Snohomish County
Public Works Department
ADA Self-Evaluation &
Transition Plan
November 2019

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WITHOUT BOUNDARIES
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ADA SELF-EVALUATION & TRANSITION PLAN

Snohomish County Public Works
ADA Coordinator for Pedestrian Facilities in the Public Right-of-Way

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ADDITIONAL INFORMATION
This document and additional information relating to the accessibility of pedestrian facilities in the public right-of-way of Snohomish County can be found on the Public Works ADA Webpage (www.snohomishcountywa.gov/pwADA).

ALTERNATIVE FORMATS
Alternative formats of this document are available by calling (425) 388-6438 (individuals with speech or hearing impairments can first dial 711 to communicate via Washington Relay Services) or by emailing Contact.pwADA@snoco.org.

FILING A COMPLAINT OR GRIEVANCE
If you feel Snohomish County Public Works has infringed upon your rights as an individual to equal access to pedestrian facilities in the public right-of-way and would like to file a complaint or a grievance, please contact the ADA Coordinator for Pedestrian Facilities in the Public Right-of-Way, Mohammad Uddin, whose contact information is provided above.
Not included in this document:
- Government buildings
- Parks
- Criminal justice system/courts
- Information systems
- Other county services or departments
# TABLE OF CONTENTS

## SUMMARY REPORT
- SELF-EVALUATION REQUIREMENTS ................................................................. 1
- TRANSITION PLAN REQUIREMENTS ............................................................... 2
- EVALUATION CRITERIA .................................................................................. 3
- PHYSICAL BARRIERS ................................................................................... 5
- ADMINISTRATIVE BARRIERS ..................................................................... 13
- ADA COMPLIANCE PROGRAM ................................................................. 14
- ACCOUNTABILITY AND REPORTING ....................................................... 15
- COMMUNITY INVOLVEMENT .................................................................. 17
- ACKNOWLEDGEMENTS ........................................................................... 19

## APPENDICES
- APPENDIX A: ADA STANDARDS TUTORIAL
- APPENDIX B: ADMINISTRATIVE REQUIREMENTS
- APPENDIX C: TECHNICAL REQUIREMENTS TABLE
- APPENDIX D: CURB RAMPS
- APPENDIX E: PEDESTRIAN CROSSINGS
- APPENDIX F: PEDESTRIAN SIGNALS AND BEACONS
- APPENDIX G: SIDEWALKS
- APPENDIX H: BUS STOPS
- APPENDIX I: ALTERNATE PEDESTRIAN FACILITIES IN WORK ZONES
- APPENDIX J: ESTIMATING BARRIER REMOVAL COSTS
- APPENDIX K: SELF-EVALUATION & TRANSITION PLANNING PROCESSES
- APPENDIX L: PUBLIC INVOLVEMENT
- APPENDIX M: ADA COMPLIANCE PROGRAM VALUES
- APPENDIX N: SUMMARY OF ACCOMPLISHMENTS TO-DATE
- APPENDIX O: FOLLOW-UP / ACTION ITEM CHECKLIST
EXECUTIVE SUMMARY

Cities were not designed with the assumption that citizens with disabilities would expect to navigate independently to shop, go to work, enjoy recreational activities, or visit government offices. The result is a public right-of-way infrastructure that isn’t always accessible.

The 1990 Americans with Disabilities Act (ADA) was enacted into law to help remedy the situation. The ADA mandates that government agencies evaluate the public right-of-way to identify accessibility barriers and prepare and implement transition plans to remove them.

In 2010, the Snohomish County Public Works Department (Public Works) began measuring 10,718 curb ramp locations, 484 pedestrian pushbuttons, 464 miles of sidewalk, more than 3,000 pedestrian crossings, and 221 bus stops. Public Works also evaluated the way it administers its pedestrian facility program.

The results were not what Public Works expected – higher compliance rates were anticipated. Public Works found that 93 percent of curb ramps, 62 percent of sidewalks, 60 percent of pushbuttons, and 90 percent of bus stops did not meet ADA requirements.

When the root causes of non-compliance were understood, Public Works active promptly to prevent more non-compliant pedestrian facilities from being constructed. At the same time, Public Works began reconstructing curb ramps to ADA standards upgrading more than 1,000 so far.

There is still a lot of work left to do. Public Works estimates that it will likely cost more than $3 billion to remove all barriers to access in the public right-of-way.

Clearly a strategy that wisely and fairly uses limited public resources is needed, and this document specifically describes the county’s approach.

Public Works’ broad and strategic approach includes:

- Prioritizing access to high use areas such as shopping, hospitals, schools, & government offices.
- Building “corridors” of accessible right-of-way rather than scattered individual project improvements.
- Working with a committee of citizens with disabilities, engineers and ADA experts to solve problems.
- Adopting and following a set of values to guide decisions.
- Pairing ADA work with other county capital projects to save money.
- Providing training to construction companies and clear evaluation criteria to ensure that new work is done right the first time.
- Ensuring that county engineering staff have direct experience with citizens with disabilities, increasing their understanding of issues.

The result is a Transition Plan that is financially realistic and makes significant improvements in the county’s public rights-of-way. It assumes authority to spend $600,000 in road funds each year (augmented by $285,000 in grants when possible) that results in an estimated 82% of the highest priority barriers being removed from the public right-of-way in the next 12 years.

This is a living document and will be updated annually. As the plan is implemented there will surely be changes as more is learned about actual reconstruction costs. As more is learned, Public Works will adapt to be more efficient and make better use of limited resources.

Accessibility is more than just a federal regulation – it’s a civil right. Public Works’ goal is to eliminate barriers to accessibility and create an environment where all can experience mobility without boundaries.
SNOHOMISH COUNTY ADA by the NUMBERS

WHY?

Title II: Americans with Disabilities Act

Prohibits discrimination on the basis of disabilities

WHO WILL BENEFIT?

Everyone!

- 20.4% <16 years old
- 18.2% 60+ years old
- 11.2% Disabled

Particularly those with mobility challenges.

WHAT DID WE FIND?

Unincorporated Snohomish County has many non-compliant pedestrian facilities

60% non-compliant
90% non-compliant
62% non-compliant
93% non-compliant

10,718 curb ramp locations
484 pedestrian obstacles
460 miles of sidewalk
221 bus stops

HOW CAN WE FIX IT?

The required fixes include:
- sidewalk improvements
- curb ramp construction
- signal equipment upgrades

It will cost over $1 billion to become compliant and will take decades to complete all the necessary projects.
ADA BY THE NUMBERS

957
Non-compliant curb ramp barriers upgraded since 2015

110
Non-compliant pushbuttons upgraded since 2015

38
Administrative barriers eliminated since 2017

9,422
Curb ramp barriers remain

317
Pushbutton barriers remain

9
Administrative barriers remain

$385,000,000
= total cost to compliance in today’s dollars:

- Curb ramps - $122.5 M
- Pedestrian pushbuttons - $1.5 M
- Sidewalks - $258.5 M
- Transit bus stops - $2.5 M

It will take at least 167 years to achieve full compliance at current rates. At 2% annual inflation the total cost to compliance could be a little over $3 B.
SUMMARY REPORT
A self-evaluation is an opportunity for a local government to review its programs and services to identify changes that are needed for individuals with disabilities to more fully participate in civic life. Self-evaluations are required by the Americans with Disabilities Act (ADA).

The ADA frequently uses the term “barrier” to describe obstacles that prevent or limit individuals with disabilities from accessing government services or facilities. When a local government doesn’t meet the requirements of the ADA it creates or perpetuates barriers.

Some barriers are physical in nature - like sidewalks without curb ramps or pedestrian signals without accessible pushbuttons.

Some barriers are administrative in nature – such as policies, procedures, practices, or the way a local government operates its programs that have the effect of discriminating against individuals with disabilities.

The Snohomish County Public Works self-evaluation focuses on identifying all types of barriers that limit individuals with disabilities from accessing pedestrian facilities in the public right-of-way.
Public agencies with more than 50 employees are required to prepare transition plans setting forth the steps necessary to remove the barriers identified during the self-evaluation (28 CFR 35.150(d)).

Public agencies were required to complete a self-evaluation and transition plan by July 26, 1992 (28 CFR 35.105 and 28 CFR 35.150(d)). Implementation of the transition plan and removal of the barriers identified during the self-evaluation was to be completed by Jan. 26, 1995 (28 CFR 35.150(c)). Agencies that have not completed a transition plan have been encouraged to complete the process as soon as possible.

At a minimum, self-evaluations and transition plans shall:

- Identify physical obstacles (barriers) in the public entity's facilities that limit accessibility of individuals with disabilities (28 CFR 35.150(d)(3)(i)). Public Works also identified administrative barriers.
- Describe in detail the methods that will be used to make the facilities accessible (28 CFR 35.150(d)(3)(ii)).
- Specify a schedule for taking the steps necessary to achieve compliance during each year of the transition period (28 CFR 35.150(d)(3)(iii)).
- Indicate the official responsible for implementation of the plan (28 CFR 35.150(d)(3)(iv)).
- Prioritize walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas (28 CFR 35.150(d)(2)).
- Provide an opportunity to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the development of the transition plan (28 CFR 35.150(d)(1)).

The ADA Transition Plan will be coordinated with Public Works’ other capital plans including the Six-Year Transportation Improvement Program (TIP), the Transportation Needs Report, and the Transportation Element of the Comprehensive plan. Each of these documents were reviewed to determine which barriers were likely to be removed as part of planned capital transportation projects as they flow down from those documents to the Annual Construction Program (ACP).

The ADA transition plan will also be coordinated with the active transportation strategy and the transportation safety plans that Public Works is currently in the process of developing. Coordinated planning will provide benefits to the public that cannot not be obtained by planning and executing the plans in parallel, but separately.
EVALUATION CRITERIA

Credible ADA self-evaluations and transition plans are based on a clear understanding of the requirements and standards by which compliance is evaluated. Public Works understands there to be at least 63 administrative and 250 technical requirements in federal, State, and local standards, guidance, and design documents that apply to its pedestrian facility program.

Appendix A: ADA Standards Tutorial explains how Public Works determined which standards to use. The administrative requirements are explained in Appendix B: Administrative Requirements, and the technical requirements are listed in a table in Appendix C: Technical Requirements Table.

CFR - Code of Federal Regulations
PROWAG - Public Right-of-Way Accessibility Guidelines (2005 draft revisions)
RCW - Revised Code of Washington
EDDS - Engineering Design and Development Standards (Snohomish County Public Works)
PHYSICAL BARRIERS

From 2011 through 2015, Public Works conducted an extensive inventory and evaluation of pedestrian facilities within the public right-of-way of unincorporated Snohomish County.

The evaluation included:

- 464 miles of sidewalk,
- 10,718 curb ramps locations,
- 484 pedestrian pushbuttons,
- 221 bus stops,
- >3,500 pedestrian crossings, and
- 3 alternative pedestrian facilities in construction zones.

Instead of spending time trying to determine when each of the more than 10,700 curb ramps were constructed and what standards applied to them at the time of construction, Public Works referenced the requirements of the 2005 draft revisions to the Public Rights-of-Way Accessibility Guidelines (2005 PROWAG) for all of them.

This is because the Federal Highway Administration (FHWA) recommended it as a best practice document for the compliant design and construction of pedestrian facilities at the time the inventory was initiated in 2011. The FHWA encouraged use of the 2005 PROWAG as a supplement to the current standards.

A preliminary review of the curb ramp data collected early in the inventory process revealed that applying the 2005 PROWAG was indeed a good baseline for assessment. The inventory revealed that most pedestrian facilities were likely not fully compliant with the relevant standards at the time they were constructed anyway.

A detailed explanation of how Public Works measured and evaluated pedestrian facilities in the public right-of-way, including explanations of methods and tools, can be found in the following Appendices:

Appendix D: Curb Ramps
Appendix E: Pedestrian Crossings
Appendix F: Pedestrian Signals and Beacons
Appendix G: Sidewalks
Appendix H: Bus Stops
Appendix I: Alternate Pedestrian Facilities in Work Zones

The following is a summary of barriers identified.
Curb Ramps
There are 2,150 locations where there should be a curb ramp, but the ramp has not yet been constructed. 93 percent of existing curb ramps under the jurisdiction of Public Works do not meet the requirements of the 2005 PROWAG. In fact, 70 percent of existing curb ramps have three or more elements that do not meet the requirements of the ADA.

Pedestrian Crossings
Public Works evaluated 374 marked pedestrian crosswalks in unincorporated Snohomish County and more than 3,200 unmarked pedestrian crossings. Of the measured pedestrian crossings, almost half have a running slope that exceeds the 5 percent maximum, and cross slopes that exceed the 2 percent maximum (Refer to Appendix E REQ 122 and REQ 123).

Pedestrian Beacons and Signals
Of the 484 pushbuttons that the county maintains, only 22 are fully compliant and meet all 85 requirements. Most of the remaining 462 pushbuttons fail to meet four or more ADA requirements.
Sidewalks
Measurements indicate that 62 percent of the existing sidewalks do not meet ADA requirements because the cross-slope measurements exceed the maximum of 2 percent (Refer to Appendix G REQ 225).

There were also 2,659 sidewalk crossings of driveways identified as barriers due to running and/or cross slopes that exceed ADA maximums (Refer to Appendix G REQ 235).

Bus Stops
Approximately 9 percent of the bus stops and shelters on county roads are ADA compliant. Most of these bus stops do not meet the ADA requirements because they have boarding and alighting areas that are not large enough or that have slopes that exceed the maximum of 2 percent (Refer to Appendix H REQ 243 and REQ 245).

Alternate Pedestrian Facilities
Common non-compliance issues include:

- Lack of accessible pedestrian access routes through/around work zones.
- Lack of firm, stable, and slip resistant surfaces.
- Lack of temporary ramps where pedestrian detours cross curb lines.
- Inadequate notification of closures and detours and improper signage to mark them.
Root Causes and Contributing Factors of Non-Compliance

The review process found that the following contributing factors are common to the entire pedestrian facility program and are not specific to any one facility type:

- Responsibility for overseeing and ensuring ADA compliance is not clearly defined (Refer to Appendix O FAI 59).
- Standard plans are being referenced in designs with little regard to existing field conditions (Refer to Appendix O FAI 40 and FAI 43).
- Designs are not being reviewed for ADA compliance before being approved for construction (Refer to Appendix O FAI 60).
- Traffic control plans are not reviewed to ensure that temporary pedestrian facilities are provided and are compliant with ADA requirements for work zones (Refer to Appendix O FAI 60).
- Flatwork forms are not routinely checked before concrete is poured for curb ramps, sidewalk, or other pedestrian facilities in the public right-of-way (Refer to Appendix O FAI 61).

The root causes and contributing factors leading to non-compliance are documented extensively throughout Appendices D through I.

All the contributing factors identified during the self-evaluation can be traced to four root causes:

1. Expectations are not clearly set / lack of training.
2. Standards have not been clearly defined.
3. There is no follow-up to determine if standards have been met.
4. There is no accountability to address non-compliant facilities or handle exceptions.

The fact that responsibility for ensuring compliance of pedestrian facilities is broadly split amongst several county departments and departmental divisions adds another layer of complexity.

With so many stakeholders involved in constructing, altering, and maintaining pedestrian facilities in the public right-of-way, there is a tendency for compliance issues to fall between the cracks.

Estimated Cost to Compliance

The estimated cost to remove all physical barriers – in 2018 dollars - is approximately $385 million as follows:

- Curb ramps - $122.5 million
- Pedestrian pushbuttons - $1.5 million
- Sidewalks - $258.5 million
- Transit bus stops - $2.5 million

For more information on how Public Works estimated barrier removal costs for each type of pedestrian facility, refer to Appendix J: Estimating Barrier Removal Costs.

Estimated Years to Compliance

Since 2013, the county has expended as much as $2.3 million annually (through large capital projects, overlays, and small capital projects) on ADA pedestrian facility upgrades. At that expenditure rate it would take at least 167 years to achieve full compliance assuming that funding kept up with inflation. Assuming an annual inflation rate of 2%, the total cost to compliance would be a little over $3 billion.
Prioritization and Ranking Criteria

To learn more about how the prioritization and ranking criteria were developed refer to Appendix K: Self-Evaluation and Transition Planning Processes.

A key component of the self-evaluation and transition planning processes was the extensive public outreach used to collect stakeholder input to prioritize barriers for removal through the transition plan. The public outreach included surveys, traditional and online public meetings, and focus groups. More information and details about the public outreach, the survey, and a report of the results can be found in Appendix L: Public Involvement.

In general, stakeholders expect Public Works to:

- Be equitable and not over-emphasis facility upgrades that benefit individuals with certain types of disabilities over individuals with other types of disabilities.
- Focus limited resources on the highest priorities.
- Focus priorities on dense urban areas.
- Focus on safety.
- Prioritize and rank barrier removal guided by stakeholder values and not just math formulas and algorithms or statistical analysis. (See Appendix M: ADA Compliance Program Values).
- Plan programmatically yet think human scale by focusing improvements on corridors and walksheds instead of chasing scattered spot improvements based solely on priority ranking.

Considering the feedback received from stakeholders, Snohomish County developed a prioritization system as follows:

Where:

- **Barrier Severity/Location Priority** = barriers are more severe the less they comply with ADA requirements. Some barriers receive higher or lower priority because of where they are located.
- **Barrier Proximity Priority** = the closer a facility is to places more people are walking, or rolling, the higher its priority. Proximity is measured in feet and as a person walks as opposed to a straight line – or as the crow flies – distance.

With the help of the Public Works’ ADA Citizen Advisory Committee, the barrier removal priorities were ranked from 1st being the highest rank to 9th being the lowest rank. The final rankings are shown in parenthesis in the priority matrix table.

| Priority Matrix |
|-----------------|-----------------|-----------------|-----------------|
| **Barrier Severity & Location** | **Proximity** | **Barrier Severity & Location** | **Proximity** |
| | High | Intermediate | Low |
| High | (1) H-H | (3) H-I | (6) H-L |
| Intermediate | (2) I-H | (4) I-I | (7) I-L |
| Low | (5) L-H | (8) L-I | (9) L-L |
12-Year Plan

The ADA Transition Plan focuses on removing the highest priority barriers starting with those in Rank 1: High Severity Priority – High Proximity Priority. Public Works began removing barriers starting in the year 2013 and has already removed more than 1,000 curb ramp and 110 pushbutton barriers. For a comprehensive summary of barriers removed by Public Works refer to Appendix N: Summary of Accomplishments To-Date.

The ADA requires that public agencies specify a schedule for taking the steps necessary to upgrade pedestrian facilities including milestones beyond the first year. Public Works does not believe that a 167-year plan can be drafted in detail that would be worthwhile to those following the plan. There are too many variables that will change in the next 100, 50, or even 20 years to be able to plan what will occur.

Local governments across the country plan capital transportation projects in 6-year cycles to conform to federal funding requirements. The Snohomish County council reviews and approves Public Works’ 6-year Transportation Improvement Project (TIP) list on an annual basis.

Public Works’ transition plan details 12-years of improvements – which is two full 6-year TIPs. The transition plan will be updated annually along with the TIP so that it will be a 12-year rolling window in which plan details are provided.

Conformance with the TIP planning cycle will allow Public Works to better coordinate transition plan projects with other capital transportation projects. If a transportation project on the 6-year TIP is already scheduled to remove a pedestrian facility barrier in the public right-of-way the transition plan can focus limited resources on the highest priority projects not already on the TIP list.

For a map of barriers that will be removed as part of Public Works’ 12-year plan, please refer to each of the 12-Year Planned Project layers of the ADA Pedestrian Facility Map Application.

By focusing all the ADA transition plan funds on the highest priority projects not already scheduled for construction as part of other capital projects, Public Works estimates that 82% of the high severity – high proximity barriers can be removed from the public right-of-way in the next 12-years.

Funding Assumptions

The annual baseline funding level required to complete the 12-year plan is approximately $600,000. The transition plan was crafted based on the assumption that $600,000 in Roads Capital funds will be authorized and allocated annually to implement the transition plan with an additional $285,000 authorized for grants funding bringing the total annual authorization to $885,000.

In order to meet plan objectives, allocated funding will need to keep up with inflation at a rate of at least 2 percent increased annually. Every year, the 6-year TIP is updated, the estimated costs will be updated as well.

All possible grants will be pursued. The plan is flexible enough that grant money can either replace – dollar for dollar – any Roads Capital funds that were allocated or it can augment Roads Capital fund dollars up to the $885,000 authorized annual expenditure as adjusted for inflation.

Barriers that are required to be removed as part of a capital project or overlay are funded through the capital project or overlay project that triggers the necessity of reconstructing them.
Physical Barriers That Can’t Be Removed

Occasionally, the topography or existing roadway features within the limits of a construction project make it impractical to construct a pedestrian facility to fully meet ADA standards. When facilities or elements of facilities can’t be constructed to fully meet ADA standards, they must be constructed to meet standards to the maximum extent feasible (MEF).

The determination of whether a facility in the public right-of-way has been built or altered to comply with ADA standards to the MEF has been delegated to the County Traffic Engineer. Refer to Public Works’ ADA webpage www.snohomishcountywa.gov/pwADADocs for more details regarding the county’s MEF design review and approval process.

Facilities constructed to comply to the MEF will be considered ADA compliant as approved and will be removed from the list of barriers included in the transition plan. To locate ramps that have been built to the MEF refer to the MEF Compliant Facilities layer of the ADA Pedestrian Facility Map Application.

Individual Requests for ADA Upgrades

The Concern: It would not be fair to put together a plan and then have every individual citizen request delayed or declined due to already planned construction that used every penny of funding.

Set Aside Funding: A policy and procedure has been developed to screen and vet requests, and $50,000 will be set aside each year to handle individual requests for pedestrian facility upgrades and reconstruction. Requests will be considered on a first-come-first served basis.

The Process: Citizens can make requests in a variety of ways including through an online submittal form, by letter, phone, or in person. The County will accommodate other forms of communication best suited to the individual making the request on a case by case basis.

Decisions: All barrier-removal requests will be reviewed by the ADA coordinator and a response will be provided via e-mail (or other formats if requested.) More information on the barrier removal request process can be found on the Public Works’ ADA Website.
Public Works identified 38 administrative barriers. A detailed review of the criteria and the relevant findings can be found in Appendix B: Administrative Requirements. Here are some examples:

- Public Works does not notify the citizens of Snohomish County of their rights under the ADA and the protections against discrimination that the law provides them (Refer to Appendix B REQ 5).
- Public Works does not have a policy to determine which power-driven mobility devices should be allowed or prohibited to be driven on public sidewalks (Refer to Appendix B REQ 36).
- Staff are not trained to effectively communicate with individuals who are deaf or hard of hearing, or have a speech impairment, in a timely manner that respects individual privacy and independence (Refer to Appendix B REQ 54).

To thoroughly address administrative barriers, Public Works identified not only the barriers but the root causes or factors contributing to the creation of the barriers. The creation of almost all the administrative barriers can be traced to at least one of four main root causes:

1. Lack of awareness
2. Lack of suitable policies and/or procedures and guidance
3. Inadequate technology
4. Insufficient training.

Taking the lessons learned from the ADA self-evaluation, an ADA Compliance Program was created to provide training, organize and clearly define standards, implement quality assurance and quality control processes and procedures, foster accountability, and handle exceptions. To-date, implementation of the ADA Compliance Program has resulted in the removal of 29 of the 38 administrative barriers identified during the self-evaluation.

For a comprehensive summary of barriers removed by Public Works refer to Appendix N: Summary of Accomplishments To-Date and Appendix O: Follow-Up / Action Item Checklist.
ADA COMPLIANCE PROGRAM

All the physical and administrative barriers identified during the self-evaluation have specific follow-up / action items (FAIs) that address the contributing factors and root causes of non-compliance. A complete list of follow-up/action items to be resolved through the ADA Compliance Program can be found in checklist form in Appendix O: Follow-Up / Action Item Checklist. The checklist identifies a responsible party and tracks completion dates and specific actions taken.

The self-evaluation identified an urgent need for Public Works to initiate an ADA compliance program to implement the follow-up / action items and quality assurance and quality control measures and address the root causes and contributing factors of non-compliance.

The ADA Compliance Program was established to accomplish the following:

1. Raise awareness of ADA compliance issues and clearly set expectations.
2. Improve communication and cooperation between departments and divisions that share responsibility for compliance.
3. Create, implement, and enforce robust policies and procedures to guide Public Works staff in the implementation of quality assurance and quality control measures, and judiciously address concerns and complaints of discrimination.
4. Procure and integrate technology, or contract with vendors or volunteer organizations, to provide the necessary technology or services to effectively communicate with individuals with sensory, cognitive, or communication disabilities.
5. Develop and implement training on ADA compliance issues, standards, and technologies.
6. Establish well defined standards to design, construct, and inspect facilities, and to create measures of effectiveness that can be used to gauge success.
7. Develop fair and consistent ways to assess compliance and following-up to ensure stakeholders are meeting the requirements.
8. Foster accountability by creating a process to fairly and consistently handle situations when compliance is not - or cannot - be achieved. Thus, enforcing policies and procedures.
ACCOUNTABILITY AND REPORTING

The ADA self-evaluation and transition plan is a living document and must be updated on a regular basis to track changes, assess and respond to risks, and to ensure compliance. Data/inventory will be kept current to track progress and identify trends and patterns that need to be addressed.

The ADA transition plan will be updated on an annual basis and a summary progress report will be provided to Public Works management, the ADA citizen advisory committee, and posted on the Public Works ADA Webpage for all stakeholders to see.

The annual update will include:

- Identification and summary count of each barrier removed during the prior calendar year.
- Summary of expenditures for the prior calendar year.
- Updated plan for barriers to be removed in the current calendar year and the next 11 years of the plan.
- Updated cost estimates and annual costs for the current calendar year and the next 11 years of the plan.
- Updates to the ADA Barriers Removed layer of the ADA Pedestrian Facility Map Application to include all the barriers removed during the prior calendar year. The map will also account for barriers removed as part of other county capital projects and by developers and through other means.
- The ADA Pedestrian Facility Map Application will be updated to show any adjustments to planned barriers to be removed in the next 12-years.
- Adjustment of prioritization and ranking criteria with new information.
- FAI checklist (Appendix O) updates
- Summary of individual requests received and the response/actions/decisions to those requests.
- Summary of complaints received and grievances that were filed.
- Summary of compliance numbers and rates for each new pedestrian facility that was added to the inventory. Compliance numbers and rates to be summarized by county department, division, section, responsible for oversight.
- Update of the total number of facilities non-compliant and their location and milestone date for completion if beyond the 12-year horizon. Update to include all non-compliant facilities added within the last year.

The summary progress report for each transition plan year can be found in Appendix N: Summary of Accomplishments To-Date.
COMMUNITY INVOLVEMENT

In 2013, Public Works formed an ADA citizen advisory committee for pedestrian facilities in the public right-of-way, referred to as the ADAPROW committee. The ADAPROW committee is tasked with advising Public Works on matters relating to its pedestrian facilities in the public right-of-way. The Public Works ADA coordinator is also a full-time member of the ADAPROW committee and serves as a co-chair.

The committee meets on a quarterly basis – or as needed – to provide the following:

- Recommendations for policies and procedures to improve compliance.
- Recommendations for pedestrian projects or facilities to be upgraded.
- Feedback and advice on how to conduct the self-evaluation and transition plan.
- Feedback and recommendations on how to conduct public outreach efforts.

Public Works partnered with consultants from the Transpo Group, Inc., PRR, and the Northwest ADA Center (an affiliate of the University of Washington) to conduct public outreach. These private and public sector consultants helped Public Works to develop a public outreach strategy and identify key stakeholders who were willing to play a role in the self-evaluation. The consultants also assisted Public Works in developing survey and evaluation questions that were administered to stakeholders and the general public. PRR hosted two focus groups to gather detailed feedback.

In addition to these efforts, Public Works hosted a public meeting on September 15, 2016 at the Everett Station in Everett from 5:30 p.m. to 7:30 p.m. with a presentation and staff on hand to answer questions from attendees. The Public Works ADA Compliance Program team also attended a meeting with the Greater Everett Council of the Blind on September 10, 2016 to discuss its self-evaluation with group attendees.

Key stakeholders and community members were invited to provide feedback on Public Works’ self-evaluation, provide recommendations on how to remove barriers to access, and to help craft its transition plan.

A recap of Public Works’ self-evaluation public outreach is available in Appendix L: Public Involvement.

Recommendations and feedback gathered during the public outreach are used to prioritize barrier removal and to help craft the transition plan.
Welcome!

Snohomish County Public Works ADA Compliance Program Self-Evaluation Online Public Meeting

Thursday, September 1, 2016 through Monday, October 3, 2016

Public Works is completing its Americans with Disabilities Act (ADA) self-evaluation study and is looking to the public for help identifying barriers and assisting in prioritization of what barriers should be removed first.

Public Works is required to complete an ADA self-evaluation of its pedestrian facilities in the public right-of-way in regards to its compliance with federal, state, and local government requirements. The self-evaluation is an opportunity to review all that the department does and identify modifications that are needed so individuals with disabilities can participate in civic life.
ACKNOWLEDGEMENTS

Snohomish County Public Works would like to thank the following individuals for the time, effort, and expertise that they contributed to the preparation and publication of this report.

**ADA Citizen Advisory Committee for Pedestrian Facilities in the Public Right-of-Way**
George Basioli – Committee Co-Chair and ADA specialist
John Dineen – Past Committee Co-Chair, Northwest ADA Center (retired)
Corinna Fale – Arc of Snohomish County
Laura Akers – Snohomish County resident
Oliver Sloboda – Senior Services of Snohomish County
Mark Villwock, P.E. – Principal for LDC, Inc.
Brian Way, RLA, LEED AP – PACE Engineers
Harold Wirch, P.E. – SnoCo Engineer V (retired)
Patricia Bauccio – Army Corp of Engineers (retired)
Jenny Anderson – President of SnoCo Council of the Blind
Danette Dixon – Past President SnoCo Council of the Blind
Marie Jubie – ADA/Mental Health Advocate
Sharon Young – Catholic Community Services (retired)

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Owen Carter, P.E. – Deputy Director/County Engineer (former)
Steve Dickson – TES Director
Bobann Fogard, P.E. – TES Director (retired)
Max Phan, P.E. – Program Planning & Envs. Manager
Mohammad Uddin, P.E., PTOE – Traffic Ops. Manager
Jim Bloodgood, P.E. – Traffic Ops. Manager (retired)
Sheela George, P.E. – Program Planning Supervisor
JoAnn Becker – Program Planning Supervisor (retired)
Gina Hortillosa, P.E., P.M.P. – Program Planning Supervisor
Ryan Peterson, P.E. – Transportation Specialist
Darren Robb – Transportation Specialist
Robert McCadden, P.E. – Engineer II
Brent Mattila, – Engineer I
Denise Nakamura – Engineer I
Joyce Barnes – Engineer II
Nadeem Mohammad – Engineer II
Michael Zelinski – Principal Planner (retired)
Candice Soine – Administrative Assistant (retired)
Cheryl Sullivan – Administrative Assistant (former)
Pam McCurdy – Administrative Assistant

**Geographic Information System (GIS) Support**
Mark Matson – Principal GIS Analyst
Steve Cole – Senior GIS Analyst
Laura Audette – Senior GIS Analyst
Robert Zimburean – Senior GIS Analyst

**Data Collection**
Troy Osborn – Engineering Technician III
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Robert Zimburean – GIS Analyst
Jared Mix – GIS Analyst
Andy Lentz – Engineering Technician III
Matthew Feeley – Engineering Technician III
Jonathan Linders – Engineering Technician III
Aaron (A.J.) Lee – Transportation Planner Sr.
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**Communications**
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Matt Phelps – Communications Specialist II
Allison Tabianodo – Communications Specialist II
Catherine Breault – Communications Specialist II
Megan Jordan – Communications Specialist II
Deb Harvey – Graphics Specialist II
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ADA Self-Evaluation of Pedestrian Facilities in the Public Right-of-Way

Snohomish County Public Works Department
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APPENDIX A: ADA STANDARDS TUTORIAL
<table>
<thead>
<tr>
<th><strong>TABLE OF CONTENTS: APPENDIX A</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT IS THE AMERICANS WITH DISABILITIES ACT?</td>
<td>1</td>
</tr>
<tr>
<td>HOW ARE FEDERAL STANDARDS SET?</td>
<td>2</td>
</tr>
<tr>
<td>WHICH FEDERAL AGENCIES SET THE ADA STANDARDS?</td>
<td>3</td>
</tr>
<tr>
<td>WHAT ARE THE FEDERAL REGULATIONS, STANDARDS, AND GUIDELINES?</td>
<td>5</td>
</tr>
<tr>
<td>WHAT ARE THE STATE STANDARDS AND GUIDELINES?</td>
<td>7</td>
</tr>
<tr>
<td>WHAT ARE THE COUNTY STANDARDS AND GUIDELINES?</td>
<td>8</td>
</tr>
</tbody>
</table>
WHAT IS THE AMERICANS WITH DISABILITIES ACT?

One of the first legislative actions taken by the federal government to protect the rights of citizens with disabilities was the passing of the Architectural Barriers Act of 1968. The act requires facilities leased, owned, or operated by the federal government or with federal money, to be accessible to people with disabilities.

The first step towards mandating curb cuts or curb ramps at intersections was taken with the passage of the Federal-Aid Highway Act of 1973, Section 228, which applied to all facilities constructed with federal financial assistance. That same year, protections were expanded with the passage of The Rehabilitation Act of 1973, Section 504, which required equal access to all programs and activities sponsored by state and local agencies receiving any federal funding for any purpose and not just funding for specific projects. However, the crowning achievement of advocates for the rights of citizens with disabilities occurred on July 26, 1990, when President George H.W. Bush signed into law the Americans with Disabilities Act (ADA).

The ADA is divided into five titles.

1. **Title I** prohibits discrimination on the basis of disability in all aspects of employment.
2. **Under Title II of the ADA,** governments must make their programs, services, and activities accessible to all including individuals with disabilities. This requirement extends not only to physical access to government buildings or to sidewalks and curb ramps in the public right-of-way, but also may require changes to policies or procedures or the way that programs are administered to ensure that individuals with disabilities have equal access. What’s more, governmental entities must ensure that they can effectively communicate with individuals with communications disabilities by providing auxiliary aids
and services as needed. Title II applies to all federal, state, and local governments regardless of whether they receive federal financial assistance (28 CFR 35.150(a)).

3. Title III pertains to public accommodations provided by businesses such as restaurants, hotels, grocery and retail stores, medical facilities, doctors’ offices, and privately-owned transportation systems. Title III also covers nonprofit service providers. All new construction and modifications to existing public accommodations must be accessible to persons with disabilities and existing facilities must be remedied if readily achievable.

4. Title IV requires that telecommunications companies offering telephone services to the public make their services accessible to individuals with hearing or speech impairments, and provide relay services 24 hours a day, 7 days a week.

5. Title V includes miscellaneous provisions that broadly apply across all the other titles including prohibitions of retaliation, intimidation, coercion, threats, or interference against individuals who seek to exercise their rights under the ADA.

HOW ARE FEDERAL STANDARDS SET?

Step 1: Congress passes a bill.

Step 2: The President approves or vetoes the bill.

Step 3: Approved bills become law and the House of Representatives standardizes the text of the law to be codified in the United States Code. Because laws often do not include all the details needed to explain how the law should be followed, Congress authorizes the responsible agencies of the executive branch to create regulations to implement the law. Regulations set specific requirements and standards that are legally enforceable.

Step 4: Federal agencies propose regulations through a Notice of Proposed Rulemaking (NPRM). The proposals are listed in the Federal Register so that the public has an opportunity to study the proposed rules and suggest revisions. Public input is considered by the federal agencies and changes to the proposed rules are sometimes made in response to the comments received.

Step 5: A Final Rule is issued and published in the Federal Register.

Step 6: The regulations are codified in the Code of Federal Regulations. The Code of Federal Regulations is the official record of all regulations created by the Federal Government.
WHICH FEDERAL AGENCIES SET THE ADA STANDARDS?

It is important to keep in mind that the Architectural Barriers Act, Section 504 of the Rehabilitation Act of 1973, and the ADA are not building codes - they are civil rights laws. The laws lay out a broad vision of what Congress hopes to achieve but are often short on the specifics of how to do it. Congress delegates the responsibility to develop guidance, standards, and regulations to the federal agencies of the Executive branch.

The United States Access Board (Access Board) is an independent federal agency that was established by the Rehabilitation Act of 1973. The Access Board consists of 13 private citizens appointed by the President - the majority of whom must be individuals with disabilities - and the heads of 12 federal departments and agencies as specified by statute, including the heads of the U.S. Department of Justice (DOJ) and the U.S. Department of Transportation (USDOT).

The Access Board was established to focus on developing accessibility guidelines for facilities designed, constructed, altered, or leased with federal dollars under the Architectural Barriers Act of 1968. The passage of the ADA expanded the Access Board’s responsibilities. The Access Board is now authorized to develop accessibility guidelines that serve as the minimum basis for the legal standards.

The ADA directs the DOJ to issue regulations implementing Part A of Title II dealing with state and local government compliance. The USDOT is tasked with implementing Part B of Title II which deals primarily with transit services provided by public entities. The Federal Highway Administration (FHWA) is a division of the USDOT and is tasked with ensuring that state and local entities comply with the requirements of the ADA.
The ADA requires the DOJ and USDOT to issue regulations that are consistent with the "minimum guidelines" issued by the Access Board. Sometimes the DOJ and USDOT add additional requirements than what can be found in the Access Board's guidelines, but the overwhelming majority of guidelines recommended by the Access Board are adopted as standards with little or no change.

However, compliance with the DOJ and USDOT standards do not necessarily ensure compliance with other federal statutes prohibiting discrimination based on disability. Therefore, public agencies that are subject to the ADA as well as other federal disability discrimination laws must be aware of the requirements of all applicable laws and must comply with these laws and their implementing regulations.

Nothing in the ADA prevents a public agency, like the Washington State Department of Transportation (WSDOT) or Public Works, from modifying its policies and providing greater access in public programs, activities, and services to individuals with disabilities than what the ADA requires.

WSDOT provides guidance and design assistance for the construction of pedestrian facilities in the public right-of-way based on the federal standards. WSDOT also serves as the steward of federal funds that are awarded to local agencies and usually exercise direct oversight of federally funded projects to ensure ADA compliance.

Public Works relies on the standards and guidance issued by the federal agencies and WSDOT and has added additional equal access requirements that go above and beyond the federal and state requirements.

While it might seem that guidance and regulations from so many federal, state, and local governmental agencies would guarantee contradictory requirements, in fact there are serious efforts to reconcile differences and to provide coherent guidance. Everyone gains when the expectations are clear.
WHAT ARE THE FEDERAL REGULATIONS, STANDARDS, AND GUIDELINES?

ABA, Rehabilitation Act of 1973, ADA

Code of Federal Regulations (CFR)

Access Board

2004 ADAAG

2005 PROWAG

2010 ADA STANDARDS

DOT/FHWA

2006 DOT STANDARDS

MUTCD

PEDESTRIAN FACILITY PROGRAM REQUIREMENTS

DOJ

STATE

EDDS

RCW

Figure 4 – Flowchart illustrating the source of ADA requirements that apply to Snohomish County’s pedestrian facility program
On July 26, 1991 the Access Board published the original ADA Accessibility Guidelines, commonly referred to as the 1991 ADAAG. On the same day, the DOJ issued the ADA Standards for Accessible Design (1991 Standards), which were based on the 1991 ADAAG.

Between 1994 and 2004, the Access Board worked on updates to the 1991 ADAAG focusing on identifying and eliminating inconsistencies among the federal accessibility requirements and between federal requirements and state and local building codes. The resulting document is referred to as the 2004 ADAAG.

In 2006, the USDOT adopted those areas of the 2004 ADAAG that it regulates. The USDOT standards are focused primarily on transit related structures and vehicles.

In 2010, the DOJ amended its regulations implementing Title II of the ADA and adopted standards consistent with the 2004 ADAAG naming them the 2010 ADA Standards for Accessible Design (2010 Standards). The 2010 Standards are primarily focused on architectural aspects of buildings and are not well suited to the unique constraints and conditions relevant to pedestrian facilities in the public right-of-way.

Since the adoption of the original 1991 ADAAG, the Access Board has recognized the need to address the unique constraints of constructing pedestrian facilities in the public right-of-way. Thus, they developed better guidelines with the first draft of proposed guidelines for the public right-of-way released in 2002. Subsequent revisions to the draft were released in 2005 and in 2011. The draft guidelines are commonly referred to as the Public Right-of-Way Accessibility Guidelines (PROWAG).

There is an important distinction that needs to be made between the PROWAG and the standards issued by the DOJ and USDOT – only the standards have legal authority. However, at the time Public Works started its self-evaluation, the FHWA was recommending that the 2005 PROWAG be followed for areas not fully addressed by the current DOJ and USDOT standards. Both Public Works and WSDOT therefore use the 2005 PROWAG to govern the design, construction, alteration, and maintenance of pedestrian facilities in the public right-of-way.
In addition, the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) contains accessibility requirements for alternative pedestrian facilities in work zones and for accessible pedestrian signals that public agencies are required to follow.

Appendix C contains a list of more than 200 requirements from the 2005 PROWAG, 2009 MUTCD, and state and county standards for pedestrian facilities in the public right-of-way that are most pertinent to the Public Works self-evaluation.

WHAT ARE THE STATE STANDARDS AND GUIDELINES?

The Revised Code of Washington (RCW) contains specific provisions for pedestrian facilities in the public right-of-way and ADA compliance in general. Among others, Chapter 35.68.075 and 35.68.076 require curb ramps for persons with disabilities.

WSDOT publishes the Design Manual containing Chapter 1510 - Pedestrian Facilities, which is based on the guidelines in the 2005 PROWAG. WSDOT also publishes in its Standard Plans the F-40 series of drawings that illustrate the dimensions and elements of compliant curbs, driveways, and sidewalk based on the requirements in the 2005 PROWAG. WSDOT Standard Plans are approved by the FHWA.

WSDOT also provides training to local agencies on the requirements of the ADA, how to conduct self-evaluations and draft transition plans, and how to design and inspect pedestrian facilities in the public right-of-way.
WHAT ARE THE COUNTY STANDARDS AND GUIDELINES?

Subtitle 13.05 of the Snohomish County Code specifies that all work performed in the public right-of-way shall conform to the Engineering Design and Development Standards (EDDS) developed by Public Works. The EDDS contain written standards and numerous drawings that illustrate many of the design principles affecting construction within the public right-of-way.

The EDDS currently references the WSDOT Design Manual and Standard Plans, and the 2009 MUTCD. Most, if not all, of the ADA requirements for curb ramps, sidewalk, and driveways have been included in the EDDS although the language may not be an exact copy of that found in the federal standards.

The EDDS also references the F-40 series of the WSDOT Standard Plans when addressing the design and layout of curb ramps, and the 2009 MUTCD for the layout of temporary pedestrian facilities in construction zones and for accessible pedestrian signal requirements. As accessibility standards are changed at the federal level, the changes filter down through the WSDOT standards and the 2009 MUTCD standards to the county, via its EDDS.

In addition to reflecting the current federal and state standards, the EDDS also contains several provisions for curb ramps that are more stringent than the requirements of the ADA. For example, the county prohibits the use of stone or brick pavers in the construction of crosswalks, sidewalks, or ramps even though the ADA does not strictly prohibit their use and many other agencies use stone or brick pavers for decorative purposes. Stone or brick pavers can create uneven surfaces and present a challenge to people who use mobility devices such as wheelchairs, canes, scooters, walkers or other devices.

Maintenance and updating of the EDDS is the responsibility of the Program Planning group within Public Works. A substantial review of the EDDS was completed in 2012 by Public Works staff. That review produced significant updates to many provisions relating to ADA requirements for sidewalk and curb ramps.

The final authority to enforce or deviate from the EDDS requirements rests with the County Engineer, who can also modify the various provisions in the standards through the administrative rule-making procedures set forth in Subtitle 30.82 of the Snohomish County Code. The EDDS sections that are most relevant to accessibility issues can be found in Appendix C.
APPENDIX B: ADMINISTRATIVE REQUIREMENTS
TABLE OF CONTENTS: APPENDIX B

ADMINISTRATIVE REQUIREMENTS FOR PEDESTRIAN FACILITY PROGRAMS...... 1

HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT? ......................... 2

A. Self-Evaluations.............................................................................................. 3
B. Notice of Rights and Responsibilities ............................................................... 7
C. Designation of a Responsible Party and Adoption of Grievance Procedures .... 8
D. General Prohibitions Against Discrimination.................................................. 11
E. Maintenance of Accessible Features................................................................. 27
F. Prohibitions Against Retaliation or Coercion .................................................. 29
G. Policies Addressing the Use of Mobility Devices on Pedestrian Facilities in the Public Right-of-Way......................................................................................... 31
H. Prohibiting Participation in Public Services Based on Legitimate Health and Safety Assessments (Direct Threat)................................................................. 33
I. Compliance of Existing Facilities ..................................................................... 34
J. Transition Plans.................................................................................................. 36
K. Compliance of Newly Constructed or Altered Facilities ............................... 42
L. General Communications Requirements.......................................................... 47
ADMINISTRATIVE REQUIREMENTS FOR PEDESTRIAN FACILITY PROGRAMS

Within a few years of the passage of the Americans with Disabilities Act (ADA) every public agency with 50 or more employees was required to have completed a self-evaluation of its programs, activities, and services to identify barriers to equal access. Until now, Snohomish County Public Works (Public Works) had not conducted a self-evaluation of its pedestrian facility program.

Although the ADA requires public agencies to conduct self-evaluations it is not always clear how they should be conducted. There is no one-size-fits-all approach to conducting a self-evaluation and each agency must come up with a solution that is manageable given the resources that are available.

Subsequently, Public Works decided to create a questionnaire in order to transparently document how well it is complying with the administrative requirements of the ADA and to determine where improvement is needed.

The questionnaire is organized into a question and answer format with the questions stemming from the administrative requirements for public agencies as contained in Title 28 of the Code of Federal Regulations (CFR), Part 35. The answers reflect what was learned when Public Works asked the questions with its pedestrian facility program in mind.

Not all of the ADA requirements from Title 28 of the CFR, Part 35, are included in this questionnaire, only those that are directly related to program administration, construction, alteration, or maintenance of the Public Works pedestrian facility program in the public right-of-way. Compliance with the ADA requirements for county buildings, employment, and communications are best addressed by Snohomish County Facilities Management, Human Resources, and Information Services departments, respectively, since they are primarily responsible for such compliance. (For a more detailed explanation of ADA requirements and the CFR turn to Appendix A.)

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.
HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** - Requirement identification number.
2. **Bold text next to REQ number** - The Code of Federal Regulation (CFR) requirement
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP/ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

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<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>REQ 01</td>
</tr>
<tr>
<td>2</td>
<td>Does Public Works have services, policies, and practices for pedestrian facilities in the public right-of-way?</td>
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<td>(CFR Title 28, Vol. 1, Sect 35.105(a))</td>
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<td>BARRIER(S):</td>
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<td>4</td>
<td>[Barrier 01] Public Works has not conducted pedestrian facilities in the public right-of-way.</td>
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<td>CONTRIBUTING FACTOR(S): None</td>
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<td>ROOT CAUSES(S): Lack of Awareness</td>
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<td>5</td>
<td>FOLLOW-UP/ACTION ITEM(S):</td>
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</table>
A. SELF-EVALUATIONS

The self-evaluation will evaluate the current services, policies, and practices for pedestrian facilities in the public right-of-way.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 01 Does Public Works have an updated self-evaluation that evaluates its current services, policies, and practices for pedestrian facilities in the public right-of-way and the effects thereof that do not or may not meet the requirements of the ADA regulations?
(CFR Title 28, Vol. 1, Sect 35.105(a))

BARRIER(S):

[Barrier 01] Public Works has not conducted a self-evaluation of its program to provide pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


NOTES: In 1993, Public Works staff inventoried intersections to identify if curb ramps were present or not. At the time, staff identified more than 2,000 curb ramps in urban areas of unincorporated Snohomish County. Congestion Mitigation and Air Quality Improvement (CMAQ) grant money was secured to fix 129 locations between 1995 and 1997.
REQ 02 To the extent modifications to Public Works services, policies, and practices are required, has Public Works proceeded to make the modifications? (CFR Title 28, Vol. 1, Sect 35.105(a))

BARRIER(S):

[Barrier 02] Public Works has not made modifications to its services, policies, and practices as identified as needed in a self-evaluation.

CONTRIBUTING FACTOR(S): Public Works has not conducted a self-evaluation of its pedestrian facility program and services.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance

FOLLOW-UP/ACTION ITEM(S):

[FAI 02] Make modifications to Public Works’ program for pedestrian facilities in the public right-of-way to the extent they are required as identified in the ADA self-evaluation.

NOTES: None
REQ 03 Has Public Works provided an opportunity to interested persons, including individuals with disabilities, or organizations representing individuals with disabilities, to participate in the self-evaluation process by submitting comments? (CFR Title 28, Vol. 1, Sect 35.105(b))

BARRIER(S):

[Barrier 03] Public Works has not provided an opportunity for interested persons, including individuals with disabilities, or organizations representing individuals with disabilities, to participate in a self-evaluation.

CONTRIBUTING FACTOR(S): Public Works has not conducted a self-evaluation of its pedestrian facility program and services.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):

[FAI 03] Provide an opportunity to interested persons, including individuals with disabilities and organizations representing individuals with disabilities, to participate in the self-evaluation and transition plan process by submitting comments.

NOTES: Public Works will not wait until its self-evaluation is completed to provide opportunities for interested persons to participate. Public Works will form a citizen advisory committee to help conduct its self-evaluation and involve the public and interested persons, including individuals with disabilities and organizations that represent individuals with disabilities throughout the self-evaluation process.
REQ 04    Has Public Works maintained, on file, the self-evaluation for three years and made the self-evaluation available for public inspection: (1) a list of the interested persons consulted; (2) a description of areas examined, and any problems identified; and (3) a description of any modifications made? (CFR Title 28, Vol. 1, Sect 35.105(c))

BARRIER(S):

[Barrier 04] Public Works has not made a self-evaluation available for public inspection according to the requirements of 28 CFR 35.105(c).

CONTRIBUTING FACTOR(S): Public Works has not conducted a self-evaluation of its pedestrian facility program and services.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):

[FAI 04] Implement an archival process to maintain the self-evaluation on file for at least three years following the completion of the self-evaluation and make available for public inspection: (1) a list of the interested persons consulted; (2) a description of areas examined, and any problems identified; and (3) a description of any modifications made. Make a copy of the transition plan available for public inspection.

NOTES: None
B. NOTICE OF RIGHTS AND RESPONSIBILITIES

Information regarding the requirements of the ADA and its applicability to the services, programs, or activities of Public Works, should be made available to applicants, participants, members of the public, and companions with disabilities.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 05 Has Public Works made available to applicants, participants, beneficiaries, and other interested persons, information regarding the requirements of the ADA and its applicability to the services, programs, or activities of the Public Works, and made such information available to them in such a manner as the head of Public Works finds necessary to apprise such persons of the protections against discrimination assured them by the ADA?
(CFR Title 28, Vol. 1, Sect 35.106)

BARRIER(S):

[Barrier 05] Public Works does not provide adequate notification to individuals with disabilities of their rights and Public Works’ responsibilities under the law to provide equitable access to pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):

[FAI 05] Make available to applicants, participants, beneficiaries, and other interested persons, information regarding the requirements of the ADA and its applicability to Public Works’ program for pedestrian facilities in the public right-of-way via the Public Works ADA webpage.

[FAI 06] Coordinate with the Public Works Title VI Compliance Officer to improve current notification practices, as needed.

[FAI 07] Coordinate with the Public Works Communication Group to improve current notification practices, as needed.

NOTES: None
C. DESIGNATION OF A RESPONSIBLE PARTY AND ADOPTION OF GRIEVANCE PROCEDURES

A responsible party would be responsible for responding to grievances that are submitted through the grievance procedure. The grievance procedure would be used to resolve complaints regarding non-compliance.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 06 Has an employee been designated to coordinate efforts to comply with and carry out the Public Works’ responsibilities under the ADA to provide equal access to pedestrian facilities in the public right-of-way, including investigations of any complaints communicated to it alleging non-compliance or any actions that would be prohibited by the ADA?
(CFR Title 28, Vol. 1, Sect 35.107(a))

BARRIER(S):

[Barrier 06] Public Works has not designated an employee to coordinate efforts to comply with the ADA nor investigate complaints of non-compliance or discrimination based on disability.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance

FOLLOW-UP/ACTION ITEM(S):

[FAI 08] Designate a Snohomish County Public Works ADA Coordinator for pedestrian facilities in the public right-of-way. Designate the official responsible for implementation of the transition plan.

[FAI 09] Establish a process and/or procedure to receive, assess, respond to, and address requests for the removal of specific physical barriers in a timely manner and resolve complaints of alleged discrimination or non-compliance based on disability.

[FAI 10] Establish a process and/or procedure to receive, assess, respond to, and address requests for the installation of Accessible Pedestrian Signal pushbuttons and equipment at signalized intersections and beacons.

NOTES: Public Works will appoint an ADA Coordinator to guide the self-evaluation process.
REQ 07 Are the name, office address, and telephone number of the employee designated to coordinate ADA compliance for pedestrian facilities in the public right-of-way made available to interested parties?
(CFR Title 28, Vol. 1, Sect 35.107(a))

BARRIER(S):

[Barrier 07] Public Works has not made available, to interested parties, the name, office address, and telephone number of the employee designated to coordinate ADA compliance for pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): Public Works does not have an ADA Coordinator or designated employee to coordinate ADA compliance for pedestrian facilities in the public right-of-way.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):

[FAI 11] Publish the name, office address, and telephone number of the ADA Coordinator for pedestrian facilities in the public right-of-way.

NOTES: None
REQ 08  Have grievance procedures been adopted and published that provide for the prompt and equitable resolution of complaints alleging any action that would be prohibited by the ADA regarding Public Works pedestrian facility programs, activities, or services?
(CFR Title 28, Vol. 1, Sect 35.107(b))

BARRIER(S):
[Barrier 08] Public Works has not adopted grievance procedures.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance

FOLLOW-UP/ACTION ITEM(S):
[FAI 12] Adopt and publish grievance procedures that incorporate due process standards and provide for the prompt and equitable resolution of complaints of discrimination against an individual with a disability relating to pedestrian facilities in the public right-of-way.

NOTES: None
D. GENERAL PROHIBITIONS AGAINST DISCRIMINATION

There are many ways that public agencies could potentially discriminate or participate in discrimination against individuals with disabilities. The prohibitions in this section cover the most common discriminatory practices.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 09 Does Public Works exclude qualified individuals with a disability, on the basis of the disability, from participation in or deny the benefits of public right-of-way pedestrian facility services, programs, or activities?
(CFR Title 28, Vol. 1, Sect 35.130(a))

BARRIER(S):

[Barrier 09] Not all the requirements in 28 CFR Part 35 are being met.

[Barrier 10] Many of the existing pedestrian facilities in the public right-of-way are not ADA compliant and could have been constructed to full ADA compliance, maintained to full ADA compliance, or constructed to comply with the ADA requirements to the maximum extent feasible.

CONTRIBUTING FACTOR(S): Public Works staff was unaware of the ADA requirements and lack the training and resources to fully implement the requirements.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):


[FAI 02] Make modifications to Public Works’ program for pedestrian facilities in the public right-of-way to the extent they are required as identified in the ADA self-evaluation.

NOTES: More than 6,000 curb ramps and several hundred miles of sidewalk, dozens of accessible pedestrian signals, and thousands of pedestrian crossings have been constructed in the public right-of-way since the ADA was enacted. The mere existence of the curb ramps and pedestrian facilities illustrates that Public Works has recognized the importance of providing pedestrian facilities in the public right-of-way for individuals with disabilities.
But, as the answers to the questions in this questionnaire and the technical review of pedestrian facilities conducted as part of this self-evaluation will reveal, not all of the pedestrian facilities constructed in the public right-of-way are compliant with current ADA standards or the ADA standards in effect at the time the facilities were designed and/or constructed.

When Public Works staff tasked with conducting the self-evaluation met with design engineers, supervisors, managers, inspectors, contractors, flat work crew members, foremen, consultants, and others involved in the design and construction of pedestrian facilities in the public right-of-way it was obvious they knew about the ADA but few could identify the standards by which they were to conduct their work. Most would have pointed to the standard plan sets provided by the Washington State Department of Transportation as their sole reference point. More importantly, most did not understand the reasoning and purpose behind the requirements to be able to adapt the standard plans to fit in a real-world environment where not every project site is standard.

Given the fact that there are more than 60 administrative requirements and 200 technical requirements that have to be met to have a fully compliant pedestrian facility program it is no surprise that amongst the hundreds of people involved in implementing the pedestrian facility program not one person was identified who could list or explain more than 10 of the technical requirements. In the same breadth, none could list or explain more than four of the administrative requirements.

An evaluation of Public Works policies, procedures, and practices, even those unwritten and practiced by habit or institutional culture, reveals that facilities that do not meet the ADA requirements have not been constructed as a deliberate attempt to discriminate against individuals with disabilities. Instead, it is due to a lack of understanding of the ADA standards and a lack of focus on compliance requisite to the complexity of the ADA.
REQ 10  Has Public Works, in providing any aid, benefit, or service relating to pedestrian facilities in the public right-of-way, directly or through contractual, licensing, or other arrangements, based on disability, denied a qualified individual with a disability the opportunity to participate in or benefit from the aid, benefit, or service?
(CFR Title 28, Vol. 1, Sect 35.130(b)(1)(i))

BARRIER(S): Refer to the response to REQ 9.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 9.

ROOT CAUSES(S): Refer to the response to REQ 9.

FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 9.

NOTES: Refer to the response to REQ 9.

REQ 11  Has Public Works, in providing pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, on the basis of disability, afforded a qualified individual with a disability an opportunity to participate in or benefit from the aid, benefit, or service that is not equal to that afforded others?
(CFR Title 28, Vol. 1, Sect 35.130(b)(1)(ii))

BARRIER(S): Refer to the response to REQ 9.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 9.

ROOT CAUSES(S): Refer to the response to REQ 9.

FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 9.

NOTES: Refer to the response to REQ 9.
REQ 12    Has Public Works, in providing pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, on the basis of disability, provided a qualified individual with a disability with an aid, benefit, or service that is not as effective in affording equal opportunity to obtain the same result, to gain the same benefit, or to reach the same level of achievement as that provided to others?
(CFR Title 28, Vol. 1, Sect 35.130(b)(1)(iii))

BARRIER(S): Refer to the response to REQ 9.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 9.

ROOT CAUSES(S): Refer to the response to REQ 9.

FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 9.

NOTES: Refer to the response to REQ 9.
REQ 13 Has Public Works, in providing pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, on the basis of disability, provided different or separate aids, benefits, or services to individuals with disabilities or to any class of individuals with disabilities than is provided to others unless such action is necessary to provide qualified individuals with disabilities with aids, benefits, or services that are as effective as those provided to others? (CFR Title 28, Vol. 1, Sect 35.130(b)(1)(iv))

BARRIER(S): None

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: On occasion, alternative routes or pedestrian facilities have been provided that are separate from the facilities provided to others due to safety concerns. For example, during construction work separate facilities have been provided around a work zone that are ADA compliant but that may require a slightly longer path of travel than is available to others.

In cases where sight distance is a concern for motorists on a roadway, curb ramps have been eliminated at a crossing which may require an individual with a disability to travel a slightly longer route to find a crossing at an adjacent location. Curb ramps have also not been installed in a few cases where the grade of the existing roadway was so steep that there were concerns that the grades could cause tipping hazards.

In those cases, an alternate crossing was provided at an adjacent location with minimal differences in the path of travel for individuals with disabilities than what might be expected of others.
REQ 14   Has Public Works, in providing pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, on the basis of disability, aided or perpetuated discrimination against a qualified individual with a disability by providing significant assistance to an agency, organization, or person that discriminates on the basis of disability in providing any aid, benefit, or service to beneficiaries of the public entity’s program? (CFR Title 28, Vol. 1, Sect 35.130(b)(1)(v))

BARRIER(S): Unknown. More information needed.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance

FOLLOW-UP/ACTION ITEM(S):

[FAI 13] Review and revise contractual language in inter-local agreements, as needed, to ensure that Public Works will not aid or perpetuate discrimination against individuals with disabilities in the provision of pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, on the basis of disability.

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

NOTES: Public Works has, through inter-local agreements, provided services to other public agencies which may or may not be fully complying with the requirements of the ADA. Public Works does not investigate other public agencies to determine if they are complying with the requirements of the ADA.
REQ 15 Has Public Works, in providing pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, on the basis of disability, denied a qualified individual with a disability the opportunity to participate as a member of planning or advisory boards? (CFR Title 28, Vol. 1, Sect 35.130(b)(1)(vi))

BARRIER(S): None. Public Works does not make disability a basis for denying qualified individuals with a disability, the opportunity to participate as a member of planning or advisory boards.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None

REQ 16 Has Public Works, in providing pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing, or other arrangements, based on disability, otherwise limited a qualified individual with a disability in the enjoyment of any right, privilege, advantage, or opportunity enjoyed by others receiving the program, activity, or service? (CFR Title 28, Vol. 1, Sect 35.130(b)(1)(vii))

BARRIER(S): Refer to the response to REQ 9 and REQ 14.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 9 and REQ 14.

ROOT CAUSES(S): Refer to the response to REQ 9 and REQ 14.

FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 9 and REQ 14.

NOTES: Several thousand curb ramp locations and several hundred miles of sidewalk have been identified in the public right-of-way as not meeting the requirements of the ADA. Depending on the severity of non-compliance, these curb ramp locations and sidewalks may present a barrier or limit qualified individuals, based on their disability, in the enjoyment of their rights as enjoyed by others.
REQ 17 Has Public Works denied a qualified individual with a disability the opportunity to participate in pedestrian facility services, programs, or activities in the public right-of-way that are not separate or different, despite the existence of permissibly separate or different programs or activities? (CFR Title 28, Vol. 1, Sect 35.130(b)(2))

BARRIER(S): None. Public Works has not denied a qualified individual with a disability the opportunity to participate in pedestrian facility services, programs, or activities in the public right-of-way that are not separate or different, despite the existence of permissibly separate or different programs or activities.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None

REQ 18 Has Public Works directly or through contractual or other arrangements, utilized criteria or methods of administration in administering its pedestrian facility programs, services, or activities in the public right-of-way that had the effect of subjecting qualified individuals with disabilities to discrimination based on disability? (CFR Title 28, Vol. 1, Sect 35.130(b)(3)(i))

BARRIER(S): None. Public Works does not utilize criteria or methods of administration to discriminate against individuals with disabilities.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
REQ 19    Has Public Works directly or through contractual or other arrangements, utilized criteria or methods of administration in administering its pedestrian facility programs, services, or activities in the public right-of-way that have the purpose or effect of defeating or substantially impairing accomplishment of the objectives of the Public Work’s program with respect to individuals with disabilities? (CFR Title 28, Vol. 1, Sect 35.130(b)(3)(ii))

BARRIER(S): None. Refer to the response to REQ 18.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None

REQ 20    Has Public Works directly or through contractual or other arrangements, utilized criteria or methods of administration in administering its pedestrian facility programs, services, or activities in the public right-of-way that perpetuate the discrimination of another public entity if Public Works and the other public entities are subject to common administrative control or are agencies of the same State? (CFR Title 28, Vol. 1, Sect 35.130(b)(3)(iii))

BARRIER(S): None. Refer to the response to REQ 18.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
REQ 21  Does Public Works, in determining the site or location of a pedestrian facility in the public right-of-way, make selections that have the effect of excluding individuals with disabilities from, denying them the benefits of, or otherwise subjecting them to discrimination?
(CFR Title 28, Vol. 1, Sect 35.130(b)(4)(i))

BARRIER(S):

[Barrier 11] Public Works has, in determining the site or location of a pedestrian facility in the public right-of-way, made selections that have the effect of excluding individuals with disabilities from, denying them the benefits of, or otherwise subjecting them to discrimination.

CONTRIBUTING FACTOR(S): Washington State law is not entirely clear or well understood in regard to what is considered to be a legal pedestrian crossing where curb ramps would be required.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training.

FOLLOW-UP/ACTION ITEM(S):

[FAI 15] Develop policies, procedures, guidance and/or training to help Public Works staff determine when and where pedestrian facilities in the public right-of-way are required to meet the requirements of the ADA, state law, and county standards.

NOTES: Although there may be several locations where curb ramps were required and have not yet been constructed it is mostly due to the fact that it was not well understood or clear at the time of construction that a ramp was required. This is partially due to the fact that Washington State law is not entirely clear or well understood in regard to what is considered to be a legal pedestrian crossing where curb ramps would be required. For example, it has not always been clear to Public Works staff that Public Works officials interpret the RCW to apply to 90-degree elbow intersections thereby requiring two legal crossings that require subsequent curb ramps.
REQ 22  Does Public Works, in determining the site or location of a pedestrian facility in the public right-of-way, make selections that have the purpose or effect of defeating or substantially impairing the accomplishment of the objectives of the service, program, or activity with respect to individuals with disabilities?  
(CFR Title 28, Vol. 1, Sect 35.130(b)(4)(ii))

BARRIER(S): Refer to the response to REQ 21.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 21.

ROOT CAUSES(S): Refer to the response to REQ 21.

FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 21.

NOTES: None

REQ 23  Does Public Works, in the selection of procurement contractors for pedestrian facilities in the public right-of-way, use criteria that subject qualified individuals with disabilities to discrimination on the basis of disability?  
(CFR Title 28, Vol. 1, Sect 35.130(b)(5))

BARRIER(S): None. Public Works does not, in the selection of procurement contractors for pedestrian facilities in the public right-of-way, use criteria that subject qualified individuals with disabilities to discrimination on the basis of disability. Contract specifications contain non-discrimination clauses including discrimination based on disability.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
REQ 24  Does Public Works administer a licensing or certification program for pedestrian facilities in the public right-of-way in a manner that subjects qualified individuals with disabilities to discrimination on the basis of disability, or establish requirements for the programs or activities of licensees or certified entities that subject qualified individuals with disabilities to discrimination on the basis of disability? (CFR Title 28, Vol. 1, Sect 35.130(b)(6))

BARRIER(S): None. Public Works does not administer licensing or certification programs for pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
REQ 25  Does Public Works make reasonable modifications in policies, practices, or procedures relating to pedestrian facilities in the public right-of-way when the modifications are necessary to avoid discrimination on the basis of disability, unless it can demonstrate that making the modifications would fundamentally alter the nature of the service, program, or activity?
(CFR Title 28, Vol. 1, Sect 35.130(b)(7))

BARRIER(S):

[Barrier 12] Public Works decision makers do not have an objective process to determine when modifications in policies, practices, or procedures relating to pedestrian facilities in the public right-of-way are necessary to avoid discrimination. Nor do they have an objective process to determine when such modifications would fundamentally alter the nature of the program in such a way that they should not make such modifications.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 16] Develop policies, procedures, guidance, and/or training to help Public Works staff determine when requested changes to policies, practices, or procedures relating to pedestrian facilities in the public right-of-way are reasonable and necessary to avoid discrimination on the basis of disability, and when it may be necessary to deny requests because the request would fundamentally alter the nature of the pedestrian facility program.

Notes None
REQ 26 Does Public Works impose or apply eligibility criteria that screen out or tend to screen out an individual with a disability or any class of individuals with disabilities from fully and equally enjoying its pedestrian facility services, programs, or activities in the public right-of-way, unless such criteria can be shown to be necessary for the provision of the service, program, or activity being offered? (CFR Title 28, Vol. 1, Sect 35.130(b)(8))

BARRIER(S): None. Public Works does not impose or apply eligibility criteria that screen out or tend to screen out an individual with a disability or any class of individuals with disabilities from fully and equally enjoying its pedestrian facility services, programs, or activities in the public right-of-way.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
REQ 27  Does Public Works administer pedestrian facility services, programs, and activities in the public right-of-way in the most integrated setting appropriate to the needs of qualified individuals with disabilities?  
(CFR Title 28, Vol. 1, Sect 35.130(d))

BARRIER(S):

[Barrier 13] Public Works staff is not trained to know how to administer pedestrian facility programs in the most integrated setting appropriate to the needs of qualified individuals with disabilities nor is there guidance to guide them.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 17] Develop policies, procedures, guidance and/or training to help Public Works staff understand what it means – and how – to administer pedestrian facility services, programs, and activities in the public right-of-way in the most integrated setting appropriate to the needs of qualified individuals with disabilities.

NOTES: On occasion, such as during construction, or at a complex intersection or pedestrian crossing location, an accessible pedestrian facility may be provided separately from other pedestrian crossings that require a slightly longer travel route. These are only included as needed for the safety and benefit of individuals with disabilities and are designed and constructed to integrate them as much as possible into the overall pedestrian facility infrastructure.

More training may be needed to confirm that Public Works staff understands how to ensure that individuals with communications disabilities can participate in public meetings in an integrated setting.
REQ 28   Does Public Works place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the costs of measures, such as the provision of auxiliary aids or program accessibility for its pedestrian facility programs, activities, or services in the public right-of-way, that are required to provide that individual or group with the nondiscriminatory treatment required by the ADA? (CFR Title 28, Vol. 1, Sect 35.130(f))

BARRIER(S): None. Public Works does not place a surcharge on its pedestrian facility programs, activities, or services in the public right-of-way to cover the costs of providing individuals with disabilities with access.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None

REQ 29   Does Public Works exclude or otherwise deny equal pedestrian facility services, programs, or activities in the public right-of-way to an individual or entity because of the known disability of an individual with whom the individual or entity is known to have a relationship or association? (CFR Title 28, Vol. 1, Sect 35.130(g))

BARRIER(S): None. Public Works does not exclude individuals or entities from participating in its pedestrian facility program because of known disabilities.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): N/A

NOTES: None
REQ 30 Even though Public Works may impose legitimate safety requirements necessary for the safe operation of its pedestrian facility services, programs, or activities in the public right-of-way, does Public Works ensure that its safety requirements are based on actual risks, not on mere speculation, stereotypes, or generalizations about individuals with disabilities?
(CFR Title 28, Vol. 1, Sect 35.130(h))

BARRIER(S): 

[Barrier 14] Public Works staff is not trained to make determinations of safety risks nor is guidance provided to staff to impose legitimate safety requirements necessary for the safe operation of Public Works' pedestrian facility program.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S): 

[FAI 18] Develop policies, procedures, guidance and/or training to help Public Works staff be able to make determinations as to when, how, and under what conditions to impose legitimate safety requirements necessary for the safe operation of pedestrian facilities in the public right-of-way, that are based on actual risks and not on speculation, stereotypes, or generalizations about individuals with disabilities.

NOTES: On occasion, curb ramps have not been required at a certain intersection due to safety concerns including sight distance limitations and conflicts with vehicular traffic flow. However, the restrictions have been extended to all persons and not just individuals with disabilities.

**E. MAINTENANCE OF ACCESSIBLE FEATURES**

Not all pedestrian facilities within the county’s public right-of-way are checked on a regular basis. Any deficiencies are usually brought to the attention of Public Works by citizens. A routine inspection plan would be useful in identifying problems before they are reported to public works by citizens.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.
REQ 31  Does Public Works maintain in operable working condition those features of pedestrian facilities and equipment in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities?
(CFR Title 28, Vol. 1, Sect 35.133(a))

BARRIER(S):

[Barrier 15] Not all features of pedestrian facilities in the public right-of-way that are required to be readily available to and usable by persons with disabilities are maintained in operable working condition.

CONTRIBUTING FACTOR(S): Technology has not matured sufficiently to ensure that all of the ADA requirements for Accessible Pedestrian Signals can be met all of the time. Technology breaks or fails to function as designed.

ROOT CAUSES(S): Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

[FAI 20] Develop policies, procedures, guidance and/or training to help Public Works staff plan for and provide continuous access to pedestrian facilities in the public right-of-way to persons with disabilities during maintenance or repairs, and to know under what conditions isolated or temporary interruptions in service or access are acceptable.

NOTES: Public Works signal electricians routinely inspect traffic signal equipment to ensure that it is operating as designed. Pedestrian pushbuttons that are damaged or broken are repaired or replaced as identified. However, some features of accessible pedestrian signals are not routinely checked – such as the volume of the audible pedestrian WALK phase indication – so that most problems are identified only through complaints or reports of problems from the public. Most sidewalk and curb ramp obstructions are also identified by the public. In these instances, Public Works does not have a maintenance plan to inspect facilities for compliance and make repairs as needed.
REQ 32  Does Public Works maintain an operable working condition those features of pedestrian facilities and equipment in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities by the ADA except for isolated or temporary interruptions in service or access due to maintenance or repairs? (CFR Title 28, Vol. 1, Sect 35.133(b))

BARRIER(S): Refer to the response for REQ 31.

CONTRIBUTING FACTOR(S): Refer to the response for REQ 31.

ROOT CAUSES(S): Refer to the response for REQ 31.

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

[FAI 20] Develop policies, procedures, guidance and/or training to help Public Works staff plan for and provide continuous access to pedestrian facilities in the public right-of-way to persons with disabilities during maintenance or repairs, and to know under what conditions isolated or temporary interruptions in service or access are acceptable.

NOTES: None

F. PROHIBITIONS AGAINST RETALIATION OR COERCION
Public Works does not retaliate against, coerce, intimidate, threaten, or interfere with the rights of individuals with disabilities.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.
REQ 33  Does Public Works discriminate against any individual because that individual has opposed any act or practice regarding its pedestrian facility programs, services, or activities in the public right-of-way made unlawful by the ADA, or because that individual made a charge, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under the ADA?
(CFR Title 28, Vol. 1, Sect 35.134(a))

BARRIER(S): None. Public Works does not retaliate against individuals with disabilities.

CONTRIBUTING FACTOR(S): N/A

Root Cause(s) N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None

REQ 34  Does Public Works coerce, intimidate, threaten, or interfere with any individual in the exercise or enjoyment of, or on account of his or her having exercised or enjoyed, or on account of his or her having aided or encouraged any other individual in the exercise or enjoyment of, any right granted or protected by the ADA regarding pedestrian facilities in the public right-of-way?
(CFR Title 28, Vol. 1, Sect 35.134(b))

BARRIER(S): None. Public Works does not coerce, intimidate, threaten, or interfere with the rights of individuals with disabilities.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
**G. POLICIES ADDRESSING THE USE OF MOBILITY DEVICES ON PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY**

Public Works does not currently limit what type of mobility devices can be used on pedestrian facilities in the public right-of-way.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

**REQ 35** Does Public Works permit individuals with mobility disabilities to use wheelchairs and manually-powered mobility aids, such as walkers, crutches, canes, braces, or other similar devices designed for use by individuals with mobility disabilities in any areas open to pedestrian use on its pedestrian facilities in the public right-of-way? (CFR Title 28, Vol. 1, Sect 35.137(a))

**BARRIER(S):** None. Public Works permits individuals with mobility disabilities to use wheelchairs and manually-powered mobility aids, such as walkers, crutches, canes, braces, or other similar devices designed for use by individuals with mobility disabilities in any areas open to pedestrian use on its pedestrian facilities in the public right-of-way.

**CONTRIBUTING FACTOR(S):** N/A

**ROOT CAUSES(S):** N/A

**FOLLOW-UP/ACTION ITEM(S):** None

**NOTES:** None
REQ 36  Does Public Works make reasonable modifications in its policies, practices, or procedures relating to its pedestrian facilities in the public right-of-way to permit the use of other power-driven mobility devices by individuals with mobility disabilities, unless it can demonstrate that the class of other power-driven mobility devices cannot be operated in accordance with legitimate safety requirements that it has adopted pursuant to applicable federal laws? (CFR Title 28, Vol. 1, Sect 35.137(b)(1))

BARRIER(S):

[Barrier 16] Public Works has not developed clear policies or guidance governing the use of power-driven mobility devices on its pedestrian facilities in the public right-of-way. Nor has it developed guidance that clarifies which power-driven mobility devices are allowed and not allowed to be used on pedestrian facilities in the public right-of-way based on legitimate safety analysis and requirements and pursuant to applicable federal laws.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Suitable Policies and/or Procedures and Guidance

FOLLOW-UP/ACTION ITEM(S):

[FAI 21] Develop policies, or revise county code, as necessary, to clarify which power-driven mobility devices are allowed and not allowed to be used on pedestrian facilities in the public right-of-way based on legitimate safety analysis and requirements and pursuant to applicable federal laws.

NOTES: Where Washington State law is clear on the matter then the county may not have to adopt specific policies or practices or modify its code.

If state law is unclear, then the county should consider adopting specific policies and/or procedures and guidance or amending or modifying its traffic codes to be more specific.
H. PROHIBITING PARTICIPATION IN PUBLIC SERVICES BASED ON LEGITIMATE HEALTH AND SAFETY ASSESSMENTS (DIRECT THREAT)

Public Works is not required to permit an individual to participate in or benefit from its pedestrian facility services, programs, or activities in the public right-of-way when that individual poses a direct threat to the health or safety of others. However, Public Works cannot envision a scenario where an individual with a disability would pose a direct threat to the health or safety of others due to their disability such that they would be prohibited from benefitting from the pedestrian facility program.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 37 The ADA does not require Public Works to permit an individual to participate in or benefit from its pedestrian facility services, programs, or activities in the public right-of-way when that individual poses a direct threat to the health or safety of others. In determining whether an individual poses a direct threat to the health or safety of others, does Public Works make an individualized assessment, based on reasonable judgment that relies on current medical knowledge or on the best available objective evidence, to ascertain: the nature, duration, and severity of the risk; the probability that the potential injury will actually occur; and whether reasonable modifications of policies, practices, or procedures or the provision of auxiliary aids or services will mitigate the risk?
(CFR Title 28, Vol. 1, Sect 35.139(a) - (b))

BARRIER(S): None. Public Works cannot envision a scenario where an individual with a disability would pose a direct threat to the health or safety of others due to their disability such that they would be prohibited from benefitting from the pedestrian facility program.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
I. COMPLIANCE OF EXISTING FACILITIES

Not all of the county’s pedestrian facilities in the public right-of-way are fully compliant.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 38  Does Public Works operate each public right-of-way pedestrian facility service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities? (CFR Title 28, Vol. 1, Sect 35.150(a))

BARRIER(S): None. Public Works operates each public right-of-way pedestrian facility service, program, or activity so that the service, program, or activity, when viewed in its entirety, is readily accessible to and usable by individuals with disabilities.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

NOTES: None
REQ 39 In those circumstances where Public Works personnel believe that a proposed action to comply with the ADA requirements would fundamentally alter a public right-of-way pedestrian facility service, program, or activity, or would result in undue financial and administrative burdens, does the head of Public Works, or his or her designee, after considering all resources available for use in the funding and operation of the service, program, or activity, document in writing the reasons for reaching that conclusion?
(CFR Title 28, Vol. 1, Sect 35.150(a)(3))

BARRIER(S):

[Barrier 17] Public Works has not developed guidance to determine when compliance with ADA requirements would result in undue financial and administrative burdens to the pedestrian facility program, nor how the head of Public Works, or his/her designee, should make such determinations and document them.

CONTRIBUTING FACTOR(S): None

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 23] Develop policies, procedures, guidance, and/or training to help the Public Works Director, or his / her designee, determine when a proposed action to comply with the ADA requirements would fundamentally alter Public Works’ program for pedestrian facilities in the public right-of-way in such a way that it would result in undue financial and administrative burdens and how to adequately document in writing the reasons for reaching that conclusion.

NOTES: Public Works has never made a claim that a proposed action to comply with the ADA requirements would fundamentally alter a public right-of-way pedestrian facility program or result in an undue financial or administrative burden.
J. TRANSITION PLANS

The Public Works Transition Plan will document the schedule and steps necessary to bring all non-compliant pedestrian facilities in the public right-of-way into compliance.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 40 Does Public Works have a transition plan setting forth the steps necessary to complete changes to pedestrian facilities in the public right-of-way that are not compliant with the requirements of the ADA?
(CFR Title 28, Vol. 1, Sect 35.150(d)(1))

BARRIER(S):

[Barrier 18] Public Works does not have a transition plan setting forth the steps necessary to complete changes to pedestrian facilities in the public right-of-way that are not compliant with the requirements of the ADA.

CONTRIBUTING FACTOR(S): Public Works has not completed a self-evaluation.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


[FAI 24] Develop and publish a transition plan to remove barriers to equal access to Public Works’ program for pedestrian facilities in the public right-of-way, that at a minimum: (1) identifies physical obstacles that limit the accessibility of its program to individuals with disabilities; (2) describes in detail the methods that will be used to make the program accessible; and, (3) specifies the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identifies steps that will be taken during each year of the transition period.

Notes: None
REQ 41  Does Public Works provide opportunities to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the development of the transition plan for pedestrian facilities in the public right-of-way by submitting comments? Is a copy of the Public Work transition plan for pedestrian facilities in the public right-of-way made available for public inspection? (CFR Title 28, Vol. 1, Sect 35.150(d)(1))

BARRIER(S):

[Barrier 19] Public Works has not provided opportunities to interested persons, including individuals with disabilities or organizations representing individuals with disabilities, to participate in the development of the transition plan for pedestrian facilities in the public right-of-way by submitting comments.

[Barrier 20] Public Works has not made a copy of the Public Work transition plan for pedestrian facilities in the public right-of-way available for public inspection.

CONTRIBUTING FACTOR(S): Public Works has not completed a self-evaluation or drafted a transition plan.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


[FAI 03] Provide an opportunity to interested persons, including individuals with disabilities and organizations representing individuals with disabilities, to participate in the self-evaluation and transition plan process by submitting comments.

[FAI 04] Implement an archival process to maintain the self-evaluation on file for at least three years following the completion of the self-evaluation and make available for public inspection: (1) a list of the interested persons consulted; (2) a description of areas examined, and any problems identified; and, (3) a description of any modifications made. Make a copy of the transition plan available for public inspection.


NOTES: None
REQ 42   Does the Public Works Transition Plan for pedestrian facilities in the public right-of-way include a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the ADA, including state and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas?  
(CFR Title 28, Vol. 1, Sect 35.150(d)(2))

BARRIER(S):  
[Barrier 21] Public Works does not have a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the ADA, including state and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas.

CONTRIBUTING FACTOR(S): Public Works has not completed a self-evaluation or drafted a transition plan.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):  


NOTES: None
REQ 43  Does the Public Works Transition Plan for pedestrian facilities in the public right-of-way identify physical obstacles in the public entity’s facilities that limit the accessibility of its programs or activities to individuals with disabilities?  
(CFR Title 28, Vol. 1, Sect 35.150(d)(3)(i))

BARRIER(S):

[Barrier 27] Public Works has not identified physical obstacles in the public entity’s facilities that limit the accessibility of its programs or activities to individuals with disabilities.

CONTRIBUTING FACTOR(S): Public Works has not conducted a self-evaluation and does not have a transition plan.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


[FAI 25] Conduct an inventory of pedestrian facilities in the public right-of-way including curb ramps, sidewalk, pedestrian signals and beacons, pedestrian crossings, bus stops, and alternate pedestrian facilities, and measure and record every element of the facilities in sufficient detail that a determination can be made as to whether or not the facilities are compliant with the requirements of the 2005 revised draft version of the Public Right-of-Way Accessibility Guidelines.

NOTES: None
REQ 44 Does the Public Works Transition Plan for pedestrian facilities in the public right-of-way describe in detail the methods that will be used to make the facilities accessible?
(CFR Title 28, Vol. 1, Sect 35.150(d)(3)(ii))

BARRIER(S):

[Barrier 28] Public Works does have a transition plan that describes in detail the methods that will be used to make pedestrian facilities in the public right-of-way accessible.

CONTRIBUTING FACTOR(S): Public Works has not completed a self-evaluation and does not have a transition plan.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


NOTES: None
REQ 45  Does the Public Works Transition Plan for pedestrian facilities in the public right-of-way specify the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identify steps that will be taken during each year of the transition period?  
(CFR Title 28, Vol. 1, Sect 35.150(d)(3)(iii))

BARRIER(S):

[Barrier 29] Public Works does not have a transition plan that specifies the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identify steps that will be taken during each year of the transition period

CONTRIBUTING FACTOR(S): Public Works has not completed a self-evaluation and does not have a transition plan.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


Notes None
REQ 46 Does the Public Works Transition Plan for pedestrian facilities in the public right-of-way indicate the official responsible for implementation of the plan? (CFR Title 28, Vol. 1, Sect 35.150(d)(3)(iv))

BARRIER(S):

[Barrier 30] Public Works does not have a transition plan that indicates the official responsible for implementation of the plan.

CONTRIBUTING FACTOR(S): Public Works has not completed a self-evaluation and does not have a transition plan.

ROOT CAUSES(S): Lack of Awareness

FOLLOW-UP/ACTION ITEM(S):


[FAI 08] Designate a Snohomish County Public Works ADA Coordinator for pedestrian facilities in the public right-of-way. Designate the official responsible for implementation of the transition plan.

NOTES: None

K. COMPLIANCE OF NEWLY CONSTRUCTED OR ALTERED FACILITIES
Newly constructed or altered facilities are required to be constructed to be in full compliance with ADA standards.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.
REQ 47 Is each pedestrian facility or part of a pedestrian facility in the public right-of-way designed or constructed on behalf of, or for the use of Public Works designed and constructed in such a manner that the facility or part of the facility is readily accessible to and usable by individuals with disabilities, if the construction was commenced after January 26, 1992?
(CFR Title 28, Vol. 1, Sect 35.151(a)(1))

BARRIER(S): Refer to Appendices C through I.

CONTRIBUTING FACTOR(S): Refer to Appendices C through I.

ROOT CAUSES(S): Refer to Appendices C through I.

FOLLOW-UP/ACTION ITEM(S): Refer to Appendices C through I.

NOTES: This requirement and the contributing factors and root causes leading to non-compliance are discussed in more detail as part of the self-evaluation of compliance with the technical requirements of the ADA.
REQ 48 If full compliance with the requirements of the ADA is structurally impracticable for pedestrian facilities in the public right-of-way, does Public Works ensure that compliance with the ADA is required to the extent that it is not structurally impracticable, and that any portion of pedestrian facilities in the public right-of-way that can be made accessible are made accessible, and that even if accessibility cannot be provided to individuals with certain disabilities due to structural impracticability that accessibility is ensured to persons with other types of disabilities?
(CFR Title 28, Vol. 1, Sect 35.151(a)(2)(i) – (iii))

BARRIER(S):

[Barrier 31] Public Works does not have a process to determine when a claim of structural impracticability is valid nor to document and approve such cases.

[Barrier 32] Public Works does not have a policy or procedure to determine if/when full compliance with the requirements of the ADA is structurally impracticable that any portion of those pedestrian facilities that can be made accessible are made accessible.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 27] Develop policies, procedures, guidance and/or training to help Public Works staff determine and document when a pedestrian facility can be constructed in the public right-of-way to less than full compliance due to structural impracticability.

NOTES: None
REQ 49  Does Public Works ensure that each pedestrian facility in the public right-of-way or part of a pedestrian facility in the public right-of-way altered by, on behalf of, or for the use of a public entity in a manner that affects or could affect the usability of the facility or part of the facility is, to the maximum extent feasible, altered in such a manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities, if the alteration was commenced after January 26, 1992?
(CFR Title 28, Vol. 1, Sect 35.151(b)(1))

BARRIER(S):

[Barrier 33] Public Works does not have a design review process, policy, or procedure to determine if pedestrian facilities that cannot be constructed to full compliance due to an existing constraint are at least constructed to comply with the ADA to the maximum extent feasible.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 28] Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.

NOTES: None
REQ 50  Does Public Works ensure that newly constructed or altered streets, roads, and highways contain curb ramps or other sloped areas at any intersection having curbs or other barriers to entry from a street level pedestrian walkway?
(CFR Title 28, Vol. 1, Sect 35.151(i)(1))

BARRIER(S): Refer to Appendices C through I.

CONTRIBUTING FACTOR(S): Refer to Appendices C through I.

ROOT CAUSES(S): Refer to Appendices C through I.

FOLLOW-UP/ACTION ITEM(S): Refer to Appendices C through I.

[FAI 15] Develop policies, procedures, guidance and/or training to help Public Works staff determine when and where pedestrian facilities in the public right-of-way are required to meet the requirements of the ADA, state law, and county standards.

NOTES: This requirement and the contributing factors and root causes leading to non-compliance are discussed in more detail as part of the self-evaluation of compliance with the technical requirements of the ADA.

REQ 51  Does Public Works ensure that newly constructed or altered street level pedestrian walkways contain curb ramps or other sloped areas at intersections to streets, roads, or highways?
(CFR Title 28, Vol. 1, Sect 35.151(i)(2))

BARRIER(S): Refer to Appendices C through I.

CONTRIBUTING FACTOR(S): Refer to Appendices C through I.

ROOT CAUSES(S): Refer to Appendices C through I.

FOLLOW-UP/ACTION ITEM(S): Refer to Appendices C through I.

[FAI 15] Develop policies, procedures, guidance and/or training to help Public Works staff determine when and where pedestrian facilities in the public right-of-way are required to meet the requirements of the ADA, state law, and county standards.

NOTES: This requirement and the contributing factors and root causes leading to non-compliance are discussed in more detail as part of the self-evaluation of compliance with the technical requirements of the ADA.
L. GENERAL COMMUNICATIONS REQUIREMENTS

Communication with applicants, participants, members of the public, and companions of individuals with disabilities is essential for community outreach and input for this ADA self-evaluation plan. A “companion” means a family member, friend, or associate of an individual seeking access to a service, program, or activity of a public entity, who, along with such individual, is an appropriate person with whom the public entity should communicate.

The Public Works Self-Evaluation began in 2010 and was completed in 2016. The answers to the following self-evaluation questions are based on the state of compliance of the Public Works pedestrian facility program as it existed in 2010, when the self-evaluation began, and does not represent the current state of the program.

REQ 52 Does Public Works take appropriate steps to ensure that communications with applicants, participants, members of the public, and companions with disabilities regarding its public right-of-way pedestrian facility programs, activities, or services are as effective as communications with others?

(CFR Title 28, Vol. 1, Sect 35.160(a)(1))

BARRIER(S):

[Barrier 34] Public Works does not take appropriate steps to ensure that communications with applicants, participants, members of the public, and companions with disabilities regarding its public right-of-way pedestrian facility programs, activities, or services are as effective as communications with others

CONTRIBUTING FACTOR(S): There are numerous regulations, numerous types of communications disabilities, and numerous methods or means to communicate with individuals with communications disabilities.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids, and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

NOTES: None
REQ 53 Does Public Works furnish appropriate auxiliary aids and services where necessary to afford individuals with disabilities, including applicants, participants, companions, and members of the public, an equal opportunity to participate in, and enjoy the benefits of, its public right-of-way pedestrian facilities services, programs, or activities?
(CFR Title 28, Vol. 1, Sect 35.160(b)(1))

BARRIER(S):

[Barrier 35] Public Works staff do not know when it is necessary to furnish auxiliary aids and services to individuals with communications disabilities, nor do staff know how to procure and provide such services if they were to be requested, including:

- Qualified interpreters
- Note takers
- Transcription services
- Written materials
- Telephone handset amplifiers
- Assistive listening devices
- Assistive listening systems
- Telephones compatible with hearing aids
- Closed caption decoders
- Open and closed captioning
- Telecommunications devices for deaf persons (TDDs)
- Videotext displays
- Other effective methods of making aurally delivered materials available to individuals with hearing impairments
- Qualified readers
- Taped text
- Audio recordings
- Brailed materials
- Large print materials
- Other effective methods of making visually delivered materials available to individuals with vision impairments as needed

CONTRIBUTING FACTOR(S): There are numerous regulations, numerous types of communications disabilities, and numerous methods or means to communicate with individuals with communications disabilities.
There are numerous auxiliary aids and services available, but it is not clear which aids and services are required to be provided and which ones should be provided because it is good customer service.

It is not clear which auxiliary aids and services are desired by individuals with communications disabilities that may wish to communicate with public works regarding its pedestrian facility program.

**ROOT CAUSES(S):** Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

[FAI 30] Develop policies, procedures, guidance and/or training to guide staff on how to procure interpretation services to communicate with individuals with hearing or speech impairments and/or their companions.

**NOTES:** None
REQ 54 Does Public Works furnish auxiliary aids and services in accessible formats, in a timely manner, and in such a way as to protect the privacy and independence of the individual with a disability?  
(CFR Title 28, Vol. 1, Sect 35.160(b)(2))

BARRIER(S):

[Barrier 36] Public Works staff is not trained, nor are they provided with guidance to furnish auxiliary aids and services in accessible formats, in a timely manner, and in such a way as to protect the privacy and independence of the individual with a disability.

CONTRIBUTING FACTOR(S): There are numerous auxiliary aids and services available, but it is not clear which aids and services are required to be provided and which ones should be provided because it is good customer service.

It is not clear which auxiliary aids and services are desired by individuals with communications disabilities that may wish to communicate with public works regarding its pedestrian facility program.

Public Works staff is not aware of the ways that privacy or independence of individuals could be compromised.

Public Works does not have a policy to determine what is considered a “timely manner.”

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

NOTES: None
REQ 55  Does Public Works require an individual with a disability to bring another individual to interpret for him or her regarding its pedestrian facilities in the public right-of-way?
(CFR Title 28, Vol. 1, Sect 35.160(c)(1))

BARRIER(S):

[Barrier 37] Public Works staff is not trained to know that they are not to require an individual with a disability to bring another individual to interpret for him or her.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works' program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

NOTES: None
REQ 56 Does Public Works rely on an adult or minor accompanying an individual with a disability to interpret or facilitate communication regarding its pedestrian facilities in the public right-of-way except in emergencies, or when the individual with a disability specifically requests that the accompanying adult interpret or facilitate communication and the accompanying adult agrees to provide such assistance? (CFR Title 28, Vol. 1, Sect 35.160(c)(2)(i) – (iii))

BARRIER(S):

[Barrier 38] Public Works staff is not trained to know that they cannot rely on an adult or minor accompanying an individual with a disability to interpret or facilitate communication regarding pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

NOTES: None
REQ 57 Where Public Works communicates by telephone with individuals with disabilities regarding its public right-of-way pedestrian facility programs and services, are text telephones (TTYs) or equally effective telecommunications systems used to communicate with individuals who are deaf or hard of hearing or have speech impairments?
(CFR Title 28, Vol. 1, Sect 35.161(a))

BARRIER(S): [Barrier 39] Public Works staff is not adequately trained, nor do they have the technology to effectively communicate via telephone with individuals who have hearing or speech impairments.

CONTRIBUTING FACTOR(S): Public Works does not have a TTY device nor are staff trained on how to use one. Public Works staff have not been trained how to communicate effectively via Washington Relay Services.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

[FAI 31] Determine whether Public Works should acquire a TTY device or if the use of Washington Relay Services is sufficient to meet the requirements of the law and effectively communicate with individuals with hearing and/or speech impairments. If a TTY device is required then Public Works will need to acquire a TTY device, provide training to staff on how to recognize TTY calls and how to use the TTY device to respond. Create a TTY specific phone number and ensure that staff is always available during business hours to respond to TTY calls unless a compatible automated answering system is available.

NOTES: Phone calls from individuals with hearing or speech impairments placed via Washington Relay Services may be inadvertently interpreted as dropped calls, prank calls, or a call from a telemarketer and the person answering the phone may hang up before communication is established. If Washington Relay Services is sufficient, staff will still need to be trained on how to use it and make sure it is advertised effectively as a means of communication with Public Works.
REQ 58 If Public Works uses an automated-attendant system, including, but not limited to, voicemail and messaging, or an interactive voice response system, for receiving and directing incoming telephone calls regarding its pedestrian facilities in the public right-of-way does that system provide effective real-time communication with individuals using auxiliary aids and services, including TTYs and all forms of FCC-approved telecommunications relay systems, including Internet-based relay systems? (CFR Title 28, Vol. 1, Sect 35.161(b))

BARRIER(S):

[Barrier 40] Public Works uses an automated-attendant system, voicemail and messaging that does not provide effective real-time communication with individuals using auxiliary aids and services, including TTYs and all forms of FCC-approved telecommunications relay systems, including Internet-based relay systems.

CONTRIBUTING FACTOR(S): The technology is complex and not well understood, if there is even technology available that can comply with this requirement. It is not known if directing individuals with communications disabilities to utilize the services of Washington Relay Services is sufficient.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

[FAI 32] Ensure that automated-attendant phone systems, including, but not limited to, voicemail and messaging, or interactive voice response systems, for receiving and directing incoming telephone calls provide effective real-time communication with individuals using auxiliary aids and services, including TTYs and all forms of FCC-approved telecommunications relay systems, including Internet-based relay systems. Provide training to staff on the use of these devices as needed.

NOTES: A determination needs to be made as to whether relying on Washington Relay Services is sufficient to meet the requirements of the ADA and to provide good customer service to individuals with communications disabilities who communicate with Public Works.
REQ 59 Does Public Works respond to telephone calls regarding its pedestrian facilities in the public right-of-way from a telecommunications relay service established under Title IV of the ADA in the same manner that it responds to other telephone calls? (CFR Title 28, Vol. 1, Sect 35.161(c))

BARRIER(S):

[Barrier 41] Public Works staff is not trained to respond to telephone calls regarding its pedestrian facilities in the public right-of-way from a telecommunications relay service established under Title IV of the ADA in the same manner that it responds to other telephone calls.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

[FAI 33] Train Public Works staff how to respond effectively to telephone calls from a telecommunications relay service like Washington Relay Services (711) and respond in the same manner that they respond to other telephone calls.

NOTES: Phone calls from individuals with hearing or speech impairments placed via Washington Relay Services may be inadvertently interpreted as dropped calls, prank calls, or a call from a telemarketer and the person answering the phone may hang up before communication is established.
REQ 60 Are alternative methods of communication available to individuals with vision impairments who wish to communicate with Public Works regarding its pedestrian facilities in the public right-of-way?
(Based on CFR Title 28, Vol. 1, Sect 35.160)

BARRIER(S):  
[Barrier 42] Alternative methods of communication are not available to individuals with vision impairments who wish to communicate with Public Works regarding its pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): Email communications and electronic documents are not formatted to be as accessible as they could be for individuals with vision impairments.

If an individual with vision impairments requests an alternative form of communication staff would not know how to meet this request.

Video and audio content provided on Public Works’ website is often not accessible to individuals with communications disabilities.

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Inadequate Technology; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

[FAI 34] Develop training to teach Public Works staff how to make electronic documents and media accessible to individuals who use screen readers.

[FAI 35] Update the content on Public Works ADA webpage to be accessible to individuals with communications disabilities.
REQ 61 Are alternative forms of communication advertised to individuals with vision, hearing, or other sensory impairments in such a manner that they can readily discern what communication options are available to them to communicate with Public Works regarding its pedestrian facilities in the public right-of-way? (Based on CFR Title 28, Vol. 1, Sect 35.160)

BARRIER(S):

[Barrier 43] Alternative forms of communication are not advertised to individuals with vision, hearing, or other sensory impairments in such a manner that they can readily discern what communication options are available to them to communicate with Public Works.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 29] Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works' program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.

[FAI 36] Advertise the availability of alternate forms of communications to individuals with vision, hearing, speech, or other sensory impairments in such a manner that they can readily discern what communication options are available to them to communicate with Public Works.

[FAI 37] Notify the public and other interested parties that auxiliary aids will be provided, as needed, to help individuals with communications disabilities communicate with Public Works and access the documents and forms that Public Works provides to the public. Develop a policy on how quickly services can be expected to be provided and how much advance notice may be required for some services. Advertise the requirement for advance notice when required.
REQ 62 Does Public Works’ written materials (publications) pertaining to pedestrian facilities in the public right-of-way include a notice of nondiscrimination in the administration of its pedestrian facilities programs and services? (Based on CFR Title 28, Vol. 1, Sect 35.160)

BARRIER(S):

[Barrier 44] Public Works’ written materials (publications) pertaining to pedestrian facilities in the public right-of-way do not include a notice of nondiscrimination in the administration of its pedestrian facilities programs and services.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSES(S): Lack of Awareness; Lack of Suitable Policies and/or Procedures and Guidance; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 38] Train staff when and how to provide notice of non-discrimination based on disability in written materials (publications) pertaining to pedestrian facilities in the public right-of-way. Provide a copy of the text that should be used to provide notice to Public Works staff.

NOTES: None
APPENDIX C: TECHNICAL REQUIREMENTS TABLE
HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** – Requirement identification number. The technical REQ identification numbering starts up from where the administrative REQ identification numbering left off.
2. **FACILITY** – Type of pedestrian facility.
3. **ELEMENT** – The element of the pedestrian facility.
4. **FEATURE** – What the requirement specifically addresses for the facility and element.
5. **REQUIREMENT** – The actual requirement.
6. **COUNTY SOURCE / STATE SOURCE / FEDERAL SOURCE** – The source of each requirement, whether it is local, state, or federal.
7. **MEASURING FORM FIELD** – A measurement form was created for each facility, this lists what form field the requirement relates to.
8. **FOLLOW-UP / ACTION ITEM(S)** – Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##]. The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

For a thorough explanation of each type of facility that was measured and evaluated, including the results of the evaluations, and for copies of the measurements form for each facility, turn to Appendices D through I.

In addition to the technical requirements that Public Works must comply with, Title 28 of the Code of Federal Regulations (CFR), Part 35, outlines the administrative requirements that Public Works must meet to ensure non-discrimination based on disability in the provision of its pedestrian facility program. The administrative requirements can be found in Appendix B.
<table>
<thead>
<tr>
<th>REQ #</th>
<th>FACILITY</th>
<th>ELEMENT</th>
<th>FEATURE</th>
<th>REQUIREMENT</th>
<th>COUNTY SOURCE</th>
<th>STATE SOURCE</th>
<th>FEDERAL SOURCE</th>
<th>MEASURING FORM FIELD</th>
<th>FOLLOW-UP / ACTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQ 063</td>
<td>Curb Ramps - Perpendicular</td>
<td>Landing</td>
<td>Running Slope</td>
<td>Perpendicular ramp landing running slopes at intersections shall be 2 percent maximum. Landing running slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.1</td>
<td>FAI 41, FAI 43</td>
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<tr>
<td>REQ 064</td>
<td>Curb Ramps - Perpendicular</td>
<td>Landing</td>
<td>Cross Slope</td>
<td>Perpendicular ramp landing cross slopes at intersections shall be 2 percent maximum. Landing cross slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.2</td>
<td>FAI 28, FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 065</td>
<td>Curb Ramps - Perpendicular</td>
<td>Landing</td>
<td>Length</td>
<td>A perpendicular ramp landing length of 4.0 ft. minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.3</td>
<td>FAI 40, FAI 42</td>
</tr>
<tr>
<td>REQ 066</td>
<td>Curb Ramps - Perpendicular</td>
<td>Landing</td>
<td>Width</td>
<td>A perpendicular ramp landing width of 4.0 ft. minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.4</td>
<td>FAI 40, FAI 42</td>
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<tr>
<td>REQ 067</td>
<td>Curb Ramps - Perpendicular</td>
<td>Ramp</td>
<td>Cross Slope</td>
<td>The cross slope of perpendicular ramps at intersections shall be 2 percent maximum. The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.1.2</td>
<td>CR-E1.2</td>
<td>FAI 28, FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 068</td>
<td>Curb Ramps - Perpendicular</td>
<td>Ramp</td>
<td>Width</td>
<td>The clear width of perpendicular curb ramps, excluding flares, shall be 4.0 ft. minimum.</td>
<td>2012 EDDS - 4.05D, 6</td>
<td></td>
<td>2005 PROWAG R303.3.1</td>
<td>CR-E1.4</td>
<td>FAI 40, FAI 42</td>
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<tr>
<td>REQ 069</td>
<td>Curb Ramps - Perpendicular</td>
<td>Ramp</td>
<td>Running Slope</td>
<td>The running slope for perpendicular ramps shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 ft.</td>
<td>2012 EDDS 4-05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.1.1</td>
<td>CR-E1.1, CR-E1.3</td>
<td>FAI 40, FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 070</td>
<td>Curb Ramps -</td>
<td>Ramp</td>
<td>Flares and Returned Curbs</td>
<td>Flared sides with a slope of 10 percent maximum, measured parallel to the curb line, shall be provided where a pedestrian circulation path crosses a perpendicular curb ramp.</td>
<td>2012 EDDS - 4.05D, 8</td>
<td>2005 PROWAG R303.2.1.4</td>
<td>CR-E2.1</td>
<td>FAI 41, FAI 42, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 071</td>
<td>Perpendicular</td>
<td>Landing</td>
<td>Running Slope</td>
<td>Parallel ramp landing running slopes at intersections shall be 2 percent maximum. Running slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td>2005 PROWAG R303.2.2.3</td>
<td>CR-B1.1</td>
<td>FAI 41, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 072</td>
<td>Curb Ramps -</td>
<td>Landing</td>
<td>Cross Slope</td>
<td>Parallel ramp landing cross slopes at intersections shall be 2 percent maximum. Cross slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td>2005 PROWAG R303.2.2.3</td>
<td>CR-B1.2</td>
<td>FAI 28, FAI 41, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 073</td>
<td>Parallel</td>
<td>Length</td>
<td></td>
<td>A parallel ramp landing length of 4.0 ft. minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td>2005 PROWAG R303.2.2.3</td>
<td>CR-B1.3</td>
<td>FAI 42</td>
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<td>REQ 074</td>
<td>Curb Ramps -</td>
<td>Landing</td>
<td>Width</td>
<td>A parallel ramp landing width of 4.0 ft. minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td>2005 PROWAG R303.2.2.3</td>
<td>CR-B1.4</td>
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<td>REQ 075</td>
<td>Parallel</td>
<td>Ramps</td>
<td>Cross Slope</td>
<td>Parallel ramp cross slopes shall be 2 percent maximum.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td>2005 PROWAG R303.2.2.2</td>
<td>CR-C1.2, CR-D1.2</td>
<td>FAI 41, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 076</td>
<td>Curb Ramps -</td>
<td>Ramps</td>
<td>Width</td>
<td>The clear width of parallel curb ramps shall be 4.0 ft. minimum.</td>
<td>2012 EDDS - 4.05D, 6</td>
<td>2005 PROWAG R303.3.1</td>
<td>CR-C1.4, CR-D1.4</td>
<td>FAI 42</td>
<td></td>
</tr>
<tr>
<td>REQ 077</td>
<td>Parallel</td>
<td>Ramps</td>
<td>Running Slope</td>
<td>Parallel curb ramp running slopes shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 ft.</td>
<td>2012 EDDS 4-05D, 5</td>
<td>2005 PROWAG R303.2.2.1</td>
<td>CR-C1.1, CR-C1.3, CR-D1.1, CR-D1.3</td>
<td>FAI 41, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 078</td>
<td>Curb Ramps - Parallel</td>
<td>Ramps</td>
<td>Running Slope</td>
<td>Parallel curb ramps shall have a running slope that is in-line with the direction of sidewalk travel.</td>
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<td>2005 PROWAG R303.2.2</td>
<td>CR-A6</td>
<td>None</td>
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<tr>
<td>REQ 079</td>
<td>Curb Ramps - Parallel</td>
<td>Ramps</td>
<td>Diverging Sidewalk</td>
<td>Where a parallel curb ramp does not occupy the entire width of a sidewalk, drop-offs at diverging segments shall be protected.</td>
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<td>2005 PROWAG R303.2.2.4</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 080</td>
<td>Curb Ramps - Combination</td>
<td>Landing</td>
<td>Running Slope</td>
<td>Combination curb ramp landing running slopes at intersections shall be 2 percent maximum. Running slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.1</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 081</td>
<td>Curb Ramps - Combination</td>
<td>Landing</td>
<td>Cross Slope</td>
<td>Combination curb ramp landing cross slopes at intersections shall be 2 percent maximum. Cross slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.2</td>
<td>FAI 28, FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 082</td>
<td>Curb Ramps - Combination</td>
<td>Landing</td>
<td>Length</td>
<td>A combination curb ramp landing length of 4.0 ft. minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.3</td>
<td>FAI 42</td>
</tr>
<tr>
<td>REQ 083</td>
<td>Curb Ramps - Combination</td>
<td>Landing</td>
<td>Width</td>
<td>A combination curb ramp landing width of 4.0 ft. minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.</td>
<td>2012 EDDS - 4.05D, 7</td>
<td></td>
<td>2005 PROWAG R303.2.1.3</td>
<td>CR-B1.4</td>
<td>FAI 42</td>
</tr>
<tr>
<td>REQ 084</td>
<td>Curb Ramps - Combination</td>
<td>Ramps</td>
<td>Cross Slope - Parallel Ramp</td>
<td>The cross slopes of the parallel portion of combination curb ramps shall be 2 percent maximum.</td>
<td>2012 EDDS - 4.05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.2.2</td>
<td>CR-C1.2, CR-D1.2</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 085</td>
<td>Curb Ramps - Combination</td>
<td>Ramps</td>
<td>Cross Slope - Perpendicular Ramp</td>
<td>The cross slope of the perpendicular portion of combination curb ramps at intersections shall be 2 percent maximum. The cross slope at midblock</td>
<td>2012 EDDS - 4.05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.1.2</td>
<td>CR-E1.2</td>
<td>FAI 28, FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 086</td>
<td>Curb Ramps - Combination</td>
<td>Ramps</td>
<td>Width</td>
<td>The clear width of combination curb ramps shall be 4.0 ft. minimum.</td>
<td>2012 EDDS - 4.05D, 6</td>
<td></td>
<td>2005 PROWAG R303.3.1</td>
<td>CR-C1.4, CR-D1.4, CR-E1.4</td>
<td>FAI 42</td>
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<tr>
<td>REQ 087</td>
<td>Curb Ramps - Combination</td>
<td>Ramps</td>
<td>Running Slope</td>
<td>The running slopes of combination curb ramps shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 ft.</td>
<td>2012 EDDS 4-05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.1.1</td>
<td>CR-C1.1, CR-C1.3, CR-D1.1, CR-D1.3, CR-E1.1, CR-E1.3</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 088</td>
<td>Curb Ramps - Blended Transitions</td>
<td>Transitions, Medians, or Islands</td>
<td>Width</td>
<td>Medians and pedestrian refuge islands in crosswalks shall contain a pedestrian access route, including passing space (5 ft. x 5 ft.) connecting each crosswalk.</td>
<td>2012 EDDS - 4.05D, 6</td>
<td></td>
<td>2005 PROWAG R305.4, 2005 PROWAG R303.3.1</td>
<td>CR-E1.4</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 089</td>
<td>Curb Ramps - Blended Transitions</td>
<td>Transitions, Medians, or Islands</td>
<td>Running Slope</td>
<td>Running slopes of blended transitions and island or median cut throughs shall be 5 percent maximum. Ramp running slopes for medians, islands shall be 8.3 percent maximum.</td>
<td>2012 EDDS 4-05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.3</td>
<td>CR-E1.1</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 090</td>
<td>Curb Ramps - Blended Transitions</td>
<td>Transitions, Medians, or Islands</td>
<td>Cross Slope</td>
<td>Cross slopes of blended transitions shall be 2 percent maximum. Cross slopes of medians, islands, or island cut-throughs at midblock locations shall be permitted to be warped to meet street or highway grade.</td>
<td>2005 PROWAG R303.2.3, 2005 PROWAG R305.2.2.3</td>
<td></td>
<td></td>
<td>CR-E1.2</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 091</td>
<td>Curb Ramps - Blended Transitions</td>
<td>Transitions, Medians, or Islands</td>
<td>Length</td>
<td>Medians and pedestrian refuge islands shall be 6.0 ft. minimum in length in the direction of pedestrian travel.</td>
<td>2005 PROWAG R305.4.1</td>
<td>None</td>
<td>FAI 44</td>
<td></td>
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<tr>
<td>REQ 092</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Grade Breaks - Flush</td>
<td>Surface slopes that meet at grade breaks shall be flush.</td>
<td>2005 PROWAG R303.3.4</td>
<td>CR-F1.1</td>
<td>FAI 43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REQ 093</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Obstructions</td>
<td>Ramps shall not be obstructed by hydrants, signposts, poles, pedestals or other utilities, gratings, access covers or any other obstruction.</td>
<td>2012 EDDS 4-05D, 11</td>
<td>2005 PROWAG R303.3.3</td>
<td>CR-F1.2</td>
<td>FAI 40</td>
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<tr>
<td>REQ 094</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Drainage</td>
<td>Avoid placing a drainage low point and a catchbasin or inlet within a curb ramp or crosswalk.</td>
<td>2012 EDDS 4-05D, 11</td>
<td>CR-F1.2</td>
<td>FAI 40</td>
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<td></td>
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<td>REQ 095</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Obstructions</td>
<td>Surface materials used for curb ramps shall be concrete or asphalt for stability and a relatively slip-resistant surface.</td>
<td>2012 EDDS 4-05D, 14</td>
<td>CR-F1.2</td>
<td>None</td>
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<tr>
<td>REQ 096</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Protruding Objects</td>
<td>Protruding objects along or overhanging any portion of a pedestrian circulation path shall comply with R401 and shall not reduce the clear width required for pedestrian access routes.</td>
<td>2005 PROWAG R209</td>
<td>CR-F1.2</td>
<td>None</td>
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<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 097</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Vertical Discontinuities</td>
<td>Surface discontinuities shall not exceed 0.50 in. maximum. Vertical discontinuities between 0.25 in. and 0.5 in. maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.</td>
<td>2005 PROWAG R301.5.2</td>
<td>CR-F1.3</td>
<td>FAI 19, FAI 43</td>
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<tr>
<td>REQ 098</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Horizontal Gaps</td>
<td>Openings shall not permit passage of a sphere more than 0.5 in. in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.</td>
<td>2005 PROWAG R301.7.1</td>
<td>CR-F1.4</td>
<td>FAI 19</td>
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<tr>
<td>REQ 099</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Grade Breaks - Perpendicular to Slope</td>
<td>Grade breaks at the top and bottom of perpendicular curb ramps shall be perpendicular to the direction of ramp run.</td>
<td>2012 EDDS 4-05D, 4</td>
<td>2005 PROWAG R303.3.4</td>
<td>CR-F1.5</td>
<td>FAI 40, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 100</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Grade Breaks - Perpendicular to Slope</td>
<td>Perpendicular curb ramps shall have a running slope that cuts through or is built up to the curb at right angles or meets the gutter grade break at right angles.</td>
<td>2012 EDDS 4-05D, 4</td>
<td>2005 PROWAG R303.2.1</td>
<td>CR-F1.5</td>
<td>FAI 40, FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 101</td>
<td>Curb Ramps - Common Elements</td>
<td>Surfaces &amp; Grade Breaks</td>
<td>Planar Surfaces</td>
<td>Vertical alignment shall be planar within curb ramp runs, blended transitions, landings, and gutter areas within the pedestrian access route.</td>
<td>2005 PROWAG R301.5.1</td>
<td>CR-F1.6</td>
<td>FAI 41, FAI 43</td>
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<tr>
<td>REQ 102</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Location</td>
<td>Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street.</td>
<td>2012 EDDS 4-05D, 15</td>
<td>2005 PROWAG R303.3.2</td>
<td>CR-F2.1</td>
<td>FAI 24, FAI 42, FAI 43</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
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<td>MEASURING FORM FIELD</td>
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<td>REQ 103</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Contrast</td>
<td>Detectable warning surfaces shall contrast visually with adjacent gutter, street or highway, or walkway surfaces, either light-on-dark or dark-on-light.</td>
<td>2012 EDDS 4-05D, 16</td>
<td>2005 PROWAG R304.1.3</td>
<td>CR-F2.2</td>
<td>None</td>
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<tr>
<td>REQ 104</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Width</td>
<td>Detectable warning surfaces shall extend the full width of the curb ramp (exclusive of flares), the landing, or the blended transition.</td>
<td>2012 EDDS 4-05D, 15</td>
<td>2005 PROWAG R304.1.4</td>
<td>CR-F2.3</td>
<td>FAI 40, FAI 42, FAI 43</td>
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<td>REQ 105</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Placement</td>
<td>The detectable warning shall be located on the landing or blended transition at the back of curb. At medians or islands, detectable warning surfaces shall be located at the curbline in-line with the face of the curb and shall be separated by 2.0 ft. minimum in length of walkway without detectable warnings. Where the island has no curb, the detectable warning shall be located at the edge of the roadway.</td>
<td>2012 EDDS 4-05D, 15</td>
<td>2005 PROWAG R304.2.2, 2005 PROWAG R305.4.2</td>
<td>CR-F2.4</td>
<td>FAI 42, FAI 43</td>
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<tr>
<td>REQ 106</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Placement</td>
<td>Where both ends of the bottom grade break are 5.0 ft. or less from the back of curb, the detectable warning shall be located on the ramp surface at the bottom grade break. Where either end of the bottom grade break is more than 5.0 ft. from the back of curb, the detectable warning shall be located on the lower landing.</td>
<td>2005 PROWAG R304.2.1</td>
<td>CR-F2.5</td>
<td>FAI 40, FAI 41, FAI 43</td>
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<tr>
<td>REQ 107</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Length</td>
<td>Detectable warning surfaces shall extend 24 in. minimum in the direction of travel.</td>
<td>2012 EDDS 4-05D, 15</td>
<td>2005 PROWAG R304.1.4</td>
<td>CR-F2.6</td>
<td>None</td>
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<td>REQ #</td>
<td>FACILITY - ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
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<td>REQ 108</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Alignment</td>
<td>The rows of truncated domes in a detectable warning surface shall be aligned to be perpendicular or radial to the grade break between the ramp, landing, or blended transition and the street.</td>
<td>2005 PROWAG R304.2.3</td>
<td>None</td>
<td>CR-F2.7</td>
<td>FAI 24, FAI 43</td>
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<tr>
<td>REQ 109</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Dome Size</td>
<td>Truncated domes in a detectable warning surface shall have a base diameter of 0.9 in. minimum to 1.4 in. maximum, a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of 0.2 in.</td>
<td>2005 PROWAG R304.1.1</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 110</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Dome Spacing</td>
<td>Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 in. minimum and 2.4 in. maximum, and a base-to-base spacing of 0.65 in. minimum, measured between the most adjacent domes.</td>
<td>2005 PROWAG R304.1.2</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 111</td>
<td>Curb Ramps - Common Elements</td>
<td>Detectable Warning Surfaces</td>
<td>Rail Crossings</td>
<td>The detectable warning surface shall be located so that the edge nearest the rail crossing is 6 ft. minimum and 15 ft. maximum from the centerline of the nearest rail. The rows of truncated domes in a detectable warning surface shall be aligned to be parallel with the direction of wheelchair travel.</td>
<td>2005 PROWAG R304.2.3</td>
<td>None</td>
<td>FAI 45</td>
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<tr>
<td>REQ 112</td>
<td>Curb Ramps - Common Elements</td>
<td>Gutter &amp; Pedestrian Crossing Slopes</td>
<td>Counter Slopes</td>
<td>The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transition shall be 5 percent maximum.</td>
<td>2012 EDDS 4-05D, 6</td>
<td>2005 PROWAG R303.3.5</td>
<td>CR-F3.1</td>
<td>FAI 40, FAI 43</td>
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<td>REQ #</td>
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<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
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<td>REQ 113</td>
<td>Curb Ramps - Common Elements</td>
<td>Gutter &amp; Pedestrian Crossing Slopes</td>
<td>Algebraic Difference in Grade Break</td>
<td>The counterslope from the end of the ramp to the roadway should not exceed 5%, as a slope change of more than 13% can cause wheelchairs to pitch forward.</td>
<td>2012 EDDS 4.05D, 6</td>
<td></td>
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<td>CR-F3.1</td>
<td>FAI 40, FAI 43</td>
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<tr>
<td>REQ 114</td>
<td>Curb Ramps - Common Elements</td>
<td>Clear Space &amp; Alignment</td>
<td>Clear Space</td>
<td>Beyond the curb face, a clear space of 4.0 ft. minimum by 4.0 ft. minimum shall be provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.</td>
<td>2005 PROWAG R303.3.6</td>
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<td>CR-F4.1</td>
<td>FAI 43</td>
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<tr>
<td>REQ 115</td>
<td>Curb Ramps - Common Elements</td>
<td>Clear Space &amp; Alignment</td>
<td>Alignment</td>
<td>Curb ramps shall be aligned to fall within the boundaries of crosswalks, marked or unmarked, so that pedestrians who have vision or mobility impairments are not directed outside the crosswalk or into a vehicle travel lane.</td>
<td>2012 EDDS 4-05D, 4</td>
<td>RCW 46.61.240</td>
<td></td>
<td>CR-F4.2</td>
<td>FAI 43</td>
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<tr>
<td>REQ 116</td>
<td>Curb Ramps - Common Elements</td>
<td>Clear Space &amp; Alignment</td>
<td>Alignment</td>
<td>A curb ramp or blended transition, or a combination of curb ramps and blended transitions, shall connect the pedestrian access route to each pedestrian street crossing within the width of each crosswalk.</td>
<td>2012 EDDS 4-05D, 1</td>
<td>RCW 35.68.075</td>
<td>2005 PROWAG R207</td>
<td>CR-F4.2</td>
<td>FAI 43</td>
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<tr>
<td>REQ 117</td>
<td>Curb Ramps - Common Elements</td>
<td>Clear Space &amp; Alignment</td>
<td>Location</td>
<td>Ramps shall not be located outside the curb radius because such placement makes pedestrians less visible to turning vehicles.</td>
<td>2012 EDDS 4-05D, 4</td>
<td></td>
<td></td>
<td>None</td>
<td>FAI 42</td>
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<tr>
<td>REQ 118</td>
<td>Curb Ramps - Miscellaneous</td>
<td>Type - Required</td>
<td>Type - Required</td>
<td>Curb ramp types are categorized by their design and position relative to the pedestrian facility and the roadway. Types and specifications are provided in WSDOT Standard Plans F-40 (series). Additional information and details may be found in &quot;Sidewalk Details – A Guide for</td>
<td>2012 EDDS 4-05D, 2</td>
<td></td>
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<td>CR-A5, CR-A6</td>
<td>FAI 42</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
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<td>Washington Local Agencies, Tribes and Nations” (WSDOT) and the Pedestrian Facilities Guidebook (WSDOT, PSRC, CRAB, AWC).</td>
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<tr>
<td>REQ 119</td>
<td>Curb Ramps - Miscellaneous</td>
<td>Type - Prohibited</td>
<td>Type - Prohibited</td>
<td>Diagonal curb ramps, located at the midpoint of curb radii, are not permitted in new construction sidewalks. They may be installed only when required for the modification of an existing sidewalk.</td>
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<td>2012 EDDS 4-05D, 3</td>
<td>CR-A5, CR-A6</td>
<td>FAI 42</td>
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<td>REQ 120</td>
<td>Curb Ramps - Miscellaneous</td>
<td>Location - Required When Missing</td>
<td>Location - Required When Missing</td>
<td>If a new ramp is installed on one side of a road or intersection, then the responsible party shall install a corresponding ramp on the opposite side of the road or intersection, unless there is no curb or sidewalk on that side. In the event a pedestrian facility other than a sidewalk exists on the opposite side of the road or intersection, an ADA-compliant crosswalk connection shall be installed.</td>
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<tr>
<td>REQ 121</td>
<td>Curb Ramps - Miscellaneous</td>
<td>Location - Required</td>
<td>Location - Required</td>
<td>Curb ramps are required to provide access between elevated pedestrian facilities and road surfaces. Ramps shall be installed at legal pedestrian crossings unless a crossing is prohibited and signed as a prohibited crossing. Note that RCW 47.04.010 defines “crosswalk” as the portion of the roadway between the intersection area and a prolongation or connection of the farthest sidewalk line or, in the event there are no sidewalks, then between the intersection area and a line 10 feet therefrom, except as modified by a marked crosswalk. This definition and the curb ramp requirement apply to all intersections (including 2-leg and “T” intersections).</td>
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<td>2012 EDDS 4-05D, 1, 2012 EDDS Standard Plan 3-105</td>
<td>RCW 46.61.240, RCW 47.04.010 (11), (12), (13)</td>
<td>CR-A10, CR-A11</td>
<td>FAI 40, FAI 43</td>
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<td>REQ 122</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Running Slope</td>
<td>The running slope of crosswalks shall be 5 percent maximum, measured parallel to the direction of pedestrian travel in the crosswalk.</td>
<td>2005 PROWAG R305.2.3</td>
<td>CR-F3.1 and in the GIS Attribute Table as XWalkRS</td>
<td>FAI 43, FAI 46</td>
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<tr>
<td>REQ 123</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Cross Slope - Crossings with Stop Control</td>
<td>At crossings with stop control the cross slope of the crosswalk shall be 2 percent maximum.</td>
<td>2005 PROWAG R305.2.2.1</td>
<td>CR-F3.2 and in the GIS Attribute Table as XWalkXS</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 124</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Cross Slope - Crossings without Stop Control</td>
<td>At crossings without stop control the cross slope of the crosswalk shall be 5 percent maximum.</td>
<td>2005 PROWAG R305.2.2.2</td>
<td>CR-F3.2 and in the GIS Attribute Table as XWalkXS</td>
<td>FAI 43</td>
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<tr>
<td>REQ 125</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Cross Slopes - Midblock Crossings</td>
<td>The cross slope of crosswalks at midblock crossings shall be permitted to be warped to meet street or highway grade.</td>
<td>2005 PROWAG R305.2.2.3</td>
<td>CR-F3.2 and in the GIS Attribute Table as XWalkXS</td>
<td>None</td>
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<tr>
<td>REQ 126</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Width</td>
<td>Marked crosswalks shall be 6 ft. wide minimum.</td>
<td>2005 PROWAG R305.2.1</td>
<td>None</td>
<td>FAI 44</td>
<td></td>
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<tr>
<td>REQ 127</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Surface</td>
<td>The surface of the crosswalk shall be firm, stable, and slip resistant.</td>
<td>2012 EDDS 4-05D, 14</td>
<td>2005 PROWAG R301.5</td>
<td>None</td>
<td>FAI 19, FAI 46, FAI 47</td>
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<tr>
<td>REQ 128</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Vertical Discontinuities</td>
<td>Surface discontinuities shall not exceed 0.50 in. maximum. Vertical discontinuities between 0.25 in. and 0.5 in. maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.</td>
<td>2005 PROWAG R301.5.2</td>
<td>None</td>
<td>FAI 19, FAI 46, FAI 47</td>
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<td>FACILITY</td>
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<td>REQUIREMENT</td>
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<td>REQ 129</td>
<td>Pedestrian Crossings</td>
<td>Crosswalks</td>
<td>Horizontal Gaps</td>
<td>Openings shall not permit passage of a sphere more than 0.5 in. in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.</td>
<td>2005 PROWAG R301.7.1</td>
<td>None</td>
<td>FAI 19, FAI 46, FAI 47</td>
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<tr>
<td>REQ 130</td>
<td>Pedestrian Crossings</td>
<td>Rail - Non-Freight Crossings</td>
<td>Horizontal Gaps</td>
<td>Openings for wheel flanges at pedestrian crossings of non-freight rail track shall be 2.5 in. maximum.</td>
<td>2005 PROWAG R301.7.3</td>
<td>None</td>
<td>FAI 45</td>
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<tr>
<td>REQ 131</td>
<td>Pedestrian Crossings</td>
<td>Rail - Freight Crossings</td>
<td>Horizontal Gaps</td>
<td>Openings for wheel flanges at pedestrian crossings of freight rail track shall be 3 in. maximum.</td>
<td>2005 PROWAG R301.7.4</td>
<td>None</td>
<td>FAI 45</td>
<td></td>
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<td>REQ 132</td>
<td>Pedestrian Crossings</td>
<td>Roundabout Intersections</td>
<td>PAR</td>
<td>Where pedestrian facilities are provided at roundabout intersections, they shall comply with R305.6 and shall contain a pedestrian access route complying with R301.</td>
<td>2005 PROWAG R305.6</td>
<td>CR-A11, and all other CR fields compatible with the particular ramp type</td>
<td>FAI 40, FAI 41, FAI 43</td>
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<tr>
<td>REQ 133</td>
<td>Pedestrian Crossings</td>
<td>Roundabout Intersections</td>
<td>Separation</td>
<td>If walkways are curb-attached, there shall be a continuous and detectable edge treatment along the street side of the walkway wherever pedestrian crossing is not intended. Where chains, fencing, or railings are used, they shall have a bottom element 15 in. maximum above the pedestrian access route.</td>
<td>2005 PROWAG R305.6.1</td>
<td>None</td>
<td>FAI 48</td>
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<td>REQ 134</td>
<td>Pedestrian Crossings</td>
<td>Pedestrian Overpasses and Underpasses</td>
<td>PAR</td>
<td>Pedestrian overpasses and underpasses shall contain a pedestrian access route complying with R301.</td>
<td>2005 PROWAG R305.5.1</td>
<td>None</td>
<td>FAI 49</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
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<td>REQ 135</td>
<td>Pedestrian Crossings</td>
<td>Pedestrian Overpasses and Underpasses</td>
<td>Approach</td>
<td>Where the approach slope exceeds 5 percent, the approach shall be a ramp 4.0 ft. minimum in width complying with R406 or an elevator, a limited use/limited application elevator, or platform lift complying with the applicable requirements in section 407, 408, and 410 of Appendix D to 36 CFR part 1191 (the ADA and ABA Accessibility Guidelines) and providing for independent operation.</td>
<td>2005</td>
<td>PROWAG</td>
<td>None</td>
<td>FAI 49</td>
<td>None</td>
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<tr>
<td>REQ 136</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pedestrian Phasing - Leading Interval</td>
<td>If a leading pedestrian interval is used, the use of accessible pedestrian signals should be considered.</td>
<td>2009</td>
<td>MUTCD</td>
<td>None</td>
<td>FAI 50</td>
<td>None</td>
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<td>REQ 137</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pedestrian Phasing - Time of Day</td>
<td>Under stop-and-go operation, the accessible pedestrian signal shall not be limited in operation by the time of day or day of week.</td>
<td>2009</td>
<td>MUTCD</td>
<td>None</td>
<td>FAI 51</td>
<td>None</td>
</tr>
<tr>
<td>REQ 138</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pedestrian Phasing - Activation</td>
<td>At accessible pedestrian signal locations where pedestrian pushbuttons are used, each pushbuttons shall activate both the walk interval and the accessible pedestrian signals.</td>
<td>2009</td>
<td>MUTCD</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 139</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Contrast</td>
<td>Pedestrian pushbuttons shall contrast visually with their housing or mounting.</td>
<td>2005</td>
<td>PROWAG</td>
<td>PSB-A6</td>
<td>None</td>
<td>None</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
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<td>REQ 140</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Diameter</td>
<td>Pedestrian pushbuttons shall be a minimum of 2 in. across in one dimension.</td>
<td></td>
<td></td>
<td>2005 PROWAG R306.3.3</td>
<td>PSB-H1</td>
<td>None</td>
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<tr>
<td>REQ 141</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Sign Location</td>
<td>Pedestrian signal devices shall provide tactile and visual signs on the face of the device or its housing or mounting to indicate crosswalk direction.</td>
<td></td>
<td></td>
<td>2005 PROWAG R306.4, 2005 PROWAG R210.1</td>
<td>PSB-H2</td>
<td>None</td>
</tr>
<tr>
<td>REQ 142</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Street Name Braille</td>
<td>Accessible pedestrian signals street name information shall be provided in Braille or shall provide street name information in an audible format.</td>
<td></td>
<td></td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3</td>
<td>PSB-H2</td>
<td>None</td>
</tr>
<tr>
<td>REQ 143</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Braille Spacing</td>
<td>Braille shall be separated 0.375 in. minimum from other tactile characters.</td>
<td></td>
<td></td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3</td>
<td>PSB-A6</td>
<td>None</td>
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<tr>
<td>REQ 144</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Braille Contracted Grade 2</td>
<td>Braille shall be contracted grade 2.</td>
<td></td>
<td></td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3</td>
<td>PSB-A6</td>
<td>None</td>
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<tr>
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<td>FEATURE</td>
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<td>REQ 145</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Braille Dots</td>
<td>Braille dots shall have a domed or rounded shape and shall comply with Table R409.3.1.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.1</td>
<td></td>
<td></td>
<td>PSB-A6</td>
<td>None</td>
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<tr>
<td>REQ 146</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Braille Dots</td>
<td>When using Braille, the indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.1</td>
<td></td>
<td></td>
<td>PSB-A6</td>
<td>None</td>
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<tr>
<td>REQ 147</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Braille Location</td>
<td>Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.1</td>
<td></td>
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<td>PSB-A6</td>
<td>None</td>
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<td>REQ 148</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Braille Spacing Part 2</td>
<td>Braille is separated by 0.375 in. minimum from any raised borders and decorative elements.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.2</td>
<td></td>
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<td>PSB-A6</td>
<td>None</td>
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<td>REQ 149</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Orientation - Face</td>
<td>The control face of the accessible pedestrian signal shall be installed to face the intersection.</td>
<td>2005 PROWAG R306.2.1.1</td>
<td></td>
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<td>PSB-H3</td>
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<td>REQ 150</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Information - Street Name Orientation</td>
<td>Accessible pedestrian signals street name information shall be aligned parallel to the crosswalk direction.</td>
<td>2005 PROWAG R306.4.2</td>
<td>PSB-H4</td>
<td>FAI 40, FAI 43</td>
<td></td>
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<tr>
<td>REQ 151</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Orientation - Parallel</td>
<td>The control face of the accessible pedestrian signal shall be parallel to the direction of the crosswalk it serves.</td>
<td>2005 PROWAG R306.2.1.1</td>
<td>PSB-H4</td>
<td>FAI 40, FAI 43</td>
<td></td>
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<tr>
<td>REQ 152</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow</td>
<td>Signs shall include a tactile arrow.</td>
<td>2005 PROWAG R306.4.1, 2009 MUTCD 4E.12 - 01</td>
<td>PSB-H9.2</td>
<td>None</td>
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<td>REQ 153</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow - Orientation</td>
<td>Tactile arrows shall be aligned parallel to the crosswalk direction.</td>
<td>2005 PROWAG R306.4.1, 2009 MUTCD 4E.12 - 01</td>
<td>PSB-H9.2</td>
<td>None</td>
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<td>REQ 154</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow - Size</td>
<td>The arrow arrowheads shall be open at 45 degrees to the shaft and shall be 33 percent of the length of the shaft.</td>
<td>2005 PROWAG R306.4.1</td>
<td>PSB-A6</td>
<td>None</td>
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<tr>
<td>REQ 155</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow - Contrast</td>
<td>The tactile arrow shall contrast with the background.</td>
<td>2005 PROWAG R306.4.1, 2009</td>
<td>PSB-A6</td>
<td>None</td>
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<td>REQ 156</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow - Length</td>
<td>The tactile arrow shall be 1.5 in. minimum in length.</td>
<td></td>
<td></td>
<td>2005</td>
<td>PROWAG R306.4.1</td>
<td>None</td>
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<tr>
<td>REQ 157</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow - Raised Dimension</td>
<td>The tactile arrow shall be raised 0.03 in. minimum.</td>
<td></td>
<td></td>
<td>2005</td>
<td>PROWAG R306.4.1</td>
<td>None</td>
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<tr>
<td>REQ 158</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Tactile Arrow - Stroke Widths and Lengths</td>
<td>Tactile arrow stroke width shall be 10 percent minimum and 15 percent maximum of arrow length.</td>
<td></td>
<td></td>
<td>2005</td>
<td>PROWAG R306.4.1</td>
<td>None</td>
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<tr>
<td>REQ 159</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Actuation Confirmation - Pilot Light</td>
<td>If used, a pilot light or other means of indication installed with a pedestrian pushbutton shall not be illuminated until actuation.</td>
<td></td>
<td></td>
<td>2009</td>
<td>MUTCD 4E.08 - 16</td>
<td>None</td>
</tr>
<tr>
<td>REQ 160</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Actuation Confirmation - Pilot Light Duration</td>
<td>Once it is actuated, the pilot light shall remain illuminated until the pedestrian’s green or WALKING PERSON (symbolizing WALK) signal indication is displayed.</td>
<td></td>
<td></td>
<td>2009</td>
<td>MUTCD 4E.08 - 16</td>
<td>None</td>
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<td>REQ 161</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Actuation Confirmation - Speech Message</td>
<td>If a pilot light is used at an accessible pedestrian signal location, each actuation shall be accompanied by the speech message “wait.”</td>
<td>2009 MUTCD 4E.08 - 17, MUTCD 4E.11 - 23</td>
<td>PSB-H6</td>
<td>None</td>
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<tr>
<td>REQ 162</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Present</td>
<td>Pedestrian pushbuttons shall incorporate a locator tone at the pushbutton.</td>
<td>2005 PROWAG R306.3.2 2009 MUTCD 4E.12 - 02</td>
<td>PSB-H7</td>
<td>None</td>
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<tr>
<td>REQ 163</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Operation</td>
<td>The locator tone shall operate during the DON’T WALK and flashing DON’T WALK intervals only.</td>
<td>2005 PROWAG R306.3.2 2009 MUTCD 4E.11 - 25</td>
<td>None</td>
<td>None</td>
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<td>REQ 164</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Deactivation</td>
<td>The locator tone shall be deactivated when the pedestrian signal is not operative.</td>
<td>2005 PROWAG R306.3.2 2009 MUTCD 4E.12 - 05</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 165</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Off During Flashing Mode</td>
<td>Pushbutton locater tones shall be deactivated when the traffic control signal is operating in a flashing mode. This requirement shall not apply to traffic control signals or pedestrian hybrid beacons that are activated from a flashing or dark mode to a stop-and-go mode by pedestrian actuations.</td>
<td>2009 MUTCD 4E.12 - 05</td>
<td>None</td>
<td>FAI 51</td>
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<td>REQ 166</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Duration</td>
<td>The duration of the locator tone shall be 0.15 s maximum and shall repeat at intervals of one second.</td>
<td>2009 MUTCD 4E.11 - 25, 2009 MUTCD 4E.12 - 04</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 167</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Requirement</td>
<td>Each crosswalk with pedestrian signal indication shall have an accessible pedestrian signal which includes audible and vibrotactile indications of the WALK interval. Where a pedestrian pushbutton is provided, it shall be integrated into the accessible pedestrian signal.</td>
<td>2005 PROWAG R306.2, 2005 PROWAG R306.2.3, 2009 MUTCD 4E.11 - 02,</td>
<td>PSB-H8.1</td>
<td>FAI 52</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 168</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Pedestrian Phasing - Clarity of Message</td>
<td>The information provided by an accessible pedestrian signal shall clearly indicate which pedestrian crossing is served by each device.</td>
<td>2009 MUTCD 4E.09 - 06</td>
<td>PSB-H8.1</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 169</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Audible Duration</td>
<td>Accessible pedestrian signals shall have audible walk indication during the walk interval only.</td>
<td>2009 MUTCD 4E.11 - 04</td>
<td>PSB-H8.1</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 170</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Percussive Tone</td>
<td>Where two accessible pedestrian signals are separated by a distance of at least 10 feet, the audible walk indication shall be a percussive tone.</td>
<td>2009 MUTCD 4E.11 - 07</td>
<td>PSB-H8.1, PSB-K2</td>
<td>FAI 40, FAI 43, FAI 53</td>
<td>None</td>
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<td>REQ 171</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Message Use</td>
<td>Where two accessible pedestrian signals on one corner are not separated by a distance of at least 10 feet, the audible walk indication shall be a speech walk message.</td>
<td>2009 MUTCD 4E.11 - 07, 2009 MUTCD 4E.11 - 17</td>
<td>PSB-H8.1, PSB-K2</td>
<td>None</td>
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<tr>
<td>REQ 172</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Tones</td>
<td>Tones shall consist of multiple frequencies with a dominant component at 880 Hz.</td>
<td>2009 MUTCD 4E.11 - 08, 2005 PROWAG R306.2.3.1</td>
<td>None</td>
<td>None</td>
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<td>REQ 173</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Tones</td>
<td>The duration of the tone shall be 0.15 s.</td>
<td>2009 MUTCD 4E.11 - 08, 2005 PROWAG R306.2.3.1</td>
<td>None</td>
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<td>REQ 174</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Tones</td>
<td>Tones shall repeat at intervals of 0.15 s.</td>
<td>2009 MUTCD 4E.11 - 08, 2005 PROWAG R306.2.3.1</td>
<td>None</td>
<td>None</td>
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<td>REQ 175</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Message Clarity</td>
<td>Speech walk messages shall not contain any additional information, except they shall include designations such as &quot;Street&quot; or &quot;Avenue&quot; where this information is necessary to avoid ambiguity at a particular location.</td>
<td>2009 MUTCD 4E.11 - 20</td>
<td>PSB-H8.2</td>
<td>FAI 53</td>
<td>None</td>
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<td>REQ 176</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Message Form</td>
<td>Speech walk messages that are used at intersections having pedestrian phasing that is concurrent with vehicular phasing shall be patterned after the model: &quot;Broadway. Walk sign is on to cross Broadway.&quot;</td>
<td>2009 MUTCD 4E.11 - 18</td>
<td>None</td>
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<td>PSB-H8.2</td>
<td>None</td>
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<tr>
<td>REQ 177</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Vibrotactile - Arrow</td>
<td>Vibrotactile walk indications shall be provided by a tactile arrow on the pushbutton that vibrates during the walk interval.</td>
<td>2009 MUTCD 4E.11 - 03, 2005 PROWAG R306.2 Advisory</td>
<td>None</td>
<td>None</td>
<td>PSB-H9.1</td>
<td>None</td>
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<tr>
<td>REQ 178</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - dBA Max.</td>
<td>Automatic adjustments of the WALK indication volume in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA.</td>
<td>2009 MUTCD 4E.11 - 10</td>
<td>None</td>
<td>FAI 54</td>
<td>PSB-H10</td>
<td></td>
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<tr>
<td>REQ 179</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Audible - Volume</td>
<td>The audible walk indication shall be audible from the beginning of the associated crosswalk.</td>
<td>2009 MUTCD 4E.11 - 04</td>
<td>None</td>
<td>FAI 54</td>
<td>PSB-H11</td>
<td></td>
</tr>
<tr>
<td>REQ 180</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Volume</td>
<td>Pushbutton locator tones shall be audible 6 to 12 feet from the pushbutton, or to the building line, whichever is less.</td>
<td>2009 MUTCD 4E.12 - 06</td>
<td>None</td>
<td>FAI 54</td>
<td>None</td>
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Appendix C: Technical Requirements Table | 21
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<th>REQ #</th>
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<th>REQUIREMENT</th>
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<tr>
<td>REQ 181</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Volume</td>
<td>Pushbutton locator tone volume measured at 3.0 ft. from the pushbutton shall be 2 dB minimum and 5 dB maximum above ambient noise level.</td>
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<td>REQ 182</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>Locator Tone - Volume Responsive</td>
<td>Pushbutton locator tone volumes shall be responsive to ambient noise level changes.</td>
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<td>REQ 183</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton</td>
<td>WALK Indication Duration</td>
<td>The accessible walk indication shall have the same duration as the pedestrian walk signal except when the pedestrian signal rests in walk.</td>
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<td>REQ 184</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Reach Requirements</td>
<td>Unobstructed Forward</td>
<td>Where a forward reach is unobstructed, the high forward reach shall be 48 in. maximum and the low forward reach shall be 15 in. minimum above the finish surface.</td>
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Appendix C: Technical Requirements Table | 22
<table>
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<tr>
<th>REQ #</th>
<th>FACILITY</th>
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<tbody>
<tr>
<td>REQ 186</td>
<td>Accessible Pedestrian</td>
<td>Pushbutton - Reach</td>
<td>Obstructed</td>
<td>Where a high forward reach is over an obstruction, the clear space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 1220 mm (48 in) maximum where the reach depth is 510 mm (20 in) maximum. Where the reach depth exceeds 510 mm (20 in), the high forward reach shall be 1120 mm (44 in) maximum and the reach depth shall be 635 mm (25 in) maximum.</td>
<td>Un-written county policy Should be Considered for Addition to ADA Decision Matrix</td>
<td></td>
<td>2005 PROWAG R404.2.2</td>
<td>None</td>
<td>FAI 55</td>
</tr>
<tr>
<td>REQ 187</td>
<td>Accessible Pedestrian</td>
<td>Pushbutton - Reach</td>
<td>Obstructed</td>
<td>Where a clear space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 in. maximum and the depth of the obstruction shall be 24 in. maximum. The high side reach shall be 48 in. maximum for a reach depth of 10 in. maximum. Where the reach depth exceeds 10 in., the high side reach shall be 46 in. maximum for a reach depth of 24 in. maximum.</td>
<td>Un-written county policy Should be Considered for Addition to ADA Decision Matrix</td>
<td></td>
<td>2005 PROWAG R404.3.2</td>
<td>None</td>
<td>FAI 55</td>
</tr>
<tr>
<td>REQ 188</td>
<td>Accessible Pedestrian</td>
<td>Clear Space</td>
<td>Position</td>
<td>Unless otherwise specified, clear space shall be positioned for either forward or parallel approach to an element.</td>
<td></td>
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<td>PSB-J1</td>
<td>None</td>
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Appendix C: Technical Requirements Table | 23
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<th>REQ #</th>
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<tr>
<td>REQ 189</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Approach</td>
<td>One full unobstructed side of the clear space shall adjoin a pedestrian access route or adjoin another clear space.</td>
<td>PROWAG R402.6, 2009 MUTCD 4E.08 - 04 B., 2005 PROWAG R306.2.2, 2005</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 190</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Continuous Width</td>
<td>The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 ft., exclusive of the width of the curb.</td>
<td>2012 EDDS - 4.05B, 1, 2012 EDDS - 4.05B, 2</td>
<td>PSB-J2</td>
<td>None</td>
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<tr>
<td>REQ 191</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Maneuvering Space</td>
<td>Where a clear space is confined on all or part of three sides, additional maneuvering space shall be provided in accordance with R402.7.1 and R402.7.2.</td>
<td>2005 PROWAG R402.7</td>
<td>PSB-J3</td>
<td>None</td>
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<tr>
<td>REQ 192</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Maneuvering Space - Forward Approach</td>
<td>Clear spaces to pushbuttons confined on all or part of three sides shall be 36 in. wide minimum where the depth exceeds 24 in.</td>
<td>2005 PROWAG R402.7.1</td>
<td>PSB-J1, PSB-J3, PSB-B1.3, PSB-B1.4</td>
<td>None</td>
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<tr>
<td>REQ 193</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Maneuvering Space - Parallel Approach</td>
<td>Clear spaces to pushbuttons confined on all or part of three sides shall be 60 in. wide minimum where the depth exceeds 15 in.</td>
<td>2005 PROWAG R402.7.2</td>
<td>PSB-J1, PSB-J3, PSB-B1.3, PSB-B1.4</td>
<td>None</td>
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<td>REQ 194</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Running Slope</td>
<td>Surfaces of clear spaces shall have a slope of 2 percent maximum.</td>
<td>2005 PROWAG R402.2</td>
<td>PSB-B1.1</td>
<td>FAI 41, FAI 43</td>
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<tr>
<td>REQ 195</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Length</td>
<td>The clear space shall be 48 in. in length, minimum.</td>
<td>2005 PROWAG R402.3</td>
<td>PSB-B1.3</td>
<td>None</td>
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<tr>
<td>REQ 196</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Cross Slope</td>
<td>Surfaces of clear spaces shall have a cross slope of 2 percent maximum.</td>
<td>2005 PROWAG R402.2</td>
<td>PSB-B1.2</td>
<td>FAI 41, FAI 43</td>
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<tr>
<td>REQ 197</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Width</td>
<td>The clear space shall be 30 in. in width, minimum.</td>
<td>2005 PROWAG R402.3</td>
<td>PSB-B1.4</td>
<td>None</td>
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<tr>
<td>REQ 198</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Vertical Discontinuities</td>
<td>Surface discontinuities shall not exceed 0.50 in. maximum. Vertical discontinuities between 0.25 in. and 0.5 in. maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.</td>
<td>2005 PROWAG R301.5.2</td>
<td>PSB-F1.3</td>
<td>None</td>
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<tr>
<td>REQ 199</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Horizontal Gaps</td>
<td>Openings shall not permit passage of a sphere more than 0.5 in. in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.</td>
<td>2005 PROWAG R301.7.1</td>
<td>PSB-F1.4</td>
<td>None</td>
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<td>REQ 200</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Surface</td>
<td>The surface of the pedestrian access route shall be firm, stable, and slip resistant.</td>
<td>2012 EDDS 4-05A, 5, 2012 EDDS 4-05A, 6, 2012 EDDS 4-05D, 14</td>
<td>2005 PROWAG R301.5, 2009 MUTCD 4E.08 - 04A</td>
<td>None</td>
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<td>REQ 201</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Surface</td>
<td>Grade breaks shall be flush.</td>
<td>2005 PROWAG R301.5.1</td>
<td>PSB-F1.1</td>
<td>None</td>
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<td>REQ 202</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Clear Space</td>
<td>Surface</td>
<td>Vertical alignment shall be planar within clear spaces required for accessible pedestrian signals.</td>
<td>2005 PROWAG R301.5.1</td>
<td>PSB-F1.6</td>
<td>None</td>
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<tr>
<td>REQ 203</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>General</td>
<td>Accessible pedestrian signals shall be located so that the vibrotactile feature can be contacted from the level landing serving a curb ramp, if provided, or from a clear space that is in line with the crosswalk line adjacent to the vehicle stop line.</td>
<td>2005 PROWAG R306.2.1</td>
<td>PSB-K1</td>
<td>None</td>
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<td>REQ 204</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>Distance between pushbuttons</td>
<td>Accessible pedestrian signal devices shall be 10.0 ft. minimum from other accessible pedestrian signals at a crossing.</td>
<td>2005 PROWAG R306.2.1.1</td>
<td>PSB-K2</td>
<td>FAI 40, FAI 43</td>
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<td>REQ 205</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>Distance between pushbuttons</td>
<td>Accessible pedestrian signals located in medians and islands shall be 5.0 ft. minimum from other accessible pedestrian signals.</td>
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<td>REQ 206</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>Indication of Crosswalk Served</td>
<td>The positioning of pedestrian pushbuttons and the legends on the pedestrian pushbutton signs shall clearly indicate which crosswalk signal is actuated by each pedestrian pushbutton.</td>
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<td>REQ 207</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>Location from Curb</td>
<td>Pedestrian pushbuttons should be located between 1.5 and 6 feet from the edge of the curb, shoulder, or pavement.</td>
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<td>REQ 208</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>Location from Crosswalk</td>
<td>Pedestrian pushbuttons should be located between the edge of the crosswalk line (extended) farthest from the center of the intersection and the side of a curb ramp (if present), but not greater than 5 feet from said crosswalk line.</td>
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<tr>
<td>REQ 209</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Pushbutton - Location</td>
<td>Pushbutton Requirements for Medians</td>
<td>If the pedestrian clearance time is sufficient only to cross from the curb or shoulder to a median of sufficient width for pedestrians to wait and the signals are pedestrian actuated, an additional pedestrian detector shall be provided in the median.</td>
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<td>REQ 210</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Crossing Time</td>
<td>Pedestrian Phasing - Walk Interval Time</td>
<td>The Pedestrian WALK Interval shall be 7 seconds min.</td>
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<td>REQ 211</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Crossing Time</td>
<td>Walk Speed and Crossing Distance</td>
<td>All pedestrian signal phase timing shall be calculated using a pedestrian walk speed of 3.5 ft./s. maximum. The crosswalk distance used in calculating pedestrian signal phase timing shall include the entire length of the crosswalk.</td>
<td>2005 PROWAG R305.3</td>
<td>PSB-L1, PSB-L2</td>
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<td>FAI 56</td>
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<tr>
<td>REQ 212</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Crossing Time</td>
<td>Pedestrian Phasing - Median Duration</td>
<td>Where the pedestrian clearance time is sufficient only for crossing from the curb or shoulder to a median of sufficient width for pedestrians to wait, median mounted pedestrian signals (with pedestrian detectors if actuated operations is used) shall be provided and signing such as r10-3d sign has been provided to notify pedestrians to cross only to the median to await the next walking person signal indication.</td>
<td>2009 MUTCD 4E.06 - 16</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 213</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Roundabout Intersections</td>
<td>Signals</td>
<td>At roundabouts with multi-lane crossings, a pedestrian activated signal shall be provided for each segment of each crosswalk, including the splitter island. Signals shall clearly identify which crosswalk segment the signal serves.</td>
<td>2005 PROWAG R305.6.2</td>
<td>None</td>
<td>None</td>
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<td>REQ 214</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Audible Beaconing Source Location</td>
<td>If audible beaconing is used, the volume of the pushbutton locator tone during the pedestrian change interval of the called pedestrian phase shall be increased and operated in one of the following ways: A. The louder audible walk indication and louder locator tone comes from the far end of the crosswalk, as pedestrians cross the street, B. The louder locator tone comes from both ends of the crosswalk, or C. The louder locator tone comes from an additional speaker that is aimed at the center of the crosswalk and that is mounted on a pedestrian signal head.</td>
<td>2009 MUTCD 4E.13 - 08 A., 2009 MUTCD 4E.13 - 08 B., 2009 MUTCD 4E.13 - 08 C.</td>
<td>None</td>
<td>None</td>
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<td>REQ 215</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Crosswalk Configuration</td>
<td>Where provided, graphic indication of crosswalk configuration shall be tactile.</td>
<td>2005 PROWAG R306.4.3</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 216</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Extended Press - Pushbutton Braille</td>
<td>An extended button press shall be permitted to activate additional features. Buttons that provide additional features shall be marked with three braille dots forming an equilateral triangle in the center of the pushbutton.</td>
<td>2005 PROWAG R306.3.4</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 217</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Extended Press Actuation</td>
<td>If an extended pushbutton press is used to provide any additional feature(s), a pushbutton press of less than one second shall actuate only the pedestrian timing and any associated accessible walk indication, and a pushbutton press of one second or more shall actuate the pedestrian timing, any associated accessible walk indication, and any additional feature(s).</td>
<td>2009 MUTCD 4E.13 - 02</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>REQ 218</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Extended Press Plaque</td>
<td>If additional cross time is provided by means of an extended pushbutton press, a plaque r10:32p shall be mounted adjacent to or integral with the pedestrian pushbutton.</td>
<td>2009 MUTCD 4E.08 - 19, 2009 MUTCD 4E.13 - 03</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td>REQ 219</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Speech Pushbutton Information Messages Availability</td>
<td>If speech pushbutton information messages are made available by actuating the accessible pedestrian signal detector, they shall only be actuated when the walk interval is not timing.</td>
<td>2009 MUTCD 4E.13 - 10</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 220</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Additional Features</td>
<td>Speech Pushbutton Information Messages Message</td>
<td>If speech pushbutton information messages are made available by actuating the accessible pedestrian signal, they shall begin with the term “Wait,” followed by intersection identification information modeled after: “Wait to cross Broadway at Grand.” If information on intersection signalization or geometry is also given, it shall follow the intersection identification information.</td>
<td>2009</td>
<td>MUTCD 4E.13 - 10</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>REQ 221</td>
<td>Accessible Pedestrian Signal (APS)</td>
<td>Channelized Turn Lanes at Intersections</td>
<td>Multi-Lane Right or Left Channelized Turn Lanes</td>
<td>Where pedestrian crosswalks are provided at multi-lane right or left channelized turn lanes at intersections with pedestrian signal indications, a pedestrian activated signal complying with R306 shall be provided.</td>
<td>2005</td>
<td>PROWAG R305.7</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>REQ 222</td>
<td>Sidewalk</td>
<td>Width</td>
<td>Clear Width</td>
<td>The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 ft., exclusive of the width of the curb.</td>
<td>2012</td>
<td>EDDS 4-05B, 1 through 6</td>
<td>2005 PROWAG R301.3.1</td>
<td>SW-B1.4</td>
<td>FAI 24</td>
</tr>
<tr>
<td>REQ 223</td>
<td>Sidewalk</td>
<td>Width</td>
<td>Width at Passing Spaces</td>
<td>Walkways in pedestrian access routes that are less than 5.0 ft. in clear width shall provide passing spaces at intervals of 200 ft. maximum. Pedestrian access routes at passing spaces shall be 5.0 ft. wide for a distance of 5.0 ft.</td>
<td>2005</td>
<td>PROWAG R301.3.2</td>
<td>SW-B1.4</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>REQ 224</td>
<td>Sidewalk</td>
<td>Slopes</td>
<td>Running Slope</td>
<td>Where the walkway of a pedestrian access route is contained within a street or highway border, its grade shall not exceed the general grade established for the adjacent street or highway.</td>
<td>2012</td>
<td>EDDS 4-05A, 2</td>
<td>2005 PROWAG R301.4.2</td>
<td>SW-B1.1</td>
<td>None</td>
</tr>
<tr>
<td>REQ 225</td>
<td>Sidewalk</td>
<td>Slopes</td>
<td>Cross Slope</td>
<td>The cross slope of the walkway of a pedestrian access route shall be 2 percent maximum.</td>
<td>2012</td>
<td>EDDS 4-05A, 1</td>
<td>2005 PROWAG R301.4.1</td>
<td>SW-B1.2</td>
<td>FAI 41, FAI 43</td>
</tr>
<tr>
<td>REQ 226</td>
<td>Sidewalk</td>
<td>Discontinuities</td>
<td>Surface</td>
<td>The surface of the pedestrian access route shall be firm, stable and slip resistant.</td>
<td>2012</td>
<td>EDDS 4-05A, 5, 2012 EDDS 4-</td>
<td>2005 PROWAG R301.5</td>
<td>None</td>
<td>FAI 24</td>
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<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 227</td>
<td>Sidewalk</td>
<td>Discontinuities</td>
<td>Vertical Alignment</td>
<td>Vertical alignment shall be planar within pedestrian access routes. Grade breaks shall be flush.</td>
<td>05A, 6, 2012 EDDS 4-05D, 14</td>
<td></td>
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<tr>
<td>REQ 228</td>
<td>Sidewalk</td>
<td>Discontinuities</td>
<td>Surface Discontinuities</td>
<td>Surface discontinuities shall not exceed 0.50 in. maximum. Vertical discontinuities between 0.25 in. and 0.5 in. maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.</td>
<td>2012 EDDS 4-05D, 14</td>
<td></td>
<td></td>
<td>SW-F1.4</td>
<td>FAI 19</td>
</tr>
<tr>
<td>REQ 229</td>
<td>Sidewalk</td>
<td>Discontinuities</td>
<td>Walkway Joints and Gratings</td>
<td>Openings shall not permit passage of a sphere more than 13 mm (0.5 in) in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.</td>
<td></td>
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<td></td>
<td>SW-F1.4</td>
<td>FAI 19</td>
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<tr>
<td>REQ 230</td>
<td>Sidewalk</td>
<td>PAR Obstructions</td>
<td>Clear Width</td>
<td>Protruding objects along or overhanging any portion of a sidewalk shall not reduce the clear width required for pedestrian access routes.</td>
<td>2012 EDDS 3-14, 2012 EDDS 4-05B, 5, and EDDS Standard Plan 4-150</td>
<td></td>
<td></td>
<td>SW-B1.4</td>
<td>FAI 57</td>
</tr>
<tr>
<td>REQ 231</td>
<td>Sidewalk</td>
<td>PAR Obstructions</td>
<td>Protrusion Limits</td>
<td>Objects with leading edges more than 27 in. and not more than 80 in. above the finish surface or ground shall protrude 4 in. maximum horizontally into the pedestrian circulation path.</td>
<td></td>
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<td>SW-F1.2</td>
<td>FAI 57</td>
</tr>
<tr>
<td>REQ 232</td>
<td>Sidewalk</td>
<td>PAR Obstructions</td>
<td>Post-Mounted Objects</td>
<td>Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 in., the lowest edge of such sign or obstruction shall 27 in. maximum or 80 in. minimum above the finish surface.</td>
<td></td>
<td></td>
<td></td>
<td>SW-F1.2</td>
<td>None</td>
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<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
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<tr>
<td>REQ 233</td>
<td>Sidewalk</td>
<td>PAR Obstructions</td>
<td>Clear Width</td>
<td>The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 ft., exclusive of the width of the curb.</td>
<td>2012 EDDS 4-05B, 1 through 6</td>
<td></td>
<td>2005 PROWAG R301.3.1</td>
<td>SW-B1.4</td>
<td>FAI 57</td>
</tr>
<tr>
<td>REQ 234</td>
<td>Sidewalk</td>
<td>Protruding Objects</td>
<td>Reduced Vertical Clearance</td>
<td>Guardrails or other barriers shall be provided where the vertical clearance is less than 80 in. high. The leading edge of such guardrail or barrier shall be located 27 in. maximum above the finish surface or ground.</td>
<td>2005 PROWAG R401.4</td>
<td></td>
<td></td>
<td>None</td>
<td>FAI 57</td>
</tr>
<tr>
<td>REQ 235</td>
<td>Sidewalk</td>
<td>Driveways</td>
<td>General Requirement</td>
<td>Access points shall be designed and constructed to conform to ADA design requirements, where applicable</td>
<td>2012 EDDS 2-01B, 1 &amp; 2, EDDS Standard Plans 2-020, 2-022, 2-024,</td>
<td></td>
<td></td>
<td>None</td>
<td>FAI 42, FAI 43</td>
</tr>
<tr>
<td>REQ 236</td>
<td>Sidewalk</td>
<td>Driveways</td>
<td>Running Slope</td>
<td>The running slope of driveway ramps shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 ft.</td>
<td>2012 EDDS 4-05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.2.1</td>
<td>SW-B1.1</td>
<td>FAI 42, FAI 43</td>
</tr>
<tr>
<td>REQ 237</td>
<td>Sidewalk</td>
<td>Driveways</td>
<td>Cross Slope</td>
<td>The cross slope of driveway ramps shall be 2 percent maximum.</td>
<td>2012 EDDS - 4.05D, 5</td>
<td></td>
<td>2005 PROWAG R303.2.2.2</td>
<td>SW-B1.2</td>
<td>FAI 42, FAI 43</td>
</tr>
<tr>
<td>REQ 238</td>
<td>Sidewalk</td>
<td>Paved Shoulder</td>
<td>PAR</td>
<td>Where a pedestrian circulation path is provided in the street, along a highway, or within a shoulder, it shall contain a pedestrian access route.</td>
<td>2005 PROWAG R204</td>
<td></td>
<td></td>
<td>None</td>
<td>FAI 46</td>
</tr>
<tr>
<td>REQ 239</td>
<td>Sidewalk</td>
<td>Pedestrian Overpasses and Underpasses</td>
<td>Stairs</td>
<td>Stairs shall comply with R407.</td>
<td>2005 PROWAG R305.5.3</td>
<td></td>
<td></td>
<td>None</td>
<td>None</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
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<tr>
<td>REQ 240</td>
<td>Sidewalk</td>
<td>Pedestrian Overpasses and Underpasses</td>
<td>Supported Slope</td>
<td>Where the walkway of a pedestrian access route is supported by a structure, it shall comply with R305.5.</td>
<td></td>
<td></td>
<td>2005 PROWAG R301.4.3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>REQ 241</td>
<td>Sidewalk</td>
<td>Street Furniture</td>
<td>Street Furniture</td>
<td>Street furniture intended for use by pedestrians and installed on or adjacent to a pedestrian circulation path shall comply with R307.</td>
<td></td>
<td></td>
<td>2005 PROWAG R211, 2005 PROWAG R307</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 242</td>
<td>Bus Stops</td>
<td>Boarding and Alighting Areas</td>
<td>Surface</td>
<td>Bus stop boarding and alighting areas shall have a firm, stable, and slip resistant surface.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.1.1</td>
<td>BS-S1</td>
<td>None</td>
</tr>
<tr>
<td>REQ 243</td>
<td>Bus Stops</td>
<td>Boarding and Alighting Areas</td>
<td>Clear Length</td>
<td>Bus stop boarding and alighting areas shall provide a clear length of 8.0 ft. minimum, measured perpendicular to the curb or vehicle street or highway edge.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.1.2</td>
<td>BS-S2</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 244</td>
<td>Bus Stops</td>
<td>Boarding and Alighting Areas</td>
<td>Clear Width</td>
<td>Bus stop boarding and alighting areas shall provide a clear width of 15.0 ft. minimum, measured parallel to the vehicle, street, or highway.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.1.2</td>
<td>BS-S3</td>
<td>None</td>
</tr>
<tr>
<td>REQ 245</td>
<td>Bus Stops</td>
<td>Boarding and Alighting Areas</td>
<td>Cross Slope</td>
<td>Perpendicular to the street or highway, the grade of the bus stop boarding and alighting area shall not be steeper than 2 percent.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.1.4</td>
<td>BS-S4</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 246</td>
<td>Bus Stops</td>
<td>Boarding and Alighting Areas</td>
<td>Running Slope</td>
<td>Parallel to the street or highway, the grade of the bus stop boarding and alighting area shall be the same as the street or highway, to the maximum extent practicable.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.1.4</td>
<td>BS-S5, BS-S6</td>
<td>None</td>
</tr>
<tr>
<td>REQ 247</td>
<td>Bus Stops</td>
<td>Boarding and Alighting Areas</td>
<td>PAR Connection</td>
<td>Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by a pedestrian access route.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.1.3</td>
<td>BS-S7</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 248</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Location</td>
<td>Bus shelters shall provide a minimum clear space entirely within the shelter.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
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<tr>
<td>REQ 249</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Surface</td>
<td>The surface of the bus shelter clear space shall be firm, stable, and slip resistant.</td>
<td>2012 EDDS 4-05A, 5, 2012 EDDS 4-05A, 6, 2012 EDDS 4-05D, 14</td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.2, 2005 PROWAG R301.5</td>
<td>None</td>
<td>FAI 14</td>
<td></td>
</tr>
<tr>
<td>REQ 250</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Vertical Discontinuities</td>
<td>Surface discontinuities shall not exceed 0.50 in. maximum. Vertical discontinuities between 0.25 in. and 0.5 in. maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.</td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.2, 2005 PROWAG R301.5</td>
<td>None</td>
<td>FAI 14</td>
<td></td>
</tr>
<tr>
<td>REQ 251</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Horizontal Gaps</td>
<td>Openings shall not permit passage of a sphere more than 0.5 in. in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.</td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.2, 2005 PROWAG R301.5.2</td>
<td>None</td>
<td>FAI 14</td>
<td></td>
</tr>
<tr>
<td>REQ 252</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Running Slope</td>
<td>Bus shelter clear spaces shall have a running slope of 2 percent maximum.</td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.2</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
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<tr>
<td>REQ 253</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Cross Slope</td>
<td>Bus shelter clear spaces shall have a cross slope of 2 percent maximum.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.2</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 254</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Length</td>
<td>Bus shelter clear spaces shall be 48 in. in length, minimum.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.2</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 255</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Width</td>
<td>Bus shelter clear spaces shall be 30 in. in width, minimum.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.3</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 256</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Position</td>
<td>Unless otherwise specified, bus shelter clear spaces shall be positioned for either forward or parallel approach to an element.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.5</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 257</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Approach</td>
<td>One full unobstructed side of bus shelter clear spaces shall adjoin a compliant pedestrian access route or adjoin another clear space.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2, 2005 PROWAG R402.6</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 258</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Maneuvering Space</td>
<td>Where a bus shelter clear space is confined on all or part of three sides, additional compliant maneuvering space shall be provided.</td>
<td></td>
<td></td>
<td>2005 PROWAG R410.2, 2005</td>
<td>None</td>
<td>FAI 14</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
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<tr>
<td>REQ 259</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Maneuvering Space - Forward Approach</td>
<td>Bus shelter clear spaces confined on all or part of three sides shall be 36 in. wide minimum where the depth exceeds 24 in.</td>
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<td>2005 PROWAG R410.2, 2005 PROWAG R402.7.1</td>
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<tr>
<td>REQ 260</td>
<td>Bus Shelters</td>
<td>Clear Space</td>
<td>Maneuvering Space - Parallel Approach</td>
<td>Clear spaces confined on all or part of three sides shall be 60 in. wide minimum where the depth exceeds 15 in.</td>
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<td>2005 PROWAG R410.2, 2005 PROWAG R402.7.2</td>
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<tr>
<td>REQ 261</td>
<td>Bus Shelters</td>
<td>Street Furniture</td>
<td>Clear Floor or Ground Space</td>
<td>Street furniture shall be connected to the pedestrian access route.</td>
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<td></td>
<td>2005 PROWAG R212, 2005 PROWAG R307.2</td>
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<td>REQ 262</td>
<td>Bus Shelters</td>
<td>Street Furniture</td>
<td>Clear Floor or Ground Space</td>
<td>Where benches without tables are provided at a single location, at least 50 percent, but no fewer than one, shall provide clear space positioned at the end of the bench seat and located for shoulder-to-shoulder seating.</td>
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<td>2005 PROWAG R212, 2005 PROWAG R307.2, 2005 PROWAG R307.6.3.1</td>
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<td>REQ 263</td>
<td>Bus Shelters</td>
<td>Street Furniture</td>
<td>Benches</td>
<td>Where benches without tables are provided at a single location, at least 50 percent, but no fewer than one, shall have a seat height at the front edge of 17 in. minimum and 19 in. maximum above the ground or floor space.</td>
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<td>REQ 264</td>
<td>Bus Shelters</td>
<td>Bus Shelter</td>
<td>Clear Space - Connection to PAR</td>
<td>Bus shelters shall be connected by a compliant pedestrian access route to a compliant boarding and alighting area.</td>
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<td>REQ 265</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Raised Characters</td>
<td>Bus route identification signs located at bus shelters shall provide raised characters complying with R409.2.</td>
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<tr>
<td>REQ 266</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Braille Characters</td>
<td>Bus route identification signs located at bus shelters shall provide braille characters complying with R409.3.</td>
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<td>REQ 267</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Braille Spacing</td>
<td>Braille on bus route identification signs at bus shelters shall be separated 0.375 in minimum from other tactile characters</td>
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<tr>
<td>REQ 268</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Braille Contracted Grade 2</td>
<td>Braille on bus route identification signs at bus shelters shall be contracted grade 2.</td>
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<td>REQ 269</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Braille Dots</td>
<td>Braille dots on bus route identification signs at bus shelters shall be domed or rounded and comply with 2005 PROWAG R409.3.1.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.1</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ 270</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Braille Location</td>
<td>Braille on bus route identification signs at bus shelters shall be located below the corresponding text.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.2</td>
<td>None</td>
<td>FAI 14</td>
<td></td>
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<td>REQ 271</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Braille Spacing Part 2</td>
<td>Braille on bus route identification signs at bus shelters shall be separated 0.375 inches minimum from raised borders and decorative elements.</td>
<td>2005 PROWAG R306.4.2, 2005 PROWAG R409.3.2</td>
<td>None</td>
<td>FAI 14</td>
<td></td>
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<tr>
<td>REQ 272</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Rounded Corners</td>
<td>Bus route identification signs located at bus shelters shall have rounded corners.</td>
<td>2005 PROWAG R210.2</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ 273</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Audible Information</td>
<td>Bus route identification signs shall not be required to comply with R409.2 where audible signs are user- or proximity-actuated or are remotely transmitted to a portable receiver carried by an individual.</td>
<td>2005 PROWAG R210.2</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ 274</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Non-Glare Finish</td>
<td>Bus route identification sign characters and their background shall have a non-glare finish.</td>
<td>2005 PROWAG R409.5.1</td>
<td>None</td>
<td>FAI 14</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
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<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
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<td>REQ 275</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Contrasting Background</td>
<td>Bus route identification sign characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.</td>
<td></td>
<td></td>
<td>2005 PROWAG R409.5.1</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ 276</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Proportions, Height, Stroke Thickness, Spacing</td>
<td>Various Requirements for bus route identification sign characters and symbols.</td>
<td></td>
<td></td>
<td>2005 PROWAG R409.5.4, 2005 PROWAG R409.5.5, 2005 PROWAG R409.5.7, 2005 PROWAG R409.5.8, 2005 PROWAG R409.5.9, 2005 PROWAG R409.5.10</td>
<td>None</td>
<td>FAI 14</td>
</tr>
<tr>
<td>REQ 277</td>
<td>Bus Stops</td>
<td>Bus Route Identification Sign</td>
<td>Mounting Height</td>
<td>Bus route identification sign visual characters shall be 3.25 ft. minimum above the finish floor or ground.</td>
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<td></td>
<td>2005 PROWAG R409.5.6</td>
<td>None</td>
<td>FAI 14</td>
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<tr>
<td>REQ 278</td>
<td>Bus Stops</td>
<td>Transit Platforms</td>
<td>Transit Platforms</td>
<td>Where provided, transit platforms shall comply with R414.</td>
<td></td>
<td></td>
<td>2005 PROWAG R219</td>
<td>None</td>
<td>FAI 14</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
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<td>REQ 279</td>
<td>Alternate Pedestrian Facilities</td>
<td>General Requirements</td>
<td>General Requirement</td>
<td>When an existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary conditions, an alternate pedestrian access route complying to the maximum extent feasible with R301, R302, and Section 6D.01, 6D.02, RG.05 of the 2009 MUTCD (incorporated by reference; see R104.2.1 and comments in the next column) shall be provided.</td>
<td>2005 PROWAG R104.2.1, 2011 PROWAG R104.2, 2005 PROWAG R205, 2011 PROWAG R301, 2005 PROWAG R302, 2009 MUTCD 6D.01, 2009 MUTCD 6D.02, 2009 MUTCD 6G.05, 2009 MUTCD 6F.63, 2009 MUTCD 6F.68 &amp; 6F.71</td>
<td>APF-T10, APF-U1, APF - All</td>
<td>FAI 43</td>
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<td>REQ #</td>
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<td>REQ 280</td>
<td>Alternate Pedestrian Facilities</td>
<td>General Requirements</td>
<td>Pedestrian Considerations</td>
<td>If a temporary traffic control zone affects an accessible and detectable pedestrian facility, the accessibility and detectability shall be maintained along the alternate pedestrian route.</td>
<td>2009 MUTCD 6D.01-04, 2009 MUTCD 6D.02-03, 2009 MUTCD 6G.05-09</td>
<td>APF-U11</td>
<td>FAI 43</td>
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<td>REQ 281</td>
<td>Alternate Pedestrian Facilities</td>
<td>General Requirements</td>
<td>Location</td>
<td>To the maximum extent feasible, the alternate circulation path shall be provided on the same side of the street as the disrupted route.</td>
<td>2005 PROWAG R302.2</td>
<td>APF-U9</td>
<td>FAI 43</td>
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<tr>
<td>REQ 282</td>
<td>Alternate Pedestrian Facilities</td>
<td>General Requirements</td>
<td>Applied Knowledge</td>
<td>The various temporary traffic control provisions for pedestrian and worker safety set forth in Part 6 shall be applied by knowledgeable (for example, trained and/or certified) persons after appropriate evaluation and engineering judgment.</td>
<td>2009 MUTCD 6D.01-02</td>
<td>APF-T10</td>
<td>FAI 43</td>
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<tr>
<td>REQ 283</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Protection</td>
<td>Where the alternate circulation path is exposed to adjacent construction, excavation drop-offs, traffic, or other hazards, it shall be protected with a compliant pedestrian barricade or channelizing device.</td>
<td>2005 PROWAG R302.3</td>
<td>APF-U1</td>
<td>FAI 43</td>
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<tr>
<td>REQ 284</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Continuous Width</td>
<td>The minimum continuous and unobstructed clear width of an alternate pedestrian access route shall be 4.0 ft., exclusive of the width of the curb.</td>
<td>2005 PROWAG R301.3.1</td>
<td>APF-U2</td>
<td>FAI 43</td>
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<td>REQ #</td>
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<td>REQ 285</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Width at Passing Spaces</td>
<td>Walkways in alternate pedestrian access routes that are less than 5.0 ft. in clear width shall provide passing spaces at intervals of 200 ft. maximum. Alternate pedestrian access routes at passing spaces shall be 5.0 ft. wide for a distance of 5.0 ft.</td>
<td>2005 PROWAG R301.3.2</td>
<td>APF-U2</td>
<td>FAI 43</td>
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<tr>
<td>REQ 286</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Cross Slope</td>
<td>The cross slope of an alternate pedestrian access route shall be 2 percent maximum.</td>
<td>2005 PROWAG R301.4.1</td>
<td>APF-U3</td>
<td>FAI 43</td>
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<td>REQ 287</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Street or Highway Grade</td>
<td>Where an alternate pedestrian access route within a street or highway border, its grade shall not exceed the general grade established for the adjacent street or highway.</td>
<td>2005 PROWAG R301.4.2</td>
<td>APF-U4</td>
<td>FAI 43</td>
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<td>REQ 288</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Surface</td>
<td>The surface of an alternate pedestrian access route shall be firm, stable and slip resistant.</td>
<td>2005 PROWAG R301.5</td>
<td>APF-U5</td>
<td>FAI 43</td>
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<td>REQ 289</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Vertical Alignment</td>
<td>Vertical alignment of alternate pedestrian access routes shall be planar within curb ramp runs, blended transitions, landings, and gutter areas within the pedestrian access routes.</td>
<td>2005 PROWAG R301.5.2</td>
<td>APF-U6</td>
<td>FAI 43</td>
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<tr>
<td>REQ 290</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Vertical Alignment</td>
<td>Grade breaks on alternate pedestrian access routes shall be flush.</td>
<td>2005 PROWAG R301.5.2</td>
<td>APF-U7</td>
<td>FAI 43</td>
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<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
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<td>REQ 291</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Horizontal Gaps</td>
<td>Openings on alternate pedestrian access routes shall not permit passage of a sphere more than 0.5 in. in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.</td>
<td>2005 PROWAG R301.7.1</td>
<td>None</td>
<td>APF-U8</td>
<td>FAI 43</td>
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<tr>
<td>REQ 292</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Access Route</td>
<td>Supported Slope</td>
<td>Where the walkway of an alternate pedestrian access route is supported by a structure, it shall comply with R305.5.</td>
<td>2005 PROWAG R301.4.3</td>
<td>None</td>
<td>None</td>
<td>FAI 43</td>
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<td>REQ 293</td>
<td>Alternate Pedestrian Facilities</td>
<td>Protruding Objects</td>
<td>Protrusion Limits</td>
<td>Objects with leading edges more than 27 in. and not more than 80 in. above the finish surface or ground shall protrude 4 in. maximum horizontally into the alternate pedestrian circulation path.</td>
<td>2005 PROWAG R401.2</td>
<td>None</td>
<td>APF-U13</td>
<td>FAI 43</td>
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<tr>
<td>REQ 294</td>
<td>Alternate Pedestrian Facilities</td>
<td>Protruding Objects</td>
<td>Post-Mounted Objects</td>
<td>Objects mounted on free-standing posts or pylons, 27 in. minimum and 80 in. maximum above the finish surface or ground, shall overhang alternate pedestrian circulation paths 4 in. maximum beyond the post or pylon base measured 6 in. minimum above the finish surface or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 in., the lowest edge of such sign or obstruction shall be 27 in. maximum or 80 in. minimum above the finish surface.</td>
<td>2005 PROWAG R401.3</td>
<td>None</td>
<td>APF-U13</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 295</td>
<td>Alternate Pedestrian Facilities</td>
<td>Protruding Objects</td>
<td>Reduced Vertical Clearance</td>
<td>REQ 300 Guardrails or other barriers shall be provided where the vertical clearance is less than 80 in. high. The leading edge of such guardrail or barrier shall be located 27 in. maximum above the finish surface or ground.</td>
<td>2005 PROWAG R401.4</td>
<td>None</td>
<td>APF-U13</td>
<td>FAI 43</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
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<td>REQ 296</td>
<td>Alternate Pedestrian Facilities</td>
<td>Temporary Traffic Control Zone Devices</td>
<td>Safety</td>
<td>Short intermittent segments of temporary traffic barrier shall not be used because they nullify the containment and redirective capabilities of the temporary traffic barrier, increase the potential for serious injury both to vehicle occupants and pedestrians, and encourage the presence of blunt, leading ends. All upstream leading ends that are present shall be appropriately flared or protected with properly installed and maintained crashworthy cushions. Adjacent temporary traffic barrier segments shall be properly connected in order to provide the overall strength required for the temporary traffic barrier to perform properly.</td>
<td>2009 MUTCD 6D.01-22</td>
<td>APF-V3</td>
<td>FAI 43</td>
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<tr>
<td>REQ 297</td>
<td>Alternate Pedestrian Facilities</td>
<td>Temporary Traffic Control Zone Devices</td>
<td>Safety</td>
<td>Designs of various channelizing devices shall be as shown in Figure 6F–7. All channelizing devices shall be crashworthy.</td>
<td>2009 MUTCD 6F.63-01</td>
<td>APF-V4</td>
<td>FAI 43</td>
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<td>REQ 298</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Continuous Bottom Edge</td>
<td>A continuous bottom edge shall be provided 6 in. maximum above the ground or walkway surface.</td>
<td>2005 PROWAG R302.4.1</td>
<td>APF-V5</td>
<td>FAI 43</td>
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<td>REQ 299</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Cane Detectable</td>
<td>Devices used to channelize pedestrians shall be detectable to users of long canes and visible to persons having low vision.</td>
<td>2009 MUTCD 6F.63-04</td>
<td>APF-V5, through APF-V12</td>
<td>FAI 43</td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
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<td>REQ 300</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Top Rail Height</td>
<td>Devices shall provide a continuous surface or upper rail at 3.0 ft. minimum above the ground or walkway surface. Support members shall not protrude into the alternate circulation path.</td>
<td>2005 PROWAG R302.4.2</td>
<td></td>
<td>APF-V6</td>
<td>FAI 43</td>
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<td>REQ 301</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Top Surface Height</td>
<td>The top of the top surface shall be no lower than 32 inches above the ground.</td>
<td>2009 MUTCD 6F.63-05</td>
<td></td>
<td>APF-V6</td>
<td>FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 302</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Continuous</td>
<td>Pedestrian barricades and channelizing devices shall be continuous, stable, and non-flexible and shall consist of a wall, fence, or enclosures specified in section 6F-63 6F-68, and 6F-71 of the 2009 MUTCD (incorporated by reference; see R104.2.1, and the comments in the column to the left).</td>
<td>2005 PROWAG R302.4, 2011 PROWAG R205</td>
<td></td>
<td>APF-V7</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 303</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Text</td>
<td>The letters and numbers of the name and telephone number shall be non-retroreflective and not over 2 inches in height.</td>
<td>2009 MUTCD 6F.63-16</td>
<td></td>
<td>APF-V8</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 304</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Stripes</td>
<td>Stripes on barricade rails shall be alternating orange and white and the stripes shall be 6 inches wide.</td>
<td>2009 MUTCD 6F.68-03</td>
<td></td>
<td>APF-V9</td>
<td>FAI 43</td>
<td></td>
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<td>REQ #</td>
<td>FACILITY</td>
<td>ELEMENT</td>
<td>FEATURE</td>
<td>REQUIREMENT</td>
<td>COUNTY SOURCE</td>
<td>STATE SOURCE</td>
<td>FEDERAL SOURCE</td>
<td>MEASURING FORM FIELD</td>
<td>FOLLOW-UP / ACTION ITEM</td>
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<tr>
<td>REQ 305</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Retroreflectivity</td>
<td>Devices that are damaged or have lost a significant amount of their retroreflectivity and effectiveness shall be replaced.</td>
<td>2009 MUTCD 6F.63-18</td>
<td>None</td>
<td>APF-V10</td>
<td>FAI 43</td>
<td></td>
</tr>
<tr>
<td>REQ 306</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Retroreflectivity</td>
<td>Stripes on barricade rails shall be retroreflective.</td>
<td>2009 MUTCD 6F.68-03</td>
<td>None</td>
<td>APF-V10</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 307</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Stripes</td>
<td>Stripes on barricade rails shall be sloping downward at an angle of 45 degrees in the direction road users are to pass.</td>
<td>2009 MUTCD 6F.68-03</td>
<td>None</td>
<td>APF-V11</td>
<td>FAI 43</td>
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<tr>
<td>REQ 308</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Full Width Closures</td>
<td>Where pedestrians with visual disabilities normally use the closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.</td>
<td>2009 MUTCD 6D.02-03</td>
<td>None</td>
<td>APF-V12</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 309</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Retroreflectivity</td>
<td>The retroreflective material used on channelizing devices shall have a smooth, sealed outer surface that will display a similar color day or night.</td>
<td>2009 MUTCD 6F.63-14</td>
<td>None</td>
<td>None</td>
<td>FAI 43</td>
<td></td>
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<tr>
<td>REQ 310</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Barricade Dimensions</td>
<td>The minimum length for Type 1 and Type 2 Barricades shall be 24 inches, and the minimum length for Type 3 Barricades shall be 48 inches. Each barricade rail shall be 8 to 12 inches wide. Barricades used on freeways, expressways, and other high-speed roadways shall have a minimum</td>
<td>2009 MUTCD 6F.68-05</td>
<td>None</td>
<td>None</td>
<td>FAI 43</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix C: Technical Requirements Table

<table>
<thead>
<tr>
<th>REQ #</th>
<th>FACILITY</th>
<th>ELEMENT</th>
<th>FEATURE</th>
<th>REQUIREMENT</th>
<th>COUNTY SOURCE</th>
<th>STATE SOURCE</th>
<th>FEDERAL SOURCE</th>
<th>MEASURING FORM FIELD</th>
<th>FOLLOW-UP / ACTION ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQ 311</td>
<td>Alternate Pedestrian Facilities</td>
<td>Pedestrian Barricades and Channelizing Devices</td>
<td>Vertical Curbing</td>
<td>Normal vertical curbing shall not be used as a substitute for temporary traffic barriers when temporary traffic barriers are needed.</td>
<td>2009 MUTCD 6D.01-23</td>
<td>None</td>
<td>FAI 43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REQ 312</td>
<td>Alternate Pedestrian Facilities</td>
<td>Crosswalk Closures and Pedestrian Detours</td>
<td>Advance Notification</td>
<td>Advance notification of sidewalk closures shall be provided by the maintaining agency.</td>
<td>2009 MUTCD 6D.01-03</td>
<td>APF-W1</td>
<td>FAI 43, FAI 58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REQ 313</td>
<td>Alternate Pedestrian Facilities</td>
<td>Crosswalk Closures and Pedestrian Detours</td>
<td>Sidewalk Detours and Diversions</td>
<td>When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.</td>
<td>2009 MUTCD Figure 6H-28</td>
<td>APF-W2</td>
<td>FAI 43</td>
<td></td>
<td></td>
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<tr>
<td>REQ 314</td>
<td>Alternate Pedestrian Facilities</td>
<td>Crosswalk Closures and Pedestrian Detours</td>
<td>Crosswalk Closures and Pedestrian Detours</td>
<td>When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.</td>
<td>2009 MUTCD Figure 6H-29</td>
<td>APF-X1, APF-X2, APF-X3</td>
<td>FAI 43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D: CURB RAMPS
TABLE OF CONTENTS: APPENDIX D

WHY WERE CURB RAMPS EVALUATED? ................................................................. 1

HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT? ...................... 2

WHAT ARE THE TECHNICAL REQUIREMENTS FOR CURB RAMPS? .............. 3

A. Perpendicular Curb Ramps ........................................................................... 3
B. Parallel Curb Ramps ..................................................................................... 11
C. Combination Curb Ramps ............................................................................ 19
D. Blended Transitions, End of Sidewalk Transition Ramps, Medians, or Islands ..... 27
E. Common Curb Ramp Elements - Surfaces and Grade Breaks .................... 31
F. Common Curb Ramp Elements - Detectable Warning Surfaces .................. 40
G. Common Curb Ramp Elements - Gutter and Pedestrian Crossing Slopes ...... 52
H. Common Curb Ramp Elements - Clear Space and Alignment .................... 56
I. Miscellaneous Curb Ramp Requirements ..................................................... 59

HOW WAS THE CURB RAMP DATA COLLECTED? ....................................... 65

A. Data Collection Tools .................................................................................. 65
B. Data Collection Team ................................................................................. 66
C. Measurement Criteria ................................................................................. 66
D. Data Collection Process .............................................................................. 68
WHY WERE CURB RAMPS EVALUATED?

Properly designed curbs and gutters collect and channel water off roadways when it is raining, and separate pedestrians on sidewalks from cars and trucks in the roadway. However, for some people with disabilities, including many individuals who use wheelchairs, a curb is a barrier.

It is not enough to simply provide a curb ramp where a sidewalk intersects with a street; curb ramps must be designed to meet specific Americans with Disabilities Act (ADA) requirements to be accessible. Just as curb ramps remove barriers for individuals who use wheelchairs, they also create sloped surfaces that can be harder to walk up and down for some individuals who use crutches or canes. Curb ramps can also create information barriers for individuals with vision impairments who rely on the curb to identify the transition point between the sidewalk and the street (21).

Because there are so many competing interests in the proper design and construction of curb ramps it should be no surprise that there are at least 58 federal, state, and local ADA requirements that govern curb ramp construction in the public right-of-way.

Public Works is responsible for providing ADA compliant curb ramps in the public right-of-way along unincorporated county roads. Curb ramps were included in this self-evaluation to determine:

- How many ADA compliant curb ramps exist, and where they are located.
- How many curb ramps exist that do not meet the ADA requirements and where they are located.
- Where curb ramps are required and have yet to be constructed.
- What elements and features of curb ramps most often do not meet the requirements.
- What contributing factors and root causes have led to the construction of these curb ramps.

The analysis of the curb ramp self-evaluation resulted in:

- 10,718 total curb ramp locations
- 659 compliant curb ramps (6%)
- 7,909 curb ramps do not meet the requirements of the ADA (74%)
- 2,150 missing ramp locations (20%)

Curb ramp measurement data is available from Public Works upon request in both spreadsheet and Geographic Information System (GIS) formats.
HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** - Requirement identification number.
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP / ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

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1. **REQ 01**

2. Does Public Works have services, policies, and practices for pedestrian facilities in the public right-of-way that do not or may not meet the requirements of 28 CFR Title 28, 35.105(a)?

3. *(CFR Title 28, Vol. 1, Sect 35.105(a))*

4. **BARRIER(S):**

   [Barrier 01] Public Works has not conducted a needs assessment for pedestrian facilities in the public right-of-way.

5. **CONTRIBUTING FACTOR(S):** None

6. **ROOT CAUSE(S):** Lack of Awareness

7. **FOLLOW-UP/ACTION ITEM(S):**

WHAT ARE THE TECHNICAL REQUIREMENTS FOR CURB RAMPS?

A. PERPENDICULAR CURB RAMPS
Perpendicular curb ramps are oriented perpendicular to the curb line and the traveled way of the adjacent street. Perpendicular ramps have landings at the top of the ramp. There were 5,307 perpendicular curb ramps identified during the self-evaluation inventory making it the most common type found in the public right-of-way.

A flare is an element associated with perpendicular curb ramps that is not associated with other curb ramp types. When a pedestrian circulation path cuts across a perpendicular ramp, flares are needed to prevent people from accidently tripping over the abrupt change in elevation created by the ramp.

Figure 5 - Perpendicular curb ramp
REQ 63  Perpendicular ramp landing running slopes at intersections shall be 2 percent maximum. Landing running slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 5,307 perpendicular curb ramps in the inventory:

- 2,933 have landing cross slopes of \( \leq 2\%\)
- 547 have landing cross slopes between 2.1% to 2.4%
- 1,826 have landing cross slopes \( \geq 2.5\%\)

There are 20 perpendicular ramps at midblock locations that have running slopes that exceed 2%.

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-B1.1
REQ 64 Perpendicular ramp landing cross slopes at intersections shall be 2 percent maximum. Landing cross slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 5,307 perpendicular curb ramps in the inventory:

- 2,170 have landing cross slopes of \( \leq 2\% \)
- 432 have landing cross slopes between 2.1% to 2.4%
- 2,799 have landing cross slopes \( \geq 2.5\% \)

There are 29 perpendicular ramps at midblock locations that have cross slopes that exceed 2%.

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

There are no records to indicate which of these slopes were a result of an existing physical constraint that made full ADA compliance infeasible.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 28] Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-B1.2
REQ 65  A perpendicular ramp landing length of 4.0 feet minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

REQ 66  A perpendicular ramp landing width of 4.0 feet minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 5,307 perpendicular curb ramps in the inventory:
- 364 have no landing
- 74 have a landing length and/or width < 3 feet (DOJ 2010 Standards)
- 1,068 have a landing length and/or width >/=3 feet (DOJ 2010 Standards) to < 4 feet
- 3,801 have a landing length and width >/=4 feet (2005 PROWAG)

CONTRIBUTING FACTOR(S): Research indicates that even before the ADA was passed into law some Public Works engineers were under the assumption that if there were right-of-way constraints a landing could be omitted as long as the ramp flare slopes were kept below 8.3 percent (22). The current and longstanding legal standard for landing widths and lengths is the 2010 ADA Standards which requires a minimum of 3 feet for both dimensions.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):
[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-B1.3, CR-B1.4

Figure 8 - Measuring the landing width of a perpendicular curb ramp
REQ 67  The cross slope of perpendicular ramps at intersections shall be 2 percent maximum. The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.1.2)
(2012 EDDS - 4.05D, 5)

BARRIER(S): Of the 5,307 perpendicular curb ramps in the inventory:
- 2,142 have ramp cross slopes \(\leq 2\%\)
- 358 have ramp cross slopes between 2.1\% to \(\leq 2.4\)
- 2,807 have ramp cross slopes >2.4\%

There are 44 perpendicular curb ramps at mid-block crossings that have ramp cross slopes that exceed 2 percent.

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

There are no records to indicate which of these slopes were a result of an existing physical constraint that made full ADA compliance infeasible.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 28] Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-B2.1
REQ 68 The clear width of perpendicular curb ramps, excluding flares, shall be 4.0 feet minimum.
(2005 PROWAG R303.3.1)
(2012 EDDS - 4.05D, 6)

BARRIER(S): Of the 5,307 perpendicular curb ramps in the inventory:

- 335 have ramp widths <3 feet (DOJ 2010 Standard)
- 2,575 have ramp widths between 3 feet (DOJ 2010 Standard) and < 4 feet
- 2,397 have ramp widths >/=4 feet

CONTRIBUTING FACTOR(S): The current and longstanding legal standard for landing widths and lengths is the DOJ 2010 Standards which requires a minimum of 3 feet for both dimensions. The curb ramp inventory indicates that there are no ramps with a width between 3 and 4 feet with otherwise fully compliant elements meaning that all the ramps constructed to the longtime standard of 3 feet are non-complaint for other reasons.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-B2.2
REQ 69 The running slope for perpendicular ramps shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 feet
(2005 PROWAG R303.2.1.1)
(2012 EDDS 4-05D, 5)

BARRIER(S): Of the 5,307 perpendicular curb ramps in the inventory:

- 3,278 have running slopes \(\leq 8.3\%\)
- 295 have running slopes between 8.4\% to 8.7\%
- 1,734 have running slopes \(\geq 8.8\%\)

CONTRIBUTING FACTOR(S): If the slope of the roadway adjacent to the ramp is steep and the ramp running slope is kept at 8.3 percent maximum, the ramp may never catch back up with the elevation of the sidewalk until it reaches the top of the hill. The 2005 PROWAG allows an exception to the 8.3 maximum running slope requirement to avoid chasing the grade in not requiring the ramp length to exceed 15 feet. The exception to avoid chasing the grade was not well understood by engineers. In fact, ramps lengths were not even measured for the first part of the inventory process because this rule wasn’t understood. Therefore, it is hard to know how many ramps have slopes that exceed 8.3 percent but that were taken to 15 feet.

ROOT CAUSE(S): Lack of Clearly Defined Standards; No Follow-Up, Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-B2.3, CR-B2.4
REQ 70 Flared sides with a slope of 10 percent maximum, measured parallel to the curb line, shall be provided where a pedestrian circulation path crosses a perpendicular curb ramp. 
(2005 PROWAG R303.2.1.4) 
(2012 EDDS - 4.05D, 8)

BARRIER(S): Of the 5,307 perpendicular curb ramps identified during the inventory, 5,146 have flares while 161 have returned curbs.

Flares may be found on one or both sides of perpendicular ramps but only the worst-case flare slopes were measured for the inventory. The curb ramp inventory indicates that there are 3,174 curb ramps that have at least one flare that exceeds 10 percent.

The sides of ramps with returned curbs are to be protected from cross travel by landscaping, street furniture, poles, or equipment. No curb ramps have yet been inventoried where the ramp has returned curbs that are not protected.

CONTRIBUTING FACTOR(S): Public Works engineers have relied heavily on the standard plans for curb ramps that were developed by the Washington State Department of Transportation (WSDOT) and approved by the Federal Highway Administration (FHWA), but those standard plans did not always paint a clear picture of the expected requirements and were sometimes unintentionally misleading.

For example, the 2003 curb ramp standard plans from WSDOT showed a fixed perpendicular curb ramp flare width dimension of 5 feet and no flare slope maximums were shown even though the actual requirement for flare slopes is that they not exceed 10 percent as measured parallel to the back of the curb (14).
Unless the flow line slope of the adjacent curb and gutter is flat, the slope of a perpendicular curb ramp flare constructed with a 5-foot width will usually result in a flare slope that exceeds 10 percent. Because of this lack of clarity, it is possible that numerous curb ramps throughout the state, including in Snohomish County, were inadvertently built as shown on the WSDOT Standard Plans that did not otherwise meet the actual requirements of the ADA because engineers misunderstood the flare requirements and what the standard plans were attempting to illustrate.

**ROOT CAUSE(S):** Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

**MEASURING FORM FIELD(S):** CR-B3.1 through CR-B3.4

**B. PARALLEL CURB RAMPS**

There are 1,138 parallel curb ramps in unincorporated Snohomish County. Parallel ramps have one or two ramps that are oriented parallel to the curb line, parallel to the vehicular path of travel on the adjacent street, and parallel to the pedestrian path of travel on the sidewalk. Parallel ramps have a landing at the bottom of the ramps.

Parallel ramps are often constructed where there are right-of-way constraints that would make perpendicular ramps infeasible to construct.

![Figure 14 - Parallel curb ramp](image-url)
REQ 71   Parallel ramp landing running slopes at intersections shall be 2 percent maximum. Running slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.2.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 1,138 parallel curb ramps in the inventory

- 529 have landing running slopes \(\leq 2\%\)
- 141 have landing running slopes between 2.1% to 2.4%
- 468 have landing running slopes \(\geq 2.5\%\)

There are 12 parallel ramps at midblock locations have running slopes that exceed 2%.

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-C1.1

Figure 15 - Measuring the landing running slope of a parallel curb ramp
REQ 72     Parallel ramp landing cross slopes at intersections shall be 2 percent maximum. Cross slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.2.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 1,138 parallel curb ramps in the inventory:
- 593 have landing cross slopes ≤2%
- 96 have landing cross slopes between 2.1% to 2.4%
- 449 have landing cross slopes ≥2.5%

There are 9 parallel ramps at midblock locations have running slopes that exceed 2%.

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

There are no records to indicate which of these slopes were a result of an existing physical constraint that made full ADA compliance infeasible.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 28] Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-C1.2
REQ 73    A parallel ramp landing length of 4.0 feet minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space.
(2005 PROWAG R303.2.2.3)
(2012 EDDS - 4.05D, 7)

REQ 74    A parallel ramp landing width of 4.0 feet minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space.
(2005 PROWAG R303.2.2.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 1,138 parallel curb ramps in the inventory:

- 34 have a length and/or width <3 feet (DOJ 2010 Standards)
- 160 have a length and/or width >/= 3feet (DOJ 2010 Standards) to < 4 feet
- 944 have a length and width >/=4 feet

CONTRIBUTING FACTOR(S): The current and longstanding legal standard for landing widths and lengths is the DOJ 2010 Standards which requires a minimum of 3 feet for both dimensions.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-C1.3, CR-C1.4
REQ 75 Parallel ramp cross slopes shall be 2 percent maximum.
(2005 PROWAG R303.2.2.2)
(2012 EDDS - 4.05D, 5)

BARRIER(S): There are 1,138 parallel curb ramps in the inventory. Although almost all parallel ramps consist of a left and right ramp, only the worst-case ramp slope of either is reported below.

Parallel Ramp Cross Slopes:
- 665 are \textless;=2\%
- 112 are 2.1\% to \textless;=2.4
- 361 are >2.4\%

CONTRIBUTING FACTOR(S):
For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-C2.1
REQ 76 The clear width of parallel curb ramps shall be 4.0 feet minimum.
(2005 PROWAG R303.3.1)
(2012 EDDS - 4.05D, 6)

BARRIER(S): Of the 1,138 parallel curb ramps in the inventory:

- 21 have widths <3 feet (2004 ADAAG)
- 32 have widths >/=3 feet (2004 ADAAG) and < 4 feet
- 1,085 have widths >/=4 feet

CONTRIBUTING FACTOR(S): The current and longstanding legal standard for landing widths and lengths is the DOJ 2010 Standards which requires a minimum of 3 feet for both dimensions. The curb ramp inventory indicates that there are no ramps with a width between 3 and 4 feet with otherwise fully compliant elements meaning that all the ramps constructed to the longtime standard of 3 feet are non-complaint for other reasons.

The reason why an overwhelming majority of parallel curb ramps have compliant widths is that the ramps are in line with the sidewalk and the county’s sidewalk standard width is 5 feet minimum in residential zones and 7 feet minimum in commercial and industrial zones which means that most ramps exceed 4 feet in width.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-C2.2
REQ 77 Parallel curb ramp running slopes shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 feet (2005 PROWAG R303.2.2.1) (2012 EDDS 4-05D, 5)

BARRIER(S): Of the 1,138 parallel curb ramps in the inventory:
- 748 have running slopes $\leq 8.3\%$
- 31 have running slopes 8.4% to 8.7%
- 359 have running slopes $\geq 8.8\%$

CONTRIBUTING FACTOR(S): If the slope of the roadway adjacent to the ramp is steep and the ramp running slope is kept at 8.3 percent maximum the ramp may never catch back up with the elevation of the sidewalk until it reaches the top of the hill. The 2005 PROWAG allows an exception to the 8.3 maximum running slope requirement to avoid chasing the grade in not requiring the ramp length to exceed 15 feet. The exception to avoid chasing the grade was not well understood by engineers. In fact, ramps lengths were not even measured for the first part of the inventory process because this rule wasn’t understood. Therefore, it is hard to know how many ramps have slopes that exceed 8.3 percent but that were taken to 15 feet.

However, most of these slopes are most likely due to the fact that inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-C2.3, CR-C2.4
REQ 78  Parallel curb ramps shall have a running slope that is in line with the
direction of sidewalk travel.
(2005 PROWAG R303.2.2)

BARRIER(S): All of the county’s parallel ramps
have running slopes that are in line with the
direction of sidewalk travel.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): CR-A6

REQ 79  Where a parallel curb ramp does
not occupy the entire width of a sidewalk, drop-offs at diverging segments shall be
protected.
(2005 PROWAG R303.2.2.4)

BARRIER(S): The curb ramp inventory does not indicate that there are parallel curb ramps in
the county where the ramp does not occupy the entire width of the sidewalk such that diverging
segments are left unprotected except for the occasional case where the back of a pedestrian
curb is in line with the back of the sidewalk – usually due to right-of-way constraints.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): None
C. COMBINATION CURB RAMPS

A combination ramp is a combination of perpendicular and parallel ramps. Parallel ramps lower the elevation of the sidewalk to a level landing while a perpendicular ramp bridges the space between the landing and the street. Combination ramps fit when there are right-of-way limitations or steep grades and planter strips where the difference in elevation between the sidewalk and street cannot be made up with one ramp.

There are 41 ramps in the inventory listed as combination ramps although most of them are not true combination ramps in that the running slopes of the parallel and/or perpendicular ramps are not at least 5 percent. The ramps that were classified as combo ramps were classified as such because they look and function like a combo ramp even if they don’t fully meet the technical definition.
REQ 80  Combination curb ramp landing running slopes at intersections shall be 2 percent maximum. Running slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.1.3)  
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 41 combination curb ramps in the inventory:

- 35 have landing running slopes $\leq 2\%$
- 4 have landing running slopes between 2.1% to 2.4%
- 2 have landing running slopes $\geq 2.5\%$

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-D1.1
REQ 81   Combination curb ramp landing cross slopes at intersections shall be 2 percent maximum. Cross slopes at midblock crossings shall be permitted to be warped to meet street or highway grade.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 41 combination curb ramps in the inventory:

- 33 have landing cross slopes \(\leq 2\%\)
- 4 have landing cross slopes between 2.1% to 2.4%
- 4 have landing cross slopes \(\geq 2.5\%\)

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

There are no records to indicate which of these slopes were a result of an existing physical constraint that made full ADA compliance infeasible.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 28] Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-D1.2
REQ 82 A combination curb ramp landing length of 4.0 feet minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

REQ 83 A combination curb ramp landing width of 4.0 feet minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space.
(2005 PROWAG R303.2.1.3)
(2012 EDDS - 4.05D, 7)

BARRIER(S): Of the 41 combination curb ramps in the inventory:

- 0 have lengths and/or widths <3 feet (DOJ 2010 Standards)
- 2 have lengths and/or widths between >/=3 feet (DOJ 2010 Standards) and < 4 feet
- 39 have lengths and widths >/=4 feet

CONTRIBUTING FACTOR(S): The current and longstanding legal standard for landing widths and lengths is the Department of Justice (DOJ) 2010 Standards which requires a minimum of 3 feet for both dimensions.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S): [FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-D1.3, CR-D1.4
REQ 84 The cross slopes of the parallel portion of combination curb ramps shall be 2 percent maximum.
(2005 PROWAG R303.2.2.2)
(2012 EDDS - 4.05D, 5)

BARRIER(S): There are 41 combination curb ramps in the inventory. Although almost all combination curb ramps have two parallel ramps, only the worst-case ramp cross slope of either is reported, below.

Combination Curb Parallel Ramp Cross Slopes:

- 5 are $\leq$2%
- 0 are 2.1% to $\leq$2.4
- 36 are >2.4%

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-D2.1
REQ 85 The cross slope of the perpendicular portion of combination curb ramps at intersections shall be 2 percent maximum. The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade.

(2005 PROWAG R303.2.1.2)
(2012 EDDS - 4.05D, 5)

BARRIER(S): Of the 41 combination curb ramps in the inventory:

- 30 are \( \leq 2\% \)
- 2 are 2.1% to \( \leq 2.4 \% \)
- 9 are \( > 2.4\% \)

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

There are no records to indicate which of these slopes were a result of an existing physical constraint that made full ADA compliance infeasible.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 28] Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-D2.1
REQ 86  The clear width of combination curb ramps shall be 4.0 feet minimum.
(2005 PROWAG R303.3.1)
(2012 EDDS - 4.05D, 6)

BARRIER(S): Of the 41 combination curb ramps in the inventory:

- 0 have widths of <3 feet (DOJ 2010 Standards)
- 2 have widths between >/=3 feet (DOJ 2010 Standards) and < 4 feet
- 39 have widths >/=4 feet (2005 PROWAG)

CONTRIBUTING FACTOR(S): The current and longstanding legal standard for landing widths and lengths is the Department of Justice (DOJ) 2010 Standards which requires a minimum of 3 feet for both dimensions.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S): [FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-D2.2

Figure 26 – Measuring the ramp width of a combination ramp
REQ 87  The running slopes of combination curb ramps shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 feet (2005 PROWAG R303.2.1.1) (2012 EDDS 4-05D, 5)

BARRIER(S): Of the 41 combination curb ramps in the inventory:

- 31 have running slopes </=8.3%
- 1 has a running slope between 8.4% to 8.7%
- 9 have running slopes >/=8.8%

CONTRIBUTING FACTOR(S): Slopes that do not meet the requirements of the ADA are most likely due to the fact that for many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-D2.3, CR-D2.
D. BLENDED TRANSITIONS, END OF SIDEWALK TRANSITION RAMPS, MEDIANS, OR ISLANDS

There are 31 blended transitions that have been identified in the public right-of-way and 1,458 end of sidewalk transition ramps. Blended transitions occur when a sidewalk or walkway gradually lowers to meet the grade of the street in such a way that a person with vision impairments might not be able to detect the change thereby making it difficult to detect the boundary between the sidewalk and the street. Guide animals may not distinguish the boundary either.

The running slopes of the blended transitions do not exceed 5 percent and cross slopes are 2 percent or less. The detectable warning surfaces are placed at the back of the curb and the truncated domes are to be oriented perpendicular – often in a radial pattern – to the back of the curb.

Median or island curb ramps or cut-throughs are located where pedestrian crossings traverse medians or islands. There are 38 median or island ramps or cut-throughs in the inventory.
REQ 88  The clear width of blended transitions, medians, islands, and island cut-throughs shall be 4 feet minimum. Medians and pedestrian refuge islands in crosswalks shall include passing space 5 feet in width.
(2005 PROWAG R303.3.1)
(2005 PROWAG R305.4)
(2012 EDDS - 4.05D, 6)

BARRIER(S): The curb ramp inventory indicates there are 38 curb cuts or ramps related to medians or islands in unincorporated Snohomish County. 3 of those do not contain a pedestrian access route that is at least 5 feet in width.

Of the 1,458 transition ramps in unincorporated Snohomish County, there are approximately 257 with widths less than 4 feet

CONTRIBUTING FACTOR(S): Unknown.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-E1
REQ 89 Running slopes of blended transitions and island or median cut-throughs shall be 5 percent maximum. Ramp running slopes for medians and islands shall be 8.3 percent maximum.
(2005 PROWAG R303.2.3)
(2012 EDDS 4-05D, 5)

BARRIER(S): None of the blended transitions in the inventory have slopes that exceed 5 percent. Of the approximately 1,458 transition ramps, 695 have running slopes that exceed 8.3 percent.

CONTRIBUTING FACTOR(S): Sopes that do not meet the requirements of the ADA are most likely due to the fact that for many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking transition ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-E2
REQ 90  Cross slopes of blended transitions shall be 2 percent maximum. Cross slopes of medians, islands, or island cut-throughs at midblock locations shall be permitted to be warped to meet street or highway grade.

(2005 PROWAG R303.2.3)
(2005 PROWAG R305.2.2.3)

BARRIER(S): There are 906 blended transitions, transition ramps, or median or island cross slopes that exceed 2 percent.

CONTRIBUTING FACTOR(S): For many years construction workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-E3
REQ 91  Medians and pedestrian refuge islands shall be 6.0 feet minimum in length in the direction of pedestrian travel.  
(2005 PROWAG R305.4.1)

**BARRIER(S):** There is insufficient data in the inventory to evaluate refuge island lengths because it was not included on the measurement form for curb ramps.

**CONTRIBUTING FACTOR(S):** This requirement was overlooked during the initial inventory.

**ROOT CAUSE(S):** Expectations Are Not Clearly Set; Lack of Training

**FOLLOW-UP/ACTION ITEM(S):** [FAI 44] Median and pedestrian refuge islands and cut-throughs need to be evaluated to determine if they meet the requirements of the 2005 PROWAG R305.4.

**MEASURING FORM FIELD(S):** None

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**E. COMMON CURB RAMP ELEMENTS - SURFACES AND GRADE BREAKS**

Common curb ramp elements are elements that are common to every curb ramp regardless of type, configuration, location, or traffic control.
REQ 92 Surface slopes that meet at grade breaks shall be flush.  
(2005 PROWAG R303.3.4)

BARRIER(S): Grade breaks occur where two different slopes meet, such as the slope at the bottom of the ramp where it meets the gutter counter slope.

There was no form field on the initial curb ramp measurement form to track whether or not grade breaks were flush but of the 3,005 ramps that were measured after the form was updated approximately 22 ramps (0.73%) have at least one non-flush grade break. If that non-compliance rate were to hold true for all 8,568 existing curb ramps in the inventory, Public Works would expect to find approximately 63 curb ramps with grade brakes that are not flush.

CONTRIBUTING FACTOR(S): Care and attention is not taken when forming, pouring, and finishing the curb and gutter.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S): [FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F1.1

Figure 34 – Non-flush grade break at the bottom of a curb ramp
REQ 93  Ramps shall not be obstructed by hydrants, signposts, poles, pedestals, or other utilities, gratings, access covers, or any other obstruction.
(2005 PROWAG R303.3.3)
(2012 EDDS 4-05D, 12)

BARRIER(S):

- 138 ramps were obstructed by other obstructions (fence, mailbox, damaged panel, utility, etc.)

CONTRIBUTING FACTOR(S): Sometimes utilities cannot be relocated, and the curb ramp cannot be moved to a better location. Additionally, Public Works engineers lacked the training to look for utility conflicts and provided with guidance on how to avoid them.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S): [FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

MEASURING FORM FIELD(S): CR-F1.2

Figure 35 – Utility obstruction on a curb ramp
REQ 94   Avoid placing a drainage low point and a catch basin or inlet within a curb ramp or crosswalk.
(2012 EDDS 4-05D, 11)

BARRIER(S): No data was recorded of catch basins or inlets within, or at the base of, a curb ramp. Drainage low points were recorded in the comments section as an obstruction if there was standing water at the time the data collection occurred. Otherwise, data collectors probably wouldn’t have noticed a drainage low point.

CONTRIBUTING FACTOR(S): Engineers need to be trained to account for drainage low points and be provided with guidance on how to avoid them.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S): [FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

MEASURING FORM FIELD(S): CR-F1.2
REQ 95  Surface materials used for curb ramps shall be concrete or asphalt for stability and a relatively slip-resistant surface.
(2012 EDDS 4-05D, 14)

BARRIER(S): Surface material was not specifically measured and evaluated for curb ramps, sidewalk, or pedestrian crossings. However, historically, only concrete or asphalt has been allowed to be used and there is no record of other types of surface materials having been allowed. Any uneven surfaces would have been recorded as a discontinuity, non-planar surface, or gap.

CONTRIBUTING FACTOR(S): A research project sponsored by the U.S. Access Board conducted tests with persons with disabilities and concluded that a higher coefficient of friction was needed by such persons. A static coefficient of friction of 0.6 is recommended for steps, floors, and lift platforms, and 0.8 for ramps (23). These coefficient of friction values are not legal standards and are not even well known or well publicized recommendations. Even then, there is no practical way for Public Works to measure coefficients of friction for pedestrian facilities in the public right-of-way.

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): CR-F1.2

REQ 96  Protruding objects along or overhanging any portion of a pedestrian circulation path shall comply with R401 and shall not reduce the clear width required for pedestrian access routes.
(2005 PROWAG R209)

BARRIER(S): There were no specific protruding objects that were identified as encroaching on curb ramps during the inventory.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): CR-F1.2
REQ 97 Surface discontinuities shall not exceed 0.50 inches maximum. Vertical discontinuities between 0.25 inches and 0.5 inches maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change. (2005 PROWAG R301.5.2)

BARRIER(S): 1,686 vertical discontinuities were > 0.25 inches

CONTRIBUTING FACTOR(S): Vertical discontinuities appear when a concrete panel lifts up or sinks next to another panel – most often as a result of tree roots growing underneath or as a result of freeze/thaw damage.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; Maintenance is Needed

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F1.3
REQ 98    Openings shall not permit passage of a sphere more than 0.5 inches in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel. (2005 PROWAG R301.7.1)

BARRIER(S): 555 horizontal gaps were > 0.5 inches

CONTRIBUTING FACTOR(S): Almost all of the gaps that occur on curb ramps occur at the joints between adjacent concrete panels and occur when the joint filler material has eroded or been removed from the joints.

A few of the gaps occur when concrete panels become damaged and cracks are formed.

ROOT CAUSE(S): Maintenance is Needed

FOLLOW-UP/ACTION ITEM(S): [FAI 19]
Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

MEASURING FORM FIELD(S): CR-F1.4

Figure 37 – Horizontal gap between curb ramp and gutter
REQ 99  Grade breaks at the top and bottom of perpendicular curb ramps shall be perpendicular to the direction of ramp run.
(2005 PROWAG R303.3.4)
(2012 EDDS 4-05D,4)

BARRIER(S): There was no form field on the initial curb ramp measurement form to track whether or not grade breaks at the top and bottom of perpendicular curb ramps are perpendicular to direction of the ramp run. This was, however, added later in the inventory process.

There are 5,307 perpendicular curb ramps in unincorporated Snohomish County. Of the 962 perpendicular ramps that were evaluated for perpendicular grade breaks, 41 of them (4.26%) were found to not meet the requirement. If the rate held true for all 5,307 perpendicular curb ramps, Public Works would expect to see 226 perpendicular curb ramps that did not have perpendicular grade breaks.

CONTRIBUTING FACTOR(S): In recent years, design engineers were not aware of the requirement to keep grade breaks perpendicular. Therefore, they were designing ramps with non-perpendicular grade breaks at the gutter line in order to get ramps directly across from each other to line up.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F1.5
REQ 100 Perpendicular curb ramps shall have a running slope that cuts through or is built up to the curb at right angles or meets the gutter grade break at right angles.
(2005 PROWAG R303.2.1)
(2012 EDDS 4-05D, 4)

BARRIER(S): Refer to the response to REQ 99.
CONTRIBUTING FACTOR(S): Refer to the response to REQ 99.
ROOT CAUSE(S): Refer to the response to REQ 99.
FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 99.
MEASURING FORM FIELD(S): CR-F1.5

REQ 101 Vertical alignment shall be planar within curb ramp runs, blended transitions, landings, and gutter areas within the pedestrian access route.
(2005 PROWAG R301.5.1)

BARRIER(S): A practical way of describing a planar surface is to describe it as being flat. Surfaces should be flat and not have humps or bumps in them or be warped in any way which unevenness could create difficulties for individuals with mobility impairments or who have difficulty maintaining their balance.

There was no form field on the initial curb ramp inventory measurement form to track whether or not surfaces were planar. After the criteria were added to the measurement form that data collectors were using, an additional 2,103 ramps were measured. Of the 2,103 ramps 67 (3.18%) did not have planar surfaces. If that rate held true for all 8,568 curb ramps that were measured, Public Works could expect to find 272 curb ramps in the public right-of-way that do not meet this requirement.

CONTRIBUTING FACTOR(S): Poor construction or finishing work.
ROOT CAUSE(S): No Follow-Up; Lack of Accountability
FOLLOW-UP/ACTION ITEM(S): [FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.
[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F1.6
F. COMMON CURB RAMP ELEMENTS - DETECTABLE WARNING SURFACES

Curbs are edge cues for pedestrians with vision impairments but are barriers to people in wheelchairs. Curb ramps remove the barrier for wheelchairs but remove the edge cue for pedestrians with vision impairments.

Therefore, detectable warning surfaces are required on ramps, exclusive of flares, where curb ramps, blended transitions, or landings provide a flush pedestrian connection to the street as a replacement cue, to indicate to pedestrians with vision impairments the location of the street crossing.

Sidewalk crossings of driveways should not have detectable warning surfaces unless they are curb-returned or signalized. Care should be taken to avoid overuse of detectable warning surfaces to maintain message clarity.

Older standards required that the curb ramp have a detectable warning surface that extended the full width and depth of the ramp.

In 1994, a suspension was placed on the requirement to install detectable warning surfaces on curb ramps except at transit platforms because more research was needed to determine specific detectable warning surface specifications and requirements. The suspension was not lifted until July 2001, which means that for more than seven years - hundreds of ramps were constructed without detectable warning surfaces or with designs or patterns that are now not compliant (24).

With few exceptions, detectable warning surfaces installed on ramps since the year 2001 are manufactured products that comply with the federal requirements for dome spacing, dome base diameter and dome height, etc., so those detailed ADA requirements will not be discussed in this report.
REQ 102 Detectable warning surfaces shall be provided, where a curb ramp, landing, or blended transition connects to a street.
(2005 PROWAG R303.3.2)
(2012 EDDS 4-05D, 15)

BARRIER(S): The curb ramp inventory indicates there are 2,744 curb ramps that have detectable warning surfaces and 3,899 curb ramps that are required under current standards to have a detectable warning surface and the detectable warning surface is not present – at least not that meets the requirements of the 2005 PROWAG. Approximately 907 of the curb ramps without detectable warning surfaces were constructed prior to the passage of the Americans with Disabilities Act of 1990 and 1,164 of the curb ramps without detectable warning surfaces were constructed during the federal moratorium on the detectable warning surfaces requirements between the years 1994 and 2001.

CONTRIBUTING FACTOR(S): In 1994, a moratorium was placed on the requirement to install detectable warning surfaces on curb ramps except at transit platforms because more research was needed to determine specific detectable warning surface specifications and requirements. The suspension was not lifted until July 2001, which means that for more than seven years - hundreds of ramps were constructed without detectable warning surfaces or with designs or patterns that are now not compliant.

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S): [FAI 24] Develop and publish a transition plan to remove barriers to equal access to Public Works’ program for pedestrian facilities in the public right-of-way.

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F2.1
REQ 103 Detectable warning surfaces shall contrast visually with adjacent gutter, street or highway, or walkway surfaces, either light-on-dark or dark-on-light.

(2005 PROWAG R304.1.3)
(2012 EDDS 4-05D, 16)

**BARRIER(S):** This is a subjective requirement. How should one measure and evaluate contrast? County standards recommend federal yellow or safety yellow, which has been the default color used for detectable warning surfaces in the public right-of-way for many years because those are some of the colors most manufacturers provide.

Although the curb ramp inventory does not track detectable warning surfaces by type, most detectable warning surfaces installed in the field consist of a prefabricated federal yellow colored surface that is two feet in depth and that meets the requirements of the 2005 PROWAG as to dome diameter, size, configuration, spacing, etc. There are a handful of questionable installations where the truncated domes were stamped into the concrete and then painted yellow.

There are also several hundred curb ramps that were constructed either during the moratorium on detectable warning surfaces requirements between 1994 and 2001 or prior to the implementation of the ADA. These curb ramps have some sort of diamond or square grid pattern stamped on the surface. However, these were not counted as having detectable warning surfaces because they were not designed to a recognized standard and would be difficult for many pedestrians to even sense that the stamped pattern was present because the patterns are generally not raised.

**CONTRIBUTING FACTOR(S):** There is no clear specification on how to measure and evaluate visual contrast and so it is a largely subjective assessment. There are some lesser known recommendations for assessing contrast of step edges, lifts, and platforms in Appendix A of the 1997 Accessibility Guidelines for Transportation Vehicles that require the measurement of light reflective values. However, they are not legal standards and it would not be practical to implement light reflectivity measurements into an assessment of the county’s pushbuttons (23).

**ROOT CAUSE(S):** Lack of Clearly Defined Standards

**FOLLOW-UP/ACTION ITEM(S):** None

**MEASURING FORM FIELD(S):** CR-F2.2
REQ 104 Detectable warning surfaces shall extend the full width of the curb ramp (exclusive of flares), the landing, or the blended transition.
(2005 PROWAG R304.1.4)
(2012 EDDS 4-05D, 15)

BARRIER(S): There initial inventory of curb ramps did not include an evaluation of whether existing detectable warning surfaces extended the full width of curb ramps. After the criteria was added to data collector’s measurement forms, there were 3,218 ramps that were measured and 37 curb ramps (1.14%) were found that did not meet the requirement. If that rate held true for all 8,568 existing curb ramps, Public Works would expect to see approximately 98 curb ramps with detectable warning surfaces that do not meet this requirement.

The 2005 PROWAG requirements are somewhat incomplete in that a two-inch concrete border around the detectable warning surface is allowed if required by the manufacturer for proper installation.

CONTRIBUTING FACTOR(S): Design engineers, construction and maintenance workers, and inspectors were not aware of the requirement to extend the detectable warning surface the full width of the ramp or landing. Pre-formed and manufactured detectable warning surface panels – by far the most common type preferred by contractors and Road Maintenance – come in set lengths and widths. Each manufacturer’s products are different, and widths vary. Additionally, design engineers do not specify the manufacturer and product that maintenance workers must use. Construction and maintenance workers take a preformed detectable warning surface panel and press it into freshly poured concrete at the back of the curb when constructing a ramp or landing. If the ramp or landing was not designed or formed to exactly fit the preformed detectable warning surface panel that the contractor selected there will be a gap in coverage on the ramp.

Construction and maintenance workers do not want to have to cut up preformed detectable warning surface panels and fill in the gaps because the preformed panels are expensive, and it creates a lot of wasted panel pieces. Smaller pieces of preformed panels with gaps in between adjacent pieces are not likely to be as durable as wholly-integral panels pressed into the concrete because water is likely to get in and could freeze and damage the pieces.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards
FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F2.3
REQ 105 The detectable warning shall be located on the landing or blended transition at the back of the curb. At medians or islands, detectable warning surfaces shall be located at the curb line in-line with the face of the curb and shall be separated by 2.0 feet minimum in length of walkway without detectable warnings. Where the island has no curb, the detectable warning shall be located at the edge of the roadway.

(2005 PROWAG R304.2.2)
(2005 PROWAG R305.4.2)
(2012 EDDS 4-05D, 15)

BARRIER(S): The initial inventory of curb ramps did not include a requirement to check if the detectable warning surface was located at the back of the curb, only whether detectable warning surfaces were present or not. Of the 667 curb ramps that were evaluated against these criteria, approximately 180 curbs were measured (27%) where one or both ends are not located at the back of the curb. If that rate were to hold for all 8,568 curb ramps, Public Works would expect to find 2,312 curb ramps in the public right-of-way that do not meet this requirement.

The curb ramp inventory indicates there are approximately 38 curb cuts or ramps related to medians or islands in unincorporated Snohomish County. Approximately 35 of those curb cuts or ramps have detectable warning surfaces. Public Works did not start following the 2005 PROWAG until 2011, and so, detectable warning surfaces were placed at the back of curb not the face of curb or edge of the roadway.

CONTRIBUTING FACTOR(S): Construction and maintenance workers are likely to place the panels a few inches from the back of the curb to make it easier to press the panel into the concrete and to finish the concrete. The concern is that placing the panel at the back of the curb may cause a gap to form between the gutter and the detectable warning surface panel into which water can collect and freeze in the winter causing damage to the panel.

For many years, the county’s Engineering Design and Development Standards (EDDS) conflicted with the 2005 PROWAG and did not specify that the detectable warning surface be placed at the back of the curb but rather that it be placed near the bottom and set back 6 to 8 inches from the bottom (2003 EDDS).

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards
FOLLOW-UP/ACTION ITEM(S):

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F2.4
REQ 106 Where both ends of the bottom grade break are 5.0 feet or less from the back of curb, the detectable warning shall be located on the ramp surface at the bottom grade break. Where either end of the bottom grade break is more than 5.0 feet from the back of curb, the detectable warning shall be located on the lower landing. (2005 PROWAG R304.2.1)

BARRIER(S): Of the 180 curb ramps that don’t have both ends at the back of the curb, the offsets between the detectable warning surfaces and the back of the curbs range somewhere between 2 inches and 5 feet from the back of curb. There are approximately 15 curb ramps where the detectable warning surfaces are located further than 5 feet from the back of the curb.

CONTRIBUTING FACTOR(S): Design engineers, construction and maintenance workers, and inspectors are not aware of this requirement. It is a difficult concept to understand and it is hard to construct and implement in the field.

There are approximately 674 single direction ramps on public roads in unincorporated Snohomish County. Single direction ramps are the only ramps on the corner of an intersection and serve only one crossing. Single direction ramps are extremely challenging to construct to full compliance given that they are required to have a compliant landing at the top and the bottom of the ramp. It is extremely challenging to get a fully compliant landing at the bottom of the ramp with a fully compliant detectable warning surface installation due to all the minor details that have to be constructed. Single direction ramps are where it is most likely to find grade breaks at the bottom or ramps that are not at the back of the sidewalk and where this requirement comes into play.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.
[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

**MEASURING FORM FIELD(S): CR-F2.5**
REQ 107  Detectable warning surfaces shall extend 24 inches minimum in the direction of travel.
(2005 PROWAG R304.1.4)
(2012 EDDS 4-05D, 15)

BARRIER(S): All detectable warning surface installations in the public right-of-way that were installed prior to the year 1994 when the moratorium on the requirement to provide detectable warning surfaces went into effect and since the moratorium was lifted in 2001 comply with this requirement.

Now, most construction and maintenance workers use pre-formed detectable warning surface panels that are manufactured to a 24 inches minimum width in the direction of travel.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): CR-F2.6

Figure 45 – Detectable warning surface that extends 24 inches in the direction of travel
REQ 108 The rows of truncated domes in a detectable warning surface shall be aligned to be perpendicular or radial to the grade break between the ramp, landing, or blended transition and the street. (2005 PROWAG R304.2.3)

BARRIER(S): The initial inventory of curb ramps did not include a requirement to check if the rows of truncated domes in a detectable warning surface are aligned to be perpendicular or radial to grade breaks. The inventory of 776 curb ramps measured with this requirement indicates there are approximately 14 curb ramps (1.8%) that have truncated domes that are not aligned perpendicular or radial to the grade between the ramp, landing, or blended transition and the street. If that rate held true for all 8,568 existing curb ramps, Public Works would expect to find 154 curb ramps in the public right-of-way that does not meet this requirement.

CONTRIBUTING FACTOR(S): Prior to the year 2001 when the moratorium on detectable warning surface requirements were lifted there were no clearly defined standards for detectable warning surfaces. Therefore, most ramps constructed prior to 2001 don’t have detectable warning surface or truncated domes and will automatically be added to the transition plan for installation of compliant detectable warnings surfaces.

Since 2001, clearly defined standards have been developed for things such as dome alignment, size, spacing, etc. Since there are clearly defined standards now, there are manufacturers who create pre-formed detectable warning surface panels that can be inserted into freshly poured concrete, so it is extremely rare that the detectable warning surfaces are handcrafted into a curb ramp. Because of this, it makes it easier to comply with REQ 108 and other similar requirements for truncated domes. This can explain why there are so few curb ramps with detectable warning surfaces that have domes that don’t align. In all, a lack of training and inexact inspections led to the few ramps that were constructed with misaligned truncated domes.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 24] Develop and publish a transition plan to remove barriers to equal access to Public Works’ program for pedestrian facilities in the public right-of-way.
[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F2.7

REQ 109      Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inches minimum to 1.4 inches maximum, a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of 0.2 inches.
(2005 PROWAG R304.1.1)

BARRIER(S): Since the moratorium on the requirements for detectable warning surfaces were lifted in 2001 almost all detectable warning surfaces installed on curb ramps have been pre-formed panels supplied by manufacturers who mold the truncated domes to comply with this requirement.

There are approximately one dozen curb ramps with truncated domes that were handcrafted into the concrete when it was freshly poured. The truncated domes on these ramps have not been measured by hand since the ramps do not meet the requirements of the ADA for other reasons and will be added to the transition plan to be upgraded anyway. Currently all detectable warning surface installations are of the manufactured kind, which are fully compliant.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): None
REQ 110  Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches minimum and 2.4 inches maximum, and a base-to-base spacing of 0.65 inches minimum, measured between the most adjacent domes. (2005 PROWAG R304.1.2)

BARRIER(S): Refer to the response to REQ 109.
CONTRIBUTING FACTOR(S): Refer to the response to REQ 109.
ROOT CAUSE(S): Refer to the response to REQ 109.
FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 109.
MEASURING FORM FIELD(S): None

REQ 111  The detectable warning surface shall be located so that the edge nearest the rail crossing is 6 feet minimum and 15 feet maximum from the centerline of the nearest rail. The rows of truncated domes in a detectable warning surface shall be aligned to be parallel with the direction of wheelchair travel. (2005 PROWAG R304.2.3)

BARRIER(S): Public Works only has one pedestrian facility that crosses a railway in unincorporated Snohomish County, and that crossing is located on 240 Street SE, east of Woodinville-Snohomish Road. The facility does not have detectable warning surfaces that comply with this requirement, but a project is already planned to reconstruct the pedestrian facility in the near future, at which time Public Works will coordinate with the responsible railroad agency to seek compliance with this requirement.

CONTRIBUTING FACTOR(S): N/A
ROOT CAUSE(S): N/A
FOLLOW-UP/ACTION ITEM(S): [FAI 45] Coordinate compliance of the pedestrian crossing of the railroad on 240 Street SE with the railroad owner/operator.
MEASURING FORM FIELD(S): None

G. COMMON CURB RAMP ELEMENTS - GUTTER AND PEDESTRIAN CROSSING SLOPES
The gutter and pedestrian crossing slopes are elements that are located at the bottom of the ramp in the area where a pedestrian enters the roadway.
REQ 112  The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transition shall be 5 percent maximum.
(2005 PROWAG R303.3.5)
(2012 EDDS 4-05D, 6)

BARRIER(S): The gutter counter slope is the slope measured in the gutter and roadway perpendicular to the curb at the bottom of the ramp. The gutter counter slope is the cross slope of the gutter and roadway.

- Of the 7,638 curb ramps, landings, or blended transition in the inventory: 4,183 have counter slopes \( \leq 5\% \) (compliant)
- 3,455 have counter slopes > 5% (do not meet the requirements)

CONTRIBUTING FACTOR(S): Designers, construction and maintenance workers, and inspectors are unaware of this requirement. In addition, many ramps are constructed adjacent to existing roads where re-grading the roadway is not part of the scope of the ramp reconstruction project.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F3.1
REQ 113 The counter slope from the end of the ramp to the roadway should not exceed 5 percent, as a slope change of more than 13 percent can cause wheelchairs to pitch forward. (2012 EDDS 4.05D, 6)

BARRIER(S): The gutter counter slope is the slope measured in the gutter and roadway perpendicular to the curb at the bottom of the ramp. The gutter counter slope is the cross slope of the gutter and roadway.

Grade breaks at the top and bottom of perpendicular curb ramps are to be perpendicular to the direction of the ramp run to avoid creating a situation where one wheel of a wheelchair comes off the ground when crossing the grade break and presenting a tipping hazard.

A curb ramp with a maximum 5 percent gutter counter slope at the bottom of the ramp with a maximum 8.3 percent running slope would create an algebraic difference in grade breaks of 13.3 percent. As the algebraic difference in grade breaks increases, the risk increases that the foot rests or anti-tip wheels of some wheelchairs could catch in the gutter or at the bottom of the ramp and cause a person in a wheelchair to come to an abrupt stop and possibly tumble out of the wheelchair. Reverse grade breaks could cause wheelchairs to bottom out.

- 3,040 have a difference in algebraic grade break (counter to ramp slope) </=11%
- 1,395 have a difference in algebraic grade break (counter to ramp slope) 11%/=13.3%
- 3,203 have a difference in algebraic grade break (counter to ramp slope) >13.3%

CONTRIBUTING FACTOR(S): In addition to the fact that engineers, construction and maintenance workers, and inspectors are unaware of this requirement, there are some geometric obstacles that would be hard to overcome even if they were aware. This is a challenging obstacle to overcome because many times when a curb ramp is reconstructed the scope of the work does not include re-grading the roadway to improve the running slope of the crosswalk and/or flatten out the crown of the road to reduce the gutter counter slope. Sometimes, during an overlay some minimal adjustments can be made to the roadway slope by milling excess asphalt, so the gutter can be reconstructed and flattened out. Other times the only way that the algebraic difference in grade breaks could be lessened would be by lessening the running slope of the ramp which might cause compliance problems with other curb ramp or sidewalk elements whose slopes have to be increased to lessen the slope of the ramp.
ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F3.1
An area for clear space and alignment that is provided at the bottom of the curb ramp is designed to assist pedestrians that use mobility devices align themselves to cross the road.

**REQ 114** Beyond the curb face, a clear space of 4.0 feet minimum by 4.0 feet minimum shall be provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.

(2005 PROWAG R303.3.6)

**BARRIER(S):** At the bottom of curb ramps and beyond the curb face, a clear space of 4.0 feet minimum by 4.0 feet minimum is required within the width of the crosswalk and wholly outside the parallel vehicle travel lane.

The curb ramp inventory indicates there are approximately 170 curb ramps with clear space that do not meet the minimum 4.0 feet by 4.0 feet requirements and/or is not provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.

**CONTRIBUTING FACTOR(S):** Design engineers, construction and maintenance workers, and inspectors are unaware of this requirement.

**ROOT CAUSE(S):** Expectations Are Not Clearly Set; Lack of Training

**FOLLOW-UP/ACTION ITEM(S):** [FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

**MEASURING FORM FIELD(S):** CR-F4.1

Figure 50 – Clear space at the bottom of a ramp that is wholly outside vehicular travel lanes
REQ 115  Curb ramps shall be aligned to fall within the boundaries of crosswalks, marked or unmarked, so that pedestrians who have vision or mobility impairments are not directed outside the crosswalk or into a vehicle travel lane. (RCW 46.61.240) (2012 EDDS 4-05D, 4)

BARRIER(S): Curb ramps should be aligned to fall within the boundaries of crosswalks, marked or unmarked, so that pedestrians who have vision or mobility impairments are not directed outside the crosswalk or into a vehicle travel lane. Also, so that individuals who use mobility devices aren’t directed into conflict with vehicles on the road or that have stopped at the intersection.

The Revised Code of Washington (RCW) states that disabled persons may enter the roadway from the curb ramps and cross the roadway within or as closely as practicable to the crosswalk.

The curb ramp inventory indicates that there are approximately 20 curb ramps within the public right-of-way that do not connect the pedestrian access route to the pedestrian street crossing within the width of the crosswalk. Of those 20 curb ramps, 18 are at marked crosswalk locations.

CONTRIBUTING FACTOR(S): Design engineers, construction and maintenance workers, and inspectors are unaware of this requirement.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S): [FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F4.2
REQ 116  A curb ramp or blended transition, or a combination of curb ramps and blended transitions, shall connect the pedestrian access route to each pedestrian street crossing within the width of each crosswalk.
(2005 PROWAG R207), (RCW 35.68.075), (2012 EDDS 4-05D, 1)

BARRIER(S): Refer to the response to REQ 115.
CONTRIBUTING FACTOR(S): Refer to the response to REQ 115.
ROOT CAUSE(S): Refer to the response to REQ 115.
FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 115.
MEASURING FORM FIELD(S): CR-F4.2

REQ 117  Ramps shall not be located outside the curb radius because such placement makes pedestrians less visible to turning vehicles.
(2012 EDDS 4-05D, 4)

BARRIER(S): This is a requirement from the county’s Engineering Design and Development Standards (EDDS) and one that has only been around for a few years. It was not based on knowledgeable feedback from individuals with disabilities. Discussions were held with the Public Works ADA working group, the County Traffic Engineer, and the ADA Coordinator for Pedestrian Facilities in the Public Right-of-Way to determine if this requirement should be removed from EDDS and if it was needed. There may be an occasional case where it makes sense to place curb ramps outside the corner radius where the radius is much smaller, and visibility isn’t a concern. This is because by placing the ramp on the tangent section of the roadway approach to the intersection it is possible to get the ramp to line up perpendicular to the curb-line and ramp on the other side of the road and meet the requirement that grade breaks be perpendicular to the ramp run. The conclusion was made that this requirement is too broad and should be removed from future EDDS revisions.

CONTRIBUTING FACTOR(S): N/A
ROOT CAUSE(S): N/A
FOLLOW-UP/ACTION ITEM(S): [FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.
MEASURING FORM FIELD(S): CR-F4.3
I. MISCELLANEOUS CURB RAMP REQUIREMENTS

There are several elements for curb ramps that do not fall into a specific category. These miscellaneous requirements mainly pertain to the layout and position of curb ramps relative to the roadway and pedestrian crossings.

REQ 118 Curb ramp types are categorized by their design and position relative to the pedestrian facility and the roadway. Types and specifications are provided in WSDOT’s Standard Plans F-40 (series). Additional information and details may be found in “Sidewalk Details – A Guide for Washington Local Agencies, Tribes and Nations” (WSDOT) and the Pedestrian Facilities Guidebook (WSDOT, PSRC, CRAB, AWC). (2012 EDDS 4-05D, 2)

BARRIER(S): REQ 118 comes from the county’s Engineering Design and Development Standards (EDDS) and is more guidance than a requirement. Many of the documents are outdated or no longer in use. This requirement in EDDS should be revised or eliminated.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): [FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-A5, CR-A6
Diagonal curb ramps, located at the midpoint of curb radii, are not permitted in new construction sidewalks. They may be installed only when required for the modification of an existing sidewalk.

(2012 EDDS 4-05D, 3)

BARRIER(S): Diagonal curb ramps often serve more than one crossing and are oriented diagonal to the crossings they serve and oriented to the center of the intersection. Curb ramp users must turn when they enter the street at the bottom of the ramp to continue on their path of travel. The concern with diagonal ramps is that they may make the decision-making and orientation process harder for individuals who have vision impairments. Also, without adequate clear space at the bottom of the ramp it may place pedestrians in conflict with vehicular traffic traveling parallel to the crosswalk the pedestrian will use.

There are 3,255 diagonal curb ramps in the inventory. The federal and state ADA requirements do not prohibit diagonal curb ramps although general guidance discourages their use. This is a requirement in the county’s Engineering Design and Development Standards (EDDS). Almost all the diagonal curb ramps were constructed before the prohibition was added to EDDS but because it is not certain when each ramp was constructed it is hard to know how many have been constructed in violation of the EDDS requirement.

Extensive discussions among Public Works engineers at the Public Works ADA working group meetings, and with the County Traffic Engineer, the County ADA Coordinator for Pedestrian Facilities in the Public Right-of-Way, and amongst the ADA Public Right-of-Way Citizen Advisory Committee have led to the conclusion that this requirement in EDDS should be revised. The revision would state that diagonal curb ramps for new construction are only prohibited at signalized intersections and at intersections of one or more arterial roads. Additionally, it would include that properly constructed diagonal curb ramps at un-signalized intersections on non-arterial roads are acceptable and, in some instances, preferred over having to separate curb ramps for separate crossings on the same corner radius.

CONTRIBUTING FACTOR(S): Engineers, construction and maintenance workers, and inspectors did not know this was a requirement. The requirement has not always been included in the county’s EDDS

ROOT CAUSE(S): Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S): [FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

MEASURING FORM FIELD(S): CR-A5, CR-A6
REQ 120 If a new ramp is installed on one side of a road or intersection, then the responsible party shall install a corresponding ramp on the opposite side of the road or intersection, unless there is no curb or sidewalk on that side. In the event a pedestrian facility other than a sidewalk exists on the opposite side of the road or intersection, an ADA-compliant crosswalk connection shall be installed.

(RCW 35.68.075)
(2012 EDDS 4-05D, 13)

BARRIER(S): This is a state and county requirement. The ADA does not require that a curb ramp be installed – if one is missing – if so doing would be outside of the scope of work of a planned project. However, public agencies must identify where ramps are required and are lacking and draft a transition plan to remove the barrier created by not having the ramp.

Over 2,150 locations were identified during the curb ramp inventory where there is a legal crossing with curb, gutter, and sidewalk on one or both sides, but no curb ramp. Public Works’ interpretation of what constitutes a legal crossing has become more liberal over the years so many of the missing ramp locations are where there was no legal crossing identified in years past, or where there was an adjacent legal crossing readily available. The missing ramp locations will be added to the transition plan for barrier removal.

It would be extremely challenging and time-consuming to determine which curb ramps constructed since this requirement took effect at both the state and local levels were constructed without a ramp on the other side also being provided. For this reason, it is difficult to diagnose why there are locations where a ramp was required but was never constructed in order to identify contributing factors or root causes.

The best way to ensure that missing ramps locations are not created in the future is to implement a robust ADA compliance program to set expectations and provide training, clearly define standards, follow-up to ensure standards are being met, and foster accountability when standards are not, or cannot be met.

Missing curb ramp locations will be added to the transition plan for barrier removal.

CONTRIBUTING FACTOR(S): Unknown
ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S):

[FAI 24] Develop and publish a transition plan to remove barrier to equal access to Public Works’ program for pedestrian facilities in the public right-of-way.

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

REQ 121  Curb ramps are required to provide access between elevated pedestrian facilities and road surfaces. Ramps shall be installed at legal pedestrian crossings unless a crossing is prohibited and signed as a prohibited crossing. Note that RCW 47.04.010 defines “crosswalk” as the portion of the roadway between the intersection area and a prolongation or connection of the farthest sidewalk line or, in the event there are no sidewalks, then between the intersection area and a line 10 feet therefrom, except as modified by a marked crosswalk. This definition and the curb ramp requirement apply to all intersections (including 2-leg and “T” intersections).

(RCW 46.61.240)  
(RCW 47.04.010 (11), (12), (13))  
(2012 EDDS 4-05D, 1)  
(2012 EDDS Standard Plan 3-105)

BARRIER(S): Over 2,150 locations were identified during the curb ramp inventory where there is a legal crossing with curb, gutter, and sidewalk on one or both sides, but no curb ramp. There are 283 curb ramp locations at 90-degree elbow intersections (both existing and missing) in the inventory.

CONTRIBUTING FACTOR(S): Public Works’ interpretation of what constitutes a legal crossing has become more liberal over the years so many of the missing ramp locations are where there was no legal crossing identified in years past, or where there was an adjacent legal crossing readily available.

This requirement provides a broader and more liberal interpretation of where curb ramps are required than what most other public agencies require. For example, the requirement for curb ramps to be included at 2-leg intersections is new to the county’s Engineering Design and Development Standards (EDDS) and is not well understood or known by engineers, contactors, or developers even though 2-leg intersections are very popular in the development community.

Public Works interprets the Revised Code of Washington (RCW) definition of an intersection (25) to apply to 90 degree elbow intersections such that they contain two legal crossings and curb ramps are required on both sides of each crossing if there is curb, gutter, and sidewalk that would otherwise present a barrier.
At “T” intersections, curb ramps have been left off of one side of the road approach to the stem of the “T” because some design engineers, construction and maintenance workers, and inspectors have thought it redundant to have two crossings so close to each other.

**ROOT CAUSE(S):** Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

**MEASURING FORM FIELD(S):** CR-A10, CR-A1
HOW WAS THE CURB RAMP DATA COLLECTED?

Although the ADA requires public agencies to conduct an evaluation of curb ramps, there are few standards or guidelines to direct agencies how to conduct them.

Some public agencies collect data on a sample set of their curb ramps and then use the results from the sample set to estimate the compliance rate of the remaining ramps. Some agencies conduct a “window” survey where evaluators drive by ramps and mark down whether they think each ramp is compliant by the look of the ramp. Other agencies measure and collect information on a handful of the curb ramp requirements that are most likely to not meet the ADA.

Public Works decided to measure and map every curb ramp in enough detail to be able to prioritize and rank each ramp based on the severity of each deficiency identified.

Measuring and mapping all 10,718 curb ramp locations took approximately 136 working days and cost approximately $150,000, including labor, equipment, and data management and post-processing.

A. DATA COLLECTION TOOLS

Curb ramps were measured using a MD Building Products Smart Tool™ Digital Level (inclinometer) – commonly referred to as a Smart Level – and a tape measure. The Smart Levels were calibrated on a regular basis and any time that they were dropped, or the temperature changed more than 20 degrees from the previous calibration. A calibration log was kept for each Smart Level and a periodic true calibration test was conducted at a fixed location with known slopes to ensure that the tools were self-calibrating accurately.

The guaranteed accuracy of the MD Building Products Slope Walker Digital Inclinometer is +/- 0.35 percent between 0 and 90 degrees (26). The tape measure was scaled to feet and hundredths of a foot.

Curb ramp measurements and coordinate data were collected using handheld Trimble® GPS units running Trimble TerraSync™ software.

Trimble GPS Pathfinder® Office software was used to create the data dictionaries for the Trimble GPS units and to post-process the data and create data tables. The data dictionaries contained all of the input fields that are shown on the following Curb Ramp Measurement Form.
For post-processing purposes data tables were imported into Microsoft Access®, Microsoft Excel®, or ArcGIS® for quality control checks, mapping, and analysis.

B. DATA COLLECTION TEAM
Although there were many Public Works staff members that helped with the early planning and data collection efforts, the core data collection team consisted of an engineer to develop the evaluation criteria, data attribute table, and the database for storing, querying, analyzing, and reporting the collected data, and to evaluate the results; four engineering technicians who helped create the data dictionary and evaluation criteria, and who measured and mapped all of the curb ramps; and, a geographic information system (GIS) analyst who created the data dictionary for the handheld GPS units and post-processed the data to create the database tables for use in Microsoft Access and ArcGIS.

C. MEASUREMENT CRITERIA
Determining which standard to use to measure compliance was challenging because the standards have changed somewhat over time.

Instead of spending hundreds of hours trying to determine when each existing ramp was constructed and what standards applied at the time of construction Public Works decided to apply the requirements of the 2005 draft revisions to the Public Rights-of-Way Accessibility Guidelines (2005 PROWAG) because it was the Federal Highway Administration’s (FHWA) recommended best practice document for the compliant design and construction of pedestrian facilities at the time the inventory was initiated in the year 2010. The county also used the requirements of its Engineering Design and Development Standards (EDDS), and state law as found in the Revised Code of Washington (RCW).

A preliminary review of the curb ramp data collected early in the process revealed that this was a good choice. This is because most of the curb ramps that did not meet the ADA requirements were found to have multiple elements and the most common elements didn’t meet some of the most basic requirements that have been around since the first ADA standards were developed. In other words, the inventory revealed that most curb ramps were likely not fully compliant with the relevant standards at the time they were constructed.

There are at least 30 requirements for curb ramps in the 2005 PROWAG with some ramp types having more requirements. A Curb Ramp Measurement Form (Figure 55) was created to summarize all of the requirements on one page and to provide a place for measurements to be recorded for each ramp.

During the Public Works inventory, measurements were taken at over 10,700 curb ramps. To manage the incoming data, Public Works created a data dictionary on a handheld Trimble GPS unit with fields representing each of the fields in the Curb Ramp Measurement Form and collected the data electronically.
Illustrated ADA measuring guidelines were also developed to explain and illustrate how to measure curb ramps, and data collectors were provided classroom and field training on how to use the measurement forms and handheld GPS units. Data collectors were only asked to take accurate measurements and were not asked to make a determination of compliance or non-compliance for each ramp in the field. If the forms are properly used and data adequately collected there would have been enough information on each form for an ADA expert to determine compliance back in the office. This simplicity sped up the data collection efforts and data post-processing.

Figure 55 - Curb ramp measurement form used to collect curb ramp data
D. DATA COLLECTION PROCESS

Initially data collectors were furnished with 11x17 paper copies of each grid of the county’s Road Atlas and they canvassed each county road, grid by grid, and inventoried every curb ramp in the public right-of-way that they could identify at intersections, mid-block crossings, curb-returned driveways, and at the end of sidewalk segments. They also identified locations where they thought there should be a curb ramp, but one was missing.

When they identified a curb ramp location they hand-marked the location on their Road Atlas maps to track progress and collected and recorded coordinate and attribute information using the Smart Levels, measuring tapes, and handheld GPS units. At the end of each week they turned the handheld GPS units over to the GIS Analyst to post-process the data and update the data tables.

Eventually, all potential curb ramp locations were identified and mapped ahead of time in ArcGIS using aerial imagery and orthophotography complemented by Google Earth™ mapping service, Google Street View™ images, Microsoft Bing® maps, and GeoAutomation® digital imagery. From then on, data collectors used a laptop and traveled to each known curb ramp location to collect survey grade coordinate data and curb ramp attribute data.

After post-processing, data was reviewed for accuracy and questionable results were flagged. Over the course of the curb ramp data collection effort, approximately 2 percent of curb ramp locations were measured and evaluated a second time to check the quality of work and accuracy of the data. In almost every case the second measurement nearly matched the first measurement within the margin of error of the Smart Levels. Approximately four measurements were found to be the result of input or other human error.

If the ratio of ramps errors to double-checked curb ramps holds true across the entire inventory that would mean that approximately 2 percent of the data are, in part, erroneous due to human measurement or input error.
APPENDIX E: PEDESTRIAN CROSSINGS
TABLE OF CONTENTS: APPENDIX E

WHY WERE PEDESTRIAN CROSSINGS EVALUATED? ......................................................... 1
HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT? .............................. 2
WHAT ARE THE TECHNICAL REQUIREMENTS FOR PEDESTRIAN CROSSINGS? 3
A. Crosswalks .................................................................................................................... 3
B. Rail Crossings ................................................................................................................ 11
C. Roundabout Intersections .......................................................................................... 13
D. Pedestrian Overpasses and Underpasses .................................................................. 15

HOW WAS THE PEDESTRIAN CROSSING DATA COLLECTED? .......................... 17
A. Data Collection Tools ................................................................................................. 17
B. Data Collection Team ................................................................................................. 18
C. Measurement Criteria ................................................................................................. 18
D. Data Collection Process ............................................................................................. 20
WHY WERE PEDESTRIAN CROSSINGS EVALUATED?

Pedestrian crossings connect pedestrian facilities across streets at intersections or mid-block crossings. Sometimes pedestrian crossings are at grade and sometimes they are provided as grade separated overpasses or underpasses. Pedestrian crossings occur not only at roadways and intersections, but also over railroads.

According to Washington State law there is a legal pedestrian crossing – unless prohibited and signed as such – across each leg of every intersection whether marked or unmarked (RCW 47.04.010). Public Works is not in the business of prohibiting pedestrian crossings unless there are unusual conflicting traffic patterns, sight distance limitations, or other safety concerns.

Public Works interprets state law to include 90-degree elbow intersections – essentially a two-leg intersection – as having two legal pedestrian crossings. Legal crossings are also established at midblock locations when marked and signed as such.

It would be challenging to locate and count all the legal crossings in unincorporated Snohomish County but there must be tens of thousands. Because it would be impractical for Public Works to evaluate every single legal crossing for ADA compliance, staff evaluated those crossings where there was a curb ramp on at least one side of the crossing and so the inventory of pedestrian crossings was conducted in conjunction with the curb ramp inventory.

Figure 57 – Illustration of legal crossings at intersections (image borrowed from WSDOT Design Manual)
Although it isn’t a complete inventory it is a large enough sample set to get an idea of the magnitude of any potential problems. In all, more than 3,200 pedestrian crossings were evaluated with more than 12,900 measurements recorded.

HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** - Requirement identification number.
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP/ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

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1. **REQ 01**  
   Does Public Works have services, policies, and practices for pedestrian effects thereof that do not or may not comply?  
   **(CFR Title 28, Vol. 1, Sect 35.105(a))**

   **BARRIER(S):**
   [Barrier 01] Public Works has not constructed pedestrian facilities in the public right-of-way.

   **CONTRIBUTING FACTOR(S):** None

   **ROOT CAUSE(S):** Lack of Awareness

2. **FAI 01** Conduct an ADA self-evaluation of the public right-of-way.
WHAT ARE THE TECHNICAL REQUIREMENTS FOR PEDESTRIAN CROSSINGS?

A. CROSSWALKS
Most people think of crosswalks as being marked with big white stripes or other pavement markings, but the Revised Code of Washington (RCW) definition of “crosswalk” does not require that they be marked. Basically, there is a crosswalk anywhere a pedestrian is allowed to cross a street. For the most part, one of the only requirements that crosswalks be marked is where they are located outside of intersections. Sometimes the term pedestrian crossing is used interchangeably with the term crosswalk.
REQ 122  The running slope of crosswalks shall be 5 percent maximum, measured parallel to the direction of pedestrian travel in the crosswalk.
(2005 PROWAG R305.2.3)

BARRIER(S): The results indicate there are:

- 2,982 measurements of pedestrian crossing running slopes are <= 5%
- 337 measurements of pedestrian crossing running slope are > 5.0%, <= 5.4%
- 3,179 measurements of pedestrian crossing running slope are > 5.4%

CONTRIBUTING FACTOR(S): The pedestrian crossing running slope is the roadway cross slope or transverse slope, or the gutter counter slope. In the roadway, the pedestrian crossing running slope is governed by the crown of the road and it is important for proper drainage that the crown be sufficient to allow water to flow into the gutter.

For new construction it is more likely that the 5 percent pedestrian crossing running slope can be met because the roadway or intersection can be graded to comply. For existing roadways, the challenge is to determine if there are ways to reduce pedestrian crossing running slopes that don’t meet the requirements during pavement overlays where a portion of the existing roadway pavement can be milled and repaved to reduce the crowning of the roadway.

Rarely is re-grading the roadway part of the typical curb ramp reconstruction project. On occasion, during a pavement overlay the crown or cross slope of the roadway, and/or curb line can be adjusted slightly to improve the pedestrian crossing running slope. The county makes efforts to do so when the opportunity arises. Otherwise pedestrian crossings are only improved with major roadway reconstruction or widening projects.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

[FAI 46] Coordinate with the County Pavement Engineer to affect changes to crosswalks and paved shoulders used as walkways to bring them in line with ADA requirements as part of the county’s annual overlay program, where practical.

MEASURING FORM FIELD(S): CR-F3.1 and in the Geographic Information System (GIS) Attribute Table as XWalkRS
REQ 123 At crossings with stop control, the cross slope of the crosswalk shall be 2 percent maximum. (2005 PROWAG R305.2.2.1)

BARRIER(S): The results indicate there are:

- 2,467 measurements of pedestrian crossing cross slope are $\leq 2\%$
- 533 measurements of pedestrian crossing cross slope are $> 2\%, \leq 2.4\%$
- 2,440 measurements of pedestrian crossing cross slope are $> 2.4\%, \leq 5.0\%$
  (approximately 500 cross slope measurements are at traffic signals or uncontrolled intersections where the pedestrian crossing cross slope is allowed to exceed 2 percent but not 5 percent.
- 1,002 measurements of pedestrian crossing cross slope are $> 5.0\%$

Unfortunately, although the intersection control for the overall intersection was recorded during the data collection process, approach control for each intersection leg was not recorded. Therefore, it will be impossible to gauge exactly which pedestrian crossing cross slopes are allowed to exceed 2 percent but not 5 percent from the data that were collected.

CONTRIBUTING FACTOR(S): For existing roadways the pedestrian crossing cross slope does not generally exceed the longitudinal slope of the roadway. Short of major roadway and intersection re-grading in well-established areas – something that could cost billions of dollars to achieve at a systematic level – there is little that can be done to change the crosswalk cross slopes of pedestrian crossings on existing roadways.

Pedestrian crossing cross slopes are required to meet ADA requirements for new construction projects where the entire intersection is being graded. In years past, developers were not tabling intersections in developments with steep slopes and so the crosswalks were following the final grade of the road - which often exceeded 2 percent. The ADA makes it clear that grading to achieve compliance is expected for new construction and steep grades, alone, are not enough to excuse crosswalks that do not meet the requirements of the ADA.

Rarely is re-grading the roadway part of the typical curb ramp reconstruction project. On occasion, during a pavement overlay the slope of the roadway, and/or curb line can be adjusted slightly to improve the pedestrian crossing cross slope.
ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S): [FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-F3.2 and in the Geographic Information System (GIS) Attribute Table as XWalkXS

REQ 124 At crossings without stop control the cross slope of the crosswalk shall be 5 percent maximum.
(2005 PROWAG R305.2.2.2)

BARRIER(S): Refer to the response for REQ 123.

CONTRIBUTING FACTOR(S): Refer to the response for REQ 123.

ROOT CAUSE(S): Refer to the response for REQ 123.

FOLLOW-UP/ACTION ITEM(S): Refer to the response for REQ 123.

MEASURING FORM FIELD(S): CR-F3.2 and in the Geographic Information System (GIS) Attribute Table as XWalkXS
REQ 125  The cross slope of crosswalks at midblock crossings shall be permitted to be warped to meet street or highway grade.  
(2005 PROWAG R305.2.2.3)

BARRIER(S): None. All of the crosswalk cross slopes at midblock crossings meet the street or highway grade.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): N/A

MEASURING FORM FIELD(S): CR-F3.2 and in the Geographic Information System (GIS) Attribute Table as XWalkXS

REQ 126  Marked crosswalks shall be 6 feet wide minimum.  
(2005 PROWAG R305.2.1)

BARRIER(S): None. All marked crosswalk widths are compliant except for potentially the crosswalk width through islands or medians which measurements weren’t recorded due to an oversight.

CONTRIBUTING FACTOR(S): The County’s 2012 Engineering Design and Development Standards (EDDS) for marked crosswalks is 12 feet in width with the middle four feet clear of markings. There are approximately 374 marked crosswalks in unincorporated Snohomish County. Marked crosswalk widths were not measured because they are compliant by conforming to the county’s stricter width standard.

ROOT CAUSE(S): None

FOLLOW-UP/ACTION ITEM(S): [FAI 44] Median and pedestrian refuge islands and cut-throughs need to be evaluated to determine if they meet the requirements of the 2005 PROWAG R305.4

MEASURING FORM FIELD(S): None
REQ 127 The surface of the crosswalks shall be firm, stable, and slip resistant.  
(2005 PROWAG R301.5)  
(2012 EDDS 4-05D, 14)

BARRIER(S): All Snohomish County pedestrian facilities in the public right-of-way operated by Public Works are constructed with a concrete surface with a broom finish or are constructed out of asphalt. These materials are generally considered to be firm, stable, and slip resistant. Other materials are strictly prohibited by the county’s Engineering Design and Development Standards (EDDS).

It was assumed that all utility covers or lids for junction boxes, man-hole covers, water valves, etc. that may show up in the crosswalk in the roadway do not meet the ADA requirements simply because they do not have slip resistant surfaces. Most of these also have hand holes or access holes that have a diameter greater than 0.5 inches which means they don’t meet ADA on that front. Because utility covers and lids were captured during the county’s Mobile Mapping project, the data did not need to be collected by the ADA data collectors. Such lids will have to be addressed in the transition plan.

Uneven surfaces, vertical discontinuities, or horizontal gaps that may occur in the crosswalks were not recorded as part of the inventory. If uneven surfaces exist in the crosswalk in the roadway, they can be repaired by the Public Works Road Maintenance crews as they are discovered. Pavement conditions are routinely evaluated, and the county has a comprehensive program to preserve and repave roadways on a programmatic basis.

CONTRIBUTING FACTOR(S): Standards have changed over time and an understanding of how the standards are to be applied – especially to such details as utility lids and covers – has not always been consistent throughout the industry. A research project sponsored by the U.S. Access Board conducted tests with persons with disabilities and concluded that a higher coefficient of friction was needed by such persons. A static coefficient of friction of 0.6 is recommended for steps, floors, and lift platforms and 0.8 for ramps (23). These coefficient of friction values are not legal standards and are not even well known or well publicized recommendations. Even then, there is no practical way for Public Works to measure coefficients of friction for pedestrian facilities in the public right-of-way.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.
[FAI 46] Coordinate with the County Pavement Engineer to affect changes to crosswalks and paved shoulders used as walkways to bring them in line with ADA requirements as part of the county’s annual overlay program, where practical.

[FAI 47] Develop a plan to remove and replace or upgrade utility or junction box lids in pedestrian access routes that are not compliant with the ADA requirements for horizontal openings and slip-resistant surfaces.

MEASURING FORM FIELD(S): None

REQ 128 Surface discontinuities shall not exceed 0.50 in. maximum. Vertical discontinuities between 0.25 in. and 0.5 in. maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change. (2005 PROWAG R301.5.2)

BARRIER(S): Refer to the response to REQ 127.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 127.

ROOT CAUSE(S): Refer to the response to REQ 127.

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

[FAI 46] Coordinate with the County Pavement Engineer to affect changes to crosswalks and paved shoulders used as walkways to bring them in-line with ADA requirements as part of the county’s annual overlay program, where practical.

[FAI 47] Develop a plan to remove and replace or upgrade utility or junction box lids in pedestrian access routes that are not compliant with the ADA requirements for horizontal openings and slip-resistant surfaces.

MEASURING FORM FIELD(S): None
REQ 129 Openings shall not permit passage of a sphere more than 0.5 inches in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

(2005 PROWAG R301.7.1)

BARRIER(S): Refer to the response to REQ 127.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 127.

ROOT CAUSE(S): Refer to the response to REQ 127.

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

[FAI 46] Coordinate with the County Pavement Engineer to affect changes to crosswalks and paved shoulders used as walkways to bring them in-line with ADA requirements as part of the county’s annual overlay program, where practical.

[FAI 47] Develop a plan to remove and replace or upgrade utility or junction box lids in pedestrian access routes that are not compliant with the ADA requirements for horizontal openings and slip-resistant surfaces.

MEASURING FORM FIELD(S): None
B. RAIL CROSSINGS

The gaps between rail flanges and the crossing surface can present challenges to pedestrians that use mobility devices to travel in the public right-of-way because they present potential tripping hazards or uneven surfaces and gaps that could trap the feet of walkers or canes or the wheels on wheelchairs. Individuals with hearing or vision disabilities may also have difficulty determining where and when to cross rail tracks if they are inadequately designed.

To identify rail crossing locations Public Works staff used ESRI’s ArcGIS® to intersect a railroad feature line dataset with a county road feature line dataset to identify all rail crossings of unincorporated Snohomish County roads. 30 crossing locations were identified.

Google Earth™ mapping service and Google Street View™ images were used to determine if there were pedestrian facilities associated with the rail crossings. Twenty-nine road crossings of rails were identified in rural areas where there are no pedestrian facilities. The only pedestrian crossing of rail is located on 240 Street SE east of the signalized intersection with Woodinville-Snohomish Road. There is curb, gutter, and sidewalk on both sides of the rail crossing but the curb, gutter, and sidewalk does not extend across the rail crossing – instead pedestrians cross the rail on the rail bed or in the roadway.

Because the rail is not owned, operated, or maintained by Public Works, no measurements were taken of the rail crossing. Public Works will coordinate with the operator of the railway for future improvements projects to ensure ADA compliance where it is within Public Work’s authority to require compliance.

Figure 61 - Rail Crossing on 240 ST SE East of Woodinville-Snohomish Road (Image from Google Street View)
REQ 130  Openings for wheel flanges at pedestrian crossings of non-freight rail track shall be 2.5 inches maximum.  
(2005 PROWAG R301.7.3)

BARRIER(S): None – Public Works does not maintain pedestrian access routes across railways.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 45] Coordinate compliance of the pedestrian crossing of the railroad on 240 Street SE with the railroad owner/operator.

MEASURING FORM FIELD(S): None

REQ 131  Openings for wheel flanges at pedestrian crossings of freight rail track shall be 3 inches maximum.  
(2005 PROWAG R301.7.4)

BARRIER(S): None – Public Works does not maintain pedestrian access routes across railways.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 45] Coordinate compliance of the pedestrian crossing of the railroad on 240 Street SE with the railroad owner/operator.

MEASURING FORM FIELD(S): None
C. ROUNDABOUT INTERSECTIONS
Roundabouts are circular intersections that allow for a continuous flow of traffic. The roundabouts within the county are located at intersecting roads that have curb, gutter, and sidewalk attached to them.

REQ 132 Where pedestrian facilities are provided at roundabout intersections, they shall comply with R305.6 and shall contain a pedestrian access route complying with R301.
(2005 PROWAG R305.6)

BARRIER(S): There are two roundabouts in unincorporated Snohomish County, but the pedestrian access routes are not fully compliant given that the cross slopes are not compliant.

CONTRIBUTING FACTOR(S): For many years, construction and maintenance workers were using bubble levels to measure slopes. However, these bubble levels do not provide the level of precision needed determine if ADA slope requirements are met. Additionally, inspectors were not checking slopes to determine if they had been constructed to compliance.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): CR-A11, and all other CR fields compatible with the particular ramp type
REQ 133 If walkways are curb-attached, there shall be a continuous and detectable edge treatment along the street side of the walkway wherever pedestrian crossing is not intended. Where chains, fencing, or railings are used, they shall have a bottom element 15 inches maximum above the pedestrian access route.
(2005 PROWAG R305.6.1)

BARRIER(S): There are two roundabouts in unincorporated Snohomish County and at both roundabouts’ planter strips separate the sidewalk from the curb and gutter on most approaches. At both roundabouts, however, there is a portion of sidewalk that is curb-attached. Those segments of sidewalk do not have continuous and detectable edge treatment along the street side of the walkway.

In addition, one of the roundabouts has ramps specifically for bikes that allow bicyclists to access the sidewalk from the shoulder of each approach. The challenge for citizens with disabilities in navigating the roundabout with bike ramps is distinguishing the bike ramps that lead into the shoulder/roadway and the curb ramps serving the pedestrian access route and pedestrian crossings.

CONTRIBUTING FACTOR(S): This requirement is not well known by engineers or well understood.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

FOLLOW-UP/ACTION ITEM(S): [FAI 48] Continuous and detectable edge treatments for roundabouts with curb-attached sidewalk need to be included in the transition plan.

MEASURING FORM FIELD(S): None
D. PEDESTRIAN OVERPASSES AND UNDERPASSES

Pedestrian overpasses and underpasses allow for separation between pedestrian and vehicular traffic. The county does not maintain or have any of these types of facilities within the public right-of-way.

REQ 134 Pedestrian overpasses and underpasses shall contain a pedestrian access route complying with R301.
(2005 PROWAG R305.5.1)

BARRIER(S): Measurements of pedestrian overpasses and underpasses were not included in the initial inventory and will need to be evaluated in the field or using precision aerial imagery.

CONTRIBUTING FACTOR(S): The requirement was overlooked early in the measurement and evaluation process.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S): [FAI 49] Pedestrian overpasses and underpasses need to be evaluated according to 2005 PROWAG R305.5.

MEASURING FORM FIELD(S): None

Figure 65 – Pedestrian overpass over Interstate 5
REQ 135 Where the approach slope exceeds 5 percent, the approach shall be a ramp 1.2 meters (4.0 feet) minimum in width complying with R406 or an elevator, a limited use/limited application elevator, or platform lift complying with the applicable requirements in section 407, 408, and 410 of Appendix D to 36 CFR part 1191 (the ADA and ABA Accessibility Guidelines) and providing for independent operation. (2005 PROWAG R305.5.2)

BARRIER(S): Measurements of pedestrian overpasses and underpasses were not included in the initial inventory and will need to be evaluated in the field or using precision aerial imagery.

CONTRIBUTING FACTOR(S): The requirement was overlooked early in the measurement and evaluation process.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S): [FAI 49] Pedestrian overpasses and underpasses need to be evaluated according to 2005 PROWAG R305.5.

MEASURING FORM FIELD(S): None
HOW WAS THE PEDESTRIAN CROSSING DATA COLLECTED?

Although the ADA requires public agencies to conduct an evaluation of pedestrian crossings, there are few standards or guidelines to direct agencies how to conduct them.

Public Works was not able to find an example of another public agency that had extensively measured and evaluated its pedestrian crossings at a systemic level. Therefore, Public Works developed its own measurement and evaluation process.

A. DATA COLLECTION TOOLS

Pedestrian crossing measurements were collected using MD Building Products Smart Tool™ Digital Levels (inclinometers) – commonly referred to as Smart Levels. The Smart Levels were calibrated on a regular basis and any time they were dropped, or the temperature changed more than 20 degrees from the previous calibration.

A calibration log was kept for each Smart Level and a periodic true calibration test was conducted at a fixed location with known slopes to ensure that the tools were self-calibrating accurately.

The guaranteed accuracy of the MD Building Products Slope Walker Digital Inclinometer is +/- 0.35 percent between 0 and 90 degrees (26). The tape measure was scaled to feet and hundredths of a foot.

Crossing measurements were recorded using a mapping grade handheld Trimble® GPS unit running Trimble TerraSync™ software. Trimble GPS Pathfinder® Office software was used to create the data dictionaries for the Trimble GPS units and to post-process the data and create data tables.

Because the pedestrian crossing data was collected at the same time as the curb ramp data the pedestrian crossing measurements were included in the curb ramp measurement form (Figure 67) as part of the curb ramp data dictionary programmed into the handheld GPS units.

Data tables were imported into Microsoft Access®, Microsoft Excel®, or ArcGIS® for quality control checks, mapping, and analysis.

Figure 66 – Pedestrian crossing data collection equipment
B. DATA COLLECTION TEAM
The data collection team consisted of an engineer to develop the evaluation criteria, data attribute table, and the database for storing, querying, analyzing, and reporting the collected data, and to evaluate the results; four engineering technicians who helped create the data dictionary and evaluation criteria, and who measured and mapped all of the curb ramps; and, a geographic information system (GIS) analyst who created the data dictionary for the handheld GPS units and post-processed the data to create the database tables for use in Microsoft Access and ArcGIS.

C. MEASUREMENT CRITERIA
Determining which standard to use to measure compliance was challenging because the standards have changed somewhat over time.

Instead of spending hundreds of hours trying to determine when each existing pedestrian crossing was constructed and what standards applied at the time of construction Public Works decided to apply the requirements of the 2005 draft revisions to the Public Rights-of-Way Accessibility Guidelines (2005 PROWAG) because it was the Federal Highway Administration’s (FHWA) recommended best practice document for the compliant design and construction of pedestrian facilities at the time the inventory was initiated in 2010. The county also used the requirements of its Engineering Design and Development Standards (EDDS), and state law as found in the Revised Code of Washington (RCW).
Figure 67 - Form fields on the curb ramp measurement form that were used to collect pedestrian crossing measurements
D. DATA COLLECTION PROCESS

To avoid having to send data collectors into the roadway to dodge traffic to collect pedestrian crossing running slope measurements the running slopes were measured at the base of curb ramps as the gutter counter slope measurement. It is assumed that for most roads the steepest slopes will be closer to the curb and gutter anyway because roadways tend to flatten out near the crown at the centerline of the road.

The cross slopes were measured in the flow line of the gutter at the base of the curb ramps.

Figure 68 – Gutter flow line slope
APPENDIX F: PEDESTRIAN SIGNALS AND BEACONS
TABLE OF CONTENTS: APPENDIX F

WHY WERE PEDESTRIAN SIGNALS AND BEACONS EVALUATED? ......................... 1

HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT? ......................... 2

WHAT ARE THE TECHNICAL REQUIREMENTS FOR PEDESTRIAN SIGNALS AND
BEACONS? ..................................................................................................................... 3

A. Pedestrian Signal Timing .................................................................................. 3
B. Pushbuttons - Contrast and Diameter ................................................................. 5
C. Pushbuttons - Information Signs ....................................................................... 7
D. Pushbuttons – Tactile Arrows .......................................................................... 14
E. Pushbuttons - Actuation Confirmation ............................................................... 18
F. Pushbuttons - Locator Tone ............................................................................... 20
G. Pushbuttons - Walk Indication ......................................................................... 23
H. Pushbuttons - Volumes ..................................................................................... 28
I. Pushbuttons - Walk Indication Duration ........................................................... 32
J. Pushbutton Reach Requirements ....................................................................... 33
K. Pushbutton Clear Space .................................................................................... 39
L. Pushbutton Placement ....................................................................................... 46
M. Pedestrian Crossing Time ................................................................................ 52
N. Roundabout Intersections ................................................................................ 54
O. Additional Features .......................................................................................... 54
P. Channelized Turn Lanes ................................................................................... 57

HOW WAS THE PEDESTRIAN SIGNAL and BEACON DATA COLLECTED? ....... 58

A. Data Collection Tools ...................................................................................... 58
B. Data Collection Team ...................................................................................... 59
C. Measurement criteria ....................................................................................... 59
D. Data Collection Process ................................................................................... 61
WHY WERE PEDESTRIAN SIGNALS AND BEACONS EVALUATED?

Many pedestrian crossings are supplemented with pedestrian signals. These signals communicate to pedestrians when the right-of-way has been granted to them. Additionally, pedestrian actuated beacons or hybrid beacons at mid-block crossings or on uncontrolled intersection approaches increase driver awareness of potential pedestrian conflicts.

Most county traffic signals are equipped with pedestrian signal displays that provide lighted symbols that are universally understood to indicate when right-of-way has been granted to pedestrians. The WALKING PERSON symbol indicates when right-of-way has been granted and pedestrians are permitted to leave the curb or shoulder; a flashing UPRAISED HAND symbol lets pedestrians know the pedestrian phase is about to end, pedestrians in the crosswalk should clear the crosswalk as quickly as possible, and no more pedestrians should enter the crosswalk from the curb or the shoulder; and, a steady UPRAISED HAND symbol warns pedestrians that they do not have the right-of-way to be in the crosswalk.

Some pedestrian signals and hybrid beacons also supplement the pedestrian indications with countdown timers. This alerts pedestrians to the length of the time that is available for pedestrians to enter the crosswalk and to the amount of time remaining that a pedestrian has to clear the intersection before the right-of-way is assigned to conflicting vehicle movements.

All components of a pedestrian signal system or pedestrian beacon and all information communicated to pedestrians must be readily accessible and effectively communicated to people with disabilities. Although the ADA requires that pedestrian signal systems and beacons provide effective communication to people with disabilities there are no clear standards as to how this is to be done.

The most comprehensive and well researched set of specifications for accessible pedestrian signals and beacons can be found in the 2005 PROWAG and in the 2009 edition of the Manual.
on Uniform Traffic Control Devices (2009 MUTCD). Public Works designs and constructs all new or reconstructed intersections to meet the requirements of the 2005 PROWAG and 2009 MUTCD.

The county currently has three types of pedestrian signals: signalized intersections with pedestrian activated phases, pedestrian activated Rectangular Rapid Flashing Beacons (RRFBs), and a pedestrian activated High-Intensity Activated Crosswalk (HAWK) signal.

- 72 signalized intersections with pedestrian activated phases – all 72 have pedestrian signals
- 1 pedestrian activated beacon crossing
- 1 pedestrian activated signal/hybrid crossings

**HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?**

1. **REQ ##** - Requirement identification number.
2. **Bold text next to REQ number** - The Code of Federal Regulation (CFR) requirement
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP/ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.
WHAT ARE THE TECHNICAL REQUIREMENTS FOR PEDESTRIAN SIGNALS AND BEACONS?

A. PEDESTRIAN SIGNAL TIMING

A pedestrian signal system lets pedestrians know when they have been granted the right-of-way to cross a street at a signalized intersection or mid-block crossing. The ADA requires that pedestrian signal information be communicated effectively to all, including individuals with vision, hearing, or other sensory impairments. Pedestrian signal systems must also be accessible to individuals with mobility impairments, or cognitive disabilities. An accessible pedestrian signal (APS) system meets the requirements of the ADA as contained in the Public Rights-of-Way Accessibility Guidelines (2005 PROWAG) and the 2009 Edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD).

REQ 136  If a leading pedestrian interval is used, the use of accessible pedestrian signals should be considered.
(2009 MUTCD 4E.06 – 20)
(2009 MUTCD 4E.06 - 21)

Barrier(s): A leading pedestrian interval gives a head start to pedestrians entering an intersection before a corresponding green signal is displayed to motorists traveling in the same direction. Leading intervals enhance the visibility of pedestrians and reinforce their right-of-way over turning vehicles. Snohomish County Traffic Operations engineers identified 16 signalized intersections owned, operated, and maintained by Snohomish County that have leading pedestrian intervals but that do not comply with the requirements for accessible pedestrian signal (APS) systems.

Contributing Factor(s): This is a recent recommendation and is not a legal standard. However, if the point of the ADA is to ensure effective communication with individuals with communication disabilities it makes sense to strongly consider their use as part of the self-evaluation and transition planning process.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

Follow-up/Action Item(s): [FAI 50] Develop a policy or guidance to determine when to use accessible pedestrian signals (APS) where leading pedestrian intervals are used.

Measuring Form Field(s): None
REQ 137  Under stop-and-go operation, the accessible pedestrian signal (APS) shall not be limited in operation by the time of day or day of the week.
(2009 MUTCD 4E.09 - 07)

Barrier(s): This requirement was overlooked during the initial measurement and evaluation of pedestrian signals and although it is highly unlikely that Public Works limits accessible pedestrian signals operation by time of day or day of the week, verification of the assumption still needs to be made.

Contributing Factor(s): A thorough review of all 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) requirements for APSs was not undertaken before the measurement and evaluation process began.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training

Follow-up/Action Item(s): [FAI 51] Verify that the county’s traffic signal operations are compliant with the requirements of the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) and the ADA and provide effective communication to individuals with communications disabilities.

Measuring Form Field(s): None

REQ 138  At accessible pedestrian signal (APS) locations where pedestrian pushbuttons are used, each pushbutton shall activate both the WALK interval and the APS.
(2009 MUTCD 4E.09 - 13)

Barrier(s): This requirement is met for all county signals.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None

Figure 71 – WALK indication of the pedestrian phase
B. PUSHBUTTONS - CONTRAST AND DIAMETER

There are several ADA requirements for the design and operation of pedestrian pushbuttons that are designed to make the pushbuttons more accessible.

During the initial pushbutton inventory, the only pushbutton requirement that was evaluated was the pushbutton diameter. Section A of the 2005 PROWAG Advisory Committee Report (X02.5 Pedestrian Street Crossings) states that pushbuttons shall have a 2-inch diameter. Within the discussion section it further states that Access Board design guidelines say, “Devices that can be operated by a closed fist acting on any point on the surface will be most usable by pedestrians who have mobility impairments.” From this information we conclude that a 2-inch minimum diameter allows for the pushbutton to be actuated using a closed fist and that a pushbutton diameter of less than two inches could be difficult to actuate with a closed fist.

The other requirements were not initially evaluated because it was determined that if a pushbutton was not already APS it was not compliant and would need to be replaced anyway. In addition, many requirements in this section can be met by buying an APS pushbutton that is manufactured in compliance with the accessible pedestrian signal standards listed in the 2005 PROWAG and the 2009 MUTCD. In other words, by default, if a pushbutton is a standard item from a known manufacturer the requirements are all met and there is no need to check them all individually.
REQ 139  Pedestrian pushbuttons shall contrast visually with their housing or mounting.
(2005 PROWAG R306.3.3)

**Barrier(s):** None. The pushbuttons that Public Works uses at all signals owned, operated, and maintained by Snohomish County are of a different color than the pole upon which they are mounted. Visual contrast is a subjective measure and opinions can vary on what it means. In practice, Snohomish County has never received a complaint that its pushbuttons do not contrast with their background. Therefore, there is no reason to believe that the pushbuttons that Public Works uses don’t meet this requirement.

APS pushbuttons tend to be manufactured with bright yellow housings. Public Works is installing only APS pushbuttons moving forward.

**Contributing Factor(s):** N/A
**Root Cause(s):** N/A
**Follow-up/Action Item(s):** None
**Measuring Form Field(s):** PSB-G6

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REQ 140  Pedestrian pushbuttons shall be a minimum of 2 inches across in one dimension.
(2005 PROWAG R306.3.3)

**Barrier(s):** None. All 484 of the county’s APS pushbuttons were found to have a diameter of at least two inches.

**Contributing Factor(s):** N/A
**Root Cause(s):** N/A
**Follow-up/Action Item(s):** None
**Measuring Form Field(s):** PSB-H1

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Figure 72 – APS pushbutton with yellow housing

Figure 73 – Measuring an APS pushbutton diameter
C. PUSHBUTTONS - INFORMATION SIGNS

Information signs are required in order to provide information on pushbutton use, indication of crosswalk direction, and the name of the street being crossed. The 2005 PROWAG provides additional requirements for specific elements of the sign, such as the size and location of the braille – if present.

During the inventory the only requirements that were evaluated were if the sign was present and if the street name was embossed on the signs in braille.

The requirements that were not evaluated were the ones that were dependent on how the information sign was manufactured including the characteristics of the braille such as dot spacing and size. Purchasing a compliant pushbutton unit from a manufacturer with clearly defined specifications would ensure that the additional 2005 PROWAG requirements were met.

REQ 141 Pedestrian signal devices shall provide tactile and visual signs on the face of the device or its housing or mounting to indicate the crosswalk direction.
(2005 PROWAG R306.4)
(2005 PROWAG R210.1)

Barrier(s): All 484 pushbuttons have a visual sign that indicates the crosswalk direction. Only the APS pushbuttons, however, have a tactile arrow that indicates the crosswalk direction on the face of the device or on its housing or mounting.

Contributing Factor(s): Prior to the requirement of APS units being installed, all pushbutton installations included an information sign on the pushbutton housing that provided information on the pushbutton use and indication of the crosswalk direction. This information was printed on the side of the pushbutton housing in a non-tactile format. The APS pushbutton units have a sign on the front of the unit that provides a visual indication for the crosswalk direction, however it is not tactile. The tactile indication for the crosswalk direction is provided on the button itself, rather than the sign on the front of the unit.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H2

Figure 74 - APS pushbutton information sign
REQ 142   Accessible pedestrian signal (APS) systems shall provide street name information in braille or shall provide street name information in an audible format. (2005 PROWAG R306.4.2) (2005 PROWAG R409.3)

Barrier(s): Street name information that is provided in braille or an audible format could assist pedestrians that are visually impaired in determining what street they are going to cross.

- 152 pushbuttons have information signs with street name information in braille
- 332 pushbuttons have information signs with no street name information in braille

After reviewing and analyzing the inventory data, the assumption has been made that if the pushbutton manufacturer is not Polara then there is no street name information provided in braille for pushbuttons from other manufacturers in the county’s current inventory. The only APS pushbuttons that the county has installed are manufactured by Polara. The non-APS pushbuttons don’t comply with this requirement and will have to be upgraded as part of the transition plan implementation.

Contributing Factor(s): Most all the pushbuttons were installed before Public Works determined to follow the recommendations of the Federal Highway Administration (FHWA) and use the requirements of the 2005 PROWAG as a best practice. Therefore, the requirements did not apply at the time of installation. Moving forward all pushbuttons will meet this requirement.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H2
REQ 143  Braille shall be separated 0.375 inches minimum from other tactile characters.
(2005 PROWAG R306.4.2)
(2005 PROWAG R409.3.2)

Barrier(s): This would be a difficult requirement to measure in the field. This requirement should be met when a compliant APS pushbutton is purchased from a manufacturer. The manufacturer provides specifications for the components of APS pushbutton units. The county currently does not have the resources to provide quality control / quality assurance in order to verify that manufacturing specifications comply with current APS standards. If a component is discovered that doesn’t meet the ADA requirements, the county will work with the manufacturer to correct the deficiency.

Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-G6

REQ 144  Braille shall be contracted grade 2.
(2005 PROWAG R306.4.2)
(2005 PROWAG R409.3)

Barrier(s): The County would need someone on staff that reads braille in order to determine if the braille on the information sign is contracted grade 2.

This requirement should be met when a compliant APS pushbutton is purchased from a manufacturer. The manufacturer provides specifications for the components of APS pushbutton units and the county accepts them based on the compliant specifications. If a component is discovered that does not meet the ADA requirements, the county will work with the manufacturer to correct the deficiency.

Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-G6
REQ 145  Braille dots shall have a domed or rounded shape and shall comply with Table R409.3.1 (shown below).
(2005 PROWAG R306.4.2)
(2005 PROWAG R409.3.1)

![Braille dot requirements table](image)

**Figure 75 – Braille dot requirements table**

Barrier(s): Refer to the response to REQ 144.

Contributing Factor(s): Refer to the response to REQ 144.

Root Cause(s): Refer to the response to REQ 144.

Follow-up/Action Item(s): Refer to the response to REQ 144.

Measuring Form Field(s): PSB-G6
REQ 146  When using braille, the indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.
(2005 PROWAG R306.4.2), (2005 PROWAG R409.3.1)

Barrier(s): Refer to the response to REQ 144.
Contributing Factor(s): Refer to the response to REQ 144.
Root Cause(s): Refer to the response to REQ 144.
Follow-up/Action Item(s): Refer to the response to REQ 144.
Measuring Form Field(s): PSB-G6

REQ 147  Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text.
(2005 PROWAG R306.4.2), (2005 PROWAG R409.3.2)

Barrier(s): Refer to the response to REQ 144.
Contributing Factor(s): Refer to the response to REQ 144.
Root Cause(s): Refer to the response to REQ 144.
Follow-up/Action Item(s): Refer to the response to REQ 144.
Measuring Form Field(s): PSB-G6

REQ 148  Braille is separated by 0.375 inches minimum from any raised borders and decorative elements.
(2005 PROWAG R306.4.2), (2005 PROWAG R409.3.2)

Barrier(s): Refer to the response to REQ 144.
Contributing Factor(s): Refer to the response to REQ 144.
Root Cause(s): Refer to the response to REQ 144.
Follow-up/Action Item(s): Refer to the response to REQ 144.
Measuring Form Field(s): PSB-G6
REQ 149 The control face of the accessible pedestrian signal (APS) shall be installed to face the intersection.
(2005 PROWAG R306.2.1.1)

Barrier(s): The inventory indicates there are approximately:

- 18 pushbuttons facing away from the intersection
- 466 pushbuttons facing toward the intersection

Contributing Factor(s): Discussions with the engineers who designed the signals revealed that the engineers were not aware of the requirement to have the pushbuttons face the intersection.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training

Follow-up/Action Item(s):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-H3
REQ 150 Accessible pedestrian signal (APS) street name information shall be aligned parallel to the crosswalk direction. (2005 PROWAG R306.4.2)

Barrier(s): Aligning the street name information parallel to the crosswalk direction would assist visually impaired pedestrians aligning themselves with the pedestrian crossing. Most of the existing pushbuttons were installed before the APS requirements were developed and do not provide street name information (braille).

The inventory indicates that approximately:

- 162 pushbuttons have street name information aligned parallel to the crosswalk direction (street name information is provided in braille)
- 322 pushbuttons do not have street name information parallel to the crosswalk direction (no street name information was provided at all)

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is not Polara then there is no street name information because the county has only every provided street name information on Polara units.

Contributing Factor(s): The standards and requirements for pushbuttons were not clearly defined when most of the pushbuttons were installed throughout unincorporated Snohomish County.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

Follow-up/Action Item(s):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-H4
REQ 151  The control face of the accessible pedestrian signal (APS) shall be parallel to the direction of the crosswalk it serves.  
(2005 PROWAG R306.2.1.1)

**Barrier(s):** The pushbutton face must be aligned parallel to the crosswalk in order to assist individuals with vision impairments to align themselves with the crosswalk.

The inventory indicates there are approximately:
- 162 pushbuttons facing parallel to a crosswalk
- 322 pushbuttons not facing parallel to a crosswalk

**Contributing Factor(s):** The control faces not being parallel to the direction of the crosswalk it serves could be due to the fact that Washington State Department of Transportation (WSDOT) Standard Plan J-20.26-00 showed the pushbutton placed in an extruded aluminum “H” shape mount that oriented the face of the pushbutton perpendicular to the crosswalk being served. This standard plan was revised in August 2012 to an APS pushbutton unit. This configuration makes the control face parallel to the direction of the crosswalk it serves.

**Root Cause(s):** Lack of Clearly Defined Standards

**Follow-up/Action Item(s):**

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

**Measuring Form Field(s):** PSB-H4

**D. PUSHBUTTONS – TACTILE ARROWS**

A tactile arrow is used to communicate to pedestrians with vision impairments about which crosswalk is controlled by the pushbutton and to help pedestrians align themselves with the crosswalk. The tactile arrow is usually found on the face of the pushbutton.
REQ 152 Tactile arrows shall be located on the pushbutton and have high visual contrast (light on dark or dark on light)
(2009 MUTCD 4E.12 - 01)
(2005 PROWAG R306.4.1)

Barrier(s): The inventory indicates that approximately:

- 162 pushbuttons include a tactile arrow
- 322 pushbuttons do not include a tactile arrow

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is not Polara then the tactile arrow requirements were not met. The Polara APS units are the only pushbuttons in the county that satisfy the tactile arrow requirements.

Contributing Factor(s): Most of the existing pushbuttons were installed before the APS requirements were developed and tactile arrows were not required. All new pushbuttons installed in the future will comply with the APS requirements for tactile arrows.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB- G6

REQ 153 Tactile arrows shall be aligned parallel to the crosswalk direction.
(2005 PROWAG R306.4.1)
(2009 MUTCD 4E.12 - 01)

Barrier(s): Refer to the response to REQ 152.

Contributing Factor(s): Refer to the response to REQ 152.

Root Cause(s): Refer to the response to REQ 152.

Follow-up/Action Item(s): Refer to the response to REQ 152.

Measuring Form Field(s): PSB-H9.2
REQ 154  Tactile arrow arrowheads shall be open at 45 degrees to the shaft and shall be 33 percent of the length of the shaft.  
(2005 PROWAG R306.4.1)

Barrier(s): Refer to the response to REQ 152.
Contributing Factor(s): Refer to the response to REQ 152.
Root Cause(s): Refer to the response to REQ 152.
Follow-up/Action Item(s): Refer to the response to REQ 152.
Measuring Form Field(s): PSB- G6

REQ 155  The tactile arrow shall contrast with the background.  
(2005 PROWAG R306.4.1)  
(2009 MUTCD 4E.12 - 01)

Barrier(s): Refer to the response to REQ 152.
Contributing Factor(s): Refer to the response to REQ 152.
Root Cause(s): Refer to the response to REQ 152.
Follow-up/Action Item(s): Refer to the response to REQ 152.
Measuring Form Field(s): PSB- G6

REQ 156  The tactile arrow shall be 1.5 inches minimum in length.  
(2005 PROWAG R306.4.1)

Barrier(s): Refer to the response to REQ 152.
Contributing Factor(s): Refer to the response to REQ 152.
Root Cause(s): Refer to the response to REQ 152.
Follow-up/Action Item(s): Refer to the response to REQ 152.
Measuring Form Field(s): PSB- G6
REQ 157  The tactile arrow shall be raised 0.03 inches minimum.
(2005 PROWAG R306.4.1)

Barrier(s): Refer to the response to REQ 152.

Contributing Factor(s): Refer to the response to REQ 152.

Root Cause(s): Refer to the response to REQ 152.

Follow-up/Action Item(s): Refer to the response to REQ 152.

Measuring Form Field(s): PSB- G6

REQ 158  Tactile arrow stroke width shall be 10 percent minimum and 15 percent maximum of arrow length.
(2005 PROWAG R306.4.1)

Barrier(s): Refer to the response to REQ 152.

Contributing Factor(s): Refer to the response to REQ 152.

Root Cause(s): Refer to the response to REQ 152.

Follow-up/Action Item(s): Refer to the response to REQ 152.

Measuring Form Field(s): PSB-G6
E. PUSHBUTTONS - ACTUATION CONFIRMATION

A pilot light, speech message, or tone informs pedestrians the pushbutton has been actuated and that a signal has been sent to the traffic signal controller to bring up the next WALK phase within the signal's cycle. The pilot light on the face of the pushbutton provides a visual indication to pedestrians that the pushbutton has been actuated. Audible indications of actuation would be helpful to pedestrians with vision impairments.

REQ 159  If used, a pilot light or other means of indication installed with a pedestrian pushbutton shall not be illuminated until actuation.
(2009 MUTCD 4E.08 - 16)

Barrier(s): The inventory indicates that:
- 241 pushbuttons have a pilot light that is not illuminated until actuation
- 243 pushbuttons do not have a pilot light

Contributing Factor(s): Pushbuttons without pilot lights were installed according the standard at the time, the 2003 edition of the Manual on Uniform Traffic Control Devices (2003 MUTCD) 4E-09, when the pilot light was optional.

Now that it is a requirement in the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) all new pushbuttons moving forward will be installed with a pilot light and all existing pushbuttons that do not meet the ADA requirements will be upgraded as part of the county’s transition plan.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H5
REQ 160  Once it is actuated, the pilot light shall remain illuminated until the pedestrian’s green or walking person (symbolizing WALK) signal indication is displayed. (2009 MUTCD 4E.08 - 16)

Barrier(s): The inventory indicates:

- 162 pushbuttons have pilot lights that remain illuminated until the WALK indication is displayed
- 73 pushbuttons have a pilot light that does not remain illuminated until the WALK interval
- 243 pushbuttons do not have a pilot light

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is not Polara then this pilot light requirement is not met. The Polara APS units are the only pushbuttons in the county that will satisfy this pilot light requirement. The 79 pushbuttons that were identified as having a pilot light that does not remain illuminated until activation do not meet any of the other pilot light requirements.

Contributing Factor(s): Most of the existing pushbuttons were installed before the APS requirements were developed and pilot lights were not required. We suspect that the pushbuttons that have a pilot light to indicate actuation but do not remain illuminated until the walk interval were not following all the standards at the time they were installed. All new pushbuttons installed in the future will comply with the requirements for accessible pedestrian signals. It is not clear if at the time of installation these were compliant with the standards at that time.

Root Cause(s): Lack of Clearly Defined Standards

Follow-up/Action Item(s): None

Measuring Form Field(s): None
REQ 161  If a pilot light is used at an accessible pedestrian signal (APS) location, each actuation shall be accompanied by the speech message “wait.”
(2009 MUTCD 4E.08 – 17)
(2009 MUTCD 4E.11 - 23)

Barrier(s): Providing a “wait” speech message when the pushbutton is actuated would indicate to visually impaired pedestrians that they need to wait because the WALK interval is not active.

- 162 pushbuttons have a “wait” message confirming actuation.
- 322 pushbuttons do provide a “wait” message to confirm actuation.

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is not Polara this pilot light requirement is not met.

Contributing Factor(s): Pushbuttons without pilot lights were installed according to the standard at the time, the 2003 edition of the Manual on Uniform Traffic Control Devices (2003 MUTCD) 4E-09, when the pilot light was optional. Now that it is a requirement in the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) all new pushbuttons moving forward will provide a “wait” message to confirm actuation and all existing pushbuttons will be placed on the transition plan to be upgraded.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H6

F. PUSHPBUTTONS - LOCATOR TONE

The locator tone assists persons with vision impairments in locating the pushbutton. The features of locator tones are subject to additional requirements that are outlined in the 2009 MUTCD and 2005 PROWAG. These additional requirements include: tone duration, tone frequency, and volume. The measurement form used to conduct a field inventory of pushbuttons only contained a field to verify if the locator tone is present because there was no practical way to measure compliance with the other requirements. Instead, the county purchases pushbuttons from manufacturers that specify compliance with the pushbutton locator tone requirements and defective pushbuttons are sent back to the manufacturer for repair or replacement.
REQ 162  Pedestrian pushbuttons shall incorporate a locator tone at the pushbutton.
(2005 PROWAG R306.3.2)
(2009 MUTCD 4E.12 - 02)

Barrier(s): Locator tones alert visually impaired pedestrians to the presence of a pushbutton and assist them to locate the pushbutton so they can actuate it.

- 162 pushbuttons have a locator tone
- 322 pushbuttons do not have a locator tone

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is not Polara then this requirement has not been met.

Contributing Factor(s): Pushbuttons without locator tones were installed according the standard at the time, the 2003 edition of the Manual on Uniform Traffic Control Devices (2003 MUTCD) 4E-09, when the locator tone was optional. Now that it is a requirement in the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) all new pushbuttons moving forward will have a locator tone and all existing pushbuttons will be placed on the transition plan to be upgraded.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H7

REQ 163  The locator tone shall operate during the DON'T WALK and flashing DON'T WALK intervals only.
(2005 PROWAG R306.3.2)
(2009 MUTCD 4E.11 - 25)

Barrier(s): All 162 pushbuttons with locator tones are compliant with this requirement.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None
REQ 164  The locator tone shall be deactivated when the pedestrian signal is not operative.
(2005 PROWAG R306.3.2)
(2009 MUTCD 4E.12 - 05)

Barrier(s): All 162 pushbuttons with locator tones are compliant with this requirement.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None

REQ 165  Pushbutton locator tones shall be deactivated when the traffic control signal is operating in a flashing mode. This requirement shall not apply to traffic control signals or pedestrian hybrid beacons that are activated from a flashing or dark mode to a stop-and-go mode by pedestrian actuations.
(2009 MUTCD 4E.12 - 05)

Barrier(s): All 162 pushbuttons with locator tones are compliant with this requirement.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None

REQ 166  The duration of the locator tone shall be 0.15 seconds maximum and shall repeat at intervals of one second.
(2009 MUTCD 4E.11 – 25)
(2009 MUTCD 4E.12 - 04)

Barrier(s): Measuring the duration of the locator tone would be extremely difficult to do in the field, but it is not apparent that any of the tones are longer than 0.15 seconds. And although the locator tone interval is a setting that can be changed, it is a county practice to use a one second interval.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None
**G. PUSHBUTTONS - WALK INDICATION**

Speech messages, tones, or vibrotactile surfaces are used to communicate to pedestrians the beginning of the WALK phase. The distance between the APS units will determine if speech messages or audible tones are used to indicate the beginning of the WALK phase. Vibrotactile indications are provided regardless of what type of audible indication is used.

**REQ 167** Each crosswalk with pedestrian signal indication shall have an accessible pedestrian signal (APS) which includes audible and vibrotactile indications of the WALK interval. Where a pedestrian pushbutton is provided, it shall be integrated into the accessible pedestrian signal.

*(2005 PROWAG R306.2), (2005 PROWAG R306.2.3), (2009 MUTCD 4E.11 - 02)*

**Barrier(s):**

- 152 APS pushbuttons provide an audible “WALK” message and vibrotactile indications of the WALK interval
- 10 APS pushbuttons provide an audible percussive tone and vibrotactile indications of the WALK interval
- 14 pushbuttons provide a chirping tone, but no vibrotactile indication
- 308 pushbuttons are not APS and don’t provide an audible or vibrotactile WALK indication

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is known and there is no data for measuring form field H8.1 then this requirement has not been met.

**Contributing Factor(s):** Pushbuttons without vibrotactile indications were installed according the standard at the time, the 2003 edition of the Manual on Uniform Traffic Control Devices (2003 MUTCD) 4E-09, when the vibrotactile indication was optional. Now that it is a requirement in the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) all new pushbuttons moving forward will have a vibrotactile indications and all existing pushbuttons will be placed on the transition plan to be upgraded.

**Root Cause(s):** Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

**Follow-up/Action Item(s):** [FAI 52] Add APS as a requirement for pedestrian signal installation with all newly constructed signals and develop a policy to determine when APS will be installed at existing signalized intersections as part of a transition plan.

**Measuring Form Field(s):** PSB-H8.1
REQ 168 The information provided by an accessible pedestrian signal (APS) shall clearly indicate which pedestrian crossing is served by each device.
(2009 MUTCD 4E.09 - 06)

Barrier(s): This is a very broad requirement and more specific requirements following this one have been provided to clarify what the term “clearly indicate” means.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H8.1

REQ 169 An accessible pedestrian signals (APS) shall provide an audible WALK indication during the WALK interval only.
(2009 MUTCD 4E.11 - 04)

Barrier(s): All county APS provide an audible WALK indication during the WALK interval only.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H8.1
REQ 170 Where two accessible pedestrian signal (APS) devices are separated by a distance of at least 10 feet, the audible WALK indication shall be a percussive tone. (2009 MUTCD 4E.11 - 07)

Barrier(s): By default, Public Works engineers and traffic operations staff have been specifying speech messages for all pushbuttons regardless of the distance separating them, so almost all pushbuttons have a speech message.

- 8 APS pushbuttons emit a percussive tone and are separated by 10 feet or more
- 0 APS pushbuttons emit a percussive tone and are separated by less than 10 feet
- 14 APS pushbuttons emit a chirping tone and are separated by 10 feet or more
- 0 APS pushbuttons emit a chirping tone and are separated by less than 10 feet
- 110 APS pushbuttons emit an audible speech message and are separated by 10 feet or more
- 52 APS pushbuttons emit an audible speech message and are separated by less than 10 feet

Contributing Factor(s): Public Works staff was not familiar with the ADA requirements and assumed that an audible speech message is preferred by individuals with vision impairments.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training

Follow-up/Action Item(s):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

[FAI 53] Update all APS pushbuttons located 10 feet apart, or more, to provide a percussive tone to indicate the WALK interval unless there is a unique purpose for maintaining the speech WALK interval indication at specific locations. Ensure that speech WALK messages do not contain any additional information, except they shall include designations such as "Street" or "Avenue" where this information is necessary to avoid ambiguity at a particular location.

Measuring Form Field(s): PSB-H8.1, PSB-K2
REQ 171 Where two accessible pedestrian signal (APS) devices on one corner are not separated by a distance of at least 10 feet, the audible WALK indication shall be a speech WALK message.
(2009 MUTCD 4E.11 – 07)
(2009 MUTCD 4E.11 - 17)

Barrier(s): By default, Public Works engineers and traffic operations staff have been specifying speech messages for all pushbuttons regardless of the distance separating them.

Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-H8.1, PSB-K2

REQ 172 Tones shall consist of multiple frequencies with a dominant component at 880 Hz.
(2009 MUTCD 4E.11 – 08), (2005 PROWAG R306.2.3.1)

Barrier(s): It would be very difficult to measure compliance with this requirement in the field. Public Works does not have the equipment or trained staff to be able to measure tone frequencies or the duration of such short tones. Knowing the pushbutton manufacturer and model enables the specifications provided by the manufacturer to be checked to verify compliance.

Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None

REQ 173 The duration of the WALK tone shall be 0.15 seconds.
(2009 MUTCD 4E.11 – 08), (2005 PROWAG R306.2.3.1)

Barrier(s): Refer to the response to REQ 172.

Contributing Factor(s): Refer to the response to REQ 172.
Root Cause(s): Refer to the response to REQ 172.
Follow-up/Action Item(s): None
Measuring Form Field(s): None
REQ 174  
WALK tones shall repeat at intervals of 0.15 seconds.  
(2009 MUTCD 4E.11 – 08)  
(2005 PROWAG R306.2.3.1)

Barrier(s): Refer to the response to REQ 172.

Contributing Factor(s): Refer to the response to REQ 172.

Root Cause(s): Refer to the response to REQ 172.

Follow-up/Action Item(s): None

Measuring Form Field(s): None

REQ 175  
Speech WALK messages shall not contain any additional information, except they shall include designations such as "Street" or "Avenue" where this information is necessary to avoid ambiguity at a particular location.  
(2009 MUTCD 4E.11 - 20)

Barrier(s): 154 APS pushbuttons have an audible “WALK” message that meets this requirement

The 154 APS pushbutton units with an audible “WALK” message follow the MUTCD standard message format that provides the appropriate designation to accompany the road name.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H8.2

REQ 176  
Speech WALK messages that are used at intersections having pedestrian phasing that is concurrent with vehicular phasing shall be patterned after the model: "Broadway. Walk sign is on to cross Broadway."
(2009 MUTCD 4E.11 - 18)

Barrier(s): 154 APS pushbuttons have an audible “WALK” message patterned after the model: “Broadway. Walk sign is on to cross Broadway.”

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H8.2
REQ 177 Vibrotactile WALK indications shall be provided by a tactile arrow on the pushbutton that vibrates during the WALK interval.
(2009 MUTCD 4E.11 – 03)
(2005 PROWAG R306.2 Advisory)

Barrier(s): A vibrotactile WALK indication provides an additional indication that the WALK interval is active to pedestrians that may have hearing or vision impairments.

- 162 APS pushbuttons provide a vibrotactile WALK indication with a tactile arrow on the pushbutton that vibrates during the WALK interval
- 322 do not provide a vibrotactile WALK indication with a tactile arrow on the pushbutton that vibrates during the WALK interval because they are not APS pushbuttons

After reviewing and analyzing the inventory data the assumption has been made that if the pushbutton manufacturer is not Polara then this requirement has not been met.

Contributing Factor(s): Pushbuttons without vibrotactile indications were installed according to the standard at the time, the 2003 edition of the Manual on Uniform Traffic Control Devices (2003 MUTCD) 4E-09, when the vibrotactile indication was optional. Now that it is a requirement in the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) all new pushbuttons moving forward will have vibrotactile indications and all existing pushbuttons will be placed on the transition plan to be upgraded.

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-H9.1

H. PUSHBUTTONS - VOLUMES

When APS devices provide audible indications, it is important that the indications be audible even when there is background noise that varies in volume and duration. Because APS units are in areas where there is vehicular traffic noise it is important to make sure that the indications can be heard by pedestrians.
**REQ 178**  Automatic adjustments of the WALK indication volume in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. *(2009 MUTCD 4E.11 - 10)*

**Barrier(s):** This was not measured. There is no clear guidance as to how this should be measured. The 2003 MUTCD mentions that A-weighted sound pressure level should conform to requirements set forth by “ISO 1996-1:1982” and “ISO1996-2:1987”. More research would need to be done in order to accurately measure automatic volume adjustment.

**Contributing Factor(s):** Pushbuttons with locator tones were installed according to the standard at the time, the 2003 edition of the Manual on Uniform Traffic Control Devices (2003 MUTCD) 4E-09, when the maximum locator tone volume was to be provided up to 89 dBA. The 2009 edition of the Manual of Uniform Traffic Control Devices (2009 MUTCD) 4E-11 now requires that the sound level be provided up to a maximum volume of 100 dBA.

**Root Cause(s):** Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

**Follow-up/Action Item(s):** [FAI 54] Provide guidance and/or resources to help evaluators measure and evaluate accessible pedestrian signal volumes, messages, and tones for ADA compliance. Develop a policy and procedures to investigate, document, and address complaints about APS volumes.

**Measuring Form Field(s):** PSB-H10
REQ 179  The audible WALK indication shall be audible from the beginning of the associated crosswalk.
(2009 MUTCD 4E.11 - 04)

**Barrier(s):** It is important for visually impaired pedestrians to be able to hear when the WALK interval begins so they know when they have been granted the right-of-way to cross the street.

- 128 pushbuttons provide a WALK indication audible from the beginning of the associated crosswalk
- 34 pushbuttons provide a WALK indication not audible from the beginning of the associated crosswalk
- 322 pushbuttons do not provide an audible WALK indication

**Contributing Factor(s):** The volume on the APS pushbutton can be adjusted by traffic signal technicians in the field. Volumes may have not been set at times where there was the greatest traffic noise and the volume was not set loud enough to begin with. This technology has not matured yet.

**Root Cause(s):** Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

**Follow-up/Action Item(s):** [FAI 54] Provide guidance and/or resources to help evaluators measure and evaluate accessible pedestrian signal volumes, messages, and tones for ADA compliance. Develop a policy and procedures to investigate, document, and address complaints about APS volumes.

**Measuring Form Field(s):** PSB-H11

REQ 180  Pushbutton locator tones shall be audible 6 to 12 feet from the pushbutton, or to the building line, whichever is less.
(2009 MUTCD 4E.12 - 06)

**Barrier(s):** No data were collected to evaluate this requirement.

**Contributing Factor(s):** Data collectors were asked to evaluate the volume of the pushbutton from the curb line (or where there is no curb line, at the beginning of the associated crosswalk) since this is typically where individuals who have vision impairments wait to cross at signalized intersections or crossings with pedestrian activated beacons. If pushbuttons are located according to the 2009 MUTCD guidelines, then they will be within 6 to 10 feet of the curb line.

**Root Cause(s):** Lack of Clearly Defined Standards

**Follow-up/Action Item(s):** [FAI 54] Develop guidance to determine how to measure and evaluate APS volumes, messages, and tones for ADA compliance. Develop a policy and procedures to investigate, document, and address complaints about APS volumes.

**Measuring Form Field(s):** None
REQ 181 Pushbutton locator tone volume measured at 3.0 feet from the pushbutton shall be 2 dB minimum and 5 dB maximum above ambient noise level.
(2005 PROWAG R306.3.2)

Barrier(s): No data were collected to evaluate this requirement.

Contributing Factor(s): It would be highly impractical for data collectors to measure the decibels of pushbutton locator tones above ambient background noise. Data collectors were asked to evaluate whether they could hear the volume of the locator tone from the curb line (or, where there is no curb line, at the beginning of the associated crosswalk) since this is typically where individuals who have vision impairments wait to cross at signalized intersections or crossings with pedestrian activated beacons. If pushbuttons are located according to the 2009 MUTCD guidelines, then they will be within 6 to 10 feet of the curb line.

Root Cause(s): Lack of Clearly Defined Standards

Follow-up/Action Item(s): [FAI 54] Develop guidance to determine how to measure and evaluate APS volumes, messages, and tones for ADA compliance. Develop a policy and procedures to investigate, document, and address complaints about APS volumes.

Measuring Form Field(s): None
REQ 182  Pushbutton locator tone volumes shall be responsive to ambient noise level changes.
(2005 PROWAG R306.3.2)
(2009 MUTCD 4E.12 - 06)

Barrier(s): From what could be determined given the best available methods there are:

- 162 pushbuttons with volume adjustment capabilities
- 322 pushbuttons do not auto-adjust volume/no audible indications

Contributing Factor(s): This is a very challenging requirement to measure in the field. Usually, changes in volume can be detected by ear when ambient noise levels increase. Public Works does not have a tool that can adequately measure the volume adjustment of the locator tone separate from the ambient noise. Even then, a data collector would have to bring an artificial noisemaker to increase the ambient noise or wait for a random event like the passing of a large vehicle. Alternatively, data collectors would have to conduct measurements during peak hour traffic to ensure that the volume responsiveness was adequate to handle the increased noise that accompanies increased traffic volumes. In the end, data collectors were asked to do their best and pay attention to when background noises increased. Some even yelled or spoke loudly next to the pushbutton microphone in an attempt to induce the responsive adjustment. Even then, only a handful of pushbuttons were even known (by manufacturer and model number) to include a responsive volume adjustment feature so for most pushbuttons the default measurement recorded on a measurement form was that there is no locator tone - let alone a responsive one.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

Follow-up/Action Item(s): [FAI 54] Provide guidance and/or resources to help evaluators measure and evaluate accessible pedestrian signal volumes, messages, and tones for ADA compliance. Develop a policy and procedures to investigate, document, and address complaints about APS volumes.

Measuring Form Field(s): PSB-H10

I. PUSHBUTTONS - WALK INDICATION DURATION
The accessible WALK indication that is provided by the APS unit needs to have the same duration as the pedestrian WALK signal.
REQ 183  The accessible WALK indication shall have the same duration as the pedestrian WALK signal except when the pedestrian signal rests in WALK.  
(2009 MUTCD 4E.11 – 05)  
(2005 PROWAG R306.2 Advisory)

Barrier(s): This requirement was overlooked during the initial inventory and evaluation. The information can be gathered from the traffic signal engineers who operate the county’s traffic signals and pedestrian beacons.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): [FAI 51] Verify that the county’s traffic signal operations are compliant with the requirements of the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) and the ADA and provide effective communication to individuals with communications disabilities.

Measuring Form Field(s): None

J. PUSHBUTTON REACH REQUIREMENTS

People in wheelchairs, those who use other mobility assistance devices, or those who experience issues with balance, may not be able to lean outside of the wheelchair to actuate a pushbutton so the pushbutton cannot be located too far from the place where the wheelchair is to be located.

Figure 81 - Pedestrian Pushbutton Reach (Imaged Borrowed from U.S. Access Board Guide)
REQ 184 Where a forward reach is unobstructed, the high forward reach shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the finish surface.

(2005 PROWAG R306.2.2)
(2005 PROWAG R404.2.1)
(2009 MUTCD 4E.08 - 04 F)

Barrier(s): Pushbutton height requirements set a maximum and minimum mounting height above the adjacent clear space from where the pushbutton is activated so that people in wheelchairs can reach the pushbutton. In most cases the minimum mounting height is 15 inches and the maximum is 48 inches above the adjacent clear space.

- 477 pushbuttons have a height $\geq 15$ inches and $\leq 48$ inches (compliant)
- 7 pushbuttons have a height $< 15$ inches or $> 48$ inches (non-compliant)

Contributing Factor(s): Where there is a pushbutton mounted too high or too low and there is no obstruction it is likely that the design engineers, contactors, and inspectors did not know or understand the mounting height requirements.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; No Follow-Up; Lack of Accountability

Follow-up/Action Item(s):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-I1
REQ 185 Where a clear space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches maximum and the low side reach shall be 15 inches minimum above the finish surface. An obstruction shall be permitted between the clear space and the element where the depth of the obstruction is 10 inches maximum.

(2005 PROWAG R306.2.2)
(2005 PROWAG R404.3.1)

**Barrier(s):** People that use a wheelchair, experience issues with balance, or rely on mobility assistance devices may have difficulty reaching the pushbutton from the pedestrian access route (PAR) or the clear space if there is an obstruction present. The type of obstruction and the reach depth helps determine if the pushbutton reach would be greater than 10 inches.

- 414 pushbuttons have a side approach reach \(\leq\) 10 inches (compliant)
- 70 pushbuttons have a side approach reach > 10 inches (non-compliant)

The types of obstructions found within the public right-of-way include:

- 36 pedestrian curbs with depths between 3 to 6 inches
- 10 with no PAR with depths between 4 to 6 inches
- 7 signal bases with depths between 4 to 12 inches
- 431 unknown

Early inventory efforts only measured the reach distance and did not record the type of reach obstruction. Pushbutton locations where the reach distance is greater than ten inches would be further evaluated to identify the obstruction responsible.

**Contributing Factor(s):** Where there is a pushbutton mounted too high or too low and there is no obstruction it is likely that the design engineers, contactors, and inspectors did not know or understand the mounting height requirements.

**Root Cause(s):** Expectations Are Not Clearly Set; Lack of Training; No Follow-Up; Lack of Accountability

**Follow-up/Action Item(s):**
[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

**Measuring Form Field(s):** PSB-I2, PSB-I3.1, PSB-I3.2
REQ 186 Where a high forward reach is over an obstruction, the clear space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches maximum where the reach depth is 20 inches maximum. Where the reach depth exceeds 20 inches, the high forward reach shall be 44 inches maximum and the reach depth shall be 25 inches maximum. (2005 PROWAG R404.2.2)

Barrier(s): This specific requirement was not measured during the inventory; however, the height, reach distance, and obstruction data that were collected could be combined and used to evaluate a pushbutton location on a case-by-case basis.

![Obstructed Forward Reach Diagram](Image Borrowed from ADAAG)

**Figure 84 - Obstructed Forward Reach (Image Borrowed from ADAAG)**

Contributing Factor(s): Where there is a pushbutton mounted adjacent to an obstruction it is likely that the design engineers, contactors, and inspectors did not know or understand the mounting height requirements.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; No Follow-Up; Lack of Accountability

Follow-up/Action Item(s): [FAI 55] Consider adding an Engineering Design and Development Standards (EDDS) requirement that all pushbutton reaches shall be unobstructed.

Measuring Form Field(s): None
REQ 187 Where a clear space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches maximum and the depth of the obstruction shall be 24 inches maximum. The high side reach shall be 48 inches maximum for a reach depth of 10 inches maximum. Where the reach depth exceeds 10 inches the high side reach shall be 46 inches maximum for a reach depth of 24 inches maximum.

(2005 PROWAG R404.3.2)

Barrier(s): This specific requirement was not measured during the inventory; however, the height, reach distance, and obstruction data that was collected could be combined and used to evaluate a pushbutton location on a case-by-case basis.

![Figure 85 – Obstructed side reach requirements (Image Borrowed from ADAAG)](Image)

Contributing Factor(s): Refer to the response to REQ 186.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; No Follow-Up; Lack of Accountability

Follow-up/Action Item(s): [FAI 55] Consider adding an Engineering Design and Development Standards (EDDS) requirement that all pushbutton reaches shall be unobstructed.

Measuring Form Field(s): None
K. PUSHBUTTON CLEAR SPACE

Adequate space that is clear and free of obstacles and barriers is required adjacent to APS pushbuttons so that pedestrians and persons in wheelchairs can access the pushbutton and wait, if needed, by the pushbutton to receive indication that the WALK phase has been activated. The requirements for pushbutton clear space are the same for other types of clear space detailed in the 2005 PROWAG and similar to the requirements for curb ramp landings – which the clear space is allowed to overlap – although the width requirement is slightly different.

![Figure 86 – APS pushbutton clear space](image_url)
REQ 188  Unless otherwise specified, clear space shall be positioned for either forward or parallel approach to an element.
(2005 PROWAG R402.5)
(2005 PROWAG R306.2.2)

Barrier(s): Pushbuttons can be approached from the side (parallel) or from the front (forward). The type of approach will determine the maximum reach distance allowed.

- 38 pushbuttons have forward approaches
- 446 pushbuttons have parallel approaches

![Diagram of approach types](https://example.com/diagram)

*Figure 87 - Approach types (Imaged Borrowed from the ADDAG)*

Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-J1

REQ 189  One full unobstructed side of the clear space shall adjoin a pedestrian access route or adjoin another clear space.
(2005 PROWAG R402.6)
(2005 PROWAG R306.2.2), (2009 MUTCD 4E.08 - 04 B)

Barrier(s): All 484 pushbuttons have at least one full unobstructed side of clear space adjoining a pedestrian access route or another clear space.

Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-J2
REQ 190  The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 feet, exclusive of the width of the curb.

(2005 PROWAG R301.3.1)
(2012 EDDS - 4.05B, 1)
(2012 EDDS - 4.05B, 2)

Barrier(s): All pedestrian access routes have an unobstructed clear width of 4.0 feet, exclusive of the curb width.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-J2

REQ 191  Where a clear space is confined on all or part of three sides, additional maneuvering space shall be provided in accordance with R402.7.1 and R402.7.2.

(2005 PROWAG R402.7)

Barrier(s): Although pushbuttons with clear spaces constrained on all or part of three sides can occasionally be found in the public right-of-way, none of them are pushbuttons owned or operated by Public Works and so they did not show up in the inventory.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-J3

Figure 88 - Additional maneuvering space requirements (Images Borrowed from the ADAAG)
REQ 192   Clear spaces to pushbuttons confined on all or part of three sides shall be 36 inches wide minimum where the depth exceeds 24 inches
(2005 PROWAG R402.7.1)

Barrier(s): Refer to the response to REQ 191.
Contributing Factor(s): Refer to the response to REQ 191.
Root Cause(s): Refer to the response to REQ 191.
Follow-up/Action Item(s): Refer to the response to REQ 191.
Measuring Form Field(s): PSB-J3, PSB-J1, PSB-J5, PSB-J7

REQ 193   Clear spaces to pushbuttons confined on all or part of three sides shall be 60 inches wide minimum where the depth exceeds 15 inches.
(2005 PROWAG R402.7.2)

Barrier(s): Refer to the response to REQ 191.
Contributing Factor(s): Refer to the response to REQ 191.
Root Cause(s): Refer to the response to REQ 191.
Follow-up/Action Item(s): Refer to the response to REQ 191.
Measuring Form Field(s): PSB-J3, PSB-J1, PSB-J5, PSB-J7

REQ 194   Surfaces of clear spaces shall have a slope of 2 percent maximum.
(2005 PROWAG R402.2)

Barrier(s): The slopes of the clear space surface include both running slopes and cross slopes.
- 207 pushbuttons have clear space slopes \( \leq 2\% \)
- 21 pushbuttons have clear space slopes \( > 2\% \) and \( \leq 2.4\% \)
- 256 pushbuttons have clear space slopes \( > 2\% \)

Contributing Factor(s): For many years, construction and maintenance workers were using bubble levels to measure slopes. However, bubble levels do not provide the level of precision needed to determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

Root Cause(s): No Follow-Up; Lack of Accountability

Follow-up/Action Item(s): [FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-J4
REQ 195  The clear space shall be 48 inches in length, minimum.  
(2005 PROWAG R402.3)

Barrier(s): The minimum clear space dimensions should be able to accommodate a wheelchair or other mobility assistance device.

- 162 pushbuttons have clear space dimensions = 48 inches x 30 inches minimum
- 2 pushbuttons have clear space dimensions < 48 inches x 30 inches minimum
- 320 pushbuttons did not have clear space dimensions evaluated

The pushbuttons that do not have adequate clear space dimensions will be added to the transition plan to be upgraded to compliance.

Contribution Factor(s): Unknown

Root Cause(s): Unknown

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-J5

REQ 196  Surfaces of clear spaces shall have a cross slope of 2 percent maximum.  
(2005 PROWAG R402.2)

Barrier(s): The cross slope is measured perpendicular to the direction of travel within the clear space.

- 244 pushbuttons have clear space slopes \( \leq 2\% \)
- 50 pushbuttons have clear space slopes > 2\% and \( \leq 2.4\% \)
- 190 pushbuttons have clear space slopes > 2\%

Contribution Factor(s): For many years, construction and maintenance workers were using bubble levels to measure slopes. However, bubble levels do not provide the level of precision needed determine if ADA slope requirements are met. Additionally, inspectors were not checking ramps to determine if they had been constructed to compliance.

Root Cause(s): No Follow-Up; Lack of Accountability

Follow-up/Action Item(s):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-J6
REQ 197  The clear space shall be 30 inches in width, minimum.  
(2005 PROWAG R402.3)

**Barrier(s):** The minimum clear space dimensions should be able to accommodate a wheelchair or other mobility assistance device.

- 162 pushbuttons have clear space dimensions = 48 inches x 30 inches minimum
- 2 pushbuttons have clear space dimensions ≠ 48 inches x 30 inches minimum
- 320 pushbuttons have unknown clear space dimensions

The pushbuttons that do not have adequate clear space dimensions will be added to the transition plan to be upgraded to compliance.

**Contributing Factor(s):** Unknown

**Root Cause(s):** Unknown

**Follow-up/Action Item(s):** None

**Measuring Form Field(s):** PSB-J7

REQ 198  Surface discontinuities shall not exceed 0.50 inches maximum. Vertical discontinuities between 0.25 inches and 0.5 inches maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.  
(2005 PROWAG R301.5.2)

**Barrier(s):** There were no discontinuities that exceeded 0.5 inches for the clear spaces that were measured.

**Contributing Factor(s):** N/A

**Root Cause(s):** N/A

**Follow-up/Action Item(s):** None

**Measuring Form Field(s):** PSB-J8
REQ 199  Openings shall not permit passage of a sphere more than 0.5 inches in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.
(2005 PROWAG R301.7.1)

Barrier(s): There were no openings that exceeded 0.5 inches for the clear spaces that were measured.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-J9

REQ 200  The surface of the pedestrian access route shall be firm, stable, and slip resistant.
(2005 PROWAG R301.5), (2009 MUTCD 4E.08 - 04 A), (2012 EDDS 4-05A, 5)
(2012 EDDS 4-05A, 6), (2012 EDDS 4-05D, 14)

Barrier(s): All Snohomish County pedestrian facilities in the public right-of-way operated by Public Works are constructed with a concrete surface with a broom finish or are constructed out of asphalt. These materials are generally considered to be firm stable and slip resistant. Other materials are strictly prohibited.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-J10

REQ 201  Grade breaks shall be flush.
(2005 PROWAG R301.5.1)

Barrier(s): All grade breaks that were evaluated were flush.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): PSB-J11
REQ 202 Vertical alignment shall be planar within clear spaces required for accessible pedestrian signals (APSs).
(2005 PROWAG R301.5.1)

Barrier(s): Another way of thinking of something as planar is thinking of it as being flat. Data collectors were asked to eyeball the flatness of clear spaces when placing their levels on the surface to measure slopes. If the 4-foot-long level that the data collectors were using didn’t lay flat on the surface then that would be an indication that the surface is not planar. Likewise, if multiple parallel slope measurements were not equal that suggested the surface was not planar. All surfaces measured were flat.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-J12

L. PUSHBUTTON PLACEMENT
Placement of pedestrian pushbuttons is an important factor in ensuring that they are accessible to pedestrians with disabilities. Placement influences whether pushbuttons can be accessed from mobility devices or whether or not the information communicated through audible tones or messages from APS pushbuttons can be distinguished from background noise or whether they can even be reached. Pushbuttons located too far from the crosswalk being served can make it challenging for pedestrians with disabilities to actuate the pushbutton and navigate from the pushbutton to the crossing in time to cross during the WALK phase. Proper placement allows users to make full use of all the pushbutton features.
REQ 203 Accessible pedestrian signal (APS) devices shall be located so that the vibrotactile feature can be contacted from the level landing serving a curb ramp, if provided, or from a clear space that is in line with the crosswalk line adjacent to the vehicle stop line. (2005 PROWAG R306.2.1)

Barrier(s): In order to contact the vibrotactile feature there needs to be room adjacent to the pushbutton for someone to wait.

- All 170 APS pushbuttons have vibrotactile features that can be contacted from a level landing or clear space.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-K1
REQ 204 Accessible pedestrian signal devices shall be 10.0 feet minimum from other accessible pedestrian signals at a crossing.  
(2005 PROWAG R306.2.1.1)

Barrier(s): The minimum 10-foot distance is required to avoid confusion as to which WALK interval is active when APS pushbutton units use a percussive tone to indicate when the WALK interval is active.

- 52 locations have 10 feet or less between accessible pedestrian signals
- 110 locations have greater than 10 feet between accessible pedestrian signals
- 322 locations have pushbuttons that do not have tone indications yet

Contributing Factor(s): Pushbuttons that are placed less than 10 feet from each other were likely mounted on the same pole – most often the same pole upon which the traffic signal mast arm is mounted. This is likely because requirements have changed over time and at one point it was acceptable to mount pushbuttons on the same pole. Now that pushbuttons need to be accessible, many of the existing pushbuttons don’t comply with the new standard. Pushbuttons installed on the same pole or less than 10 feet apart after the standards were changed were likely placed there due to a lack of knowledge and understanding of the ADA standards. A few pushbuttons were placed closer than 10 feet apart because there were existing physical constraints that made full compliance infeasible.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

Follow-up/Action Item(s):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-K2
REQ 205  Accessible pedestrian signals located in medians and islands shall be 5.0 feet minimum from other accessible pedestrian signals.
(2005 PROWAG R306.2.1.2)

Barrier(s): There are currently no accessible pedestrian signals in the county that are in median islands.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-K2

REQ 206  The positioning of pedestrian pushbuttons and the legends on the pedestrian pushbutton signs shall clearly indicate which crosswalk signal is actuated by each pedestrian pushbutton.
(2009 MUTCD 4E.08 - 12)

Barrier(s): This is a somewhat subjective requirement. What is meant by “clearly indicate?” What is clear to one person may not be so clear to another. Digging deeper into guidance provided in the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) there are some clues as to what it means to clearly indicate which crosswalk signal is actuated by each pedestrian pushbutton. Refer to REQ 207 and REQ 208 for more guidance.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-K3, PSB-K4
REQ 207  Pedestrian pushbuttons should be located between 1.5 and 6 feet from the edge of the curb, shoulder, or pavement.
(2009 MUTCD 4E.08 - 04 D.)

Barrier(s): Although this is not an ADA requirement it was measured and evaluated anyway because it helps clarify the meaning of REQ 206.

- 136 pushbuttons are located between 1.5 feet and 6 feet from the curb
- 188 pushbuttons are located between 7 feet and 10 feet from the curb
- 160 pushbuttons are located greater than 10 feet from the curb

Pushbuttons need to be located close enough to the crossing being served so that there is sufficient time to navigate from the pushbutton to the crosswalk and across the street when the pedestrian phase is activated.

Many pedestrians with vision impairments will actuate the pushbutton and then navigate to the curb line or the start of the crossing as indicated by the detectable warning surface. They will then wait there for the audible indication of the WALK phase so that no time is wasted once the right-of-way has been granted. If the pushbuttons are located too far away from the curb or start of the crosswalk it becomes ever more challenging for pedestrians with vision impairments to find them once they have left the pushbutton and the audible indications provided at the pushbutton may not be audible anymore.

Contributing Factor(s): This is not a legal standard and design engineers, construction and maintenance workers, and inspectors are not aware of the challenges that individuals with vision or hearing impairments face when determining how to safely cross the street at a signalized intersection.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

Follow-up/Action Item(s):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-K3
REQ 208  Pedestrian pushbuttons should be located between the edge of the crosswalk line (extended) farthest from the center of the intersection and the side of a curb ramp (if present), but not greater than 5 feet from said crosswalk line.
(2009 MUTCD 4E.08 - 04 C.)

Barrier(s): Although this is not an ADA requirement it was measured and evaluated because it helps clarify the meaning of REQ 206.

- 460 pushbuttons are located \( \leq 5 \) feet parallel offset from outside edge of crosswalk line
- 24 pushbuttons are located > 5 feet parallel offset from outside edge of crosswalk line

Contributing Factor(s): This is not a legal standard and design engineers, construction and maintenance workers, and inspectors are not aware of the challenges that individuals with vision or hearing impairments face when determining how to safely cross the street at a signalized intersection.

Root Cause(s): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards

Follow-up/Action Item(s):

[FAI 40] Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

Measuring Form Field(s): PSB-K4
REQ 209  If the pedestrian clearance time is sufficient only to cross from the curb or shoulder to a median of sufficient width for pedestrians to wait and the signals are pedestrian actuated, an additional pedestrian detector shall be provided in the median.  
(2009 MUTCD 4E.08 - 13)

Barrier(s): There are currently no accessible pedestrian signals in the county that are in median islands.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): N/A

M. PEDESTRIAN CROSSING TIME
The pedestrian crossing time is determined by using the pedestrian walking speed and the crossing distance. The pedestrian crossing time should be long enough to allow pedestrians to cross from one side of the road to the other.

REQ 210  The Pedestrian WALK interval shall be 7 seconds minimum.  
(2009 MUTCD 4E.06 -06)

Barrier(s): A sample set of measurements was taken at 70 pedestrian crossings by timing the duration of the WALK intervals. All 70 locations had a minimum of 7 seconds. It is expected that if all pedestrian WALK intervals for all crossings were timed, they would be found to be a minimum of 7 seconds as well.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): PSB-L1
REQ 211 All pedestrian signal phase timing shall be calculated using a pedestrian walk speed of 3.5 feet per second maximum. The crosswalk distance used in calculating pedestrian signal phase timing shall include the entire length of the crosswalk.  
(2005 PROWAG R305.3)

Barrier(s): The duration of the pedestrian clearance interval is determined by dividing the crossing distance (measured from curb to curb) and dividing by 3.5 feet per second. At 70 pedestrian crossings there was an observation of the pedestrian clearance interval. At these locations all the pedestrian clearance intervals met the required clearance time. If this was extrapolated to include every county signal, then it can be surmised that all the county signals have adequate pedestrian clearance times.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s):

[FAI 56] Develop guidance to determine when a walking speed of less than 3.5 feet per second should be used to calculate the pedestrian clearance time, or if extended press or other additional features should be offered as an option.

Measuring Form Field(s): PSB-L1, PSB-L2

REQ 212 Where the pedestrian clearance time is sufficient only for crossing from the curb or shoulder to a median of sufficient width for pedestrians to wait, median mounted pedestrian signals (with pedestrian detectors if actuated operations is used) and signing such as R10-3D sign shall be provided to notify pedestrians to cross only to the median to await the next walking person signal indication.  
(2009 MUTCD 4E.06 - 16)

Barrier(s): Public Works does not require pedestrians to cross and wait at a median at any of its intersections.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None
N. ROUNDABOUT INTERSECTIONS
Roundabouts are circular intersections that allow for a continuous flow of traffic. Since roundabouts occur at the intersection of two roads there are usually pedestrian crossings present. All roundabouts within the county are single lane roundabouts.

REQ 213 At roundabouts with multi-lane crossings, a pedestrian activated signal shall be provided for each segment of each crosswalk, including the splitter island. Signals shall clearly identify which crosswalk segment the signal serves.
(2005 PROWAG R305.6.2)

Barrier(s): Public Works does not operate roundabouts with multi-lane crossings in its public right-of-way.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None

O. ADDITIONAL FEATURES
There are several additional APS features that are available to assist pedestrians with vision impairments and pedestrians that use mobility assistance devices. These features can provide additional information and assistance for pedestrians.
REQ 214   If audible beaconing is used, the volume of the pushbutton locator tone during the pedestrian change interval of the called pedestrian phase shall be increased and operated in one of the following ways: (A) The louder audible WALK indication and louder locator tone comes from the far end of the crosswalk, as pedestrians cross the street; (B) The louder locator tone comes from both ends of the crosswalk; or (C) The louder locator tone comes from an additional speaker that is aimed at the center of the crosswalk and that is mounted on a pedestrian signal head.

Barrier(s): Public Works does not use audible beaconing.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None

REQ 215   Where provided, graphic indication of crosswalk configuration shall be tactile.
(2005 PROWAG R306.4.3)

Barrier(s): Public Works does not provide graphic indications of crosswalk configurations.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None

REQ 216   An extended pushbutton press shall be permitted to activate additional features. Buttons that provide additional features shall be marked with three braille dots forming an equilateral triangle in the center of the pushbutton.
(2005 PROWAG R306.3.4)

Barrier(s): Public Works does not use extended pushbutton press.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None
REQ 217  If an extended pushbutton press is used to provide any additional feature(s), a pushbutton press of less than one second shall actuate only the pedestrian timing and any associated accessible WALK indication, and a pushbutton press of one second or more shall actuate the pedestrian timing, any associated accessible WALK indication, and any additional feature(s).
(2009 MUTCD 4E.13 - 02)

Barrier(s): Public Works does not use extended pushbutton press.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None

REQ 218  If additional cross time is provided by means of an extended pushbutton press, a plaque r10-32p shall be mounted adjacent to or integral with the pedestrian pushbutton.
(2009 MUTCD 4E.08 - 19)

Barrier(s): Public Works does not use extended pushbutton press.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None

REQ 219  If speech pushbutton information messages are made available by actuating the accessible pedestrian signal detector, they shall only be actuated when the WALK interval is not timing.
(2009 MUTCD 4E.13 - 10)

Barrier(s): Public Works does not use speech pushbutton information.
Contributing Factor(s): N/A
Root Cause(s): N/A
Follow-up/Action Item(s): None
Measuring Form Field(s): None
Appendix F: Pedestrian Signals and Beacons | 57

REQ 220 If speech pushbutton information messages are made available by actuating the accessible pedestrian signal, they shall begin with the term “Wait,” followed by intersection identification information modeled after: “Wait to cross Broadway at Grand.” If information on intersection signalization or geometry is also given, it shall follow the intersection identification information.
(2009 MUTCD 4E.13 - 10)

Barrier(s): Public Works does not use speech pushbutton information.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None

P. CHANNELIZED TURN LANES
Channelized turn lanes are used at intersections to reduce vehicle turn delays. A pedestrian crosswalk is located across the channelized turn lane to allow pedestrians to cross from one side of the intersection to the other. These channelized turn lanes are usually un-signalized and require drivers to yield to pedestrians in the crosswalk.

REQ 221 Where pedestrian crosswalks are provided at multi-lane right or left channelized turn lanes at intersections with pedestrian signal indications, a pedestrian activated signal complying with R306 shall be provided.
(2005 PROWAG R305.7)

Barrier(s): Public Works does not operate multi-lane right or left turn channelized turn lanes at intersections.

Contributing Factor(s): N/A

Root Cause(s): N/A

Follow-up/Action Item(s): None

Measuring Form Field(s): None
HOW WAS THE PEDESTRIAN SIGNAL AND BEACON DATA COLLECTED?

When the pedestrian pushbutton inventory was started in 2012 there were very few pedestrian signals, pedestrian activated beacons, or hybrid beacons with accessible pedestrian signal (APS) systems operated by Public Works. By default, if a pushbutton wasn’t part of an APS system it was not compliant with the 2005 draft revisions to the Public Right-of-Way Accessibility Guidelines (2005 PROWAG) and would need to be upgraded as part of a transition plan. Therefore, the most basic data that needed to be collected to craft a transition plan and replace pedestrian signal systems that do not meet the ADA requirements was the number of pushbuttons, the location of the pushbuttons, and measurements sufficient to determine if the access and/or clear space to each pushbutton met the requirements of the ADA.

When the self-evaluation was initiated there were 72 signalized intersections in Snohomish County with pedestrian intervals and pushbuttons. In addition, there was one pedestrian hybrid beacon – a High Intensity Activated crosswalk (HAWK) on Puget Park Drive across from the YMCA, and there was one pedestrian activated Rectangular Rapid Flashing Beacon (RRFB) on Marine Drive across from the Warm Beach Senior Community. Google Earth® was used to map each signal and the approximate location of each pushbutton. Then Public Works staff visited each intersection to measure the location of the pushbuttons, pushbutton reach distances, and pushbutton mounting heights and to take clear space measurements.

A. DATA COLLECTION TOOLS

Pushbuttons and clear spaces were measured using an MD Building Products Smart Tool™ Digital Level (inclinometer) – commonly referred to as a Smart Level – and a tape measure. The Smart Levels were calibrated on a regular basis and any time they were dropped, or the temperature changed more than 20 degrees from the previous calibration. A calibration log was kept for each Smart Level and a periodic true calibration test was conducted at a fixed location with known slopes to ensure that the tools were self-calibrating accurately.

Pushbutton measurements and coordinate data were collected using handheld Trimble® GPS units running Trimble TerraSync™ software.

Trimble GPS Pathfinder® Office software was used to create the data dictionaries for the Trimble GPS units and to post-process the data and create data tables. The data dictionaries contained all of the input fields that are shown on the following Pedestrian Signal/Beacon Measurement Form (Figure 92). For
post-processing purposes, data tables were imported into Microsoft Access®, Microsoft Excel®, or ArcGIS® for quality control checks, mapping, and analysis.

B. DATA COLLECTION TEAM

The data collection team consisted of an engineer to develop the measurement and evaluation criteria, the data attribute table, and the database for storing, querying, analyzing, and reporting the collected data, and to evaluate the results; four engineering technicians who helped create the data dictionary and evaluation criteria and who measured and mapped all of the pedestrian pushbuttons; and, a GIS analyst, who created the data dictionary for the handheld GPS units and post-processed the data to create the database tables for use in Microsoft Access and ArcGIS.

C. MEASUREMENT CRITERIA

Determining which standard to use to evaluate compliance was challenging because the standards have changed somewhat over time.

Instead of spending hundreds of hours trying to determine when each existing pushbutton was installed and what standards applied at the time of construction Public Works decided to apply the requirements of the 2005 PROWAG because it was the Federal Highway Administration (FHWA) recommended best practice document for the compliant design and installation of pedestrian pushbuttons at the time the inventory was initiated in 2012.

There are more than 80 requirements for APSs in the 2005 PROWAG and the 2009 MUTCD to help ensure that they are accessible to individuals with disabilities. The Pedestrian Signal/Beacon Measurement Form was created to simplify the data collection process when checking the compliance of each element against the ADA requirements. The evaluation form has over 40 fields. The reason for the form having less than 80 fields is due to the fact that there are some requirements that are addressed at the manufacturing level of the APS units. By buying an APS from a manufacturer it guaranteed that a portion of the specifications are being met.

During the Public Works inventory, measurements were taken at over 484 pushbuttons. To manage the data, Public Works created a data dictionary on a handheld Trimble GPS unit with fields representing each of the fields in the Pedestrian Signal/Beacon Measurement Form and collected the data electronically.

Data collectors were provided classroom and field training on how to use the measurement forms. Furthermore, they were only asked to take accurate measurements and were not tasked with making a determination of compliance or non-compliance while in the field. If the forms are properly used and data adequately collected there would have been enough information on each form for an ADA expert to be able to evaluate the data and determine compliance back in the office. This simplicity sped up the data collection efforts and data post-processing.
# Snohomish County Pedestrian Signal/Beacon Measurement Form

## (G) Background Information

<table>
<thead>
<tr>
<th>(G1) Pushbutton ID Number:</th>
<th>(G7) Pedestrian Crossing Road:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(G2) MEF Number:</td>
<td>(G8) Adjacent Road:</td>
</tr>
<tr>
<td>(G3) Name of Person Measuring:</td>
<td>(G9) Quadrant or Side of Road:</td>
</tr>
<tr>
<td>(G4) Date Measurement Taken:</td>
<td>(G10) Number of Approaches:</td>
</tr>
<tr>
<td>(G5) Pushbutton Configuration:</td>
<td>(G11) Pedestrian Signal/Beacon Type:</td>
</tr>
<tr>
<td>(G6) Pushbutton Type:</td>
<td>(G12) Pedestrian Signal Indication? (Y/N/NA)</td>
</tr>
</tbody>
</table>

## (H) Pushbutton Requirements

<table>
<thead>
<tr>
<th>(H1) PB Diameter (in.):</th>
<th>(H1) PB Diameter (in.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>(H2) PB Information Sign Present (Y/N/Blank)?</td>
<td>(H2) PB Information Sign Present (Y/N/Blank)?</td>
</tr>
<tr>
<td>(H3) PB Faces Intersection (Y/N)?</td>
<td>(H3) PB Faces Intersection (Y/N)?</td>
</tr>
<tr>
<td>(H4) PB Face is Parallel to Crosswalk (Y/N)?</td>
<td>(H4) PB Face is Parallel to Crosswalk (Y/N)?</td>
</tr>
<tr>
<td>(H5) Pilot Light Confirms PB Actuation (Y/N)?</td>
<td>(H5) Pilot Light Confirms PB Actuation (Y/N)?</td>
</tr>
<tr>
<td>(H6) Message or Tone Confirms PB Actuation (Message/None)?</td>
<td>(H6) Message or Tone Confirms PB Actuation (Message/None)?</td>
</tr>
<tr>
<td>(H7) Locator Tone (Y/N)?</td>
<td>(H7) Locator Tone (Y/N)?</td>
</tr>
<tr>
<td>(H8.1) Audible Indicator of WALK/Beacon Activation (Message/Tone/None)?</td>
<td>(H8.1) Audible Indicator of WALK/Beacon Activation (Message/Tone/None)?</td>
</tr>
<tr>
<td>(H8.2) Audible Message Says:</td>
<td>(H8.2) Audible Message Says:</td>
</tr>
<tr>
<td>(H9.1) Verbal/Visible Indication of WALK/Beacon Activation (Y/N)?</td>
<td>(H9.1) Verbal/Visible Indication of WALK/Beacon Activation (Y/N)?</td>
</tr>
<tr>
<td>(H9.2) Tactile Arrow Parallel to Crosswalk (Y/N/NA)?</td>
<td>(H9.2) Tactile Arrow Parallel to Crosswalk (Y/N/NA)?</td>
</tr>
<tr>
<td>(H10) Message or Tone Volume Auto-Adjust to Ambient Sound (Y/N/NA)?</td>
<td>(H10) Message or Tone Volume Auto-Adjust to Ambient Sound (Y/N/NA)?</td>
</tr>
<tr>
<td>(H11) Message or Tone Volume is Audible from the Curb or Shoulder at the Crosswalk (Y/N/NA)?</td>
<td>(H11) Message or Tone Volume is Audible from the Curb or Shoulder at the Crosswalk (Y/N/NA)?</td>
</tr>
</tbody>
</table>

## (J) Pushbutton Clear Space Requirements

<table>
<thead>
<tr>
<th>(J1) PB Approach (Side/Forward):</th>
<th>(J1) PB Approach (Side/Forward):</th>
</tr>
</thead>
<tbody>
<tr>
<td>(J2) Unobstructed Path To PB Clear Space (Y/N)?</td>
<td>(J2) Unobstructed Path To PB Clear Space (Y/N)?</td>
</tr>
<tr>
<td>(J3) Path to Clear Space Confined on 3 Sides (Y/N)?</td>
<td>(J3) Path to Clear Space Confined on 3 Sides (Y/N)?</td>
</tr>
<tr>
<td>(J4) Running Slope (%)</td>
<td>(J4) Running Slope (%)</td>
</tr>
<tr>
<td>(J5) Length (in.):</td>
<td>(J5) Length (in.):</td>
</tr>
<tr>
<td>(J6) Cross Slope (%):</td>
<td>(J6) Cross Slope (%):</td>
</tr>
<tr>
<td>(J7) Width (in.):</td>
<td>(J7) Width (in.):</td>
</tr>
<tr>
<td>(J8) Vertical Discontinuities (in.):</td>
<td>(J8) Vertical Discontinuities (in.):</td>
</tr>
<tr>
<td>(J9) Horizontal Gaps (in.):</td>
<td>(J9) Horizontal Gaps (in.):</td>
</tr>
<tr>
<td>(J10) Firm, Stable and Slip Resistant Surfaces (Y/N)?</td>
<td>(J10) Firm, Stable and Slip Resistant Surfaces (Y/N)?</td>
</tr>
<tr>
<td>(J11) Are All Grade Changes Flush (Y/N)?</td>
<td>(J11) Are All Grade Changes Flush (Y/N)?</td>
</tr>
<tr>
<td>(J12) Planer Surfaces (Y/N)?</td>
<td>(J12) Planer Surfaces (Y/N)?</td>
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## (K) Pushbutton Location Requirements

<table>
<thead>
<tr>
<th>(K1) PB Adjacent To (Landing/PAR/Median/Island):</th>
<th>(K1) PB Adjacent To (Landing/PAR/Median/Island):</th>
</tr>
</thead>
<tbody>
<tr>
<td>(K2) Distance Between PBs on Same Corner (ft.):</td>
<td>(K2) Distance Between PBs on Same Corner (ft.):</td>
</tr>
<tr>
<td>(K3) Distance from PB to Curb or Shoulder (ft.):</td>
<td>(K3) Distance from PB to Curb or Shoulder (ft.):</td>
</tr>
</tbody>
</table>

## (L) Pushbutton Reach Requirements

<table>
<thead>
<tr>
<th>(L1) PB Height Above Adjacent Clear Space (in.)</th>
<th>(L1) PB Height Above Adjacent Clear Space (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(L2) Project Reach Distance (in.):</td>
<td>(L2) Project Reach Distance (in.):</td>
</tr>
<tr>
<td>(L3.1) Reach Obstruction (curb, base, no PAR, etc.):</td>
<td>(L3.1) Reach Obstruction (curb, base, no PAR, etc.):</td>
</tr>
<tr>
<td>(L3.2) Obstruction Depth (in.):</td>
<td>(L3.2) Obstruction Depth (in.):</td>
</tr>
</tbody>
</table>

## (L) Crossing Time

<table>
<thead>
<tr>
<th>(L1) Pedestrian WALK Interval Duration (sec.):</th>
<th>(L1) Pedestrian WALK Interval Duration (sec.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>(L2) Pedestrian Clearance Interval Duration (sec.):</td>
<td>(L2) Pedestrian Clearance Interval Duration (sec.):</td>
</tr>
</tbody>
</table>

**Comments / Notes:**
D. DATA COLLECTION PROCESS
Initially data collectors went out into the field with paper forms that did not include all the fields on the current evaluation form. While it did not include every requirement outlined in the 2005 PROWAG and the 2009 MUTCD, it was enough to determine whether the pushbutton installation was compliant. Google Earth was also initially used to map the locations of the pedestrian signals/beacons. Data was then collected with survey grade global positioning system (GPS) units.

Figure 93 – Data collector measuring an APS pushbutton
APPENDIX G: SIDEWALKS
# Appendix G: Sidewalks

## TABLE OF CONTENTS: APPENDIX G

- **WHY WERE SIDEWALKS EVALUATED?** ................................................................. 1
- **HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?** .................. 2
- **WHAT ARE THE TECHNICAL REQUIREMENTS FOR SIDEWALKS?** ................. 3
  - **A. Width** ........................................................................................................... 3
  - **B. Slopes** ......................................................................................................... 5
  - **C. Discontinuities** ........................................................................................... 8
  - **D. Obstructions** .............................................................................................. 12
  - **E. Driveways** ................................................................................................ 19
  - **F. Paved Shoulders** ...................................................................................... 23
  - **G. Pedestrian Overpasses and Underpasses** .................................................. 25
  - **H. Street Furniture** ....................................................................................... 26
- **HOW WAS THE SIDEWALK DATA COLLECTED?** ...................................... 27
  - **A. Data Collection Tools** ............................................................................... 28
  - **B. Data Collection Team** ............................................................................... 28
  - **C. Measurement Criteria** .............................................................................. 29
  - **D. Data Collection Process** ........................................................................... 31
  - **E. Data Post Processing** ................................................................................ 32
WHY WERE SIDEWALKS EVALUATED?

In 2002, the United States Court of Appeals for the Ninth Circuit issued an opinion in the Barden vs. City of Sacramento case that sidewalks are considered a program, service, or activity within the meaning of the ADA and are therefore subject to the program accessibility requirements of the ADA (27).

Until the Ninth Circuit Court decision, many agencies had focused solely on curb ramp compliance because sidewalks were not specifically mentioned in the ADA. However, as the Ninth Circuit Court pointed out: the clear ADA requirements to provide accessible curb ramps would be meaningless if the sidewalks between the curb ramps were inaccessible.

In 2013, Public Works undertook a survey of the existing pedestrian facility infrastructure in unincorporated Snohomish County to determine the level of compliance of the existing sidewalk system and to identify barriers to equal access to people with disabilities so they could be added to the transition plan for removal.

The evaluation resulted in:

- More than 460 miles of sidewalks evaluated
- 73,323 total measurements collected
- 134 fixed object obstructions identified
- 766 damaged panels found
- 62% of sidewalk cross slope measurements exceeded 2% maximum
- 2,659 non-compliant driveways

The sidewalk assessments allow Public Works to determine the magnitude or scope of work required to bring the sidewalk program into compliance with the ADA requirements.

The sidewalk inventory and subsequent assessment will also allow Public Works to budget and schedule routine maintenance such as removal or trimming of vegetation encroaching on the sidewalk, code enforcement to remove or relocate obstructions such as vehicles parked on the sidewalk, portable basketball hoops, or other objects that are blocking the sidewalk.

The inventory will also be used to identify fixed objects that other agencies maintain in the public right-of-way such as utility poles, fire hydrants, or mailboxes that obstruct the sidewalk and reduce or block access to people with disabilities so that Public Works can work with these agencies to remove or relocate the obstructions.

The sidewalk inventory can also be shared with disability groups and the general public in map form to aid in route planning between origins and destinations along fully accessibly routes.

In total, the Public Works self-evaluation of more than 460 miles of sidewalk took approximately 130 working days to complete with two data collectors working for up to six hours per day. The sidewalk data collection efforts cost approximately $100,000 including labor, equipment, data management, and post-processing.
HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** - Requirement identification number.
2. **Bold text next to REQ number** - The Code of Federal Regulation (CFR) requirement
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP/ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

---

1. **REQ 01**
   
2. Does Public Works have services, policies, and practices for pedestrian facilities in the public right-of-way that do not or may not be covered by the Code of Federal Regulation Title 28?
   
3. (CFR Title 28, Vol. 1, Sect 35.105(a))
   
4. **BARRIER(S):**
   
5. [Barrier 01] Public Works has not conducted pedestrian facilities in the public right-of-way self-evaluation.
   
6. **CONTRIBUTING FACTOR(S):** None
   
7. **ROOT CAUSE(S):** Lack of Awareness
   
8. **FOLLOW-UP/ACTION ITEM(S):**
   
WHAT ARE THE TECHNICAL REQUIREMENTS FOR SIDEWALKS?

A. WIDTH

There are over 460 miles of sidewalk along one or both sides of unincorporated Snohomish County roads. In the past, sidewalks were not always required by the county’s development code for new developments or for the construction of public roads. Therefore, there are many older neighborhoods and arterial roads where there is no sidewalk on one or both sides of the road. However, since 1992, sidewalk has been required on both sides of almost all urban roads so almost all neighborhoods developed since then have sidewalk.

For decades the standard sidewalk width for local access and sub collector streets was 4-feet, 5-feet for collectors and arterials, and 7-feet for sidewalk fronting commercial or industrial properties. The current county sidewalk standard width is 5 feet for residential zones and 7 feet for multi-family, commercial and industrial zones.
REQ 222  The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 feet, exclusive of the width of the curb.
(2005 PROWAG R301.3.1)
(2012 EDDS 4-05B, 1 through 6)

BARRIER(S): The evaluation of sidewalk widths indicates the following:

- 11 measurements were < 3.0 feet
- 10 measurements were 3.0 feet to 3.4 feet
- 9 measurements were 3.5 feet to 3.9 feet
- 21,061 measurements were >/= 4.0 feet

CONTRIBUTING FACTOR(S): The sidewalk inventory indicates that there were only 11 measurements taken over 460 miles where the unobstructed sidewalk width was less than 3.0 feet. These sidewalk segments will be added to the transition plan to be upgraded to the current standard.

The other 19 measurements of sidewalk widths less than 4 feet indicate that they were at least constructed to the current legal standard set by the DOJ 2010 Standards for pedestrian access routes of 3 feet minimum – which is a standard that has been in effect for many decades.

ROOT CAUSE(S): Unknown

FOLLOW-UP/ACTION ITEM(S):

[FAI 24] Develop and publish a transition plan to remove barrier to equal access to Public Works’ program for pedestrian facilities in the public right-of-way.

MEASURING FORM FIELD(S): SW-N2

Figure 94 – Measuring sidewalk width
REQ 223  Walkways in pedestrian access routes that are less than 5.0 feet in clear width shall provide passing spaces at intervals of 200 feet maximum. Pedestrian access routes at passing spaces shall be 5.0 feet wide for a distance of 5.0 feet (2005 PROWAG R301.3.2)

BARRIER(S): Snohomish County’s Engineering Development and Design Standards (EDDS) Section 4-05, B-1 and B-2 require that sidewalks constructed in single-family residential developments be a minimum of 5 feet in width. Furthermore, it states that in commercial, industrial, and other residential developments sidewalks should be a minimum of 7 feet in width.

Because all new sidewalks in unincorporated Snohomish County are constructed to be at least 5 feet wide there is no need for separate passing zones for newly constructed sidewalks.

For existing sidewalk constructed to 4 feet in width the addition of compliant passing spaces, if all other sidewalk elements are compliant, may be an effective way to retrofit the sidewalk to comply with the 2005 PROWAG without having to reconstruct the entire network.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): SW-N2

B. SLOPES
Slopes can affect the usability of pedestrian facilities. Slopes that are greater than the allowed maximum could make it uncomfortable for users, and slopes that are closer to zero could cause water to pond and create a slip hazard during freezing weather.
REQ 224 Where the walkway of a pedestrian access route is contained within a street or highway border, its grade shall not exceed the general grade established for the adjacent street or highway.

(2005 PROWAG R301.4.2)
(2012 EDDS 4-05A, 2)

BARRIER(S): There are only a handful of locations where the sidewalk running slope exceeds the general grade of the roadway and those are usually spot locations where the sidewalk elevation had to be adjusted to match the elevation of major utilities over which the sidewalk crosses.

Also, the slope at the back of a segment of sidewalk between two perpendicular curb ramp landings on a corner radius may be steeper than the grade of the roadway measured in the adjacent gutter flow line simply because of geometric constraints – the differentials in elevations between two ramp landings is made up over a shorter distance the closer one moves towards the center of the corner radii.

It may be possible to compare the sidewalk running slope data against a digital elevation model of all the county roads to identify locations where the running slope exceeds the general grade of the roadway but because these locations are very rare it would not add much to the discussion. Although the following breakdown of the running slope data does not allow for an interpretation of compliance it does provide insight into the steepness of sidewalk throughout the county.

- 80% of sidewalk running slope measurements were <= 5%
- 13% of sidewalk running slope measurements were > 5% and <= 8.3%
- 7% of sidewalk running slope measurements were > 8.3%

Approximately 80 percent of sidewalk has a running slope of 5 percent or less. Only 7 percent has a running slope of greater than the maximum allowed for a curb ramp at 8.3 percent. So, even with all the hills in unincorporated Snohomish County most of the sidewalks are pretty flat.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): SW-N3
REQ 225  The cross slope of the walkway of a pedestrian access route shall be 2
percent maximum.
(2005 PROWAG R301.4.1)
(2012 EDDS 4-05A, 1)

BARRIER(S):

- 38% of data points were \( \leq 2\%
- 16\% of data points with cross slopes were > 2\% and \( \leq 2.4\%
- 37\% of data points with cross slopes were > 2.4\% and \( \leq 4.0\%
- 9\% of data points were > 4.0\%

CONTRIBUTING FACTOR(S): In the past, the use of spirit (bubble) levels was common, but it would have been very difficult to determine the slope of a pedestrian facility without the use of a more precise measuring tool. Therefore, most of the existing sidewalks in the public right-of-way have cross slopes exceeding 2 percent. In many instances the curb and gutter are formed and poured before the sidewalk. Some contractors may have placed forms to pour sidewalk and checked cross slopes based on measurements from the face of the curb to the back of the sidewalk instead of the back of the curb to the back of the sidewalk. The sidewalk cross slope can be different than the slope of the top of the curb, the additional six inches represented by the curb width can make a difference in slope measurement to the back of the sidewalk by increasing the length over which the slope is being measured. In addition, inspectors were not following up to determine if sidewalk cross slopes were compliant with the requirements of the ADA.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 41] Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): SW-N4
C. DISCONTINUITIES
Discontinuities can become tripping hazards or can make it difficult for individuals using mobility devices to get around by creating steep slopes that they may not be able to traverse.

REQ 226 The surface of the pedestrian access route shall be firm, stable and slip resistant.
(2005 PROWAG R301.5)
(2012 EDDS 4-05A, 5)
(2012 EDDS 4-05A, 6)
(2012 EDDS 4-05D, 14)

BARRIER(S): No specific measurements were taken. All Snohomish County pedestrian facilities in the public right-of-way operated by Public Works are constructed with a concrete surface with a broom finish or are constructed out of asphalt which materials are generally considered to be firm, stable, and slip resistant. Other materials are strictly prohibited.

It was assumed that all utility covers or lids for junction boxes manhole covers, water valves, etc. did not meet requirements simply because they do not have slip resistant surfaces. Most also have hand holes or access holes that have a diameter greater than 0.5 inches which means they don’t meet ADA on that front. Because utility covers and lids were captured during the county’s mobile mapping project the data did not need to be collected by the ADA Team members. A plan to upgrade utility lid covers should be included in the transition plan.

A research project sponsored by the U.S. Access Board conducted tests with persons with disabilities and concluded that a higher coefficient of friction was needed by such persons. A static coefficient of friction of 0.6 is recommended for steps, floors, and lift platforms and 0.8 for ramps (23). These coefficient of friction values are not legal standards and are not even well known or well publicized recommendations. Even then, there is no practical way for Public Works to measure coefficients of friction for pedestrian facilities in the public right-of-way.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 24] Develop and publish a transition plan for pedestrian facilities in the public right-of-way and include upgrading utilities in the sidewalk or pedestrian circulation path to make them slip resistant.

MEASURING FORM FIELD(S): SW-02
REQ 227  Vertical alignment shall be planar within pedestrian access routes. Grade breaks shall be flush.
(2005 PROWAG R301.5.1)

BARRIER(S): Data collectors identified 651 total non-flush grade breaks including:

- 282 sidewalk heaves
- 122 expansion joints
- 119 damaged panels
- 50 cracks in sidewalk
- 78 other grade breaks

CONTRIBUTING FACTOR(S): Non-planar vertical alignments and grade breaks that are not flush are problems that develop over time due to adjacent vegetation, erosion, and freeze/thaw cycles. These issues can be addressed through routine maintenance activities.

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

MEASURING FORM FIELD(S): SW-O3
REQ 228 Surface discontinuities shall not exceed 0.5 inches maximum. Vertical discontinuities between 0.25 inches and 0.5 inches maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.
(2005 PROWAG R301.5.2)
(2012 EDDS 4-05D, 14)

BARRIER(S):

- 188 vertical discontinuities are 0.25 inches to 0.5 inches
- 360 vertical discontinuities are > 0.5 inches

CONTRIBUTING FACTOR(S):

Vertical discontinuities in the sidewalk are often caused by tree roots that have grown under the sidewalk and have caused one sidewalk panel to be lifted up higher than an adjacent sidewalk panel. Vertical discontinuities can also be caused by heaving or buckling brought on by the freeze/thaw cycle or extreme heat due to poor sub-surface construction or conditions.

Road Maintenance has an ongoing maintenance program to grind and bevel vertical discontinuities or demolish and reconstruct sidewalk or ramps where there are vertical discontinuities that can’t be beveled. However, the program is not systematic and relies, in part, on work order requests from county staff or citizens who call to complain. The inventory will allow Road Maintenance to determine the size and scope of the problem with vertical discontinuities and to prioritize and rank for remediation.

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

MEASURING FORM FIELD(S): SW-03
REQ 229  Openings shall not permit passage of a sphere more than 0.5 inches in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.  
(2005 PROWAG R301.7.1)

BARRIER(S):

- 115 horizontal gaps are > 0.5 inches

CONTRIBUTING FACTOR(S): Horizontal gaps in the sidewalk are often caused by joints filler material that has eroded out of the joints leaving a gap. Some gaps are caused by large cracks that have developed as a result of damage done by the roots of adjacent trees or through damage caused by repeated freeze/thaw cycles.

Road Maintenance has an ongoing maintenance program to fix horizontal gaps or demolish and reconstruct sidewalk or ramps where there are horizontal gaps that can’t be filled in. However, the program is not systematic and relies, in part, on work order requests from county staff or citizens who call to complain. The inventory will allow Road Maintenance to determine the size and scope of the problem with horizontal gaps and to prioritize and rank for remediation.

Many utility lids and covers have horizontal gaps or openings for hand holes or to allow tools to be inserted into them so that the lid can be lifted out of the way. A quick field review of several of these lids revealed that most of the openings do not meet the horizontal gap requirement. The county maintains a utility infrastructure dataset that will allow Public Works to locate utilities in the pedestrian access route. Upgrading utility lids to be compliant will be part of the transition plan.

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): [FAI 19] Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition.

MEASURING FORM FIELD(S): SW-04
D. OBSTRUCTIONS

Obstructions in the sidewalk can create barriers to persons with disabilities such that they are prevented from traveling a route that they need to travel, or they are forced off of the sidewalk and into the roadway to get around the obstruction.

All traffic, regulatory, guide, or other signs installed and maintained by Public Works in the public right-of-way conform to the requirements of the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD). They are also compatible with the ADA requirements for protruding objects along or overhanging any portion of a pedestrian circulation path. In addition, the county’s Engineering Design and Development Standards (EDDS) section 4-05, B-4, requires that objects in or adjacent to the sidewalk do not reduce the clear width required for pedestrian access routes required by the ADA. Furthermore, section 4-05, B-5, requires that protruding objects meet the requirements of the ADA.

Public Works does not install guardrails or other barriers when there are vertical clearance issues. Most of the barriers with inadequate vertical clearance are vegetation barriers and are not permanent or fixed barriers. Proper landscape maintenance will remove or mitigate such barriers.
REQ 230 Protruding objects along or overhanging any portion of a sidewalk shall not reduce the clear width required for pedestrian access routes.  
(2005 PROWAG R209)  
(2012 EDDS 3-14)  
(2012 EDDS 4-05B, 5)  
(EDDS Standard Plan 4-150)

BARRIER(S): Data collectors identified 1,692 sidewalk obstructions including:

- 417 encroaching grass/weeds
- 869 overhanging branches
- 3 trees obstructing the sidewalk
- 7 utility poles
- 235 portable basketball hoops
- 119 mailboxes obstructing the sidewalk
CONTRIBUTING FACTOR(S): The items on the preceding list of obstructions can be classified into three main categories: Fixed obstructions, vegetative obstructions, and moveable obstructions.

Fixed sidewalk obstructions are rare and easily identifiable if not always easily mitigated. The most commonly fixed sidewalk obstructions include mailboxes, utility poles, traffic signs, and fire hydrants where there isn’t sufficient width around the obstruction to meet the ADA requirements.

More common are sidewalk obstructions caused by overgrowth of vegetation and landscaping. Many of these obstructions can be mitigated through routine maintenance of vegetation in the public right-of-way and through public outreach and education campaigns to encourage property owners to keep vegetation and landscaping from encroaching on the sidewalk.

Harder to mitigate are the movable obstructions that are created by adjacent property owners. However, without educational public outreach efforts and robust code enforcement mechanisms many of the obstructions will remain or return after emphasis appears to diminish. Movable obstructions include objects such as garbage cans, illegally parked vehicles, portable basketball hoops, furniture and lawn decorations, and portable signs.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 57] Coordinate with the U.S. Postal Service, public utilities, county code enforcement, Road Maintenance, and private property owners to remove, relocate, and/or mitigate sidewalk obstructions.

MEASURING FORM FIELD(S): SW-P2
REQ 231  Objects with leading edges more than 27 inches and not more than 80 inches above the finish surface or ground shall protrude 4 inches maximum horizontally into the pedestrian circulation path.
(2005 PROWAG R401.2)

BARRIER(S): The sidewalk inventory indicates that there are approximately 119 mailboxes that encroach on the pedestrian access routes of sidewalk throughout unincorporated Snohomish County. Data collectors specifically noted 8 mailbox locations that apparently don’t meet the protrusion requirements of the ADA. These 8 mailbox locations were identified as not being cane detectable.

CONTRIBUTING FACTOR(S): Unknown. Standards may have changed over time.

ROOT CAUSE(S): Unknown

FOLLOW-UP/ACTION ITEM(S):
[FAI 57] Coordinate with the U.S. Postal Service, public utilities, county code enforcement, Road Maintenance, and private property owners to remove, relocate, and/or mitigate sidewalk obstructions.

MEASURING FORM FIELD(S): SW-P2

Figure 102 - Protruding Objects (Imaged Borrowed from the ADDAG)
REQ 232 Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, the lowest edge of such sign or obstruction shall be 27 inches maximum or 80 inches minimum above the finish surface.
(2005 PROWAG R401.3)

BARRIER(S): Signs or other obstructions mounted between posts or pylons are not permitted on the sidewalk or to encroach on the sidewalk. None were detected during the inventory.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): SW-P2

Figure 103 - Post Mounted Protruding Objects (Imaged Borrowed from the ADDAG)
REQ 233 The minimum continuous and unobstructed clear width of a pedestrian access route shall be 4.0 feet, exclusive of the width of the curb.
(2005 PROWAG R301.3.1)
(2012 EDDS 4-05B, 1 through 6)

BARRIER(S): Data collectors were asked to measure the width of the pedestrian access route around obstructions. The pedestrian access route width data can be classified as such:

- 7% of data point measurements are 3.5 feet to 3.9 feet (meets current 2010 ADA Standard but not 2005 PROWAG)
- 10% of data point measurements are 3.0 feet to 3.4 feet (meets current 2010 ADA Standard but not 2005 PROWAG)
- 10% of data point measurements are 2.5 feet to 2.9 feet (non-compliant)
- 17% of data point measurements are less than 2.5 feet (non-compliant)
- 56% of data point measurements are unknown or overhanging braches where the issue wasn’t horizontal clearance but vertical clearance, and the data collector left the pedestrian access route (PAR) width field blank.

CONTRIBUTING FACTOR(S): Because an overwhelming majority of sidewalk obstructions are the result of overgrown vegetation, most of the widths less than 4 feet are the result of insufficient maintenance by adjacent property owners and Public Works. Additionally, there is no code enforcement where applicable.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 57] Coordinate with the U.S. Postal Service, public utilities, county code enforcement, Road Maintenance, and private property owners to remove, relocate, and/or mitigate sidewalk obstructions.

MEASURING FORM FIELD(S): SW-P3
REQ 234 Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches high. The leading edge of such guardrail or barrier shall be located 27 inches maximum above the finish surface or ground.
(2005 PROWAG R401.4)

BARRIER(S): Barriers identified during that inventory that were less than 80 inches high were all vegetative barriers such as overhanging tree branches; no permanent or fixed objects were found. Guardrails will not be installed in the public right-of-way for vegetative barriers. Proper maintenance and code enforcement can eliminate the barriers.

CONTRIBUTING FACTOR(S): Insufficient maintenance by adjacent private property owners and Public Works. Additionally, there is no code enforcement where applicable.

ROOT CAUSE(S): No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):
[FAI 57] Coordinate with the U.S. Postal Service, public utilities, county code enforcement, Road Maintenance, and private property owners to remove, relocate, and/or mitigate sidewalk obstructions.

MEASURING FORM FIELD(S): None
E. DRIVEWAYS

Many public agencies have found that the pedestrian access routes at driveway crossings – especially in residential neighborhoods – are where a majority of the most severe cross slope and running slope measurements are found. In neighborhoods with rolled curbs, the driveways tend to be okay because there are no changes in slope. In older neighborhoods with dropped curb driveways there tend to be abrupt changes in level over short distances. The county’s EDDS were not updated until 2013 to require a dropped curb driveway design that would facilitate ADA compliance.

Sidewalk data collectors were only asked to map and record measurements for driveways that did not meet the requirements. There was no distinction made about driveway type (rolled curb vs. dropped curb vs. curb returned) or by location (residential vs. commercial). In all, 2,659 driveways were mapped and measured.

Figure 105 – Sidewalk crossing residential driveways
REQ 235  Access points shall be designed and constructed to conform to ADA design requirements, where applicable.
(2012 EDDS 2-01B, 1 & 2)
(EDDS Standard Plans 2-020, 2-022, 2-024)

BARRIER(S): There were 2,659 driveways that were identified in the county that do not meet the requirement.

CONTRIBUTING FACTOR(S): Many of the driveways were constructed before the ADA was adopted into law. Even after the ADA was adopted into law it wasn’t clear that sidewalk and driveways were covered under the regulations because they were not specifically mentioned at first.

Many of these driveways that were constructed after it was clarified that sidewalk was covered by the requirements of the ADA were not constructed according to the standards provided by the county. It appears, from reviewing older standards documents, that the standards were not very clear either.

It is also likely that there was a lack of follow-up by inspectors to ensure that the driveways were being constructed according to the standards. Additionally, engineers, construction and maintenance workers, and inspectors in years past were not aware of the challenges that individuals with disabilities face in the public right-of-way and were not paying attention to how they could improve driveway crossings to make them more accessible.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):
[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.
REQ 236  The running slope of driveway ramps shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 feet (2005 PROWAG R303.2.2.1) (2012 EDDS 4-05D, 5)

BARRIER(S):

- 111 driveway running slopes are > 8.3%, <=8.7% (not meeting the requirement)
- 1,403 driveway running slopes are > 8.7% (not meeting the requirement)

CONTRIBUTING FACTOR(S): Refer to the response to REQ 235.

ROOT CAUSE(S): Refer to the response to REQ 235.

FOLLOW-UP/ACTION ITEM(S): Refer to the response to REQ 235.

MEASURING FORM FIELD(S): SW-Q2

Figure 106 – Measuring the running slope of a driveway ramp
REQ 237  The cross slope of driveway ramps shall be 2 percent maximum.
(2005 PROWAG R303.2.2.2)
(2012 EDDS - 4.05D, 5)

BARRIER(S):

- 1,664 driveway crossings do not meet the requirements for both running and cross slopes
- 149 driveway cross slopes are > 2.0%, <=2.4 %
- 1,954 driveway cross slopes are > 2.4%

CONTRIBUTING FACTOR(S): Refer to the response to REQ 235.

ROOT CAUSE(S): Refer to the response to REQ 235.

FOLLOW-UP/ACTION ITEM(S):

[FAI 42] Refine and update the Engineering Design and Development Standards (EDDS) requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure that they are in line with the current federal and state requirements and standards, and best practices.

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): SW-Q3
F. PAVED SHOULDERS

In areas where there are no sidewalks within unincorporated Snohomish County a paved shoulder is often provided for pedestrian access. These paved shoulders can provide pedestrian access in areas where there is no continuous sidewalk network.

Figure 108 – Paved shoulder that some pedestrians may use as a walkway
REQ 238 Where a pedestrian circulation path is provided in the street, along a highway, or within a shoulder, it shall contain a pedestrian access route. (2005 PROWAG R204)

BARRIER(S): It is estimated that Public Works maintains over 220 miles of paved shoulder that pedestrians might be using as pedestrian circulation paths. Paved shoulders were not measured or evaluated as part of the Public Works ADA self-evaluation of pedestrian facilities in the public right-of-way. This was because the slopes and pavement condition are governed by the slopes and pavement condition of the road and in only limited cases can paved shoulders be fixed without a major reconstruction of the roadway. Additionally, because roadway reconstruction to achieve full compliance of existing facilities is not a requirement of the ADA, paved shoulder accessibility improvements will not be programmed into the transition plan that Public Works is preparing.

If there are spot improvements that need to be made to pavement surfaces such as filling in pot holes or repairing uneven surfaces these things can be done through routine maintenance of the roadway or fixed as part of the county’s overlay and pavement preservation program work.

For newly constructed roadways with paved shoulders, Public Works staff needs to be trained on the 2005 PROWAG requirements for pedestrian access routes to ensure that accessible routes are provided as part of the new roadway, and when roadway reconstruction projects include paved shoulders staff will know to reconstruct the paved shoulder to the maximum extent feasible when the shoulder is intended to be a walkway.

Shared use trails and other regional and recreational trails were also not included in the Public Works self-evaluation of pedestrian access routes in the public right-of-way because such facilities are maintained by the Snohomish County Parks Department which has prepared its own ADA self-evaluation and transition plan for parks facilities.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 46] Coordinate with the county’s pavement engineer to affect changes to crosswalks and paved shoulders used as walkways to bring them in line with ADA requirements as part of the county’s annual overlay program, where practical.

MEASURING FORM FIELD(S): None
G. PEDESTRIAN OVERPASSES AND UNDERPASSES

Pedestrian overpasses and underpasses allow for an uninterrupted flow of pedestrian traffic. The county does not currently have or maintain any pedestrian overpasses or underpasses.

Figure 109 – Pedestrian overcrossing of Interstate 5

REQ 239 Stairs shall comply with the 2005 PROWAG requirement R407. (2005 PROWAG R305.5.3)

BARRIER(S): Public Works does not provide stairs in the public right-of-way. There may be stairs in parks or facilities maintained by the Snohomish County Parks Department which has prepared its own ADA self-evaluation and transition plan for parks and trails.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): None

REQ 240 Where the walkway of a pedestrian access route is supported by a structure, it shall comply with R305.5. (2005 PROWAG R301.4.3)

BARRIER(S): Public Works does not have pedestrian access routes supported by structures in the public right-of-way. There may be pedestrian access routes supported by structures on trails maintained by the Snohomish County Parks Department which has prepared its own ADA self-evaluation and transition plan for parks and trails.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): None

Figure 110 – Pedestrian overcrossing of Interstate 5
H. STREET FURNITURE
Street furniture is commonly found on sidewalks in urban areas. Types of street furniture may include: benches, drinking fountains, tables, sun shades, bike racks, etc.

REQ 241    Street furniture intended for use by pedestrians and installed on or adjacent to a pedestrian circulation path shall comply with R307.
(2005 PROWAG R211)
(2005 PROWAG R307)

BARRIER(S): Public Works does not place street furniture in pedestrian circulation paths in the public right-of-way. Community Transit operates and maintains bus stops in the public right-of-way and its facilities may have street furniture that it maintains.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None

Figure 111 – Street furniture under a bus shelter
HOW WAS THE SIDEWALK DATA COLLECTED?

A 2008 report backed by the American Association of State Highway and Transportation Officials and conducted by the Texas Transportation Institute titled “ADA Compliance at Transportation Agencies: A Review of Practices” synthesizes the practices of several state and local agencies to “develop a comprehensive inventory of pedestrian facilities, identify non-compliant locations, and develop a program for remedial repairs in order to bring facilities into compliance (28).”

The focus of the report is on pedestrian infrastructure in the public right-of-way and found that:

“ADA compliance inventory and assessment efforts vary widely from simple ‘yes/no’ clipboard inventories of accessible elements to detailed survey measurements. . . using innovative approaches and technologies such as GIS, GPS receivers, orthophotography, PDAs, and data management systems (28).”

The report also found that the “. . .primary determining factors for the type and use of technology appear to be the agency’s prior experience, available resources, and amount of infrastructure to inventory (28).”

What is evident from the report is that although there are many common elements in the way agencies assess and prioritize pedestrian facilities, for accessibility improvements there are major differences in methods because what works for one agency may not work for another. This is due to differences in the size of an agency, the agency’s budget and technological sophistication, the predominant geography in which the agencies pedestrian facilities are constructed, and the spatial distribution or density of facilities in the agency’s jurisdiction.

Some agencies have the ability and resources to use more sophisticated systems and advanced technology to automate the data collection process whereas other agencies may not. The Federal Highway Administration (FHWA) published a document in 2001 called Designing Sidewalks and Trails for Access, which outlines a method for evaluating sidewalk and curb ramps called the Sidewalk Assessment Process (SWAP) (21).

SWAP is a data collection process that is developed for the use of common off-the-shelf tools such as rolatape (a measuring wheel), hand-held clinometers, digital inclinometers, a profile gauge, and a tape measure to record sidewalk dimensions, slopes, and changes in level at discrete locations, at abrupt changes in level, at driveways, and at regular stations no greater than 164 feet apart between intersections. SWAP was tested in several locations across the United States so that the accuracy of the evaluation process could be measured. It was determined that the SWAP method would lead to accurate and reliable information about the accessibility of sidewalks (21). Snohomish County decided to use a modified version of the SWAP method to conduct its sidewalk inventory.
A. DATA COLLECTION TOOLS

Data collectors were outfitted with a mapping grade Trimble® Juno® 3B hand-held GPS unit running TerraSync™ software and loaded with a data dictionary developed using Trimble GPS Pathfinder® Office software. The GPS unit was used to capture a coordinate point for each measurement and to record attribute information. Data collectors also used a tape measure, an MD Building Products Smart Tool™ Digital Level (inclinometer) - commonly referred to as a Smart Level, and high visibility safety gear.

The positional accuracy of the Trimble Juno 3B hand-held unit is 6.56 to 16.40 feet - uncorrected. Survey Grade GPS equipment was considered but it was decided that survey grade data equipment would cost too much – as much as 10 times the cost of mapping grade equipment – and take too much time to collect data because it can often take 30 or more seconds to acquire satellite and base station signals for each data point and many tens of thousands of points needed to be collected.

The guaranteed accuracy of the MD Building Products Slope Walker Digital Inclinometer is +/- 0.35 percent between 0 and 90 degrees (26). The tape measure was scaled to feet and hundredths of a foot.

A profile gauge might have been a more accurate tool to use to measure vertical discontinuities but would have required a greater amount of physical exertion for evaluators to have to bend over and measure the many hundreds of measurements that might have been taken.

A tape measure scaled to 100ths of a foot provided the level of accuracy to determine if a vertical discontinuity was at least greater than the minimum 0.25 inches allowed.

B. DATA COLLECTION TEAM

The data collection and evaluation team consisted of an engineer to develop the evaluation criteria, data attribute table and the database for storing, querying, analyzing, and reporting the collected data, and to evaluate the results; two engineering technicians who helped create the data dictionary and evaluation criteria and who measured and mapped all of the sidewalks; and, a geographic information system (GIS) analyst, who created the data dictionary for the handheld...
GPS units and post processed the data to create the database tables for use in Microsoft Access and ArcGIS.

C. MEASUREMENT CRITERIA
Public Works decided to apply the requirements of the 2005 PROWAG because it was the Federal Highway Administration (FHWA) recommended best practice document for the compliant design and construction of pedestrian facilities at the time the inventory was initiated in 2010.

A sidewalk measurement form (Figure 113) was created to summarize all of the requirements on one page and to provide a place for measurements to be recorded for each sidewalk sample location and each obstruction, driveway, or discontinuity.

During the Public Works inventory, measurements were taken at over 26,000 points along the sidewalk network. To manage the data, Public Works created a data dictionary on a handheld Trimble GPS unit with fields representing each of the fields in the Sidewalk Measurement Form and collected the data electronically.

Data collectors were only asked to take accurate measurements and were not tasked with making a determination of compliance or non-compliance for sidewalks or driveways in the field. If the data was adequately collected there should have been enough information for an ADA expert to be able to determine compliance back in the office. This simplicity sped up the data collection efforts and data post-processing.
## Sidewalk Measurement Form

### (M) Background Information
- (M1) Sidewalk Asset ID Number: 
- (M2) MEF Number: 
- (M3) Name of Person Measuring: 
- (M4) Date Measurement Taken: 
- (M5) Latitude: 
- (M6) Longitude: 

### (N) Sidewalk Measurements
- (N1) Sidewalk Measurement ID: 
- (N2) Sidewalk PAR Width (ft.): 
- (N3) Sidewalk Run Slope (%): 
- (N4) Sidewalk Cross Slope (%): 
- (N5) Sidewalk Comments: 

### (O) Discontinuities
- (O1) Discontinuity ID: 
- (O2) Discontinuity Type? 
- (O3) Vertical Discontinuity (in.): 
- (O4) Horizontal Gap (in.): 
- (O5) Discontinuities Comments: 

### (P) PAR Obstructions
- (P1) PAR Obstruction ID: 
- (P2) PAR Obstruction Type? 
- (P3) Obstruction PAR Width (ft.): 
- (P4) PAR Obstruction Comments: 

### (Q) Driveways
- (Q1) Driveway Measurement ID: 
- (Q2) Driveway Run Slope (%): 
- (Q3) Driveway Cross Slope (%): 
- (Q4) Driveway Comments: 

**Comments / Notes:**

---

**Figure 113 - Sidewalk measurement form**
DATA COLLECTION PROCESS

Snohomish County’s Engineering Design and Development Standards (EDDS) require frontage improvements, including curb, gutter, sidewalk, accessible driveway crossings, and curb ramps for most developments but because not every property is developed at the same time as adjacent properties there are often short and non-contiguous segments of curb, gutter, and sidewalk on one or both sides of many public roads. Some segments may only be a few hundred feet long, or less. Identifying and evaluating all of the non-contiguous segments throughout the county was a challenge.

Fortunately, the process of identifying sidewalk segments to be measured was facilitated by data from the mobility database, which is maintained by Public Works as a requirement of the County Road Administration Board. Data collected during the mobile mapping project undertaken in 2012 utilized GeoAutomation’s advanced photographic imaging technology and the company’s data reduction system. This was used to map multiple public infrastructure assets including curb, gutter, and sidewalk.

Although the GeoAutomation technology was sophisticated enough to allow for slope measurements, the level of accuracy could not be guaranteed to the level required to determine compliance with the requirements of the ADA. Thus, the mobile mapping data was only useful for identifying where there was sidewalk that needed to be field evaluated.

The mobile mapping sidewalk location geodata was overlaid on orthophotography to plan routes. Evaluators coordinated data collection efforts so that evaluators travelled individually to measure dispersed and discontinuous segments, while also teaming up to efficiently use travel times and vehicle usage to tackle the neighborhoods where the sidewalk density and contiguity was greater.

Progress was tracked using a KML file type version of the mobile mapping sidewalk location geodata in Google Earth. As segments were inventoried the symbology of each completed sidewalk segment was manually changed from a green to a black color. Tracking in Google Earth was easy and allowed non-GIS users access to the tracking data.

Data collectors were trained to calibrate their digital inclinometers before each use. Data collectors took running slope, cross slope, and width measurements at regular intervals of...
approximately 150 feet. Data collectors also took measurements whenever there were extreme changes in slopes in between regular intervals, or where the sidewalk running slope visibly exceeded the general grade of the road.

Data collectors mapped obstructions in the pedestrian circulation area, objects that didn’t meet protruding object requirements, vertical deflections greater 0.25 inches and horizontal gaps greater than 0.5 inches. Data collectors captured the location of damaged sidewalk panels and other unusual features that decreased or served as a barrier to access. Data collectors also captured the worst-case cross slope of each driveway where the pedestrian access route crossed the driveway apron.

**E. DATA POST PROCESSING**

The geodata collected during the sidewalk inventory was exported from the handheld GPS units, post-processed using Trimble Pathfinder software, and then converted into shapefiles for further post-processing and analysis in ESRI’s ArcGIS platform. One of the drawbacks of using mapping grade GPS units like the Trimble Juno 3B is that the positional accuracy is usually around 6.56 feet, so the point data won’t aesthetically line up with sidewalks visible in the county’s orthophotography or with the polygons of the sidewalk location geodata collected during mobile mapping. A final post-processing step occurred in ArcGIS where point data that fell outside the sidewalk prism as displayed on the orthophotography or sidewalk location polygons was manually moved into position in ArcGIS.

Relocated data points were visually checked against Google Street view images or the county’s own mobile mapping photo or orthophotography to ensure that the relocated data point position was as close as possible to the driveway, damaged panel, or other obstruction that was inventoried. For example, a point mapping an overhanging tree branch could easily be moved into alignment using the orthophotography and be placed on top of the image of the tree for which the data point was collected.

Because the position accuracy of the GPS data was only between 6.56 to 16.40 feet anyway, moving the point on a map did not worsen the real accuracy of the data.

The coordinates of relocated points were recalculated to the map coordinate points. Finally, a sample set of sidewalk data points were validated in the field to confirm that data points could be physically located from the mapped points and the data collection post process methods were confirmed to be valid.
APPENDIX H: BUS STOPS
# TABLE OF CONTENTS: APPENDIX H

**WHY WERE BUS STOPS EVALUATED?** ................................................................. 1

**HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?** ...................... 2

**WHAT ARE THE TECHNICAL REQUIREMENTS FOR BUS STOPS?** ..................... 3

A. **Boarding and Alighting Areas** .................................................................... 3

B. **Bus Shelters** ................................................................................................. 7

C. **Bus Route Identification Signs** ..................................................................... 15
WHY WERE BUS STOPS EVALUATED?

Community Transit is the local transit agency that maintains bus stops on unincorporated Snohomish County roads. Most of these bus stops consist of a post mounted bus route identification sign mounted beside a sidewalk or next to a paved shoulder. On occasion, these bus stops include a seat or two, and sometimes a trash receptacle. There are:

- 227 bus stops on county roads
- 21 compliant bus stops on county roads
- 27 bus stops with shelters on county roads

Google Street View™ images were used to quickly determine that at most bus stops – other than those with bus shelters – potential ADA compliance issues would center on the dimensions and slopes of boarding and alighting areas.

Access to bus stops on paved shoulders is governed largely by the grade of the road, the width of the shoulder, and the condition of the pavement. Because most existing paved shoulders don’t meet the ADA requirements, they would likely have to be re-graded and/or re-paved when new stops are installed. So, by default, it was assumed that almost all the access to the bus stops placed next to paved shoulders did not meet the ADA requirements because traditionally neither Community Transit nor Public Works has reconstructed shoulders before new bus stops are placed.

Google Street View was used to visually check each bus stop adjacent to a paved shoulder and if it looked like there was a possibility the stop could be compliant it was field verified otherwise it was added to the list of facilities to be included in the transition plan.

A similar line of thought was taken with the bus stops located adjacent to curb/gutter/sidewalk in that the county’s sidewalk requirements vary from 5 to 7 feet and because the ADA requires a boarding and alighting area that is 8 feet long, measured perpendicular to the curb, bus stops placed adjacent to most existing sidewalk would, by default, not be compliant if the sidewalk was not reconstructed. Sidewalk widths were measured in Google Earth and Validated in Google Street View™ and if it looked like the bus stop could be compliant it was field verified otherwise it was added to the list of facilities to be included in the transition plan.

Because there was a greater chance the bus stops with bus shelters were designed and constructed to ADA standards – including the street furniture requirements – the bus shelters were all field measured.

As part of the transition planning process, Public Works will need to coordinate with Community Transit to determine how to bring all bus stops into compliance. The following requirements for bus stops are provided to illustrate the magnitude of issues that will need to be addressed with Community Transit to bring the bus stops and bus shelters into ADA compliance.
## HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** - Requirement identification number.
2. **Bold text next to REQ number** - The Code of Federal Regulation (CFR) requirement
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP/ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

### Example Table Entry

<table>
<thead>
<tr>
<th>Req.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Does Public Works have services, policies, and practices for pedestrians that do not or may not meet the requirements of the Code of Federal Regulations (CFR Title 28, Vol. 1, Sect 35.105(a))?</td>
</tr>
</tbody>
</table>

**Barrier(s):**

- [Barrier 01] Public Works has not considered pedestrian facilities in the public right-of-way.

**Contributing Factor(s):** None

**Root Causes(s):** Lack of Awareness

**Follow-up/Action Item(s):**

- [FAI 01] Conduct an ADA self-evaluation of the public right-of-way.
WHAT ARE THE TECHNICAL REQUIREMENTS FOR BUS STOPS?

A. BOARDING AND ALIGHTING AREAS
Bus stops consist of a boarding and alighting area. This area is designated for passengers to board (enter) and alight (exit) the bus.

REQ 242 Bus stop boarding and alighting areas shall have a firm, stable, and slip resistant surface.
(2005 PROWAG R410.1.1)

BARRIER(S): No specific measurements were taken. All Snohomish County pedestrian facilities in the public right-of-way operated by Public Works are constructed with a concrete surface with a broom finish or are constructed out of asphalt. These materials are generally considered to be firm, stable, and slip resistant. Other materials are strictly prohibited.

Any uneven surfaces would have been recorded as a discontinuity, non-planar surface, or gap.

CONTRIBUTING FACTOR(S): A research project sponsored by the U.S. Access Board conducted tests with persons with disabilities and concluded that a higher coefficient of friction was needed by such persons. A static coefficient of friction of 0.6 is recommended for steps, floors, and lift platforms and 0.8 for ramps (23). These coefficient of friction values are not legal standards and are not even well known or well publicized recommendations. Even then, there is no practical way for Public Works to measure coefficients of friction for pedestrian facilities in the public right-of-way.

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): BS-T1
REQ 243  Bus stop boarding and alighting areas shall provide a clear length of 8.0 feet minimum, measured perpendicular to the curb or vehicle street or highway edge.  
(2005 PROWAG R410.1.2)

**BARRIER(S):** Out of approximately 227 bus stops, 21 provide a boarding and alighting area with a length of 8 feet minimum measured perpendicular to the curb, street, or highway edge.

**CONTRIBUTING FACTOR(S):** Most bus stops are placed next to existing sidewalk which is not 8 feet wide. It is not clear whether Community Transit is responsible for providing a compliant boarding and alighting area or whether Public Works is responsible.

**ROOT CAUSE(S):** Expectations Are Not Clearly Set; Lack of Training

**FOLLOW-UP/ACTION ITEM(S):**
[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

**MEASURING FORM FIELD(S):** BS-T2

**Figure 115 – Bus stop boarding and alighting area dimension measured perpendicular to the curb**

REQ 244  Bus stop boarding and alighting areas shall provide a clear width of 5.0 feet minimum, measured parallel to the vehicle street, or highway.
(2005 PROWAG R410.1.2)

**BARRIER(S):** No boarding and alighting areas providing less than 5.0 feet minimum measured parallel to the vehicle street or highway have been identified during the inventory.

**CONTRIBUTING FACTOR(S):** N/A

**ROOT CAUSE(S):** N/A

**FOLLOW-UP/ACTION ITEM(S):** None

**MEASURING FORM FIELD(S):** BS-T3

**Figure 116 – Bus stop boarding and alighting area measured parallel to the curb**
REQ 245  Perpendicular to the street or highway, the grade of the bus stop boarding and alighting area shall not be steeper than 2 percent.  
(2005 PROWAG R410.1.4)

BARRIER(S): Out of approximately 227 bus stops in unincorporated Snohomish County, 21 provide a boarding and alighting area with a grade measured perpendicular to the street or highway of 2 percent or less.

CONTRIBUTING FACTOR(S): Most bus stops are placed next to existing sidewalk which is not reconstructed at the time. It is not clear whether Community Transit is responsible for providing a compliant boarding and alighting area or whether Public Works is responsible.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training

FOLLOW-UP/ACTION ITEM(S):
[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-T4

REQ 246  Parallel to the street or highway, the grade of the bus stop boarding and alighting area shall be the same as the street or highway, to the maximum extent practicable.  
(2005 PROWAG R410.1.4)

BARRIER(S): No boarding and alighting areas with grades parallel to the street or highway that exceed the street or highway grade have been identified during the inventory.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S): None

MEASURING FORM FIELD(S): BS-T5, BS-T6
REQ 247  Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by a pedestrian access route.  
(2005 PROWAG R410.1.3)

**BARRIER(S):** This requirement was overlooked during the initial inventory and data have not been collected. Regardless, out of approximately 227 bus stops, only 21 are compliant so most bus stops are going to have to be reconstructed anyway. At the time of reconstruction, the pedestrian access routes to the bus stops can be made compliant.

**CONTRIBUTING FACTOR(S):** Most bus stops are placed next to existing sidewalk which is not reconstructed at the time. It is not clear whether Community Transit is responsible for providing a compliant boarding and alighting area or whether Public Works is responsible.

**ROOT CAUSE(S):** Expectations Are Not Clearly Set; Lack of Training

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

**MEASURING FORM FIELD(S):** BS-T7
**B. BUS SHELTERS**

A bus shelter is a structure that provides shelter for people while they wait for the bus. Bus shelters are subject to many of the same requirements that clear spaces are subject to.

**REQ 248**  
Bus shelters shall provide a minimum clear space entirely within the shelter.  
(2005 PROWAG R410.2)

**BARRIER(S):** Unknown – data yet to be collected.

**CONTRIBUTING FACTOR(S):** Unknown – data yet to be collected.

**ROOT CAUSE(S):** Unknown – data yet to be collected.

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

**MEASURING FORM FIELD(S):** BS-U5

**Figure 120 – Clear space area entirely within a bus shelter**

---

**REQ 249**  
The surface of the bus shelter clear space shall be firm, stable, and slip resistant.  
(2005 PROWAG R410.2)  
(2005 PROWAG R402.2)  
(2005 PROWAG R301.5)

**BARRIER(S):** Unknown – data yet to be collected.

**CONTRIBUTING FACTOR(S):** Unknown – data yet to be collected.

**ROOT CAUSE(S):** Unknown – data yet to be collected.

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

**MEASURING FORM FIELD(S):** None
REQ 250   Surface discontinuities shall not exceed 0.50 inches maximum. Vertical discontinuities between 0.25 inches and 0.5 inches maximum shall be beveled at 1:2 minimum. The bevel shall be applied across the entire level change.
(2005 PROWAG R410.2)
(2005 PROWAG R402.2)
(2005 PROWAG R301.5.1)

BARRIER(S): Unknown – data yet to be collected.
CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.
ROOT CAUSE(S): Unknown – data yet to be collected.
FOLLOW-UP/ACTION ITEM(S):
[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.
MEASURING FORM FIELD(S): None. Discontinuities for shelters will have to be recorded in the comments / notes section of the Bus Stop Measurement form. It isn’t expected that gaps will be found.

REQ 251   Openings shall not permit passage of a sphere more than 0.5 inches in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.
(2005 PROWAG R410.2)
(2005 PROWAG R402.2)
(2005 PROWAG R301.5.2)

BARRIER(S): Unknown – data yet to be collected.
CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.
ROOT CAUSE(S): Unknown – data yet to be collected.
FOLLOW-UP/ACTION ITEM(S):
[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.
MEASURING FORM FIELD(S): None. Gaps for shelters will have to be recorded in the comments / notes section of the Bus Stop Measurement form. It isn’t expected that gaps will be found.
REQ 252  Bus shelter clear spaces shall have a running slope of 2 percent maximum.  
(2005 PROWAG R410.2)  
(2005 PROWAG R402.2)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U1

REQ 253  Bus shelters clear spaces shall have a cross slope of 2 percent maximum.  
(2005 PROWAG R410.2)  
(2005 PROWAG R402.2)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U1
REQ 254  Bus shelter clear spaces shall be 48 inches in length, minimum. 
(2005 PROWAG R410.2) 
(2005 PROWAG R402.3) 

BARRIER(S): Unknown – data yet to be collected. 

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected. 

ROOT CAUSE(S): Unknown – data yet to be collected. 

FOLLOW-UP/ACTION ITEM(S): 

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit. 

MEASURING FORM FIELD(S): BS-U3 

REQ 255  Bus shelter clear spaces shall be 30 inches in width, minimum. 
(2005 PROWAG R410.2) 
(2005 PROWAG R402.3) 

BARRIER(S): Unknown – data yet to be collected. 

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected. 

ROOT CAUSE(S): Unknown – data yet to be collected. 

FOLLOW-UP/ACTION ITEM(S): 

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit. 

MEASURING FORM FIELD(S): BS-U2
REQ 256  Unless otherwise specified, bus shelter clear spaces shall be positioned for either forward or parallel approach to an element.
(2005 PROWAG R410.2)
(2005 PROWAG R402.5)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None. Approach for bus shelters will have to be recorded in the comments/notes section. There are only 21 bus shelters.

REQ 257  One full unobstructed side of bus shelter clear spaces shall adjoin a compliant pedestrian access route or adjoin another clear space.
(2005 PROWAG R410.2)
(2005 PROWAG R402.6)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U4
REQ 258 Where a bus shelter clear space is confined on all or part of three sides, additional compliant maneuvering space shall be provided.
(2005 PROWAG R410.2)
(2005 PROWAG R402.7)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U2 and BS-U3

REQ 259 Bus shelter clear spaces confined on all or part of three sides shall be 36 inches wide minimum where the depth exceeds 24 inches.
(2005 PROWAG R410.2)
(2005 PROWAG R402.7.1)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U2, BS-U3
REQ 260 Clear spaces confined on all or part of three sides shall be 60 inches wide minimum where the depth exceeds 15 inches.
(2005 PROWAG R410.2)
(2005 PROWAG R402.7.2)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U2, BS-U3

REQ 261 Street furniture shall be connected to the pedestrian access route.
(2005 PROWAG R212)
(2005 PROWAG R307.2)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None
REQ 262 Where benches without tables are provided at a single location, at least 50 percent, but no fewer than one, shall provide clear space positioned at the end of the bench seat and located for shoulder-to-shoulder seating.
(2005 PROWAG R212)
(2005 PROWAG R307.2)
(2005 PROWAG R307.6.3.1)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None

REQ 263 Where benches without tables are provided at a single location, at least 50 percent, but no fewer than one, shall have a seat height at the front edge of 17 inches minimum and 19 inches maximum above the ground or floor space.
(2005 PROWAG R212)
(2005 PROWAG R307.6.3.2)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None
REQ 264  Bus shelters shall be connected by a compliant pedestrian access route to a compliant boarding and alighting area.  
(2005 PROWAG R410.2)

BARRIER(S): Unknown – data yet to be collected.

CONTRIBUTING FACTOR(S): Unknown – data yet to be collected.

ROOT CAUSE(S): Unknown – data yet to be collected.

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-U4

C. BUS ROUTE IDENTIFICATION SIGNS

Bus route identification signs are used to provide bus riders with essential route information.
REQ 265  Bus route identification signs located at bus shelters shall provide raised characters complying with R409.2.  
(2005 PROWAG R210.2)  
(2005 PROWAG R409.2)  
(2005 PROWAG R409.4) 

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff. 

CONTRIBUTING FACTOR(S): N/A 

ROOT CAUSE(S): N/A 

FOLLOW-UP/ACTION ITEM(S): 

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit. 

MEASURING FORM FIELD(S): BS-S2 

REQ 266  Bus route identification signs located at bus shelters shall provide braille characters complying with R409.3.  
(2005 PROWAG R210.2)  
(2005 PROWAG R409.3) 

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff. 

CONTRIBUTING FACTOR(S): N/A 

ROOT CAUSE(S): N/A 

FOLLOW-UP/ACTION ITEM(S): 

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit. 

MEASURING FORM FIELD(S): BS-S3
REQ 267  Braille on bus route identification signs at bus shelters shall be separated 0.375 inches minimum from other tactile characters.
(2005 PROWAG R306.4.2)
(2005 PROWAG R409.3.2)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None

REQ 268  Braille on bus route identification signs at bus shelters shall be contracted grade 2.
(2005 PROWAG R306.4.2)
(2005 PROWAG R409.3)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None
REQ 269  Braille dots on bus route identification signs at bus shelters shall be domed or rounded and comply with 2005 PROWAG R409.3.1.  
(2005 PROWAG R306.4.2)  
(2005 PROWAG R409.3.1)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None

REQ 270  Braille on bus route identification signs at bus shelters shall be located below the corresponding text.  
(2005 PROWAG R306.4.2)  
(2005 PROWAG R409.3.2)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None
REQ 271   Braille on bus route identification signs at bus shelters shall be separated 0.375 inches minimum from raised borders and decorative elements.
(2005 PROWAG R306.4.2)
(2005 PROWAG R409.3.2)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None

REQ 272   Bus route identification signs located at bus shelters shall have rounded corners.
(2005 PROWAG R210.2)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-S4
REQ 273   Bus route identification signs shall not be required to comply with R409.2 where audible signs are user or proximity actuated or are remotely transmitted to a portable receiver carried by an individual.
(2005 PROWAG R210.2)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-S5

REQ 274   Bus route identification sign characters and their background shall have a non-glare finish.
(2005 PROWAG R409.5.1)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-S6
REQ 275  Bus route identification sign characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.
(2005 PROWAG R409.5.1)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): There is no clear specification on how to measure and evaluate visual contrast and so it is a largely subjective assessment. There are some lesser known recommendations for assessing contrast of step edges, lifts, and platforms in Appendix A to the 1997 Accessibility Guidelines for Transportation Vehicles that require the measurement of light reflective values - but they are not legal standards and it would not be practical to implement light reflectivity measurements into an assessment of the county’s pushbuttons (23).

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):
[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-S7

REQ 276  Various requirements for bus route identification sign characters and symbols.
(2005 PROWAG R409.5.4)
(2005 PROWAG R409.5.5)
(2005 PROWAG R409.5.7)
(2005 PROWAG R409.5.8)
(2005 PROWAG R409.5.9)

BARRIER(S): Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):
[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): BS-S8
REQ 277  Bus route identification sign visual characters shall be 3.25 feet minimum above the finish floor or ground.
(2005 PROWAG R409.5.6)

**BARRIER(S):** Bus route identification signs in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

**CONTRIBUTING FACTOR(S):** N/A

**ROOT CAUSE(S):** N/A

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

**MEASURING FORM FIELD(S):** BS-S9

![Figure 128 – Bus route identification sign](image)
D. TRANSIT PLATFORMS

Transit platforms are level areas where passengers wait to board and alight from buses or trains. Platforms are often designed to provide a level boarding area by eliminating any need for requiring passengers to step up or step down.

REQ 278 Where provided, transit platforms shall comply with R414. (2005 PROWAG R219)

BARRIER(S): Transit platforms in the public right-of-way are provided and maintained by Community Transit and were not measured or evaluated by Public Works staff.

CONTRIBUTING FACTOR(S): N/A

ROOT CAUSE(S): N/A

FOLLOW-UP/ACTION ITEM(S):

[FAI 14] Coordinate ADA compliance at bus stops and bus shelters with Community Transit.

MEASURING FORM FIELD(S): None
APPENDIX I: ALTERNATE PEDESTRIAN FACILITIES IN WORK ZONES
TABLE OF CONTENTS: APPENDIX I

WHY WERE ALTERNATE PEDESTRIAN FACILITIES (WORK ZONES) EVALUATED? ........ 1

HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT? ............................................ 1

WHAT ARE THE TECHNICAL REQUIREMENTS FOR ALTERNATE PEDESTRIAN FACILITIES? .......................................................................................................................................................................................................................................................................................................................... 2

A. General Requirements.................................................................................................................. 2
B. Pedestrian Access Routes........................................................................................................... 7
C. Protruding Objects......................................................................................................................14
D. Temporary Traffic Control Devices............................................................................................17
E. Pedestrian Barricades and Channelizing Devices.....................................................................19
F. Sidewalk and Crosswalk Closures, and Pedestrian Detours ..................................................27
WHY WERE ALTERNATE PEDESTRIAN FACILITIES (WORK ZONES) EVALUATED?

Multiple construction / work zones were visited by Public Works staff to determine if the alternate pedestrian access route requirements of the 2005 draft revisions to the Public Right-of-Way Accessibility Guidelines (2005 PROWAG) and the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) requirements for temporary pedestrian facilities were being implemented.

Work zones included county capital projects and road maintenance projects. Work zones were selected at random. In all cases, it was readily apparent that the work zones were not compliant with the requirements of the ADA. The requirements are included in this document for reference and will serve as the basis for training and evaluations of work zones moving forward.

It is important to note that the 2005 PROWAG references the 2003 MUTCD which is no longer the legal standard, so the equivalent 2009 MUTCD standards were included in this document instead.

HOW DO I ACCESS THE INFORMATION IN THIS DOCUMENT?

1. **REQ ##** - Requirement identification number.
2. **Bold text next to REQ number** - The Code of Federal Regulation (CFR) requirement
4. **BARRIER(S) / CONTRIBUTING FACTOR(S) / ROOT CAUSE(S)** – Barriers, contributing factors, and/or root causes identified.
5. **FOLLOW-UP/ACTION ITEM(S)** - Follow-Up / Action Items (FAIs) based on the non-compliance issues identified. Each FAI has its own identification number [FAI ##].

The checklist of all FAIs identified during the ADA self-evaluation can be found in Appendix O.

<table>
<thead>
<tr>
<th>REQ 01</th>
<th>2 Does Public Works have services, policies, and practices for pedestrian facilities in the public right-of-way that do not or may not meet the requirements of the ADA?</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARRIER(S):</td>
<td>[Barrier 01] Public Works has not considered non-compliance issues associated with pedestrian facilities in the public right-of-way.</td>
</tr>
<tr>
<td>CONTRIBUTING FACTOR(S):</td>
<td>None</td>
</tr>
<tr>
<td>ROOT CAUSES(S):</td>
<td>Lack of Awareness</td>
</tr>
</tbody>
</table>
WHAT ARE THE TECHNICAL REQUIREMENTS FOR ALTERNATE PEDESTRIAN FACILITIES?

A. GENERAL REQUIREMENTS
Construction activities within the public right-of-way can occasionally disrupt pedestrian facilities. In order to maintain pedestrian access, alternative routes are required. These alternative pedestrian facilities must be fully accessible.
REQ 279    When an existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary conditions, an alternate pedestrian access route complying to the maximum extent feasible with R301, R302, and Section 6D.01, 6D.02, RG.05 of the 2009 MUTCD (incorporated by reference; see R104.2.1 and comments in the next column) shall be provided.

(2005 PROWAG R104.2.1)
(2011 PROWAG R104.2)
(2005 PROWAG R205)
(2011 PROWAG R205)
(2005 PROWAG R301)
(2005 PROWAG R302)
(2009 MUTCD 6D.01)
(2009 MUTCD 6D.02)
(2009 MUTCD 6G.05)
(2009 MUTCD 6F.63)
(2009 MUTCD 6F.68)
(2009 MUTCD 6F.71)

BARRIER(S): On occasion, alternate pedestrian routes have been provided for large capital projects but the application of all ADA requirements for the alternate pedestrian routes has been inconsistent and most requirements have not been met.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S): [FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-V2, APF-W12, APF - All
REQ 280  If a temporary traffic control zone affects an accessible and detectable pedestrian facility, the accessibility and detectability shall be maintained along the alternate pedestrian route.

(2009 MUTCD 6D.01-04)
(2009 MUTCD 6D.02-03)
(2009 MUTCD 6G.05-09)

BARRIER(S): A field survey of active work zones did not locate an active work zone that complied with this requirement where it applied.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W9, APF-W11
REQ 281  To the maximum extent feasible, the alternate circulation path shall be provided on the same side of the street as the disrupted route.  
(2005 PROWAG R302.2)

BARRIER(S): Refer to the response to REQ 280.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 280.

ROOT CAUSE(S): Refer to the response to REQ 280.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W9
REQ 282 The various temporary traffic control provisions for pedestrian and worker safety set forth in Part 6 shall be applied by knowledgeable (for example, trained and/or certified) persons after appropriate evaluation and engineering judgment. (2009 MUTCD 6D.01-02)

BARRIER(S): Traffic control certification is required for implementation of all vehicular traffic control in the public right-of-way. Unfortunately, given the fact that evaluators were not able to locate a compliant alternate pedestrian facility in any of the work zones where they were required by the 2009 MUTCD or the 2005 PROWAG, it appears that the certification and training that Public Works staff and private contractors is receiving is insufficient to account for compliant pedestrian traffic control.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-V10
B. PEDESTRIAN ACCESS ROUTES
Pedestrian access routes that are established as part of alternative pedestrian facilities are required to be fully accessible and protect pedestrians from any hazards associated with the work zone.

REQ 283 Where the alternate circulation path is exposed to adjacent construction, excavation drop-offs, traffic, or other hazards, it shall be protected with a compliant pedestrian barricade or channelizing device.
(2005 PROWAG R302.3)

BARRIER(S): Pedestrian barricades or channelizing devices are not being used for Public Works projects even when required by the current standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W1
REQ 284 The minimum continuous and unobstructed clear width of an alternate pedestrian access route shall be 4.0 feet, exclusive of the width of the curb. (2005 PROWAG R301.3.1)

BARRIER(S): A survey of Public Works projects did not indicate that compliant alternate pedestrian access routes were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W2
REQ 285   Walkways in alternate pedestrian access routes that are less than 5.0 feet in clear width shall provide passing spaces at intervals of 200 feet maximum. Alternate pedestrian access routes at passing spaces shall be 5.0 feet wide for a distance of 5.0 feet.
(2005 PROWAG R301.3.2)

BARRIER(S): Refer to the response to REQ 284.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 284.

ROOT CAUSE(S): Refer to the response to REQ 284.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W2

REQ 286   The cross slope of an alternate pedestrian access route shall be 2 percent maximum.
(2005 PROWAG R301.4.1)

BARRIER(S): Refer to the response to REQ 284.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 284.

ROOT CAUSE(S): Refer to the response to REQ 284.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W3
REQ 287 Where an alternate pedestrian access route is contained within a street or highway border, its grade shall not exceed the general grade established for the adjacent street or highway.
(2005 PROWAG R301.4.2)

BARRIER(S): Refer to the response to REQ 284.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 284.

ROOT CAUSE(S): Refer to the response to REQ 284.

FOLLOW-UP/ACTION ITEM(S):
[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W4
REQ 288 The surface of an alternate pedestrian access routes shall be firm, stable and slip resistant.
(2005 PROWAG R301.5)

BARRIER(S): No specific measurements were taken. A survey of Public Works projects did not indicate that compliant alternate pedestrian access routes were being provided as required by the standards. Mud, dirt, and gravel were common surfaces found. These would not be slip resistant.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W5
REQ 289  Vertical alignment of alternate pedestrian access routes shall be planar within curb ramp runs, blended transitions, landings, and gutter areas within the pedestrian access routes.
(2005 PROWAG R301.5.2)

BARRIER(S): A survey of Public Works projects did not indicate that compliant alternate pedestrian access routes were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W6
REQ 290  Grade breaks on alternate pedestrian access routes shall be flush.  
(2005 PROWAG R301.5.2)

BARRIER(S): Refer to the response to REQ 289.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 289.

ROOT CAUSE(S): Refer to the response to REQ 289.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W7

REQ 291  Openings on alternate pedestrian access routes shall not permit passage of a sphere more than 0.5 inches in diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.  
(2005 PROWAG R301.7.1)

BARRIER(S): Refer to the response to REQ 289.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 289.

ROOT CAUSE(S): Refer to the response to REQ 289.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W8
REQ 292  Where the walkway of an alternate pedestrian access route is supported by a structure, it shall comply with R305.5.  
(2005 PROWAG R301.4.3)

BARRIER(S): Refer to the response to REQ 289.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 289.

ROOT CAUSE(S): Refer to the response to REQ 289.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): None

C. PROTRUDING OBJECTS

Protruding objects within the pedestrian circulation path can be a hazard to people with vision impairments. The following requirements limit the projection of objects into the pedestrian circulation path.
REQ 293  Objects with leading edges more than 27 inches and not more than 80 inches above the finish surface or ground shall protrude 4 inches maximum horizontally into the alternate pedestrian circulation path.
(2005 PROWAG R401.2)

BARRIER(S): A survey of Public Works projects did not indicate that compliant alternate pedestrian access routes were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the ADA requirements for alternate pedestrian routes and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the ADA requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W13
REQ 294  Objects mounted on free-standing posts or pylons, 27 inches minimum and 80 inches maximum above the finish surface or ground, shall overhang alternate pedestrian circulation paths 4 inches maximum beyond the post or pylon base measured 6 inches minimum above the finish surface or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, the lowest edge of such sign or obstruction shall be 27 inches maximum or 80 inches minimum above the finish surface.

(2005 PROWAG R401.3)

BARRIER(S): Refer to the response to REQ 293.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 293.

ROOT CAUSE(S): Refer to the response to REQ 293.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W13
REQ 295 Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches high. The leading edge of such guardrail or barrier shall be located 27 inches maximum above the finish surface or ground.
(2005 PROWAG R401.4)

BARRIER(S): Refer to the response to REQ 293.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 293.

ROOT CAUSE(S): Refer to the response to REQ 293.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-W13

D. TEMPORARY TRAFFIC CONTROL DEVICES
Temporary traffic control devices are used to guide pedestrian and vehicle traffic through constructions zones. Since these devices are used near vehicular traffic, they must follow the requirements in order to be classified as crashworthy devices.
REQ 296  Short intermittent segments of temporary traffic barrier shall not be used because they nullify the containment and redirected capabilities of the temporary traffic barrier; increase the potential for serious injury both to vehicle occupants and pedestrians; and encourage the presence of blunt, leading ends. All upstream leading ends that are present shall be appropriately flared or protected with properly installed and maintained crashworthy cushions. Adjacent temporary traffic barrier segments shall be properly connected in order to provide the overall strength required for the temporary traffic barrier to perform properly.

(2009 MUTCD 6D.01-22)

BARRIER(S): A survey of Public Works projects did not indicate that compliant temporary traffic barriers were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the requirements for temporary traffic barriers and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X3
REQ 297 Designs of various channelizing devices shall be as shown in Figure 6F–7. All channelizing devices shall be crashworthy. (2009 MUTCD 6F.63-01)

BARRIER(S): A survey of Public Works projects did not indicate that compliant channelizing devices were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the requirements for channelizing devices and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X4

E. PEDESTRIAN BARRICADES AND CHANNELIZING DEVICES
The most common type of traffic control that is utilized within a work zone is channelizing devices. The devices are used to guide traffic through a work zone and act as physical barriers between pedestrians, vehicles, and the work zone.
REQ 298  A continuous bottom edge shall be provided 6 inches maximum above the ground or walkway surface.
(2005 PROWAG R302.4.1)

BARRIER(S): A survey of Public Works projects did not indicate that compliant channelizing devices were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the requirements for channelizing devices and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X5
REQ 299  Devices used to channelize pedestrians shall be detectable to users of long canes and visible to persons having low vision.
(2009 MUTCD 6F.63-04)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X5, through APF-X12

REQ 300  Devices shall provide a continuous surface or upper rail at 3.0 feet minimum above the ground or walkway surface. Support members shall not protrude into the alternate circulation path.
(2005 PROWAG R302.4.2)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X6
REQ 301 The top of the top surface shall be no lower than 32 inches above the
ground.
(2009 MUTCD 6F.63-05)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X6

REQ 302 Pedestrian barricades and channelizing devices shall be continuous, stable, and non-flexible and shall consist of a wall, fence, or enclosures specified in section 6F-63 6F-68, and 6F-71 of the 2009 MUTCD.
(2005 PROWAG R302.4)
(2011 PROWAG R205)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X7
REQ 303 The letters and numbers of the name and telephone number shall be non-retroreflective and not over 2 inches in height. (2009 MUTCD 6F.63-16)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X8

REQ 304 Stripes on barricade rails shall be alternating orange and white and the stripes shall be 6 inches wide. (2009 MUTCD 6F.68-03)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X9
REQ 305 Devices that are damaged or have lost a significant amount of their retroreflectivity and effectiveness shall be replaced.
(2009 MUTCD 6F.63-18)

**BARRIER(S):** Refer to the response to REQ 298.

**CONTRIBUTING FACTOR(S):** Refer to the response to REQ 298.

**ROOT CAUSE(S):** Refer to the response to REQ 298.

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

**MEASURING FORM FIELD(S):** APF-X10

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REQ 306 Stripes on barricade rails shall be retroreflective.
(2009 MUTCD 6F.68-03)

**BARRIER(S):** Refer to the response to REQ 298.

**CONTRIBUTING FACTOR(S):** Refer to the response to REQ 298.

**ROOT CAUSE(S):** Refer to the response to REQ 298.

**FOLLOW-UP/ACTION ITEM(S):**

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

**MEASURING FORM FIELD(S):** APF-X10
REQ 307       Stripes on barricade rails shall be sloping downward at an angle of 45 degrees in the direction road users are to pass.  
(2009 MUTCD 6F.68-03)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X11

REQ 308       Where pedestrians with visual disabilities normally use the closed sidewalk, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.  
(2009 MUTCD 6D.02-03)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-X12
REQ 309  The retroreflective material used on channelizing devices shall have a smooth, sealed outer surface that will display a similar color day or night. (2009 MUTCD 6F.63-14)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): None

REQ 310  The minimum length for Type 1 and Type 2 Barricades shall be 24 inches, and the minimum length for Type 3 Barricades shall be 48 inches. Each barricade rail shall be 8 to 12 inches wide. Barricades used on freeways, expressways, and other high-speed roadways shall have a minimum of 270 square inches of retroreflective area facing road users. (2009 MUTCD 6F.68-05)

BARRIER(S): Refer to the response to REQ 298.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.

ROOT CAUSE(S): Refer to the response to REQ 298.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): None
REQ 311 Normal vertical curbing shall not be used as a substitute for temporary traffic barriers when temporary traffic barriers are needed.  
(2009 MUTCD 6D.01-23)

BARRIER(S): Refer to the response to REQ 298.  
CONTRIBUTING FACTOR(S): Refer to the response to REQ 298.  
ROOT CAUSE(S): Refer to the response to REQ 298.  
FOLLOW-UP/ACTION ITEM(S):  
[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.  
MEASURING FORM FIELD(S): None

F. SIDEWALK AND CROSSWALK CLOSURES, AND PEDESTRIAN DETOURS
When sidewalks and detours need to be used, they need to be made compliant.

REQ 312 Advance notification of sidewalk closures shall be provided by the maintaining agency.  
(2009 MUTCD 6D.01-03)

BARRIER(S): Public Works occasionally provides advance notification of sidewalk closures in fliers, postcards, and websites that are generated to communicate a specific capital project. However, notification isn’t consistent, and the information provided is not sufficient to help individuals with disabilities in their route planning.  
CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the requirement to provide notification of sidewalk closures.  
ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability  
FOLLOW-UP/ACTION ITEM(S):  
[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.  
[FAI 58] Develop and implement an advance notification tool that will provide individuals with disabilities the information they need to plan their travel routes through or around pedestrian detours, diversions, or closures.  
MEASURING FORM FIELD(S): APF-Y1
REQ 313 When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. (2009 MUTCD Figure 6H-28)

BARRIER(S): A survey of Public Works projects did not indicate that sidewalk detours or diversions were being provided as required by the standards.

CONTRIBUTING FACTOR(S): Public Works staff is largely unaware of the requirements for temporary pedestrian facilities and given the complexity of implementing the requirements in an active work zone they do not have the training or resources to achieve compliance. Additionally, private contractors who construct small and large capital projects for the county are not aware of the requirements and lack the training or expertise to implement the requirements in a safe and efficient manner.

ROOT CAUSE(S): Expectations Are Not Clearly Set; Lack of Training; Lack of Clearly Defined Standards; No Follow-Up; Lack of Accountability

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-Y2
REQ 314 When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk. (2009 MUTCD Figure 6H-29)

BARRIER(S): Refer to the response to REQ 313.

CONTRIBUTING FACTOR(S): Refer to the response to REQ 313.

ROOT CAUSE(S): Refer to the response to REQ 313.

FOLLOW-UP/ACTION ITEM(S):

[FAI 43] Institute an ongoing training program to train designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way how to comply with the requirements of the ADA.

MEASURING FORM FIELD(S): APF-Z1, APF-Z2, APF-Z3
APPENDIX J: ESTIMATING BARRIER REMOVAL COSTS
# TABLE OF CONTENTS: APPENDIX J

**INTRODUCTION** ....................................................................................................................... 1

**UNIT COST ASSUMPTIONS** ..................................................................................................... 1

- Driveway Crossings ............................................................................................................ 1
- Fixed Object Obstructions ................................................................................................. 2
- Landscape Encroachments ............................................................................................... 3
- Moveable Obstructions ...................................................................................................... 3
- Sidewalk Slopes or Widths ............................................................................................... 4
- Vertical or Horizontal Discontinuities ............................................................................. 6
- Utility Lids ......................................................................................................................... 6
- Pedestrian Pushbuttons ..................................................................................................... 7
- Transt Bus Stops ............................................................................................................... 8
- Pedestrian Crossings ........................................................................................................ 8
- Alternative Pedestrian Facilities in Work Zones ............................................................. 8

**COST ESTIMATE SUMMARY** .................................................................................................. 9
INTRODUCTION

Any feature or element of a pedestrian facility that fails to meet current ADA requirements is considered a barrier to access for individuals with disabilities. Barriers to accessibility come in many types and degrees of severity.

In order to plan for the removal of physical barriers and effectively implement the plan, the scope of work needs to be defined for each type of pedestrian facility to be reconstructed and costs estimates calculated for each unit of barrier removal.

UNIT COST ASSUMPTIONS

1. Average unit cost estimates for each facility type/group have been developed based on actual average costs of construction/reconstruction in 2018 dollars.
2. Unit cost estimates include engineering design, construction, contract administration, and construction engineering/inspection costs.
3. Unit cost estimates for curb ramps are understood through experience but because there have not been stand-alone small capital projects for driveway crossings, fixed object obstructions, sidewalk slopes or widths, or vertical or horizontal discontinuities there are no historical costs which can be used to produce analogous or parametric cost estimates so the unit cost estimates are based solely on engineering judgment based on the scopes of work described in this document.
4. Facilities were grouped by type in order to make it easier develop scopes of work and cost estimates.
5. For years beyond 2019, an inflation rate of 2% is applied to total estimated annual transition plan costs.

DRIVEWAY CROSSINGS

Driveway crossings included in the transition plan are those driveways where a sidewalk crosses a dropped curb driveway and the slopes have been measured and found to be non-compliant. There are 2,328 non-compliant driveway crossings in unincorporated Snohomish County. Most are clustered in residential neighborhoods – all driveways in a neighborhood built the same way as part of the same development. Scope of work includes:

- Saw-cutting concrete and asphalt around the driveways and adjacent sidewalk panels that will be demolished and reconstructed.
- Demolition and removal of concrete and asphalt including haul and disposal fees.
- Creating temporary access points to private property.
- Aggregate and grading of the base for the new driveway crossings and sidewalk transition segments.
- Forming and pouring the traffic curb and gutter.
• Forming and pouring concrete driveway crossings and sidewalk transition segments or
  driveway ramps.
• Patching asphalt in the roadway and adjacent asphalt driveways.
• Traffic and pedestrian control.
• Temporary erosion and sediment control.
• Landscape and fence restoration.

It is anticipated that most driveway crossing reconstruction projects will likely require grading on
to private property to reconstruct the sidewalk to compliance so temporary construction
easements will be needed.

Another option would be to convert some driveways to rolled curb driveways, or to construct the
sidewalk pedestrian access route (PAR) around the back of the driveway but which may require
that ROW be deeded to the county or dedicated as a transportation easement.

**FIXED OBJECT OBSTRUCTIONS**

Fixed object obstructions are utility poles or mailboxes that block access to the sidewalk by
narrowing the PAR to less than 4 feet in width. There are 166 fixed object obstructions to be
removed or mitigated in unincorporated Snohomish County right-of-way.

Most of the fixed object obstructions are mailboxes in the sidewalk that are not cane detectable;
or, due to their placement, narrow the PAR width to less than 4 feet, or both. Most of the
mailboxes are not individual boxes but mailbox clusters. Mailboxes are owned by the
addressees to which the mail is being delivered. Individual mailboxes are easier to plan and
program for relocation or upgrade because Public Works only has to deal with individual
property owners. Mailbox clusters are more challenging because they are shared communally
and trying to coordinate with several dozen property owners could be very challenging.

The United States Postal Service (USPS) is not responsible for ensuring the ADA compliance of
mailboxes. But the USPS does require that mailboxes be installed in accordance with federal
design and installation standards. Public Works can work with the USPS to identify property
owners and addresses so that Public Works can reach out and begin negotiating with the
property owners to upgrade their mailboxes.

It probably isn’t reasonable to expect that individual property owners or a community of owners
of cluster boxes will be willing to voluntarily pay for ADA upgrades to their mailboxes. Although,
it would be worth exploring if homeowner’s associations (HOAs) can be contacted where they
can be identified and asked to upgrade the community’s mailboxes.

Where possible, mailboxes will be left in the same location. Non-cane detectable mailboxes can
be replaced with cane detectable models, or a curb or cane detectable device could be installed
around the mailboxes whichever is less expensive and provides the maximum benefit.
On occasion, the sidewalk might be “bumped-out” around the mailboxes – right-of-way permitting - to provide a PAR around the mailbox at least 4 feet in width.

Or, if the least disruptive and least expensive option, existing mailboxes may be relocated nearby. For example, non-cane detectable mailboxes could be relocated into a planter strip as the planter strip is not part of the PAR and can be used as a can detectable buffer.

Six fixed objects belonging to utility companies were found to be blocking the PAR. The utility companies in 2018 were contacted and asked to move their poles out of the sidewalk and all agreed to do so. A project manager from the county will need to be assigned to follow-up with the utility companies as they are require oversight to follow-through on projects.

**LANDSCAPE ENCROACHMENTS**

Typical landscape encroachments identified during the inventory include:

- Overhanging tree branches
- Shrubs, bushes, and grasses growing over sidewalk

There were 1,284 landscape encroachments identified during the ADA self-evaluation. Landscape encroachments tend to be clustered in neighborhoods – some neighborhoods have few, if any, landscape encroachments while others have more mature and less maintained vegetation and landscaping. Sometimes the encroaching landscaping is in the public right-of-way, and sometimes it is not.

One way to approach the problem may be to send out post cards to neighborhoods with the highest concentration of landscape issues to make them aware and to educate them as to what they can do about it and encourage property owners to keep landscaping trimmed and from encroaching onto the sidewalk. In some neighborhoods it might make sense to distribute door hangers.

Another approach may be to have county road maintenance staff deployed to neighborhoods to trim street trees and other landscaping that is in the public right-of-way or encroaching on the public right-of-way.

Unit costs are not estimated for landscape encroachments and moveable obstructions because the remedy is not achieved through construction but rather through code enforcement, education/public outreach, and/or maintenance.

**MOVEABLE OBSTRUCTIONS**

Typical moveable obstructions marked during inventory include:

- Portable basketball hoops
- Benches and other street furniture
• Cars parked on the sidewalk
• Trash cans placed on the sidewalk

There are 236 moveable obstructions that were identified during the self-evaluation. Moveable obstructions issues can’t be fixed through capital project improvements and instead require code enforcement, parking enforcement, and education. Moveable obstructions are not ranked and prioritized on the transition plan but can be assigned to a project manager to coordinate with code, law enforcement, road maintenance and communications staff. The budget for this work would not come from a Roads Capital funded project but through the ADA Compliance Program and operations budget.

Moveable obstructions such as basketball hoops and benches tend to be scattered throughout the county.

Moveable obstructions such as trash cans and parked cars tend to be clustered in neighborhoods or along certain roads – mostly neighborhoods or roads with rolled curbs or along arterial roads with no shoulder or bike lane between curb and traveled way so residents are forced to place trash cans on the sidewalk.

Coordination is required with trash haul companies – are residents being told to place cans on the sidewalk by trash haul companies? If not, would trash haul companies be willing to team with the county to put out the word in newsletters, fliers, post-cards or other routine correspondence (for example WM sends out fliers frequently to customers or garbage truck drivers could place reminders on cans).

Coordination is required with code enforcement for moveable obstructions. At one time road maintenance would remove obstructions such as portable basketball hoops after notice was given to the property owner via a sticker placed on the object and/or door hanger on the door of the adjacent property owner.

Coordination is required with law enforcement for parking violations. The Snohomish County Sherriff’s Office does not emphasize parking enforcement and teaming with deputies to enforce parked cars blocking curb ramps may not be possible. It is an idea still worth pursuing.

Unit costs are not estimated for landscape encroachments and moveable obstructions because the remedy is not achieved through construction but rather through code enforcement, education/public outreach, and/or maintenance.

**SIDEWALK SLOPES OR WIDTHS**

Public Works has never constructed a stand-alone sidewalk upgrade/replacement project and so there are no costs upon which analogous or parametric costs estimates can be created for transition planning purposes. Instead unit costs were assumed to be a third of the cost of
sidewalk/curb/gutter installation because there will be little if any grading and aggregate needs and the curb and gutter should be able to be left in place.

Approximately 2/3 of the estimated cost to full compliance is tied to non-compliant sidewalk slopes - mostly due to non-compliant cross-slopes. It is estimated that there are approximately 269 miles of existing sidewalks that are non-compliant because of cross slopes that exceed 2 percent.

The following scope of work would be typical of sidewalk panels that are removed and replaced:

- Saw-cutting expansion and contraction joints and in between sidewalks and curbs.
- Demolition and removal of concrete including haul and disposal fees.
- Aggregate and grading of the base for sidewalk panels damaged due to poor base materials.
- Forming and pouring new sidewalk panels.
- Patching and repairing curb and gutter and sometimes replacing curb and gutter adjacent to sidewalk panels.
- Traffic and pedestrian control
- Temporary erosion and sediment control.
- Landscape and fence restoration.

One alternative to demolishing and replacing sidewalk is the use of slab-jacking - or mud-jacking - to raise up the lower side of a concrete sidewalk panel so that the sidewalk panels flatten out to 2 percent or less. Slab-jacking includes drilling a small hole or holes into a sidewalk panel on the side that needs to be raised and then pumping in a sand and Portland Cement slurry underneath the sidewalk panel to push it up.

Slab-jacking probably wouldn't work for curb-attached sidewalk unless the sidewalk sloped away from curb, otherwise the side of the sidewalk closest to the curb would be raised higher than the top of the adjacent curb.

Tree roots would need to be removed for sidewalk panels that are being replaced because of heaving due to the roots growing under them. On occasion, an entire tree may need to be removed because too much of the root would have to be taken out to fix the damaged sidewalk panel.

Estimates are about $200 per linear foot so a 120 LF sidewalk segment would likely cost $24,000 to replace. With more experience the county will be able to develop better cost estimates for planning and policy purposes. As the transition plan is implemented and the first sidewalk reconstruction projects are completed then Public Works will be better able to estimate future costs and revise the transition plan accordingly.
VERTICAL OR HORIZONTAL DISCONTINUITIES

There are 651 vertical deflections greater than 0.25 inches or horizontal gaps greater than 0.5 inches that were found and mapped during the self-evaluation. Cracks in sidewalk panels and other damage were also mapped.

The following scope of work would be typical of damaged sidewalk panels that are removed and replaced:

- Saw-cutting expansion and contraction joints and in between sidewalks and curbs.
- Demolition and removal of concrete including haul and disposal fees.
- Aggregate and grading of the base for sidewalk panels damaged due to poor base materials.
- Forming and pouring new sidewalk panels.
- Patching and repairing curb and gutter and sometimes replacing curb and gutter adjacent to sidewalk panels.
- Traffic and pedestrian control
- Temporary erosion and sediment control.
- Landscape and fence restoration.

Most horizontal gaps are located at joints between adjoining sidewalk panels. The scope of work to fix many of these issues might be as simple as filling the gap with a joint filler.

A few dozen horizontal gaps are at utility lids or catch basin grates in the PAR. The ADA Program Manager will identify the owner of the utilities and request that they be repaired or replaced.

UTILITY LIDS

Public Works' mapping and inventory of utilities in the public right-of-way shows that there are approximately 1,800 utility boxes in or adjacent to sidewalk (GIS was used to buffer sidewalk polygons and clip out of the GIS utility layer any utilities in the sidewalk buffer).

Work is also needed to determine who owns the utilities with lids in the sidewalk because some belong to the county as part its illumination circuit or traffic signal system.

Also, it still needs to be determined how many of the utility lids are already slip resistant and meet vertical deflection and horizontal gap criteria.

Coordination with utilities will be required to have them upgrade their lids to ADA compliance or move the utilities out of the pedestrian access route.
Utilities will need to bear the expense to bring their facilities into compliance or relocate them. Public Works staff will divide the county into 12 zones or regions and ask utilities to upgrade all their utilities in one zone/region per year for the next 12 years.

Coordination will be needed with Traffic Operations Signal Electricians and Technicians to bring utility lids related to county infrastructure - for ITS and street light circuits – in to compliance.

Coordination with Road Maintenance and Surface Water Management will be required to upgrade catch basin lids vanes/grates.

Some utility lids may need more than just a slip resistant lid and may have elements such as hinges or hand holes, vanes, and/or grates that create vertical deflections or horizontal gaps.

**PEDESTRIAN PUSHBUTTONS**

There are 313 pedestrian pushbuttons that need to be upgraded or installed to create Accessible Pedestrian Signal (APS) systems at signalized intersections and pedestrian beacons. A typical scope of work includes:

- Saw-cutting concrete sidewalk panels that will be demolished.
- Demolition and removal of concrete sidewalk panels including haul and disposal fees.
- Removal and disposal of existing junction boxes.
- Removal and disposal of existing pushbuttons.
- Trenching and conduit placement for the wires that run between the pushbuttons and the traffic signal controller cabinet.
- Excavation of pedestrian pushbutton pole foundations.
- Forming and pouring pedestrian pushbutton pole foundations including anchor bolts and electrical grounding equipment for the pedestrian pushbutton poles and pushbuttons.
- Backfilling and compacting around the new pedestrian pushbutton pole foundations.
- Aggregate placement and compaction for sidewalk panels.
- Form and pour sidewalk panels.
- Install crashworthy breakaway bases for the pedestrian pushbutton poles.
- Install pedestrian pushbutton poles including caps.
- Install APS pushbuttons
- Install new junction boxes
- Remove and replace electrical conductors between traffic signal controller cabinets and new APS pushbuttons
- Adjust and align pushbuttons to the intersections and crosswalks
- Install APS pushbutton controller in the traffic signal controller cabinet.
- Rewire the traffic signal controller to connect the new APS pushbutton controller
- Program and commission the APS pushbuttons.
- Traffic and pedestrian control.
• Temporary erosion and sediment control.
• Restoring landscape.

TRANST BUS STOPS
There are 167 non-compliant bus stops and 28 non-compliant bus shelters in the public right-of-way. Most of the bus stops that were identified as non-compliant have similar non-compliance issues. Most bus stops do not have an adequate boarding/alighting area.

In these cases, a concrete pad with a minimum size of 5 feet by 8 feet must be installed to provide a compliant boarding/alighting area. Also, in many of the cases, existing sidewalks exceeded the maximum cross slope of 2%.

In cases like these, a few of the sidewalk panels will need to be removed and reinstalled. The simplest upgrades are for stops that already have a compliant sidewalk.

Community Transit has verbally agreed (and says a memorandum of understanding would be appropriate) that the county will be responsible for upgrading all the bus stops along sidewalks sans bus shelters. Community Transit would be responsible for bus shelter compliance. EDDS standards need to be strengthened and coordination improved in the selection and construction of future bus stops/shelters so that compliance is achieved.

Bus stops along shoulders or where there are no sidewalks are not on the transition plan. The lack of a pedestrian facility needs to be addressed as part of the non-motorized plan.

Bus shelters are not estimated because Community Transit – the transit agency that installs and operates the bus shelters – takes responsibility for ensuring that the shelters are ADA compliant.

It is anticipated that as the transition plan is implemented that unit costs will need to be revised to reflect experience and as market conditions change. To reduce construction costs, bus stops should be strategically grouped together geographically coherent construction packages.

PEDESTRIAN CROSSINGS
Because pedestrian crossings are no longer a part of the transition planning process, no unit cost estimates were prepared. See Appendix K – Self-Evaluation & Transition Planning Process for more details. Estimates can be prepared for upgraded pedestrian crossings on a project by project basis.

ALTERNATIVE PEDESTRIAN FACILITIES IN WORK ZONES
Elements include:

• Pedestrian traffic control
• Detour pathways
• Diversion pathways
• Longitudinal channelizing devices
• Dedicated pedestrian spotters

COST ESTIMATE SUMMARY

Based on the unit cost assumptions and the scopes of work described above, reconstruction/upgrade unit costs by facility type are as follows:

(1) Curb ramps - $13,000 EA
(2) Pedestrian pushbuttons - $5,000 EA
(3) Sidewalks
• Driveway crossings - $12,000 EA
• Fixed object obstructions - $4,000 EA
• Sidewalk slopes or widths - $24,000 per 120 LF
• Vertical or horizontal discontinuities – $4,000 EA
(4) Transit bus stops - $12,000 EA

Estimates should be updated on an annual basis as part of the annual report and 12-year rolling window update process.

It is estimated that if all ADA transition plan upgrades (use small capital project estimates for curb ramps and pedestrian pushbuttons) in 2018 dollars with no inflation that the cost for full compliance would be approximately $385 million dollars as follows:

• Curb ramps - $123 million
• Pedestrian pushbuttons - $1.5 million
• Sidewalks - $258 million
• Transit bus stops - $2.5 million

The annual Public Works budget for all capital roadway projects including large capital, overlay, and small capital projects ranges between $35 million to $45 million per year.

It would take at least 10 years to bring all facilities up to compliance if the entire road capital budget were dedicated solely to ADA upgrades.

It would take approximately 440 years to bring all facilities into compliance if projects were only reconstructed through stand-alone ADA Transition Plan projects (no facilities reconstructed as a part of larger capital projects or overlay program).

Since 2013 the county has expended an estimated $2.3 million annually (through large capital projects, overlays, and small capital projects) on ADA pedestrian facility upgrades. At that expenditure rate it would take approximately 167 years to achieve full compliance assuming that
funding increased with annual inflation. Assuming an inflation rate of 2% the total cost of compliance would be over 3 billion dollars.
APPENDIX K: SELF-EVALUATION & TRANSITION PLANNING PROCESSES
TABLE OF CONTENTS: APPENDIX K

SELF-EVALUATION STEPS.................................................................................................................................................. 1

Step 1: Identify Administrative Requirements........................................................................................................... 1
Step 2: Identify Administrative Barriers ....................................................................................................................... 1
Step 3: Identify Root Causes/Contributing Factors ....................................................................................................... 1
Step 4: Identify Technical Requirements ...................................................................................................................... 2
Step 5: Inventory Physical Facilities ............................................................................................................................ 2
Step 6: Identify Physical Barriers ................................................................................................................................ 2
Step 7: Identify Root Causes/Contributing Factors ....................................................................................................... 2
Step 8: Prepare A Checklist of Follow-Up / Action Items .............................................................................................. 2

TRANSITION PLANNING PROCESSES ....................................................................................................................... 3

Step 1 – Check Federal Transition Plan Requirements ................................................................................................ 4
Step 2 – Categorize Physical Barriers ........................................................................................................................... 4
Step 3 – Develop Prioritization & Ranking Criteria ....................................................................................................... 5
  Curb Ramp Barrier Severity / Location Priorities ......................................................................................................... 8
  Sidewalk Barrier Severity / Location Priorities ................................................................................................................ 1
  Pedestrian Pushbutton Barrier Severity / Location Priorities ....................................................................................... 2
  Transit Bus Stop Barrier Severity / Location Priorities .................................................................................................. 3
  Pedestrian Crossing Barrier Severity / Location Priorities ........................................................................................... 3
  Alternate Pedestrian Facilities in Work Zones ............................................................................................................. 4
  Proximity Priority Features ......................................................................................................................................... 4
  Proximity Priority Walksheds ....................................................................................................................................... 5
Step 4 – Prioritize and Rank Physical Barriers ................................................................................................................. 8
Step 5 – Gate 1: Program Barriers for Removal .............................................................................................................. 8
Step 6 – Obtain Funding Estimates ............................................................................................................................... 8
Step 7 – Program Individual Barriers for Removal ......................................................................................................... 8
Step 8 – Cross Check with Other Capital / Maintenance Plans ..................................................................................... 9

Capital Project Plans .................................................................................................................................................... 10
Pavement Preservation and Restoration Program ........................................................................................................... 11
Developer and Utility Franchise Projects ..................................................................................................................... 12
Active Transportation and Transportation Safety Studies ............................................................................................ 12
SELF-EVALUATION STEPS

Public Works’ self-evaluation was conducted according to the following eight steps:

- Step 1: Identify Administrative Requirements
  - Programs that provide or support the construction of pedestrian infrastructure in the public right-of-way were identified.
  - Federal, state, and local codes were searched and requirements that apply to the programs were cited and compiled in a table.

- Step 2: Identify Administrative Barriers
  - Staff, consultants, clients, and customers were interviewed and provided input on whether they thought each requirement was being met, or not.
  - Policies, procedures, and practices were reviewed.
  - Equipment was checked and tested.
  - Subject matter experts were consulted.

- Step 3: Identify Root Causes/Contributing Factors
  - A work-breakdown structure was created, and processes and procedures were flow-charted.
  - Follow-up interviews with staff and stakeholders were conducted.
STEP 4: IDENTIFY TECHNICAL REQUIREMENTS
• A list was made of pedestrian facility types that Public Works constructs, operates, and maintains in the public right-of-way
• Federal, state, and local codes, guidance, and standards were searched and reviewed and all requirements that apply to Public Works pedestrian facilities in the public right-of-way were cited and complied in a table.

STEP 5: INVENTORY PHYSICAL FACILITIES
• Measurement forms and guidance were prepared to ensure all technical requirement data were gathered.
• Physical facilities were located and mapped.
• Data collectors were trained and sent out to measure all pedestrian facilities.
• Data were checked for quality and validated.

STEP 6: IDENTIFY PHYSICAL BARRIERS
• Measurement data were compared against technical requirements for each facility and facility type.
• Facilities that don’t meet the requirements are non-compliant unless documented as being constructed to comply to the maximum extent feasible.

STEP 7: IDENTIFY ROOT CAUSES/CONTRIBUTING FACTORS
• Plan sets were reviewed before construction and as-builts were reviewed after construction.
• A technical advisory committee determined potential ways error is introduced into designs, survey, and measurements.
• Construction and inspection practices were observed.
• Staff were interviewed and roundtable discussions with staff, clients, and other subject matter experts identified root causes and contributing factors to non-compliance.

STEP 8: PREPARE A CHECKLIST OF FOLLOW-UP / ACTION ITEMS
A checklist of follow-up/action items was prepared to specifically address each root cause and contributing factor to non-compliance. Snohomish County’s checklist serves as the basis for it’s transition plan for barrier removal and can be found in Appendix O.
TRANSITION PLANNING PROCESSES

The main inputs to the priority development process are the Follow-Up/Action Item (FAI) Checklist from Appendix O and stakeholder input on the prioritization and ranking criteria collected through surveys, traditional and online public meetings, and focus groups conducted during the ADA self-evaluation public outreach. Details about the public outreach can be found in Appendix L.

The process to prioritize and rank physical barriers for removal involved a series of steps both sequential and iterative as illustrated in the following flow chart.

1. Check federal transition requirement
2. Categorize physical barriers
3. Develop prioritization and ranking criteria
4. Prioritize and rank physical barriers
5. Gate 1 Program Barriers
6. Obtain annual funding estimates
7. Program individual barriers
8. Cross check w/ other capital maint. plans
9. Gate 2 Quantitative Plan Check-Finalize
10. Gate 3 Qualitative Plan Check-Finalize

Physical Barrier Removal Plan

Process Step
Constraint / Requirement
Decision Gate
STEP 1 – CHECK FEDERAL TRANSITION PLAN REQUIREMENTS

- The priority development process begins with an evaluation of federal requirements for ADA transition plans.
- The federal requirements are that at a minimum, transition plans:
  - Identify physical obstacles (barriers) in the public entity’s facilities that limit accessibility to individuals with disabilities (28 CFR 35.150(d)(3)(i)). Public Works also identified administrative barriers.
  - Describe in detail the methods that will be used to make the facilities accessible (28 CFR 35.150(d)(3)(ii)).
  - Specify a schedule for taking the steps necessary to achieve compliance during each year of the transition period (28 CFR 35.150(d)(3)(iii)).
  - Indicate the official responsible for implementation of the plan (28 CFR 35.150(d)(3)(iv)).
  - Provide interested persons, including individuals with disabilities or organizations representing individuals with disabilities, a chance to participate in the development of the transition plan (28 CFR 35.150(d)(1)).
  - Include a schedule for providing curb ramps or other sloped areas where pedestrian walk cross curbs, giving priority to walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas. (28 CFR 35.150 (d)(2)).

STEP 2 – CATEGORIZE PHYSICAL BARRIERS

Physical barriers inventoried and evaluated during the self-evaluation were grouped into categories of similar scopes of work required for construction. These groupings make it easier to prepare unit cost estimates and gather feedback and stakeholder requirements for prioritization criteria.

1. Perpendicular, parallel, blended transition, combination, and end-of-sidewalk ramps with deficiencies were grouped into a category called Existing Curb Ramps and then grouped into sub-categories by location as follows:
   - Located at a traffic signal
   - Located at an un-signalized intersection
   - Located at the end of a cul-de-sac
   - Located at the end of a road
   - Located at a 90-degree elbow intersection
   - Not located at an intersection

2. Missing curb ramp locations became its own group with the following sub-categories based on locations as follows:
   - Located at an intersection
- Not located at an intersection
- Located at a curb-returned driveway
- Located at the end of a Cul-de-Sac
- Located at the end of a road
- Located at a 90-degree elbow intersection
- Located at a dropped-curb driveway

3. Sidewalk deficiencies were grouped into the following categories:
   - Driveway crossings
   - Vertical and horizontal deficiencies
   - Moveable and fixed obstructions
   - Landscape encroachments
   - Sidewalk slopes and widths

4. Pedestrian pushbutton deficiencies were grouped into Accessible Pedestrian Signal (APS) and non-APS categories with the following sub-categories:
   - No APS Pushbutton and a Leading Pedestrian Interval
   - No APS Pushbutton
   - Non-Compliant APS Pushbutton

5. All non-compliant bus stops were grouped together with no further sub-categorization

6. All pedestrian crossings were grouped together with no further sub-categorization

**STEP 3 – DEVELOP PRIORITIZATION & RANKING CRITERIA**

The federal requirements combined with stakeholder input from the surveys, traditional and online public meetings, focus groups, and citizen advisory committees guided the process of developing priorities.

Development of the priorities was always passed through the lens of simplicity and whether the prioritization criteria could be explained in a short amount of time to the broadest audience possible. No black boxes here.

Stakeholders recommended that the prioritization and ranking criteria:

- Be equitable and not over-emphasis facility upgrades that benefit individuals with certain types of disabilities over individuals with other types of disabilities.
- Focus limited resources on the highest priorities.
- Focus priorities on dense urban areas
- Focus on safety
- Be based on values and not just math formulas and algorithms or statistical analysis.
• Allow Public Works staff to plan programmatically yet think human scale by focusing improvements on corridors and walksheds instead of chasing scattered spot improvements based solely on priority ranking.

Public Works staff researched what other public agencies were doing to prioritize and rank barriers for removal and found that the City of Bellevue, Washington’s approach, as found in its September 2009 self-evaluation titled *Toward Universal Access: Americans with Disabilities Act Sidewalk and Curb Ramp Self-Evaluation Report* could be adapted to meet the guidance provided by the County’s stakeholders. The City of Bellevue developed a prioritization and ranking formula that accounted for not only the severity of the barrier but also what the City called the “activity level” that the barrier might experience. Barriers located closer to pedestrian generators are expected to have a higher activity level than those located farther away. In other words, more people are expected to use them.

This approach means that a severe curb ramp barrier located along a low-volume residential neighborhood road ranks lower in priority than a moderate curb ramp barrier in a commercial area along a high-volume road near a transit bus stop and a medical facility.

Whereas the City of Bellevue’s system is an algorithm that results in each barrier being ranked based on an accumulated point total, Snohomish County modified the approach to follow stakeholder guidance to be less math formula based as follows:

Where:

**Barrier Severity/Location Priority** = the less a facility complies with ADA requirements, the higher its priority, with the exception that some barriers receive a higher or lower priority based on where they are located regardless of how much, or little, they comply with ADA requirements.

**Barrier Proximity Priority** = the closer a facility is to places more people are walking, the higher its priority. Proximity is measured in feet and as a person walks as opposed to a straight line – or as the crow flies – distance.
For the severity/location criteria a barrier can receive a priority of high, intermediate, or low. For the proximity criteria a barrier can also receive a priority of high, intermediate, or low. Since the priority ranking for each barrier is based on its severity/location criteria ranking plus its proximity ranking and because there are three possible ranks for each that means there are nine barrier removal priorities as shown in the following table.

<table>
<thead>
<tr>
<th>Barrier Severity &amp; Location</th>
<th>Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>High</td>
<td>(1) H-H</td>
</tr>
<tr>
<td>Intermediate</td>
<td>(2) I-H</td>
</tr>
<tr>
<td>Low</td>
<td>(5) L-H</td>
</tr>
</tbody>
</table>

With the help of the County’s ADA Citizen Advisory Committee, the barrier removal priorities were ranked. What should rank highest (1st priority) and lowest (9th priority) are self-evident: the High Severity/Location – High Proximity (H-H) barriers rank 1st for barrier removal while the Low Severity/Location – Low Proximity (L-L) barriers rank 9th for barrier removal.

What should rank 4th, 5th, 6th, 7th, and 8th is fairly non-controversial in part because targeted removal of barriers with those ranks are so far out on the timeline that it is hardly worth arguing over and can be adjusted as the plan progresses. It is the order of the 2nd and 3rd ranks that are more controversial. Projects that are ranked 2nd in priority are the projects that will be next up for reconstruction as the 1st priority projects are completed. The projects in the 2nd rank could start showing up as early as year 13 of the transition plan which is the first year beyond the first detailed 12-year rolling window.

Ultimately, with input from the ADA Citizen Advisory Committee it was determined that barriers with an Intermediate Severity/Location ranking but a High Proximity ranking (I-H) should rank above barriers with a High Severity/Location ranking but an Intermediate Proximity (H-I) ranking.

One of the challenges with ranking and prioritizing pedestrian facilities for reconstruction is that the ADA is made up of objective requirements (minimums and maximums) and subjective requirements (for example pedestrian access route surfaces shall be firm, stable, and slip resistant). There are no tolerances for the objective requirements and the subjective requirements lead to varying interpretations which means they are applied differently by different people/agencies. Either a facility is ADA compliant or it’s not when objective requirements are considered.

When an existing curb ramp is not compliant, the degree of severity that it poses as a barrier to access is subjective and depends on users’ value perceptions. The physical needs of users...
vary widely – so there is no objective scale or range to judge severity of a barrier. What may be a minor barrier to one individual with a disability may be a major barrier to another, and so on. What may be a minor barrier to 99 percent of individuals with a disability may be a major barrier to the one percent. There is little qualitative data to help determine the severity of barrier.

Some judgment is used in gathering user feedback and experiences, but really, all that we have to go on is how far out of compliance is a facility. For most ADA requirements it is assumed then, that the closer that a facility meets ADA requirements the less severe of a barrier it becomes, while facilities whose elements and features have measurements that are farther from the requirement the more severe of a barrier it is.

It is important to keep in mind that a low priority barrier is an acknowledgement of non-compliance and that there is something that needs to be fixed to make the facility accessible to individuals with disabilities and compliant with the requirements of the ADA. Classifying barriers as high, intermediate, or low priority helps to focus limited resources on achieving the most good for the most people and is not a judgment by the county of the ability any one individual or group of individuals has to cope with a particular barrier or group of barriers. When the County classifies a barrier as a low priority in relation to all other barriers that are classified it does not mean that an individual or group of people may not also view that barrier as a high priority to them.

The prioritization and ranking criteria are applied to the barriers in each category.

**CURB RAMP BARRIER SEVERITY / LOCATION PRIORITIES**

Stakeholders made clear that one of the most severe barriers that they encounter is a crosswalk location where there should be a curb ramp, but one is missing. Missing curb ramp locations receive the highest severity priority ranking.

There are at least 30 requirements that must be met for an existing curb ramp to be fully compliant with the requirements of the ADA. The self-evaluation of curb ramps included at least one measurement for each requirement. Instead of creating a complex algorithm to comb through each of the tens of thousands of curb ramp measurements and determine the amount of variance from the ADA requirements, Public Works decided to create a reasonableness test to judge the severity of a barrier for existing curb ramps.

Existing curb ramps with detectable warning surfaces (DWS), no vertical discontinuities, perpendicular grade breaks, ramp running slopes less than 8.8%, landing running slopes less than 2.5%, and cross slopes less than plus one percent greater than the flow line slope, are automatically considered low priority except for curb ramps located at intersections with traffic signals which are considered a high priority by default.

The justification for this determination is as follows:
1. DWS, no vertical discontinuities, and perpendicular grade breaks are already required so curb ramps with those elements are on their way to being fully compliant. A running slope of 8.8 percent and a cross slope of 2.5 percent are greater than the ADA requirements, but they are measurements within the guaranteed accuracy of the tools that were used to collect the data.

2. Cross slopes on perpendicular ramps and cross slopes of landings on parallel and combination ramps are parallel to the flow line slope and because the perpendicular ramp or parallel ramp landing surfaces are contiguous and parallel to the gutter flow line slope they will match the flow line slope on at least one line on the surface that is parallel to the flow line if the surface is warped, or throughout the surface if the surface is in the same plane with the flow line.

3. Existing gutters can be found with flow lines slopes that exceed 2 percent all over the county. A ramp that ties into such a gutter is constrained by the gutter flow line slope as an existing condition and so the parallel/contiguous slope on the ramp and/or landing that exceeds 2 percent is compliant with the ADA requirement to the maximum extent feasible insomuch as reconstruction of the gutter flow line is not part of the project triggering the curb ramp reconstruction.

Stakeholders also expressed a strong preference that curb ramp prioritization should be based, in part, on whether an existing curb ramp, or a missing curb ramp location, is at an intersection - or away from an intersection - with ramps at intersections generally receiving higher priority. And, not every type of intersection is the same. Whereas there are unique challenges to crossing a quiet residential street there are sometimes greater and more complex challenges when attempting to cross a busy multi-lane road at a signalized intersection.

Existing and missing curb ramps with returned curbs that look and feel like intersections should be ranked medium priority. Missing and existing curb ramps located at end of cul-de-sacs, end of roads, end of sidewalk locations midblock – where the sidewalk gaps out between developments, and at 90-degree elbow intersections are the lowest priority.

<table>
<thead>
<tr>
<th>Curb Ramp Barrier Severity / Location Priorities and Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>High</td>
</tr>
<tr>
<td>Intermediate</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Low</td>
</tr>
<tr>
<td>Curb Ramp Barrier Severity / Location Priorities and Criteria</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Located at the end of a road</td>
</tr>
<tr>
<td>Located at a 90-degree elbow intersection</td>
</tr>
<tr>
<td>Not located at an intersection (reasonableness tested)</td>
</tr>
</tbody>
</table>
SIDEWALK BARRIER SEVERITY / LOCATION PRIORITIES

Stakeholders said that all vertical and horizontal discontinuities and fixed object obstructions are a high priority for barrier removal.

The other measurements of significance in determining sidewalk compliance are the running slope, cross slope, and unobstructed sidewalk width. They factor into the priority ranking as follows:

1. Driveway crossings with a running slope that exceeds 8.3 percent but is less than 10 percent and with a cross slope that exceeds 2.5 percent but is less than 5 percent are considered intermediate priority. Whereas driveway crossings with a running slope that exceeds 10 percent and a cross slope that exceeds 5 percent are considered high priorities. All other driveway crossings that are non-compliant are considered low priority.

2. Running slopes of sidewalks should not exceed the general grade of the adjacent roadway. With a handful of known exceptions, the county’s sidewalks generally match the existing roadway grade so no prioritization was made on sidewalk running slopes.

3. Sidewalks with cross slopes that exceed 2 percent but are less than 2.4 percent are considered low priority because the measurement falls within the guaranteed accuracy of the tool that was used to take the measurement.

4. Sidewalks with cross slopes that exceed 2.4 percent but are less than 5 percent are considered intermediate priority because a 5 percent cross slope is allowed in the PAR for crosswalks and curb ramp cross slopes under some circumstances such as at midblock crossings. Because a 5 percent cross slope is sometimes allowed makes it a convenient threshold for sorting between intermediate and high priority.

5. Sidewalks with a cross slope that exceed 5 percent are a high priority for barrier removal.

6. Sidewalk widths greater than 3 feet but less than 4 feet are considered intermediate priority because 3 feet is the legal standard for PAR widths while 4 feet is the width called out in the PROWAG: a guideline that is recommended by the Federal Highway Administration (FHWA) as a best practice for all new construction and alterations of pedestrian facilities in the public right-of-way.

7. Sidewalk widths less than 3 ft. are a high priority for barrier removal.
**Sidewalk Barrier Severity / Location Priorities and Criteria**

<table>
<thead>
<tr>
<th>Priority</th>
<th>Sidewalk Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Vertical and Horizontal Discontinuities</td>
</tr>
<tr>
<td></td>
<td>Fixed Object Obstructions</td>
</tr>
<tr>
<td></td>
<td>Driveway Crossing running slope &gt; 10.0% and cross slope &gt; 5.0%</td>
</tr>
<tr>
<td></td>
<td>Sidewalk Cross Slopes &gt; 5%</td>
</tr>
<tr>
<td></td>
<td>Sidewalk Widths &lt; 3.0 ft.</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Driveway Crossing running slope &gt; 8.8% and cross slope &gt; 2.5%</td>
</tr>
<tr>
<td></td>
<td>Sidewalk Cross Slopes &gt; 2.4% and &lt;=5%</td>
</tr>
<tr>
<td></td>
<td>Sidewalk Widths &gt;=3.0 ft. and &lt; 4.0 ft.</td>
</tr>
<tr>
<td>Low</td>
<td>Driveway Crossings that don't meet the Intermediate and High Priority criteria</td>
</tr>
<tr>
<td></td>
<td>Sidewalk Cross Slopes &gt; 2.0% and &lt;=2.4%</td>
</tr>
</tbody>
</table>

**PEDESTRIAN PUSHPUSHBUTTON BARRIER SEVERITY / LOCATION PRIORITIES**

Stakeholders indicated that effective communication at signalized intersections should be a high priority for the transition plan because a lack of adequate information is a barrier to crossing at a signaled intersection and can be a safety issue.

A traffic signal with a Leading Pedestrian Interval (LPI) but no Accessible Pedestrian Signal (APS) is a problem because it does not meet the effective communication requirements of ADA. An LPI provides a head start to pedestrians to be able to enter the crosswalk while all other movements of traffic at an intersection have a red signal indication displayed. By placing pedestrians out in the middle of the crossing before motorists see a green indication it places the pedestrians in a location that is more visible to motorists when they receive the green light thereby reducing the number of vehicle-pedestrian collisions. LPIs have been proven highly effective at reducing the number of vehicle-pedestrian collisions at signalized intersections.

Unfortunately, if a signal is timed with an LPI and there are no APS pushbuttons then individuals with vision impairments won’t know when the walk indication is displayed and when they finally realize that it is time to cross the road – when they hear parallel traffic begin to move – they have already lost at least seven seconds of crossing time and can be stranded in the middle of the crossing by the time the walk interval ends and the green light is given to conflicting traffic.
Signals with an LPI and no APS should be upgraded as soon as possible and receive the highest ranking because individuals with vision impairments can be trapped in the middle of the crossing when conflicting traffic receives a green signal indication.

Signalized intersections with no LPI and no APS are intermediate priority for barrier removal.

Some APS pushbuttons that were installed with curb ramp upgrades before the creation of the ADA Compliance Program were not installed to full compliance even though full compliance was possible. Many of these pushbuttons are ranked as a low priority on the barrier severity list because they are a step forward from no APS pushbutton at all.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>No APS Pushbutton and Leading Pedestrian Interval</td>
</tr>
<tr>
<td>Intermediate</td>
<td>No APS Pushbutton</td>
</tr>
<tr>
<td>Low</td>
<td>Non-Compliant APS Pushbutton</td>
</tr>
</tbody>
</table>

TRANSIT BUS STOP BARRIER SEVERITY / LOCATION PRIORITIES
All ADA non-compliant transit bus stops along unincorporated Snohomish County roads are a high priority for upgrade and the plan is to reconstruct them all within the first 12-year rolling window of the ADA transition plan. Snohomish County will sign a memorandum of understanding with Community Transit to upgrade the ADA non-compliant bus stops without shelters and Community Transit will take responsibility for ensuring ADA compliance of all of the bus stops with shelters.

PEDESTRIAN CROSSING BARRIER SEVERITY / LOCATION PRIORITIES
There is no programmatic plan to upgrade non-compliant pedestrian crossings in the public right-of-way.

Public Works only measured a small subset of pedestrian crossings. Public Works didn’t measure or evaluate unmarked crossings that don’t have ramps or connecting sidewalks on at least one side of the crossing. Public Works doesn’t believe the ADA requires programmatic reconstruction or re-grading of existing roadway bases or sub-grades to make pedestrian facilities compliant. In fact, the infeasibility of re-grading existing roadways and intersections often serves as the physical constraint upon which maximum extent feasible design justifications are based.
The opportunities to alter pedestrian crossing slopes without re-grading intersection approaches or altering roadway sub-grades and bases is rare and usually involves adding or removing depth to the finished grade material. Public Works doesn’t believe it was justified to task our limited resources with measuring the tens of thousands of unmarked crossings that don’t have ramps or connecting sidewalks or pedestrian facilities on both ends of the crossing to find a few slopes that could be altered by adjusting the finished grade when there is doubt as to whether there is a pedestrian access route or circulation path that ties into the crossing in the first place.

Although unmarked pedestrian crossings aren’t programmed in the transition plan, Public Works is still obligated to evaluate compliance and alter pedestrian crossings to achieve full compliance (or compliance to the maximum extent feasible) when a pedestrian crossing is altered in any way. Since most of the county roads are surfaced with asphalt that means making tweaks where possible as part of overlays. Rarely are existing roads and intersections completed reconstructed and re-graded. When they are, it is incumbent upon Public Works to improve the existing crosswalks to achieve full compliance or to comply to the maximum extent feasible.

**ALTERNATE PEDESTRIAN FACILITIES IN WORK ZONES**

Public works provides training to external stakeholders and to county staff. Public Works’ capital projects include pedestrian traffic control specific requirements and specifications to increase the likelihood of compliance.

**PROXIMITY PRIORITY FEATURES**

Ideally, if Public Works knew the trip origins and trip destinations, modes of travel, and travel routes of every individual with a disability who lived in unincorporated Snohomish County, Public Works could more easily identify the highest traveled non-motorized routes and most popular origins and destinations and prioritize upgrades along those routes and near those locations first.

Public Works doesn’t have access to this kind of data and must instead rely on public feedback and look for data and information that can serve as proxy. Pedestrian generators and attractions serve as one type of proxy data to determine to and from where pedestrians want to make trips.

Careful selection is needed. Select too many proximity locations then every pedestrian facility is close to a high priority. If proximity cutoff distances are too long then every pedestrian facility is within a priority area. What is required is selection criteria that can be dialed up or down as the plan progresses. The basic concept is to find places people want to go and start removing barriers closest to those places first and then move barriers progressively outward from those places over time. It would be no good to remove a barrier far away from a proximity priority if barriers remain in between.
What was gleaned from the public outreach is that stakeholders prioritize ADA compliant pedestrian facility access to:

- Public Transit – 33% of respondents to the self-evaluation survey said they use public transit one or more times per week.
- Public buildings – schools, libraries, post offices, community centers.

The ADA Citizen Advisory Committee recommended that places that offer senior services and/or disability services such as retirement living facilities, rehabilitation centers, or adult group homes could serve as reasonable proximity priority locations for places to and from where individuals with disabilities want to travel.

Federal law requires agencies to prioritize walkways serving State and local government offices and facilities, transportation, places of public accommodation and employment, followed by walkways serving other areas.

It was also noted during the prioritization process that traffic signals are located mostly on higher volume roads and most are located near other high priority services areas such as transit, public buildings, transportation centers, retail, and medical, other so they serve as a proxy indicator of areas that are more likely to have a higher level of pedestrian activity. And, because the curb ramps at signals are expected to be used by more pedestrians than at other locations it makes sense to prioritize and package the curb ramps and pedestrian pushbuttons at signalized intersections together for ADA transition plan upgrades even if not all the pedestrian pushbuttons or curb ramps at an intersection are ranked the same.

Based on the above information, the ADA transition plan prioritizes barriers based on proximity to:

- Transit bus stops
- Government buildings
- Public schools
- Senior & disability services providers
- Major transportation facilities
- Traffic signals

Lists of the proximity priority features that were used to prioritize and rank barriers for removal can be found in Attachment 1 to this Appendix.

**PROXIMITY PRIORITY WALKSHEDS**

Distances are measured from proximity priority locations to barriers along pedestrian walk routes instead of measuring straight line (or as-the-crow-flies) distances.
A cutoff distance of equal length measured along each walk route emanating from a proximity priority feature defines the boundary of a walkshed. All barriers within a certain cutoff distance are grouped together into a walkshed for prioritization purposes. Short, and intermediate cutoff distances create high and intermediate proximity priority walksheds into which barriers can be grouped. Any barrier located along a walk route beyond the intermediate cutoff distance falls within the low proximity priority walkshed.

However, the presence of a pedestrian facility or complete network was not taken into consideration as to the quality of the walk routes or if there were even sidewalks to walk along to and from the proximity location. It would require a higher level of analysis that the county is not yet able to conduct for lack of accurate data and analysis tools. As these tools come on line in the near future it may be desirable to give higher priority to removing barriers along routes that have complete pedestrian facility networks.

The ADA does not require that local agencies build pedestrian facilities, only that pedestrian facilities be accessible to individuals with disabilities. A gap in the sidewalk may be a barrier to an individual with a disability but individuals with disabilities are not being uniquely discriminated against if there is a gap because all pedestrians regardless of whether they have a disability, or not, are at a disadvantage because of the gap. So, sidewalk gaps were not considered an accessibility barrier.

Barriers that fall within more than one proximity feature walkshed are given the priority of the highest proximity walkshed into which they fall. For example, if a curb ramp falls within the high priority proximity area of a transit bus stop, the intermediate priority area of a traffic signal, and the low priority area of a public school, the curb ramp is classified as a high priority proximity
facility. No extra points are given for being within more than one high priority proximity walkshed.

Transit bus stop priority proximity distances were selected based off typical planning guidance/practices such as that in the Sno-Tran Guide to Land Use and Public Transportation Document.

Facilities within 1/8 mile of a bus stop are high priority, between 1/8 of a mile and ¼ of a mile are intermediate priority, and facilities beyond ¼ mile are low priority.

Public school priority distances are based on the fact that the State of Washington provides funding for local school district to bus kids to school who live outside of a one-mile boundary from their school. On face value it might seem logical to make a high priority all non-compliant pedestrian facilities within the one-mile walking distance of schools. But there are so many public schools in the unincorporated areas of Snohomish County that practically all pedestrian facilities are within one mile of a public school and so if one mile was used as the high priority walk distance all facilities would be high priority. Given the quantity of public schools that are being used for the proximity priority analysis a cutoff of ¼ mile walking distance was used as the high proximity priority value, while everything between ¼ mile and ½ a mile is intermediate priority and low priority beyond ½ a mile.
## APPENDIX K: SELF-EVALUATION & TRANSITION PLANNING PROCESSES

<table>
<thead>
<tr>
<th>Category</th>
<th>&lt;= 1/8 mile</th>
<th>&gt; 1/8 mile and &lt;= 1/4 mile</th>
<th>&gt; 1/4 mile</th>
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</thead>
<tbody>
<tr>
<td>Transit Bus Stops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Schools</td>
<td>&lt;= 1/4 mile</td>
<td>&gt; 1/4 mile and &lt;= 1/2 mile</td>
<td>&gt; 1/2 mile</td>
</tr>
<tr>
<td>Government Buildings</td>
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<td>&gt; 1/4 mile and &lt;= 1/2 mile</td>
<td>&gt; 1/2 mile</td>
</tr>
<tr>
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<td>&gt; 1/8 mile and &lt;= 1/4 mile</td>
<td>&gt; 1/4 mile</td>
</tr>
<tr>
<td>Senior &amp; Disability Service Providers</td>
<td>&lt;= 1/8 mile</td>
<td>&gt; 1/8 mile and &lt;= 1/4 mile</td>
<td>&gt; 1/4 mile</td>
</tr>
</tbody>
</table>

### STEP 4 – PRIORITIZE AND RANK PHYSICAL BARRIERS

Once the prioritization and ranking criteria were defined, all physical barriers in the inventory database were prioritized using ArcGIS modeling tools and Visual Basic scripts. The ArcGIS Model Documentation and inventory geodatabases are available upon request.

### STEP 5 – GATE 1: PROGRAM BARRIERS FOR REMOVAL

Steps 1 through 5 are an iterative process and refinements and changes are made until all the following Gate 1 questions can be answered “yes” at which point the prioritized projects can move on to be programmed for construction:

- Highest priorities conform to federal requirements and stakeholder criteria?
- Are the high priorities in a select group – not too many, not too few?
- Do the lowest priorities adhere to federal guidance and stakeholder expectations?
- Are the low priorities in a select group – not too many, not too few?
- Are the criteria as simple as possible – could it be explained in a 30 second elevator pitch?
- Are the criteria transparent – no black box or complex algorithms?
- Can the prioritization and ranking criteria and processes be duplicated / checked by others?

### STEP 6 – OBTAIN FUNDING ESTIMATES

Funding estimates are obtained from Public Works management who are accountable for development and implementation of the ADA Transition Plan. Funding levels are recommended by Public Works through the annual TIP/ACP preparation. Funding is ultimately set by the County Council and the County Executive through the annual budgeting process.

### STEP 7 – PROGRAM INDIVIDUAL BARRIERS FOR REMOVAL

Determine what year each barrier is going to be programmed for removal based on estimated annual funding. Group barriers in as close a proximity to each other as possible so as to decrease the costs of construction by allowing them to be packaged together under one construction contract for each year. The sum total of each group of barriers for each year has to be as close as possible to the estimated annual funding. Too far below the estimated funding means that barriers won’t get removed as fast. Too far above the estimated funding means that some barriers will not get reconstructed as planned.
Based on total population by census tract as much as possible from highest to lowest total population with projects in the highest total population census tract being prioritized for construction before those in lower total population census tracts although some projects had to be grouped based on budget constraints.

As much as possible curb ramps and pedestrian pushbuttons at traffic signals were selected based on proximity – makes most sense from a project management/construction management perspective to upgrade curb ramps and pushbuttons at signals adjacent to each other.

As much as possible do the curb ramp work at a signalized intersection at the same time as the pedestrian pushbutton work thereby leveraging limited funds to do more.

As much as possible group bus stops along corridors/routes and in neighborhoods. Having all or most of the stops along the same corridor allows for lower construction costs and faster construction times.

The annual project list is based in large part on the projected annual budget. The sum of the unit cost estimates for all the barriers proposed for removal in a given year have to equal or be less than the project annual budget. Barriers were selected and grouped through an iterative process.

**STEP 8 – CROSS CHECK WITH OTHER CAPITAL / MAINTENANCE PLANS**
The ADA requires that existing non-compliant pedestrian facilities be brought into compliance at the time that they are altered. Some ADA facilities in the public right-of-way will be altered as part of the implementation of Public Works’ ADA Transition Plan meaning that the facility is being altered solely to achieve ADA compliance according to priorities and ranks set by Public Works and other ADA stakeholders. But many more pedestrian facilities are likely to be altered as part of a roadway widening project, installation of a potable water line, as required by federal law because the adjacent roadway is being overlaid, or because a developer is installing new facilities while developing a subdivision, etc. These pedestrian facilities altered by means other than Public Works’ ADA transition plan will significantly contribute to the removal of barriers in the public right-of-way. The key difference is that Public Work’s ADA transition plan targets barriers for removal based on where the barrier ranks on the priority list, with higher priority barriers being removed first. While pedestrian facilities altered by other means could include a wide range of facility priorities as ADA compliance is not what is driving the scope of work that requires the facilities to be altered in the first place.

The following other means were checked as the 12-year plan was prepared:

- Capital Project Plans
- Developer and Utility Franchise Projects
- Pavement Preservation and Restoration Program
• Active Transportation Study
• Transportation Safety Plan

It’s practically impossible to determine the time frame in which facilities will be altered by other means because the time frame from project initiation/inception to planning, design, permitting, and construction varies for each type. Typical timeframes include 3 to 10 years for capital projects, 1 to 3 years for overlays, and 1 to 2 years for residential homebuilders.

A review of the proposed overlay program list, the 20-year transportation needs list, the current 6-year TIP, shows the potential for more than 1,000 barriers to be removed by means other than the transition plan over the next 12 years, or approximately 84 barrier removed by other means, per year.

The transition plan will be updated on an annual basis and all barriers removed during the previous year – regardless of the means by which they were removed – will be accounted for in the transition planning process. The transition plan will continue to forecast which barriers will likely to be removed by other means and target limited resources on the highest priorities not likely to be removed by other means.

**CAPITAL PROJECT PLANS**
The Six-Year Transportation Improvement Program (TIP), the Transportation Needs Report (TNR) and the Transportation Element (TE) of the Comprehensive plan were reviewed to determine which barriers were likely to be removed as part of planned capital transportation projects as they flow down from those documents to the Annual Construction Program (ACP).

ADA transition plan projects are then focused solely on the highest priority projects not already planned for reconstruction as part of a capital project.
ACP – transition plan projects are programmed on the ACP. The ACP is updated annually and changes are reflected in annual updates to the ADA transition plan.

TIP – transition plan projects are programmed on the TIP. Barriers slated for removal through other capital projects are not included in the transition plan project list. The TIP is updated annually and changes are reflected in annual updates to the ADA transition plan.

TE – Capital projects not already on the ACP or TIP are cross-referenced with the transition plan. Non-compliant pedestrian facilities likely to be upgraded as part of Comprehensive Plan projects are not included on the transition plan project list to be funded with transition plan dollars. The Comprehensive plan is update.

As the County moves forward with its capital construction projects as identified on its Six-Year Transportation Improvement Plan or the Annual Construction Program, missing or non-compliant accessibility features will be addressed as part of these projects. Since 2013, the county has removed an average of 44 barriers per year as part of capital projects.

**PAVEMENT PRESERVATION AND RESTORATION PROGRAM**

Overlays are planned no more than about three or four years in advance because the selection of roads for each year’s overlay program is dependent on the condition of each road in relation to the condition of all others. Almost all roads are evaluated every two years and road conditions can change dramatically from one year to the next. Funding levels can also change dramatically from year to year and so planning has to be more flexible.

On occasion – where high priority ramps or signals were located along overlay routes the cost for the ramp upgrades came from the Transition Plan budget (Category B.03 of the ACP/TIP). In the future, all curb ramp costs associated with overlays will come from the overlay budget. If a future overlay is planned for a road with curb ramps that have already been identified for reconstruction as part of a ADA Transition Plan project, the responsibility for the curb ramp reconstruction transfers to the overlay and the funding budgeted for the curb ramps in the ADA Transition Plan goes to the next highest priority facilities on the physical barrier removal list.

On an annual basis, the ADA transition plan is coordinated with the pavement management and preservation program. Both programs are coordinated in such a way as to derive benefits not easily obtained by managing the projects in isolation. For example, there are often times when a planned overlay route passes through one or more signalized intersections. Although the curb ramps at the signals are required to be upgraded at the same time as the overlay, the pedestrian pushbuttons are usually not. However, it would be a poor management of public resources not to do the pushbuttons at the same time as the ramps because electrical conduit and pushbutton placement is best achieved when the ramps are being reconstructed. A lack of coordination might mean that a few years after the ramps are reconstructed as part of the
overlay, they have to be torn out and reconstructed - yet again - simply to be able to install the pedestrian pushbuttons to compliance.

Because the overlay program is an annual event, it can be assumed that existing barriers will be removed at a similar pace as the program is conducted in the future. The current rate is approximately 80 barriers removed per year.

**DEVELOPER AND UTILITY FRANCHISE PROJECTS**

Developers may receive permit approval to develop and then hold off on actual construction for many years while extending permit approvals. While some projects proceed rapidly and are constructed with one or two years of submitting an application for a permit. The county forecasts where development is likely to occur but cannot predict when it will occur. Since 2013, approximately 14 non-compliant pedestrian facilities are reconstructed as part of development and utility franchise work each year.

Every year check permits and check what has been done in the previous year to see what might be on the 12-year plan and can be removed.

**ACTIVE TRANSPORTATION AND TRANSPORTATION SAFETY STUDIES**

The ADA transition plan should also be coordinated with the active transportation strategy and the transportation safety plans that Public Works is currently in the process of developing. Coordinated planning can provide benefits to the public that could not be obtained by planning and executing the plans in parallel, but separately. For example, the transportation safety plan might identify crossings that could be improved to promote pedestrian safety and the ADA transition plan might show that the ramps are non-compliant and need to be brought into compliance. Wrapping the projects together and packaging them for construction can often take advantage of lower unit bid costs that are derived from economies of scale.
STEP 9 – GATE 2: QUANTITATIVE PLAN CHECK – FINALIZE PLAN
Steps 7 through 9 are an iterative process and refinements and changes are made until all the following Gate 2 questions can be answered “yes” at which point the prioritized projects can move on to Gate 3:

• Do the annual plan cost estimates match the annual funding estimates?
• Have barriers that show up on capital / maintenance plans been removed from the ADA Physical Barrier Removal Plan?
• Are individual barriers grouped into close proximity for each plan year?

STEP 10 – GATE 3: QUALITATIVE PLAN CHECK – FINALIZE PLAN
Steps 6 through 10 are an iterative process and refinements and changes are made until all of the following Gate 3 questions can be answered “yes” at which point the prioritized projects can move on to be included in the Physical Barrier Removal Plan which is part of the detailed 12-Year plan and go on to be included in the 6-Year Transportation Improvement Plan and the Annual Capital Plan:

• Are we doing enough?
• Are we making a difference?
• Are we improving corridors/neighborhoods instead of chasing individual barriers?
• Are we making high priority pedestrian generators accessible?

These are subjective questions which require review and feedback from key stakeholders such as public works management, the Public Works ADA Coordinator, and the ADA citizen advisory committee.
GOVERNMENT BUILDINGS
It was somewhat of a challenge to find government buildings located in unincorporated Snohomish County or even government buildings not located in unincorporated county but close to the border so that pedestrian facilities in unincorporated county could be considered within the walkshed. Take, for example, the Snohomish County campus – it’s located well within the Everett City limits. The following table lists 43 government buildings that are located in unincorporated Snohomish County. Not all have pedestrian facilities near them. If a building is missing from the list it can be added in the next annual update.

<table>
<thead>
<tr>
<th>Government Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascade District Court</td>
</tr>
<tr>
<td>Cathcart Maintenance Facility</td>
</tr>
<tr>
<td>City Of Edmonds Fire Department</td>
</tr>
<tr>
<td>City Of Snohomish Fire Department / Fire Station #2</td>
</tr>
<tr>
<td>Evergreen District Court</td>
</tr>
<tr>
<td>Evergreen State Fairgrounds</td>
</tr>
<tr>
<td>Public Works Granite Falls Shop</td>
</tr>
<tr>
<td>Sheriff East Precinct</td>
</tr>
<tr>
<td>Silvana Post Office</td>
</tr>
<tr>
<td>Sno-Isle Regional Library</td>
</tr>
<tr>
<td>Snohomish County Airport Fire Station</td>
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<td>Snohomish County Fire Protection District No. 1 / Fire Station #3</td>
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<td>Snohomish County Fire Protection District No. 22 / Fire Station #1</td>
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<td>Government Buildings</td>
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<td>Snohomish County Fire Protection District No. 7 / Fire Station #1</td>
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<td>Startup Post Office</td>
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<td>Tulalip Tribes of Washington Building</td>
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PUBLIC SCHOOLS
There are 48 public schools that are located in unincorporated Snohomish County. The fact that all the schools on the list are public is not meant to be a commentary on the merits of public vs. private schools or to down grade the importance of private schools in the education of the youth of Snohomish County.

Private schools are so tailored and customized that it would be hard to determine where to draw the line. Would Montessori’s be included? How small or big does the school have to be to be included on the list? If all schools were added to the list then there would be so many facilities around which to prioritize that every non-compliant facility would be a high priority.

Having discrete and tightly classified locations allows for less noise and clearer prioritization. There are enough public schools that many private schools will fall within the priority walksheds anyway.

School bus stops were not included because they are constantly changing and there are so many school bus stops that using them as a priority location would water down the selection process.

Schools located in the incorporated areas of Snohomish County were not considered, even if they potentially had a walkshed that included pedestrian facilities in unincorporated Snohomish County because it would run counter to the plan to fix facilities that are close to the proximity location and work out from there so as to incrementally create fully compliant routes because barriers near the school and located within the incorporated areas are outside the county’s ability to remove. There is definitely a need for local agencies to cooperate which is something that can be addressed in future transition plan updates.

<table>
<thead>
<tr>
<th>District</th>
<th>Name</th>
<th>Address</th>
<th>City</th>
<th>ZIP</th>
<th>Grade</th>
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<td>ZIP</td>
<td>Grade</td>
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<td>Olivia Park Elementary</td>
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<td>Snohomish</td>
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</tbody>
</table>
SENIOR AND DISABILITY SERVICE PROVIDERS

Most clinics, hospitals, large retirement or senior care facilities are located in incorporated areas. The selection of the proximity locations on the following table is not an endorsement of them or the services they provide. Public Works has not contacted any of them. There may be more that Public Works is not aware of and, if known, can be added to the list. These facilities were verified by internet searches and yellow page research. Most were initially identified from information provided by Snohomish County Human Services Department which has more knowledge about senior, disability, and aging facilities and services than does the Public Works Department. Facilities not currently on the list can be added during the next annual update. Facilities on the list should be checked each update and those that no longer exist or have relocated outside the unincorporated areas of Snohomish County should be removed.

<table>
<thead>
<tr>
<th>Senior and Disability Service Providers</th>
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<td>Elisabetas Loving Care</td>
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<tr>
<td>Alderwood Adult Family Home</td>
</tr>
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<td>About Love AFH</td>
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<td>Aurora Edmonds Nursing Home</td>
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<td>Ballinger Court Apartments</td>
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<td>Bothell Healthcare</td>
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<tr>
<td>Carol Lynns Corner</td>
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<tr>
<td>Chateau Pacific Retirement</td>
</tr>
<tr>
<td>Comfort Care Adult Family Home</td>
</tr>
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<td>Madison Adult Family Home</td>
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<td>Woodway Retirement Inn</td>
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TRANSIT BUS STOPS
The following table lists Community Transit operated and maintained bus stops on roads in unincorporated Snohomish County. Occasionally, bus stops are relocated, and Public Works will coordinate with Community Transit for annual updates to the list. Public Works will enter into a memorandum of understanding with Community Transit to bring bus stops without shelters into compliance with Community Transit taking responsible for the compliance of bus stops with shelters.

<table>
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<th>Cross Street</th>
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MAJOR TRANSPORTATION FACILITIES

The following list is of major transportation facilities located in unincorporated Snohomish County. Major transportation facilities serve countywide and/or regional travel.

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## TRAFFIC SIGNALS

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APPENDIX L: PUBLIC INVOLVEMENT
APPENDIX M: ADA COMPLIANCE PROGRAM VALUES
Part of one’s community

1) **Having a disability shouldn’t preclude access to one’s community.**
Our community is stronger when all of its citizens can participate in the activities of daily living. Not only is creating accessibility a civil right protected by the ADA, it is also the responsible and right thing to do.

2) **People with disabilities should be encouraged to comment on and participate in the decision-making process for prioritizing accessibility.**
The insight and guidance by individuals with disabilities will encourage stakeholder support, guard against well-intended but misguided assumptions by staff, and will build a more sophisticated understanding of accessibility.

3) **Accessible pedestrian facilities benefit all users.**
Aging Baby Boomers, those healing from injuries, mothers pushing children in strollers, and others benefit from accessible pedestrian facilities. What is good design for individuals with disabilities is good design for all.

4) **There should be no boundaries to mobility and accessibility in the public right-of-way.**
The need for accessible routes doesn’t end when an individual crosses an invisible line between one local government jurisdiction and another. Coordination and collaboration with individuals with disabilities, groups that represent them, and between local agencies are required to create accessible corridors, pathways, and end-to-end trips.

5) **To understand what is accessible and what is not, we must be able to measure it.**
Our communities were not designed with the assumption that citizens with disabilities would be independently traveling across them. The knowledge of existing barriers provides a basis for understanding the challenge to be addressed.

6) **Measurements must be linked to the ADA, avoid being overly complex, and allow for realistic analysis of progress.**
The ADA requirements are expressed in percentage slopes, decibels, and similar engineering terms. The public right of way contains thousands of measurement points. The challenge is to create data summaries that are neither too technical nor too simplistic, and thus allow for prioritization of precious resources.

7) **We must approach creating accessibility with the understanding that different disabilities require different solutions.**
Someone who is visually impaired has different needs for safely getting across the street than the person who uses an electric wheelchair. We must avoid one-size-fits-all approaches to conceptualizing the barriers and to setting priorities.
8) Not all barriers to accessibility are physical barriers. Administrative and attitudinal barriers must also be identified, understood, and removed or changed. No less challenging than modifying the physical environment will be identifying the well-intended rules and assumptions that stand in the way of creating accessibility.

Wise Use of Limited Resources

9) When the total need for change far outstrips the taxpayer’s ability to pay for quick remedies, we must create priorities for change that are perceived as equitable, responsible, and provide tangible improvement. What is needed is a process that makes the best use of limited time and funding. Decisions need to be made and priorities set, timelines established, and resources allocated for the proposed change.

10) Large changes may require multiple years and coordination to complete. In order to accomplish county-wide accessibility, the work must be viewed in both the short term and as part of longer planning. Six and twelve years of projects can be expected to make very significant improvements in community accessibility. In order to leverage existing resources, long-term collaborative relationships that provide integrated planning will enhance the change process.

11) Projects that benefit the most individuals and allow them to access important activities of daily living often will be the best use of limited funds. For example, projects that create an accessible path including street crossings for five consecutive blocks to a medical center may be prioritized over five street crossings, each in a different part of the county. Access to schools, shopping, government offices, medical centers, and transit locations will benefit many individuals.

Construction

12) Contractors and builders need to understand what is expected and why it is important. The ADA has a reputation for being complex. We must make it easy for contractors to see how to build within ADA requirements.

We also need to provide education to help contractors understand what it is like to have a disability and to experience barriers in the public rights of way.

13) Through education and inspection, it is expected that contractors and builders are able build facilities to compliance the first time, without the need for rework. Contractors and builders should expect that their work will be checked to ensure it is in compliance and that there will be a fair process to handle exceptions to full compliance due to existing physical constraints.
14) **Construction zones can pose significant accessibility barriers that need to be understood and addressed.**

Snohomish County is growing rapidly, posing changes in public rights of way that could be inaccessible, or even dangerous to people with disabilities. We must help contractors understand construction barriers and how to resolve them.

15) **Some resources will be reserved to resolve individual situations.**

A reserve fund will be used to provide unique solutions to individuals who request assistance. Decisions will be made on a case by case basis.

**Accountable to the community, county, stakeholders**

16) **Reporting on progress toward achieving improved accessibility will be detailed, understandable, and updated annually.**

Accountability comes from the presentation of specific goals and a detailed assessment of their achievement. With a detailed baseline of existing barriers already in hand, each year’s work can be viewed as it relates to the overall need.

The analysis will be more than just math and measurements; context and qualitative metrics are needed.

17) **There must be someone who is responsible and accountable, and to whom reporting on progress of the transition plan is made.**

The ADA requires a specific person be identified as the “ADA Coordinator” for each public entity. The individual serving as the Public Works ADA Coordinator naturally falls into the role of responsibility. The Public Works ADA Coordinator is accountable to Public Works management, the county council, the county executive. The Public Works ADA Coordinator will inform the ADAPROW Committee of progress towards meeting annual goals.

18) **Concerns about equity can be anticipated and addressed through annual reports.**

The strategy of focusing on one geographic area to the exclusion of others each year may be perceived as inequitable. Annual Plans and reporting on progress can illustrate how the overall work across time will shift from one area to the next, making tangible improvements in each before moving on.

Setting priorities will be challenging and providing as clear a description and a rationale for each will provide stakeholders with a better understanding of the process of creating accessibility.

19) **Even the best efforts to create physical changes are inefficient without being paired with strategies to share accessibility information with the community.**

The goal will be to provide convenient, credible, and current information.
APPENDIX N: SUMMARY OF ACCOMPLISHMENTS TO-DATE
TABLE OF CONTENTS: APPENDIX N

BACKGROUND .............................................................................................................. 1

Barriers Removed To-Date ............................................................................................. 1

ADA Compliance Program .............................................................................................. 1

2013 ANNUAL REPORT ............................................................................................... 2

2014 ANNUAL REPORT ............................................................................................... 3

2015 ANNUAL REPORT ............................................................................................... 5

2016 ANNUAL REPORT ............................................................................................... 6

2017 ANNUAL REPORT ............................................................................................... 8

2018 ANNUAL REPORT ............................................................................................. 10

2019 ANNUAL REPORT ............................................................................................. 11
BACKGROUND

Public Works did not wait until the ADA self-evaluation and transition plans were complete to begin removing barriers to accessibility to pedestrian facilities in the public right-of-way.

Refer to the Physical Barriers Removed Since 2015 layer of the ADA Transition Plan Map Portal (insert hyperlink).

BARRIERS REMOVED TO-DATE

- 29 of 38 administrative barriers
- 957 non-compliant curb ramps
- 110 non-compliant pushbuttons

Much of the work that has been done has been to prevent new barriers from being constructed in the public right-of-way. Taking the lessons learned from the ADA self-evaluation, an ADA Compliance Program was created to provide training, organize and clearly define standards, implement quality assurance and quality control processes and procedures, foster accountability, and handle exceptions.

ADA COMPLIANCE PROGRAM

The ADA Compliance Program successes include:

- Appointment of an ADA Coordinator
- Creation of an ADA Citizen Advisory Committee
- Creation of an internal ADA Working Group to develop policies and procedures from the bottom up and the top down.
- Development of a Public Works ADA website
- Adoption of Grievance Procedures
- Publication of an ADA Decision Matrix to answer frequently asked scoping questions related to alteration work in the public right-of-way.
- Publication of ADA Measuring Guidelines to outline a consistent method for measuring pedestrian facilities in the public right-of-way.
- An MEF Policy and Procedure to handle the occasional case when pedestrian facilities can’t be constructed to full compliance because of existing constraints.
- Training over 315 internal and external clients including county staff, consultants, developers, inspectors, and contractors.
2013 ANNUAL REPORT

Program Planning staff completed a significant amount of work in 2013 to bring the County’s pedestrian facility programs and services into compliance with the requirements of the ADA. Highlights include:

• An inventory of over 200 curb ramps, 220 bus stops, 23 railroad crossings, 73 signalized intersections, and 120 miles of sidewalk for ADA compliance.

• The formation of a six-member citizen advisory committee and three meetings with the committee to create a ranking and prioritization plan to reconstruct non-compliant curb ramps over a multi-year period.

• The formation of an internal ADA Working Group made up of representatives from each of the groups at the County that deal with ADA issues in the public right-of-way. The ADA Working Group met four times and helped draft design guidance for County staff and the private development community.

• An ADA technical presentation given to 34 engineers and developers from the private development community to update them on the technical requirements of the ADA and the County’s policies and procedures for designing pedestrian facilities in the public right-of-way.

• Adoption of a new Public Works Policy and Procedure to document design review decisions for curb ramps that cannot be built to full compliance with the ADA due to existing physical constraints.

• Training of Planning and Development Services inspectors and plan reviewers on the technical requirements of the ADA.

• Coordination and meetings with Community Transit that led to the quick completion of the bus stop inventory and established a collaborative relationship for future projects to upgrade bus stops and adjacent curb ramps.

• Review of more than 30 plan sets from County engineers and private developers to check for ADA compliance in curb ramp and sidewalk designs.

• Design, construction and inspection assistance for over 160 curb ramps reconstructed by Road Maintenance in conjunction with the annual overlay program and the Local Improvement Project program.

• Creation of a Geographic Information System mapping and analysis tool to rank and prioritize over 7,500 curb ramp locations for reconstruction.
2014 ANNUAL REPORT

Program Planning staff completed a significant amount of work in 2014 to bring the County’s pedestrian facility programs and services into compliance with the requirements of the ADA. Highlights include:

- An inventory of over 4,000 curb ramps and 197 miles of sidewalk for ADA compliance.
- Quarterly meetings with the citizen advisory committee including a field review of ADA facilities and work to draft a procedure to handle citizen complaints about accessible pushbutton volumes.
- Quarterly meetings with an internal ADA Working Group made up of representatives from each of the groups at the County that deal with ADA issues in the public right-of-way. The ADA Working Group helped draft design guidelines for Engineering Services to reduce design times and improve the overall quality and consistency of County curb ramp designs.
- An enhanced ADA website for pedestrian facilities within right-of-way including the creation of a Public Works ADA specific web address. Instead of directing users to snohomishcountywa.gov/1817/ADA-Pedestrian-Facilities, web users now only have to navigate to snohomishcountywa.gov/pwADA.
- Hosting six training opportunities for Engineering Services, Surface Water Management, and Planning and Development Services staff and training 30 engineers and inspectors on the technical requirements of the ADA and County policies and guidance.
- Development of a new Work Zone ADA compliance training module to be used extensively in 2015 to increase safety and equal access on County capital projects.
- A review of more than 20 plan sets from County engineers and private developers to check for ADA compliance in curb ramp and sidewalk designs.
- Field reviews of over 30 private development and County capital project work for ADA compliance.
- Design, construction and inspection assistance for over 140 curb ramps reconstructed by Road Maintenance in conjunction with the annual overlay program.

Physical barriers removed include:

- 241 curb ramps at locations including the following:
  - 164th St SW/SE between I-5 and SR 527
  - 13th Ave W south of 164th St SW
  - Larch Way between 164th St SW and 11th Ave W
• 116th Dr SE between 35th Ave SE and 51st Ave SE
• 52nd Ave W south of 148th St SW
• In the neighborhoods around Duchess RD, Grimes RD, Greening RD, 202nd St SE and vicinity.
• Along 20th Dr SE (Mays Pond)
• Several RRFBs installed by the County
• 10 pedestrian pushbuttons at the intersection of 204th St SW @ Poplar Way and at the intersection of 164th St SW @ 25th Ave W.
Physical barriers removed include:

- 182 curb ramps including curb ramps in the following locations:
  - Along the corridor of 35th Ave SE between 118th Pl SE and 126th Pl SE
  - The intersection of Beverly Park RD @ Gibson RD
  - Along the North RD corridor between 164th ST SW and SR 524 (Filbert RD)
  - Along 148th St SE between Seattle Hill RD and Puget Park Dr
  - In the neighborhoods around Snohomish-Cascade DR and Cascade DR SE
2016 ANNUAL REPORT
Program Planning staff completed a significant amount of work in 2014 to bring the County’s pedestrian facility programs and services into compliance with the requirements of the ADA. Highlights include:

- ADA Self-Evaluation Public Outreach
  - 23,000 social media posts
  - 24 public meeting attendees
  - 121 surveys completed
  - Two focus groups hosted

Physical Barriers Removed:

- 202 curb ramps including ramps at the following locations:
  - 94th St SW @ Airport RD
  - 100th St SW @ Airport RD
  - 4th Ave W @ 128th St SW
  - 5th Ave W @ 128th St SW
  - 8th Ave W @ 128th St SW
  - Along the 35th Ave SE Corridor between 101st St SE and 116th St SE
  - 36th Ave SE @ 35th Ave SE
  - 207nd Pl SE @ 39th Dr SE
  - Along the 39th Ave SE Corridor between 208th Pl SE and 223rd Pl SE
  - On Center Rd around 8th Ave W
  - In the neighborhood around Damson Rd, Hubbard Rd, Logan Rd and 4th Ave W

- 26 pedestrian pushbuttons including 2 at the Fred Meyer entrance on Alderwood Mall Parkway and 24 at the intersections of 4th Ave W, 5th Ave W, and 8th Ave W with 128th St SW were reconstructed to greatly improve access for individuals with disabilities

Additional accomplishments include:
• Quarterly meetings with an ADA Citizen Advisory Committee to prepare for and conduct public outreach for Public Works’ ADA self-evaluation. The committee also participated in a field visit to provide input and plan for the 2017 ADA Transition Plan projects on 4 AVE W.

• Quarterly meetings with an internal ADA Working Group made up of representatives from each of the groups at the county that deal with ADA issues to improve the design review and approval process for pedestrian facilities that can’t meet full compliance with the ADA due to existing physical constraints.

• Two training sessions were attended by a total of 103 engineers, inspectors, and contractors from Snohomish County, other local agencies, utility franchises, and the private sector.

• An effectiveness review of the ADA Program found that the compliance rate for curb ramps constructed by Public Works as part of capital projects - and through its Road Maintenance Division - exceeds 90% since the program was initiated in the year 2013. The compliance rate for curb ramps constructed prior to the year 2013 was 7 percent.
2017 ANNUAL REPORT

Program Planning staff completed a significant amount of work in 2014 to bring the County’s pedestrian facility programs and services into compliance with the requirements of the ADA. Highlights include:

- 36 pushbuttons were upgraded at signalized intersections including:
  - 108th St SW @ 4th Ave W
  - Mariner Park & Ride @ 4th Ave W
  - 110th St SE @ 35th Ave SE
  - 116th St SE @ 35th Ave SE
  - 212th St SE @ 39th Ave SE

- 164 curb ramps were reconstructed including at locations such as:
  - 6th Ave W
  - Seattle Hill RD between 35th Ave SE and SR 96
  - Locust Way between the Snohomish County line and Larch Way/Logan Way
  - In the neighborhood around 20th DR SE, 22nd DR SE, 25th DR SE, east of SR 527 and South of 180th ST SE.

- 1,200 feet of sidewalk gaps were filled in

Attached is a photo of our ADA Citizen Advisory Committee chairperson trying out one of the new ramps on 6th Ave W with his guide dog.
Physical barriers removed include:

- Ramps on 4th Ave W between 128th St SW and 112th St SW (both overlay and transition plan)
- Pushbuttons at the signalized intersections on 4th Ave W between 128th St SW and 112th St SW.

The Public Works Engineering Services Division has the following 2018 pedestrian projects planned for construction:

- Upgrade 81 curb ramps to ADA compliance as part of the 2018 pavement preservation/overlay program. Curb ramp upgrades along overlay routes are required by federal law.

The Public Works Transportation and Environmental Services Division has the following 2018 pedestrian projects planned for construction:

- Upgrade 38 pedestrian pushbuttons to meet Accessible Pedestrian Signal (APS) standards and upgrade 38 curb ramps to ADA compliance at six signalized intersections on 4th Ave W between 128th St SW and 112th St SW. The 4th Ave W corridor is one of the busiest pedestrian corridors with some of the worst curb ramps in the county. The corridor is in a neighborhood with a strong environmental justice need and there are four public schools with walk routes along the corridor.

- Installed approximately 200 linear feet of curb, gutter, and sidewalk on Damson Road in front of the Hilltop Fire Station to improve the walk route for kids that attend Hilltop Elementary School.

- Fill in two sidewalk gaps – one on the east side and one on the west side – of 13th Ave W between 164th St SW and 167th Pl SW. Building the sidewalk will fill in 425 feet of gaps. One gap, on the east side of 13th Ave W, is along a route that a resident that uses a mobility device has requested be filled in to allow her to shop at local stores and access transit on 164th St SW.

- Construct 500 linear feet of pedestrian accessible shoulder on the south side of 204th St SW east of 28th Ave W to improve the walk route for students who attend Hazelwood Elementary School.

- Fill in a 100 foot sidewalk gap on the south side of 148th St SW east of 35th Ave W.
Approximately 60 curb ramp barriers and 20 pedestrian pushbutton barriers were removed from the public right-of-way thereby improving access to individuals with mobility disabilities who navigate along Beverly Park Road at 112th St SW, 148th St SW at 35th Ave W and at 44th Ave W, along Center Road from Alexander Road to Marino Way, along Larch Way from Cypress Way to Poplar Road, and along Grannis Road/196th St SE from SR 527 to 35th Ave SE.

- Upgraded and installed 64 curb ramps to ADA compliance as part of the 35th Ave SW phase 1 roadway improvement project.
- A full day of ADA training was attended by 15 county staff. Attendees learned the fundamental ADA requirements as well as design techniques and guidance to improve the quality and increase compliance of pedestrian facilities constructed in the public right-of-way.
- The ADA Citizen Advisory committee met four times to finalize the final draft of the ADA Transition Plan and to provide design guidance for an ADA web map that can be used by internal and external stakeholders to track the progress of the ADA transition plan and find accessible routes to and from destinations that are important to them.
- Some of these were grant funded projects to support the Swift Green Line, a grant funded HSIP project, and projects to support the overlay program.
- A computer coding tool was developed to automatically sort through all of the data in the county’s ADA pedestrian facility measurement database and calculate/report compliance for each facility via a color-coded GIS map and table. The compliance information has been imported into Cartegraph for internal stakeholders and will serve as the basis for a web map for external clients that is going live in the Spring of 2020.
- With the help of the ADA citizen advisory committee, the prioritization and ranking criteria were finalized in 2019 and applied to all of the pedestrian facilities in the county’s ADA inventory. A 12-year project list and maps were created for the highest priority projects and will serve as the basis for a web map for external clients that is going live in the Spring of 2020.
- Updated and revised were all of the ADA curb ramp and sidewalk requirements in EDDS to remove duplication, fix errors, and provide clearer standards. These will go into effect in May 2020.
APPENDIX O: FOLLOW-UP / ACTION ITEM CHECKLIST
FOLLOW-UP / ACTION ITEM CHECKLIST

Throughout the self-evaluation process, every time it was discovered that a requirement was not being met the factors, root causes contributing to non-compliance were identified and specific follow-up or action items (FAIs) were developed to address them.

The follow-up / action item checklist is a compilation of all of the FAIs. This also serves as a checklist and the basis upon which a transition plan can be developed to address the FAIs.

1. **FAI #** - Each FAI has been assigned an ID number so that they can be easily tracked and referenced in other documents associated with this self-evaluation or other program documents.
2. **Based on REQ #** - Mention of what technical or administrative requirement the FAI refers to.
3. **Self-Evaluation Follow-Up / Action Items** – A written explanation of what the FAI is.
4. **Responsible Parth** – Who is responsible for completing the FAI.
5. **Stakeholders/Consult** – Individuals, groups, and/or organizations that are critical to completion of the follow-up/action item or who should be consulted before changes are made.
6. **Start Date / Complete Date** – Track progress on addressing the FAIs.
7. **Resolution** – Brief summary of the resolution to each FAI

Not all requirements necessitate a FAI to be met. There are, however, several requirements that necessitate more than one FAI to achieve compliance. The identification numbers of the specific administrative and technical requirements as listed in Appendices B and C of the self-evaluation, respectively, have been included for each FAIs so they can be easily referenced for more information.

**Yellow Complete Date cell** = admin barrier not yet complete.

**Orange Complete Date cell** = physical barrier FAI not yet complete.
<table>
<thead>
<tr>
<th>Follow-Up / Action Item #</th>
<th>Based on REQ #*</th>
<th>Self-Evaluation Follow-Up / Action Items</th>
<th>Responsible Party</th>
<th>Stakeholders / Consult</th>
<th>Start Date</th>
<th>Completion Date</th>
<th>Resolution</th>
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</thead>
<tbody>
<tr>
<td>FAI 01</td>
<td>REQ 01, REQ 09, REQ 10, REQ 11, REQ 12, REQ 16, REQ 40, REQ 41, REQ 42, REQ 43, REQ 44, REQ 45, REQ 46</td>
<td>Conduct an ADA self-evaluation of Public Works’ program for pedestrian facilities in the public right-of-way.</td>
<td>DPW ADA Coordinator, DPW ADA Program Manager</td>
<td>County Executive, County Council, DPW Director, County Engineer, TES Director, ENGSVCS Director, Design Manager, Construction Manager, Road Maintenance, SWM, ProgPlan Manager, ProgPlan Supervisor, Traffic Operations, DPW Title VI Coordinator, DPW Communications, PDS PROW Plan Review</td>
<td>Jan 2011</td>
<td>Dec 2016</td>
<td>The first draft – upon which the transition plan is based – was completed in 2016. However, the self-evaluation document is a living document in that progress will need to be tracked and updates made as conditions change. The self-evaluation document will be updated on a three-year (half TIP) cycle with the next update needed in Dec 2019.</td>
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<td>FAI 02</td>
<td>REQ 02, REQ 09, REQ 10, REQ 11, REQ 12, REQ 16</td>
<td>Make modifications to Public Works' program for pedestrian facilities in the public right-of-way to the extent they are required as identified in the ADA self-evaluation.</td>
<td>DPW ADA Coordinator, DPW ADA Program Manager</td>
<td>Same as FAI 01</td>
<td>Jan 2013</td>
<td>On-Going</td>
<td>Public Works has not waited until the self-evaluation and transition planning process is complete to begin to make changes to services, policies, and practices as they are needed to ensure ADA compliance. Evidence of the extensive modifications that have been made can be found on the...</td>
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<td>Follow-Up / Action Item #</td>
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<td>Self-Evaluation Follow-Up / Action Items</td>
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<td>FAI 03</td>
<td>REQ 03, REQ 41</td>
<td>Provide an opportunity to interested persons, including individuals with disabilities and organizations representing individuals with disabilities, to participate in the self-evaluation and transition plan process by submitting comments.</td>
<td>DPW ADA Coordinator, DPW ADA Program Manager</td>
<td>DPW Communications, ADAPROW Committee, General Public &amp; citizen’s who’ve requested updates, Other Local Agencies, Subscribers to PWADA webpage, Federal and state oversight agencies, Private Sector Engineers, Consultants, Developers, Contractors, Inspectors</td>
<td>July 2013</td>
<td>Nov 2016 for Self-Evaluation, Nov 2019 for Transition Plan</td>
<td>Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>. Public Works has a Citizen Advisory Committee that meets on a quarterly basis to help in the self-evaluation and transition planning process. More information about the Citizen Advisory Committee can be found on the <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>. Public outreach for the ADA self-evaluation included: (1) a traditional public meeting; (2) a month-long online public meeting; (3) a survey; and (4) two focus groups</td>
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<td>Follow-Up / Action Item #</td>
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<td>FAI 04</td>
<td>REQ 04, REQ 41</td>
<td>Implement an archival process to maintain the self-evaluation on file for at least three years following the completion of the self-evaluation and make available for public inspection: (1) a list of the interested persons consulted; (2) a description of areas examined and any problems identified; and, (3) a description of any modifications made. Make a copy of the transition plan available for public inspection.</td>
<td>DPW ADA Program Manager</td>
<td>DPW ADA Coordinator, DPW Communications</td>
<td>Dec 2016</td>
<td>Dec 2019</td>
<td>The self-evaluation is a living document and will be updated on a three-year (half TIP) cycle with the next update needed in Dec 2019. The self-evaluation, titled <em>Mobility without Boundaries</em> is available on <a href="http://www.snohomishcountywa.gov/pwADA">Public Works’ ADA Webpage</a></td>
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<tr>
<td>FAI 05</td>
<td>REQ 05</td>
<td>Make available to applicants, participants, beneficiaries, and other interested persons information regarding the requirements of the ADA and its applicability to Public Works’ program for pedestrian facilities in the public right-of-way via the Public Works ADA webpage.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Communications, General Public &amp; citizen’s who’ve requested updates, Other Local Agencies, Subscribers to PWADA webpage, Private Sector Engineers, Consultants, Developers, Contractors, Inspectors</td>
<td>Jan 2015</td>
<td></td>
<td>The Public Works ADA webpage is available at <a href="http://www.snohomishcountywa.gov/pwADA">http://www.snohomishcountywa.gov/pwADA</a></td>
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<td>FAI 06</td>
<td>REQ 05</td>
<td>Coordinate with the Public Works Title VI Compliance Officer and Public Works Communications Group to improve current notification practices, as needed.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Title VI Coordinator</td>
<td>Mar 2019</td>
<td></td>
<td>Need to work with the DPWs Title VI coordinator to add disability language to notices of non-discrimination and civil rights.</td>
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<td>FAI 07</td>
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<td>Vacant</td>
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<td>(rolled into FAI 06)</td>
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<td>FAI 08</td>
<td>REQ 06, REQ 46</td>
<td>Designate a Snohomish County Public Works ADA Coordinator for pedestrian facilities in the public right-of-way. Designate the official responsible for implementation of the transition plan.</td>
<td>DPW Director</td>
<td>County Engineer</td>
<td>Jan 2013</td>
<td>Jan 2013</td>
<td>Jim Bloodgood was designated in 2013. Mohammad Uddin is the current ADA coordinator now that Jim Bloodgood has retired.</td>
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<tr>
<td>FAI 09</td>
<td>REQ 06, REQ 25</td>
<td>Establish a process and/or procedure to receive, assess, respond to, and address requests for the removal of specific physical barriers in a timely manner and resolve complaints of alleged discrimination or non-compliance based on disability, and when it may be necessary to deny requests because the request would fundamentally alter the nature of the pedestrian facility program.</td>
<td>DPW ADA Program Manager</td>
<td>County Engineer TES Director</td>
<td>Jan 2018</td>
<td></td>
<td>The ADAPROW Committee has made it clear that it believes that some money should be set aside each year to handle individual requests for ADA upgrades. They are okay with it being a first-come-first serve process similar to the City of Seattle. The DPW ADA Coordinator agrees. Need to draft a simple policy and procedure and then update the pwADA webpage to explain the policy and procedure in the section where requests can be made. Some sort of vetting needs to occur. Need to get budget and determine if this is listed as a separate TIP line item. All requests beyond what can be accommodated in a given year will be pushed to the next available year with budget. Projects will not otherwise skip ahead of approved ADA Transition Plan projects. Performance goals should be set as to how fast certain types of facilities will be upgraded/provided after request.</td>
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<td>FAI 10</td>
<td>REQ 06</td>
<td>Establish a process and/or procedure to receive, assess, respond to, and address requests for the installation of Accessible Pedestrian Signal pushbuttons and equipment at signalized intersections and beacons.</td>
<td>DPW ADA Program Manager</td>
<td>County Engineer/ ADAPROW Committee/Traffic Operations/ProgPlan Manager/ProgPlan Supervisor</td>
<td>Jan 2018</td>
<td></td>
<td>SEE FAI 09.</td>
</tr>
<tr>
<td>FAI 11</td>
<td>REQ 07</td>
<td>Publish the name, office address, and telephone number of the ADA Coordinator for pedestrian facilities in the public right-of-way.</td>
<td>DPW ADA Coordinator</td>
<td>DPW Communications</td>
<td>Jan 2013</td>
<td>Jan 2013</td>
<td>The current ADA Coordinator’s contact information has been published on the Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
</tr>
<tr>
<td>FAI 12</td>
<td>REQ 08</td>
<td>Adopt and publish grievance procedures that incorporate due process standards and provide for the prompt and equitable resolution of complaints of discrimination against an individual with a disability relating to pedestrian facilities in the public right-of-way.</td>
<td>DPW ADA Coordinator</td>
<td>Prosecuting Attorney’s Office/DPW Public Works Director/County Engineer/DPW Communications</td>
<td>Jan 2013</td>
<td>May 2013</td>
<td>Grievance procedures were developed in consultation with the county PA’s office and are published on the Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
</tr>
<tr>
<td>FAI 13</td>
<td>REQ 14, REQ 16</td>
<td>Review and revise contractual language in inter-local agreements, as needed, to ensure that Public Works will not aid or perpetuate discrimination against individuals with disabilities in the provision of pedestrian facility programs, activities, or services in the public right-of-way, directly or through contractual, licensing,</td>
<td>DPW ADA Program Manager</td>
<td>Prosecuting Attorney’s Office/DPW Contract Admin/County Engineer</td>
<td>Mar 2019</td>
<td>Mar 2019</td>
<td>All Public Works contractual documents have included language prohibiting discrimination based on disability for many years. Confirmed on 03/22/2019 that the language exists in contract documents.</td>
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<tr>
<td>Follow-Up / Action Item #</td>
<td>Based on REQ #*</td>
<td>Self-Evaluation Follow-Up / Action Items</td>
<td>Responsible Party</td>
<td>Stakeholders / Consult</td>
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<tr>
<td>FAI 14</td>
<td>REQ 14, REQ 16, REQ 241, REQ 243, REQ 245, REQ 247 to REQ 278</td>
<td>Coordinate ADA compliance at bus stops and bus shelters with Community Transit.</td>
<td>DPW ADA Program Manager</td>
<td>Community Transit, Traffic Operations, Program Planning</td>
<td>Oct 2013</td>
<td></td>
<td>Community Transit provided a Geographic Information System (GIS) dataset of bus stops in 2013. Field inventory and evaluation completed in Mar 2017. Bus shelter compliance, bus furniture compliance, and bus route identification compliance is the responsibility of Community Transit. Snohomish County will focus on compliance of bus stop boarding and alighting areas and also providing pedestrian facilities to bus stops that do not currently have sidewalk. MOU to be drafted for CommTrans to be responsible for compliance of existing bus stops with shelters and SnoCo to be responsible for compliance all other existing bus stops. All future stops to be responsibility of CommTrans with SnoCo oversight.</td>
</tr>
<tr>
<td>FAI 15</td>
<td>REQ 21, REQ 22, REQ 50, REQ 51</td>
<td>Develop policies, procedures, guidance and/or training to help Public Works staff determine when and where pedestrian facilities in the public right-of-way are required to meet the requirements of the ADA, state law, and county standards.</td>
<td>DPW ADA Program Manager</td>
<td>DPW ADA Coordinator, DPW ADA Working Group, DPW Communications</td>
<td>Apr 2013</td>
<td>Nov 2014</td>
<td>Please see the ADA Decision Matrix document that is available on the Public Works ADA webpage: <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
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<tr>
<td>FAI 16</td>
<td>Vacant</td>
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<td>(rolled into FAI 09)</td>
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<td>FAI 17</td>
<td>REQ 27, REQ 30</td>
<td>Develop policies, procedures, guidance and/or training to help Public Works staff understand what it means – and how – to administer pedestrian facility services, programs, and activities in the public right-of-way in the most integrated setting appropriate to the needs of qualified individuals with disabilities, and how to make determinations as to when, how, and under what conditions to impose legitimate safety requirements necessary for the safe operation of pedestrian facilities in the public right-of-way, that are based on actual risks and not on speculation, stereotypes, or generalizations about individuals with disabilities.</td>
<td>DPW ADA Program Manager</td>
<td>DPW ADA Coordinator, County Engineer</td>
<td></td>
<td></td>
<td>Two ramps on a corner vs. one diagonal ramp? Never allow diagonal ramps at signalized intersections? Is this general topic something that could be included in the ADA training?</td>
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<td>FAI 18</td>
<td>Vacant</td>
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<td>(rolled into FAI 17)</td>
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<td>FAI 19</td>
<td>REQ 31, REQ 32, REQ 97, REQ 98, REQ 127, REQ 128, REQ 129, REQ 227, REQ 228, REQ 229</td>
<td>Develop a maintenance plan to ensure that pedestrian facilities in the public right-of-way that are required to be readily accessible to and usable by persons with disabilities are maintained in operable working condition. Develop guidance to provide continuous access to pedestrian facilities in the public right-of-way to persons with disabilities during maintenance or repairs, and to know under what conditions isolated or temporary interruptions in service or access are acceptable.</td>
<td>DPW ADA Program Manager</td>
<td>Traffic Operations, Road Maintenance Engineering Services</td>
<td></td>
<td></td>
<td>Identification and removal of vertical and horizontal deflections? Snow and ice removal? Fading DWS contrast colors? This is really going to have to be embraced by Road Maintenance and by the Traffic Signal Operations staff and developed adopted by them. It can’t be imposed by the DPW ADA Program Manager.</td>
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<td>FAI 20</td>
<td>Vacant</td>
<td>Develop policies, or revise county code, as necessary, to clarify which power-driven mobility devices are allowed and not allowed to be used on pedestrian facilities in the public right-of-way based on legitimate safety analysis and requirements and pursuant to applicable federal laws.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Transportation Specialist, DPW ADA Coordinator, County Engineer, PDS, ADAPROW Committee</td>
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<td>(rolled into FAI 20)</td>
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<tr>
<td>FAI 21</td>
<td>REQ 36</td>
<td>Develop policies, procedures, guidance and/or training to help the Public Works Director, or his / her designee, determine when a proposed action to comply with the ADA requirements would fundamentally alter Public Works’ program for pedestrian facilities in the public right-of-way in such a way that it would result in undue financial and administrative burdens and how to adequately document in writing the reasons for reaching that conclusion.</td>
<td>DPW ADA Program Manager</td>
<td>Prosecuting Attorney’s Office, County Engineer, DPW Director</td>
<td></td>
<td></td>
<td>Check the RCW, the WAC, and Snohomish County code for what is and isn’t already prohibited. Check with other jurisdictions. Check with the ADAPROW Committee on types of mobility devices in use.</td>
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<td>FAI 22</td>
<td>Vacant</td>
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<td>FAI 23</td>
<td>REQ 39</td>
<td>Develop and publish a transition plan for pedestrian facilities in the public right-of-way. Develop and publish a transition plan to remove barrier to equal access to Public Works’ program for pedestrian facilities in the public right-of-way, that at a minimum:</td>
<td>DPW ADA Program Manager</td>
<td>County Executive, County Council, DPW Director</td>
<td>Jan 2013</td>
<td></td>
<td>20% of the transportation budget or greater? 20% of a project estimate or greater?</td>
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<td>FAI 24</td>
<td>REQ 40, REQ 41, REQ 42, REQ 43, REQ 44, REQ 45, REQ 102, REQ 108</td>
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<td></td>
<td>March 2013</td>
<td></td>
<td>The county has not waited to complete the self-evaluation before identifying and reconstructing high priority ADA facilities to ADA compliance. The ADA Transition Plan will document projects completed and progress made before a written draft was adopted and published.</td>
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<td>REQ 120, REQ 222, REQ 226</td>
<td>(1) identifies physical obstacles that limit the accessibility of its program to individuals with disabilities; (2) describes in detail the methods that will be used to make the program accessible; and, (3) specifies the schedule for taking the steps necessary to achieve compliance with this section and, if the time period of the transition plan is longer than one year, identifies steps that will be taken during each year of the transition period.</td>
<td>County Engineer</td>
<td>TES Director</td>
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<td>FAI 25</td>
<td>REQ 43</td>
<td>Conduct an inventory of pedestrian facilities in the public right-of-way including curb ramps, sidewalk, pedestrian signals and beacons, pedestrian crossings, bus stops, and alternate pedestrian facilities, and measure and record every element of the facilities in sufficient detail that a determination can be made as to whether or not the facilities are compliant with the requirements of the 2005 revised draft Public Right-of-Way Accessibility Guidelines.</td>
<td>DPW ADA Program Manager</td>
<td>County Engineer, TES Director, ProgPlan Manager, ProgPlan Supervisor, DPW Survey Group, AMMS Manager, Road Maintenance</td>
<td>Jan 2011</td>
<td>Apr 2015</td>
<td>The inventory is currently available in Geographic Information System (GIS) datasets and will be updated on an annual basis.</td>
</tr>
<tr>
<td>FAI 26</td>
<td>N/A</td>
<td>Establish a system for periodically reviewing and updating the Public Works ADA self-evaluation and transition plan for pedestrian facilities in the public right-of-way. Document the key components of the ADA Compliance Program.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Program Planning Manager, DPW TES Director</td>
<td>Jan 2013</td>
<td>N/A</td>
<td>New or upgraded pedestrian facilities are tracked through the asset management system and in GIS. All new or upgraded ramps are measured for compliance. The self-evaluation and transition plan will be updated on an annual basis to track changes and progress against the baseline</td>
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<td>FAI 27 REQ 48</td>
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<td>Develop policies, procedures, guidance and/or training to help Public Works staff determine and document when a pedestrian facility is allowed to be constructed in the public right-of-way to less than full compliance due to structural impracticability.</td>
<td>DPW ADA Coordinator</td>
<td>County Engineer, DPW Director, DPW Engineering Services Director, DPW RM Director, County Council, County Executive, ADAPROW Committee, General Public</td>
<td>Jan 2013</td>
<td>Nov 2013</td>
<td>The claim of non-compliance due to structural impracticability is only allowed in extremely rare cases and should be documented and approved using the Maximum Extent Feasible Design Review Procedure. The MEF Design Review Policy and Procedure can be found on the Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
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<td>FAI 28</td>
<td>REQ 49, REQ 64, REQ 67, REQ 72, REQ 81, REQ 85</td>
<td>Develop and implement a maximum extent feasible design review policy and/or procedure to handle the occasional cases when pedestrian facilities cannot be constructed to full compliance due to existing constraints.</td>
<td>DPW ADA Coordinator</td>
<td>County Engineer ENGSVCS Director PDS SWM Road Maintenance EDDS Engineer ADA Working Group Private Sector Engineers, Consultants, Developers, Contractors, Inspectors Utility Franchises</td>
<td>Jan 2013</td>
<td>Nov 2013</td>
<td>The MEF Design Review Policy and Procedure can be found on the Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
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<td>FAI 29</td>
<td>REQ 52 through REQ 61</td>
<td>Develop policies, procedures, guidance and/or training to empower Public Works staff to effectively communicate with applicants, participants, members of the public, and companions with disabilities regarding Public Works’ program for pedestrian facilities in the public right-of-way, and to be able to procure and utilize auxiliary communication aids and modern and accessible communications technology in a timely manner while protecting the privacy and independence of individuals with disabilities.</td>
<td>DPW ADA Program Manager</td>
<td>ADAPROW Committee, DPW Communications, DPW Administration</td>
<td>Feb 2016</td>
<td>Sep 2016</td>
<td>Jun 2016 The Traffic Operations/Program Planning Administrative Assistant created a vendor services toolkit that lists vendor services and contact information. As of 2016 all of the vendors were active. Two vendors were hired to provide C.A.R.T, and sign language interpretation services at Public Work’s ADA self-evaluation traditional public meeting. 09/06/2016 Communications staff attended a disability etiquette training class in preparation for the DPW ADA self-evaluation open house.</td>
</tr>
<tr>
<td>FAI 30</td>
<td>REQ 53</td>
<td>Develop policies, procedures, guidance and/or training to guide staff on how to procure interpretation services to communicate with individuals with hearing or speech impairments and/or their companions.</td>
<td>DPW ADA Program Manager</td>
<td>ADAPROW Committee, DPW Communications, DPW Administration</td>
<td>Feb 2016</td>
<td>Sep 2016</td>
<td>Jun 2016 The Traffic Operations/Program Planning Administrative Assistant created a vendor services toolkit that lists vendor services and contact information. As of 2016 all of the vendors were active. Two vendors were hired to provide C.A.R.T, and sign language interpretation services at Public Work’s ADA self-evaluation traditional public meeting. 09/06/2016 Communications staff attended a disability etiquette training class in preparation for the DPW ADA self-evaluation open house.</td>
</tr>
<tr>
<td>FAI 31</td>
<td>REQ 57</td>
<td>Determine whether or not Public Works should acquire a TTY device or if the use of Washington Relay Services is sufficient to meet the requirements of the law and effectively communicate with individuals with hearing and/or speech impairments. If a TTY device is required then Public Works will need to acquire a TTY device, provide training to staff on how to</td>
<td>DPW ADA Program Manager</td>
<td>SnoCo Communications, SnoCo DoIT, ADAPROW Committee</td>
<td>2015</td>
<td></td>
<td>There are no TTY phones at the county including DPW. DoIT telecommunications staff say that a receptionist at the first floor public counter at one time had a TTY but it was removed because it was never used and now no one can find it.</td>
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<td>16 FAI 32</td>
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<td>recognize TTY calls and how to use the TTY device to respond. Create a TTY specific phone number and ensure that staff is available at all times during business hours to respond to TTY calls unless a compatible automated answering system is available.</td>
<td>DPW Administration</td>
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<td>FAI 32 REQ 58</td>
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<td>Ensure that automated-attendant phone systems, including, but not limited to, voicemail and messaging, or an interactive voice response systems, for receiving and directing incoming telephone calls provide effective real-time communication with individuals using auxiliary aids and services, including TTYs and all forms of FCC-approved telecommunications relay systems, including Internet-based relay systems. Provide training to staff on the use of these devices as needed.</td>
<td>DPW ADA Program Manager</td>
<td>SnoCo DoIT DPW Administration</td>
<td>2016</td>
<td>2016</td>
<td>SnoCo DoIT is responsible for the telecommunications technology for all of Snohomish County. There is nothing DPW can do to ensure this requirement is met. Informal communications with DoIT telecommunications staff indicate the staff do not know how to meet this requirement because they could not find technical specifications to be met. A phone call to the U.S. Access Board hotline to ask for technical specs. and an interpretation of the requirement which lead to a referral to a DOJ attorney who did not return a phone call.</td>
</tr>
<tr>
<td>FAI 33 REQ 59</td>
<td></td>
<td>Train Public Works staff how to respond effectively to telephone calls from a telecommunications relay service like Washington Relay Services (711) and respond in the same manner that they respond to other telephone calls.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Administration DPW Communications SnoCo Human Resources Washington Relay Services</td>
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<td>Maybe Washington Relay Services can help provide training and allow staff to be called or call Washington Relay Services to see how it works?</td>
</tr>
<tr>
<td>FAI 34 REQ 60</td>
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<td>Develop training to teach Public Works staff how to make electronic documents and media accessible to individuals who use screen readers.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Administration</td>
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<td>FAI 35</td>
<td>REQ 60</td>
<td>Update the content on Public Works ADA webpage to be accessible to individuals with communications disabilities.</td>
<td>DPW ADA Program Manager</td>
<td>SnoCo DoIT DPW Communications ADAPROW Committee General Public</td>
<td>Oct 2015</td>
<td>Oct 2015</td>
<td>SnoCo DoIT (Julie Heinz-Bovino) says that in 2015 the webpage architecture – provided by CivicPlus – is fully accessible. ADAPROW Committee member George Basioli, who uses a screen reader to access the county’s webpage, says the website is accessibly but not designed and formatted in an easy to follow format. A 2019 update supposedly cleared up any remaining issues with the county’s webpages. The format of content may not be user friendly but the DPW Communications group has the webpage design the way it wants it.</td>
</tr>
<tr>
<td>FAI 36</td>
<td>REQ 61</td>
<td>Advertise the availability of alternate forms of communications to individuals with vision, hearing, speech, or other sensory impairments in such a manner that they can readily discern what communication options are available to them to communicate with Public Works.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Administration DPW Communications General Public ADAPROW Committee</td>
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APPENDIX O: FAI CHECKLIST | 17
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<tr>
<td>FAI 37</td>
<td>REQ 61</td>
<td>Notify the public and other interested parties that auxiliary aids will be provided, as needed, to help individuals with communications disabilities communicate with Public Works and access the documents and forms that Public Works provides to the public. Develop a policy on how quickly services can be expected to be provided and how much advance notice may be required for some services. Advertise the requirement for advance notice when required.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Administration DPW Communications ADAPROW Committee General Public</td>
<td>Jan 2013</td>
<td>Mar 2019</td>
<td>Maybe need ADA page added to the pwADA pages similar to that which the Courts have to describe how the public and interested parties can gain access to auxiliary aids and services when conducting business with public works.</td>
</tr>
<tr>
<td>FAI 38</td>
<td>REQ 62</td>
<td>Train staff when and how to provide notice of non-discrimination based on disability in written materials (publications) pertaining to pedestrian facilities in the public right-of-way. Provide a copy of the text that should be used to provide notice to Public Works staff.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Title VI Coordinator DPW Administration DPW Communications ADAPROW Committee General Public</td>
<td>Jan 2013</td>
<td>Mar 2019</td>
<td>Almost all Public Works communications with external clients and stakeholders contain a Title VI and ADA disclaimer of non-discrimination, including all post cards and mailers for capital projects.</td>
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| FAI 39                   | N/A             | Implement an ADA compliance program to set expectations, develop standards and guidance, develop and implement training, and foster accountability to ensure that Public Works does not discriminate against individuals with disabilities in the provision of its program for pedestrian facilities in the public right-of-way. | DPW ADA Program Manager | County Engineer TES Director ProgPlan Manager ProgPlan Supervisor ENGSVCS Director | Jan 2013 | N/A | The ADA program was initiated in Jan 2013 and will operate indefinitely. The program provides the following services:  
  - Self-Evaluation and Transition Plan  
  - Design and Inspection Assistance  
  - Training and Resources  
  - Citizen Input and Public Involvement  
  - GIS Maps and Analysis |
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<td>DPW Communications</td>
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The program is founded on empowering stakeholders to answer the following four questions:

1) What is expected?
2) What are the standards?
3) How will compliance with the standards be measured?
4) What happens with compliance is not, or cannot be, achieved.
<table>
<thead>
<tr>
<th>Follow-Up / Action Item #</th>
<th>Based on REQ #*</th>
<th>Self-Evaluation Follow-Up / Action Items</th>
<th>Responsible Party</th>
<th>Stakeholders / Consult</th>
<th>Start Date</th>
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<tbody>
<tr>
<td>FAI 40</td>
<td>REQ 65, REQ 66, REQ 68, REQ 69, REQ 93, REQ 94, REQ 99, REQ 100, REQ 104, REQ 106, REQ 112, REQ 113, REQ 120, REQ 121, REQ 132, REQ 149, REQ 150, REQ 151, REQ 170, REQ 204, REQ 207, REQ 208</td>
<td>Provide guidance to help engineers design pedestrian facilities in the public right-of-way that comply with the federal, state, and local ADA requirements and standards, and according to best practices.</td>
<td>DPW ADA Program Manager</td>
<td>ADA Working Group, EDDS Engineer, Private Sector Engineers, Consultants, Developers, Contractors, Inspectors, Utility Franchises</td>
<td>Jan 2013</td>
<td>Nov 2014</td>
<td>Please see the ADA Decision Matrix and ADA document that is available on the Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
</tr>
<tr>
<td>FAI 41</td>
<td>REQ 63, REQ 64, REQ 67, REQ 69, REQ 70, REQ 71, REQ 72, REQ 75, REQ 77, REQ 80, REQ 81, REQ 84, REQ 85, REQ 87, REQ 88, REQ 89, REQ 90,</td>
<td>Provide guidance to help inspectors inspect pedestrian facilities in the public right-of-way to ensure compliance with federal, state, and local ADA requirements and standards.</td>
<td>DPW ADA Program Manager</td>
<td>ADA Working Group, EDDS Engineer, Private Sector Engineers, Consultants, Developers, Contractors, Inspectors, Utility Franchises</td>
<td>Jan 2013</td>
<td>Nov 2014</td>
<td>Please see the ADA Measuring Guidelines document that is available on the Public Works ADA webpage <a href="http://www.snohomishcountywa.gov/pwADA">www.snohomishcountywa.gov/pwADA</a>.</td>
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<td>FAI 42</td>
<td>REQ 65, REQ 66, REQ 68, REQ 70, REQ 73, REQ 74, REQ 76, REQ 82, REQ 83, 86, 102, 104, 105, 117, 118, 119, 235, 236, 237</td>
<td>Refine and update the <em>Engineering Design and Development Standards (EDDS)</em> requirements relating to ADA compliance of pedestrian facilities in the public right-of-way to ensure they are in line with the current federal and state requirements and standards, and best practices.</td>
<td>DPW ADA Program Manager</td>
<td>Sam Terres or Kerri Salas – CAD Drawings County Engineer TES Director ENGSCVS Director ADA Working Group EDDS Engineer Private Sector Engineers, Consultants, Developers, Contractors, Inspectors Utility Franchises</td>
<td>Jan 2013</td>
<td>May 2020</td>
<td>Revisions have been proposed and will be included in the next EDDS update through the appropriate rule-making process.</td>
</tr>
<tr>
<td>FAI 33</td>
<td>REQ 63, 64, 67, 69, 70, 71, 72, 75, 77, 80, 81, 84, 85, 87, 88, 89, 90, 92, 97, 99, 100, 101, 102, 104, 105, 106, 108, 112, 113, 114, 115, 116, 120, 121, 122, 123, 124, 132, 149, 150, 151, 170, 184, 185, 194, 196, 204, 207, 208, 225, 235, 236, 237, 279 to 314</td>
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<td><strong>Institute an ongoing training program for designers, construction engineers, inspectors, private developers, contractors, utility franchises, maintenance workers, and all other professionals that design, construct, inspect, or maintain pedestrian facilities in the public right-of-way on how to comply with the requirements of the ADA.</strong></td>
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<td><strong>Trainers:</strong></td>
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<td>George Basioli – ADAPROW Committee Chair</td>
<td>Construction Management Staff</td>
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<td>Curtis Dyer – Engineering Services</td>
<td>PDS ROW Plan Review and Inspection Staff</td>
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<td>Oscar Fuentes – Engineering Services</td>
<td>ADA Working Group</td>
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<td>Jeffrey Rivers – Engineering Services</td>
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<td>Ryan Peterson – Program Planning</td>
<td>EDDS Engineer</td>
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<td><strong>Private Sector Engineers, Consultants, Developers, Contractors, Inspectors Utility Franchises</strong></td>
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<td><strong>Five training modules have been developed and are routinely offered to interested individuals or groups in the public and private sector that cover all aspects of ADA compliance for pedestrian facilities in the public right-of-way including design, construction, inspection, and maintenance.</strong></td>
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<td><strong>Training and presentations to-date (Mar 2019):</strong></td>
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<td>2013_06_20 ADA Training for Internal and External Clients</td>
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<td>2015_01_15 ADA Training for Internal and External Clients</td>
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<td>2015_04_02 APWA Washington Spring 2015 Conference</td>
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<td>2015_04_18 APA 2015 National Planning Conference</td>
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<td>2015_04_28 Work Zone ADA Training for Internal Clients</td>
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<td>2015_06_09 ADA Training for External Clients</td>
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<td>2015_06_11 Work Zone ADA Training for Internal Clients</td>
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<td>2016_06_07 ADA Training for Internal and External Clients</td>
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<tr>
<td>FAI 44</td>
<td>REQ 91, REQ 126</td>
<td>Median and pedestrian refuge islands and cut-throughs need to be evaluated to determine if they meet the requirements of the 2005 PROWAG R305.4.</td>
<td>DPW ADA Program Manager</td>
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<td>2016_06_16 ADA Training for Internal and External Clients</td>
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<tr>
<td>FAI 45</td>
<td>REQ 111, REQ 130, REQ 131</td>
<td>Coordinate compliance of the pedestrian crossing of the railroad on 240 Street SE with the railroad owner/operator.</td>
<td>DPW ADA Program Manager, DPW ADA Coordinator, DPW ADA Program Manager</td>
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<td>Oct 2019</td>
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<td>There is/was a project in the TIP that was completed in 2019 to fix the railroad crossing and pedestrian facilities.</td>
</tr>
<tr>
<td>FAI 46</td>
<td>REQ 122, REQ 127, REQ 128</td>
<td>Coordinate with the county’s pavement engineer to affect changes to crosswalks and paved shoulders used as walkways to bring them in line with ADA.</td>
<td>DPW ADA Program Manager, DPW Pavement Engineer, Design Project Manager</td>
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<td>FAI 47</td>
<td>REQ 127, REQ 128, REQ 129</td>
<td>requirements as part of the county’s annual overlay program, where practical.</td>
<td>Construction Overlay Supervisor and Staff Overlay Contractor</td>
<td>DPW ADA Program Manager</td>
<td>Jan 2013</td>
<td>Mar 2019</td>
<td>APS must be installed whenever there is a leading pedestrian interval to comply with the effective communications requirements of the ADA. A list of all county traffic signals with pedestrian signals and a leading pedestrian interval and no APS was used to prioritize pedestrian pushbutton upgrades in the Transition Plan as the highest priority projects to all be completed by 2024. Also, the ADA Decision Matrix was updated to require installation of APS with the timing of a leading pedestrian interval.</td>
</tr>
<tr>
<td>FAI 48</td>
<td>REQ 133</td>
<td>Continuous and detectable edge treatments for roundabouts with curb-attached sidewalk need to be included in the transition plan.</td>
<td>DPW ADA Program Manager</td>
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<tr>
<td>FAI 49</td>
<td>REQ 134, REQ 135</td>
<td>Pedestrian overpasses and underpasses need to be evaluated according to 2005 PROWAG R305.5.</td>
<td>DPW ADA Program Manager</td>
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<tr>
<td>FAI 50</td>
<td>REQ 136</td>
<td>Develop a policy or guidance to determine when to use accessible pedestrian signals (APS) where leading pedestrian intervals are used.</td>
<td>DPW ADA Program Manager</td>
<td>Traffic Operations</td>
<td>Jan 2013</td>
<td>Mar 2019</td>
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**APPENDIX O: FAI CHECKLIST | 24**
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<tr>
<td>FAI 51</td>
<td>REQ 137, REQ 183</td>
<td>Verify that signal operations are compliant with the requirements of the 2009 edition of the Manual on Uniform Traffic Control Devices (2009 MUTCD) and the ADA, and provide effective communication to individuals with communications disabilities.</td>
<td>DPW ADA Program Manager</td>
<td>Traffic Operations DPW ADA Coordinator</td>
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<td>FAI 52</td>
<td>REQ 167</td>
<td>Add APS as a requirement for pedestrian signal installation with all newly constructed signals, and develop a policy to determine when APS will be installed at existing signalized intersections as part of a transition plan.</td>
<td>DPW ADA Coordinator</td>
<td>Traffic Operations EDDS Engineer</td>
<td>Mar 2019</td>
<td>May 2020</td>
<td>See also FAI 42. Need to add to EDDS Chapter 7 Road Channelization, Illumination &amp; Signals.</td>
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<tr>
<td>FAI 53</td>
<td>REQ 170</td>
<td>Update all APS pushbuttons located 10 feet apart, or more, to provide a percussive tone to indicate the WALK interval unless there is a unique purpose for maintaining the speech WALK interval indication at specific locations. Ensure that speech WALK messages do not contain any additional information, except they shall include designations such as &quot;Street&quot; or &quot;Avenue&quot; where this information is necessary to avoid ambiguity at a particular location.</td>
<td>DPW ADA Coordinator</td>
<td>Traffic Operations</td>
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<td>FAI 54</td>
<td>REQ 178, REQ 179, REQ 180, REQ 181, REQ 182</td>
<td>Provide guidance and/or resources to help evaluators measure and evaluate accessible pedestrian signal volumes, messages, and tones for ADA compliance. Develop a policy and procedures to investigate, document, and address complaints about APS volumes.</td>
<td>DPW ADA Coordinator</td>
<td>Traffic Operations DPW ADA Program Manager</td>
<td>Mar 2019</td>
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<td>Will start with field visits with ADAPROW Committee volunteers and county traffic signal electricians to determine volume defaults for residential and commercial areas both peak and off-peak hours for pedestrians standing at the curb line.</td>
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<tr>
<td>FAI 55</td>
<td>REQ 186, REQ 187</td>
<td>Consider adding an Engineering Design and Development Standards (EDDS)</td>
<td>DPW ADA Coordinator</td>
<td>County Engineer</td>
<td>Mar 2019</td>
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<td>See also FAI 42.</td>
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<td>FAI 56</td>
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<td>Requirement that all pushbutton reaches shall be unobstructed.</td>
<td>TES Director</td>
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<td>EDDS Engineer</td>
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<td>FAI 56</td>
<td>REQ 211</td>
<td>Develop guidance to determine when a walking speed of less than 3.5 feet per second should be used to calculate the pedestrian clearance time, or if extended press or other additional features should be offered as an option.</td>
<td>DPW ADA Coordinator</td>
<td>Traffic Operations</td>
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<td>FAI 57</td>
<td>REQ 230, REQ 231, REQ 233, REQ 234</td>
<td>Coordinate with the U.S. Postal Service, public utilities, county code enforcement, Road Maintenance, and private property owners to remove, relocate, and/or mitigate sidewalk obstructions.</td>
<td>DPW ADA Coordinator</td>
<td>Denise Nakamura</td>
<td>Jan 2018</td>
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<td>Denise reached out to the utilities with poles in the sidewalk and they agreed to relocate them in 2019.</td>
</tr>
<tr>
<td>FAI 58</td>
<td>REQ 312</td>
<td>Develop and implement an advance notification tool that will provide individuals with disabilities the information they need to plan their travel routes through or around pedestrian detours, diversions, or closures.</td>
<td>DPW ADA Program Manager</td>
<td>DPW Communications ADAPROW Committee</td>
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<tr>
<td>FAI 59</td>
<td>N/A</td>
<td>Define responsibilities and roles and coordinate ADA compliance between the multiple departments, divisions, sections, and groups within the county that participate in the county’s pedestrian facility program.</td>
<td>DPW ADA Coordinator</td>
<td>DPW Directors ADA Working Group PDS</td>
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<td>ADA Working Group ADA Technical Advisory Committee Quarterly coordination meeting between PDS and Public Works Attendance of Road Maintenance crew meetings by ADA Team members ADA Technical Training Participation in the Engineering Design Group Meeting.</td>
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<tr>
<td>FAI 60</td>
<td>N/A</td>
<td>Develop quality assurance and quality control measures specific to pedestrian facility designs and pedestrian traffic control plan reviews.</td>
<td>DPW ADA Program Manager</td>
<td>Traffic Operations</td>
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<td>FAI 61</td>
<td>N/A</td>
<td>Develop strategies and provide resources and training to encourage, educate, and facilitate ADA compliance by contractors, franchise utilities, and other government agencies that alter or construct pedestrian facilities in the public right-of-way.</td>
<td>PDS ROW Plan Reviewers and Inspectors</td>
<td>DPW ADA Program Manager</td>
<td>Jan 2013</td>
<td>Mar 2019</td>
<td>ADA Training (SEE FAI 43) ADA Decision Matrix ADA Measuring Guidelines Emphasis at pre-construction meetings Guidance for engineers who develop PS&amp;E for non-county entities.</td>
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</tbody>
</table>

*If an administrative or technical requirement is not listed on this checklist it is because a determination was made during the self-evaluation that no further action or follow-up was needed to address the requirement.