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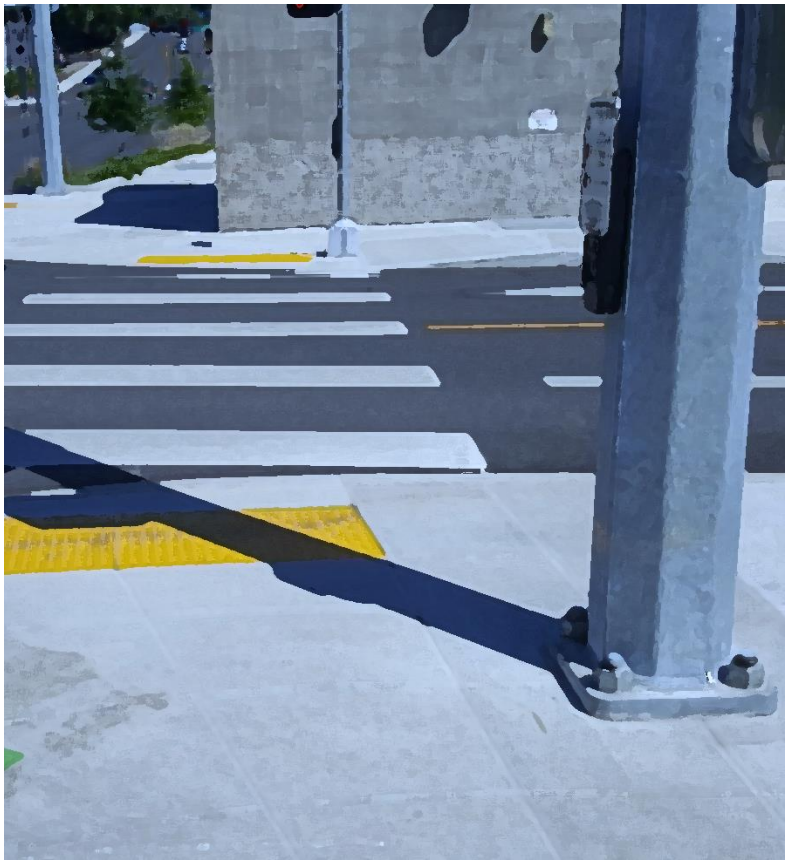
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Clackamas County
www.clackamas.us



ADA TRANSITION PLAN FOR THE PUBLIC RIGHTS-OF-WAY

Adopted

July 20, 2017

Department of Transportation and Development

CLACKAMAS COUNTY

Acknowledgements

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Executive Summary

The *2017 ADA Transition Plan for the Public Rights-of-Way* describes Clackamas County's plan for providing equal access for those with disabilities to all county pedestrian facilities - curb ramps and traffic signals - as required by the Americans with Disabilities Act of 1990.

The Department of Transportation and Development has been involved in assuring accessibility as required by the ADA for all people throughout the county through enforcement of building codes and other related laws and regulations. That same commitment will also be applied to achieving that goal for our pedestrian facilities.

The ADA requires that the county's ADA Transition Plan include a clear identification of deficiencies in physical assets, policies and procedures, including the following components:

- A self-evaluation to identify all facilities that are barriers to accessibility.
- Guidance on the steps to be taken to remove accessibility barriers, and estimates the budget and schedule for the removal and barriers based on current resource commitments.
- Recommendations for a monitoring program to track progress, an annual progress report to the Board of County Commissioners and online information on the current status of all accessibility features to increase transparency.
- Identification of those responsible for leading the removal of barriers to accessibility and
- A process by which members of the public can request improvements or call deficiencies to the attention of the county.

The self-evaluation conducted for this plan found 4,745 locations requiring curb ramps within the public rights-of-way in unincorporated Clackamas County.

- 3,963 built before the passage of the ADA
- 700 built after the passage of the ADA

Overall, there are 4,531 locations at which curb ramps must be installed, improved or replaced. Of those, 1,705 curb ramps locations are in the three highest priority groups on arterial streets and another 659 are in the second highest priority groups on moderate traffic collectors streets. In recent years, there has been a shortfall of $17 million per year in funding available to Clackamas County for transportation maintenance and improvements. Due to this shortfall, funding for all types of transportation maintenance and improvement, including ADA accessibility improvements has been severely limited. Due to the limited funding available, it is estimated that improvements to the curb ramps on the highest travel streets to remove all barriers to accessibility will require 8½ years. The department estimates that removal of barriers to accessibility on the moderate traffic collector streets could be improved in a further 4 years. Full improvement of the remaining 2,167 curb ramps in priority groups 7 to 12 would require an additional 12.5 years. Increased funding for transportation improvements will accelerate this process by enabling the county to commit additional resources for removal of barriers at ADA accessibility and increasing the number of transportation maintenance and capital improvement projects which result in improvements to curb ramps.

In addition, there are 69 traffic signals system in unincorporated Clackamas County, 44 of which require improvements to the ADA accessibility features. The total cost for those improvements is estimated to be $4.4 million. Many of these accessibility improvements to traffic signals will take place during the coming years through projects that are already funded and included in the five year Transportation Capital Improvements Program.

The process to make the improvements required to provide equal access for all will require changes to how the county carries out improvements within the public rights-of-way, including the following:

- Update county standards to be consistent with current federal standards.
- Training and improved checklists provided for county staff, consultants and contractors.
- Updated procedures to create accountability for meeting the accessibility standards and required documentation.
- Revised approaches to select and scope transportation improvement projects to incorporate accessibility improvements.
- Providing information about the accessibility of pedestrian facilities as well as annual progress reports to the Board of County Commissioners to ensure public transparency for ADA accessibility.

The changes in county standards, procedures, project programming and reporting are estimated to take 12 to 18 months to accomplish. Removal of barriers to accessibility on arterial and collector streets in the highest six priority groups will require 12½ years. Improvement of the curb ramps in the six lower priority groups will take a further 12½ years. Improvements to traffic signals are expected to take 10 years.



Chapter 1 Introduction

People with Disabilities in Clackamas County

People with disabilities make up the largest minority group in Clackamas County and have unique transportation needs that are required to be addressed by Clackamas County as a unit of government under the Americans with Disabilities Act of 1990. According to the 2010-2014 American Community Survey (ACS), there were 45,777 people in Clackamas County with a disability, over 1/8th of the total population. By way of comparison, only 40,406 people in Clackamas County self-identified as being of any one or more non-white race or ethnic groups. Those 45,777 with disabilities in Clackamas County break down by age as follows:

- 8.5% are children below age 18 (3,874),
- 48.5% are adults age 18 to 64 (22,211) and
- 43.0% are senior adults age 65 and older (19,692).

Veterans and people age 65 and above have a much higher likelihood of having a disability than the general population. The ACS found that:

- Of the 30,240 Clackamas County adults who are veterans, 8,186 (27.1%) have a disability, compared with 12.0% of the general population.
- Of the 56,694 Clackamas County residents who are age 65 or above, 19,692 or 34.7% have a disability.

Research shows that people with disabilities don't do as well economically as the general population.

- People with disabilities are less likely than the general population to hold a job. The ACS found that of the 22,211 disabled adults age 18 to 64, only 8,201 (36.9%) were employed in 2014 while 63.1% were either unemployed or not in the labor force. Of those who were employed, only 4,963 (60.5%) were employed full time for the entire year.
- Those with disabilities also tend to have a lower income than the general population. The ACS found that the median income for a disabled individual in Clackamas County in 2014 was $26,481 while the median income for an individual with no disability was $35,395.

The daily transportation needs of those with disabilities are surprisingly high when compared to average traffic volumes on Clackamas County roads. For example, the number of Clackamas County residents with disabilities is 45,777, which exceeds the number served by the highest volume road section of the unincorporated area, 41,165 vehicles per day on Sunnyside Road east of I-205.

People with disabilities have unique transportation needs that are not well understood by the rest of the population, including planners and engineers. While those who go on foot can easily step off the curb, the curb is an insurmountable barrier for those using wheelchairs or other mobility devices. Every sighted child is taught early in life to "look both ways" before crossing the street, but those who are blind or have low vision must find the safe places to cross the street by feel and determine when it is safe to cross by hearing. Lack of accessibility facilities can force those with disabilities to enter the flow of traffic on the street at great risk just to go to work, school or the store to meet their daily needs.

As described below, Clackamas County has a legal mandate to provide equal access to pedestrian facilities. But it could also be argued that providing equal access for those with disabilities is one of the most important steps the county can take to improve the quality of life for this significant portion of the county population.

Legal Requirements

For many years, there were no laws requiring equal access for those with disabilities. That changed with the passage of two landmark laws mandating equal access for those with disabilities.

Rehabilitation Act of 1973 – This Act was the first, passed the House of Representatives on a vote of 400 – 0 and the Senate on a vote of 88 – 0 and signed into law by President Richard M. Nixon on Sept. 18, 1973. Section 504 of this Act made it illegal for the federal government, federal contractors and any entity receiving federal financial assistance to discriminate on the basis of disability. Section 504 obligates state and local governments to ensure that persons with disabilities have equal access to any programs, services or activities receiving federal assistance.



ADA of 1990 -- The second landmark accessibility law, the Americans with Disabilities Act (ADA) of 1990, greatly expanded Section 504's provisions requiring equal treatment for those with disabilities. The ADA passed the House of Representatives by a vote of 377 – 28 and the Senate by a vote of 91 – 6, and was signed into law by President George H. W. Bush on July 26, 1990. The ADA requires that all state and local governments and all of their programs and facilities -- no matter the funding source -- provide equal access for those with disabilities.

Due to the fact that the ADA incorporates many specific standards for accessibility for many types of public accommodations, it is often viewed only as a set of construction requirements. In reality, the laws requiring equal access for those with disabilities are among the most sweeping civil rights legislation in the history of this country. Since the ADA is a civil rights law, the lead entity for the ADA is the Civil Rights Division of the US Department of Justice. It establishes standards for meeting the requirements of the ADA, coordinates enforcement activities of other federal agencies and, as necessary, takes legal action to require compliance with ADA by state and local governments.

The basic premise of the Rehabilitation Act of 1973 and the ADA of 1990, the requirement of equal access for those with disabilities, could be stated as follows:

> *"No qualified person with a disability may be excluded from participation in, or denied the benefits of, the programs, services, facilities or activities provided by federal, state or local governments because of a disability." (US Department of Justice, ADA Compliance Tool Kit, December 2006)*

Title II of the ADA sets out the steps that state and local governments must take to make public transportation facilities accessible to those with disabilities. With the passage of the ADA, designing and constructing facilities for public use that are not accessible by people with disabilities constitutes discrimination. Under Title II, private citizens or groups can make an administrative complaint to the Department of Justice or appropriate federal agency or file a lawsuit in federal district court. Although complaints or lawsuits can address specific accessibility facilities, recent lawsuits have focused on failures by government agencies to adhere to the process requirements of ADA. For example, the lawsuit brought by Association of Oregon Centers for Independent Living against Oregon Department of Transportation identified several areas in which ODOT failed to address provisions of the ADA. These included:

- Failure to address barriers to accessibility in resurfacing projects classified as "improvements" under guidance from the Federal Highway Administration.
- ODOT constructed curb ramps that were not designed or constructed properly and are non-compliant.
- ODOT failure to provide Accessible Pedestrian Signal (APS) buttons at signalized intersections, which rendered those intersection inaccessible.
- ODOT failure to require the provision of temporary pedestrian access routes when the permanent pedestrian access route was blocked by construction.

In settlement of this lawsuit ODOT agreed to the following:

- Commitment of $18 million over the next three years and full remediation of approximately 12,300 non-compliant curb ramps locations by 2032.
- Procedural improvements under the direction of an independent Accessibility Consultant to improvement of procedures for design, construction and inspection to result in consistent compliance with ADA standards for curb ramps.
- Require improvements to procedures by local governments seeking to be certified by ODOT for ADA.
- Provide APS buttons at all signalized intersections with pedestrian actuated signals.
- Provide temporary pedestrian access routes in all cases when required under ADA.

It is important to note that under the ADA each government is responsible for providing facilities accessible to those with disabilities, including improvement of existing facilities regardless of when the facilities were built. This requirement greatly effects the scope of Clackamas County's effort to provide accessible public rights-of-way. For example, the department identified 4,745 locations requiring curb ramps on county maintained roads. About 85% of those curb ramps were built prior to the adoption of the ADA and accessibility standards. Nonetheless, to provide equal access for all, the county must plan for the improvement of all curb ramps to the current accessibility standards.

The ADA Transition Plan

Under the ADA, local governments are required to develop a plan for program access, called the ADA Transition Plan. In the ADA Transition Plan the local government is required to do the following to demonstrate the approach it will use to provide equal access for all:

1) Conduct a self-evaluation to identify physical obstacles that limit the access to its facilities by individuals with disabilities;
2) Describe the methods to be used to make the facilities accessible;
3) Provide a budget and schedule for removing barrier to access, and
4) Identify the public officials responsible for implementation of the Transition Plan.

The typical outline for an ADA Transition Plan is as follows:

1) Designation of an ADA Coordinator and the individual responsible for implementing the ADA,
2) Providing notice to the public about ADA requirements,
3) Establishment of an ADA grievance procedure
4) Developing the required self-evaluation to identify barriers to accessibility,
5) Development and implementation of internal standards, specifications and procedures,
6) Adoption of a schedule and budget for removal of barriers to ADA accessibility,
7) Monitoring progress on the implementation of the ADA Transition Plan

The requirements of the ADA apply to all public entities or agencies no matter their size or geographic extent. Development of the ADA Transition Plan and achievement of program access has typically been difficult for large local governments due to their large geographic extent and diverse facilities. Under the ADA, public entities have the option of meeting ADA Transition Plan requirements by program. This is the approach being used by Clackamas County for the ADA Transition Plan requirements. This document is the ADA Transition Plan for providing equal access for those with disabilities as defined in the ADA for facilities within county owned rights-of-way under the responsibility of the Department of Transportation and Development (DTD). Other county departments are responsible for meeting ADA Transition Plan requirements for other facilities, services or program areas.

Designating an ADA Coordinator and Implementing Official

Each government developing an ADA Transition Plan must designate at least one responsible employee to coordinate ADA compliance. The designated ADA Coordinator for DTD is:

Stephen Williams, Principal Transportation Planner
Clackamas County Development Services Building Room #325
150 Beavercreek Road, Oregon City 97045
503-742-4696, swilliams@clackamas.us

A recommended best practice when the designated ADA Coordinator is not a member of management is the designation of an Implementing Official. This individual is selected because he or she has a broader scope of responsibility and can recommend policy or budget actions necessary to implement provisions of the ADA Transition Plan. The Implementing Official for DTD is:

Mike Bezner, Assistant Director, Transportation
Clackamas County Development Services Building Room #325
150 Beavercreek Road, Oregon City 97045
503-742-4651, mikebez@co.clackamas.or.us

Providing Notice of ADA Requirements



Each department must provide public notice about the rights of the public and the responsibility of the department under the ADA. Providing notice is not a one-time requirement, but a continuing responsibility. The audience of those who may have an interest in the accessibility of department facilities is large and diverse, and not readily identifiable. The DTD has elected to provide public notice through an ADA accessibility web page that is under the main DTD web page. In addition, a poster has been developed and is on display in the department's four main public areas providing the required notice in English as well as five other languages (Spanish, Russian, Chinese, Vietnamese and Korean). These are the language groups with a population in Clackamas County over 1,000, meeting the Department of Justice Safe Harbor requirements.

A best practice recommended by the Department of Justice is providing online data showing the status of all ADA accessibility features. This provides information to the public on available accessibility features as well as allowing the public to monitor the progress of the county in removing barriers to accessibility.

The ADA requires that Public Participation in the Development of the ADA Transition Plan

Through the course of developing the ADA Transition Plan the Department of Transportation and Development conducted an extensive public participation process. The process was structured to provide opportunities for input from those in Clackamas County experiencing disabilities, family members and care givers for those with disabilities, staff members and volunteers from organizations providing services to those with disabilities, and members of the general public. The input process was conducted in two phases. Early in the development of the ADA Transition Plan, a website and a paper handout providing information on the ADA Transition Plan was developed and available throughout the process. In addition, a questionnaire seeking input on accessibility needs and concerns, and on priorities for improvement was also prepared. The questionnaire was made available online and in print in English, Spanish, Russian, Chinese, Vietnamese and Korean, with printed copies also available in Braille. The informational handout, including links to the website and online version of the questionnaire, was distributed to the following Clackamas County organizations:

- Public and private human services organizations
- Senior Centers
- Community Service Centers
- Offices of Oregon Department of Human Services, all county offices and all cities

- Public Libraries

In addition, DTD staff attended meetings and made presentations on the ADA Transition Plan input process and questionnaire to the following groups:

- Disability Services Advisory Board
- Senior Services Advisory Board
- Developmental Disability Advisory Committee
- Clackamas County Bike and Pedestrian Advisory Committee
- Community Planning Organizations

The input received through the questionnaire was analyzed to identify the concerns, needs and priorities on the part of those with disabilities, the family members and care givers for those with disabilities, and those from the general public. This input was used to shape this plan and the prioritization for removal of barriers to accessibility.

Once the draft ADA Transition was prepared a two month comment period was conducted. During that time the draft plan was posted on the website, and new materials summarizing the plan were available in print and on the website in the six languages identified above. The summary materials, and copies of the plan were distributed to all the organizations and groups identified earlier along with comment sheets seeking input on the draft plan. Staff also made presentations on the plan to organizations or groups that requested further information – the Senior Services Advisory Board, the Developmental Disability Advisory Committee and the Clackamas County Bike and Pedestrian Advisory Committee. A noticed public hearing on the draft plan was conducted by the Clackamas County Board of Commissioners at their meeting on May 4, 2017.

Improvement Requests and Grievance Procedure

An important need identified through the public input process was for a method whereby members of the public could provide input on accessibility needs, problems or hazards. The Department of Transportation and Development has an existing system, called “Road Concerns” by which members of the public can report issues on sidewalks or roads and request improvements. Requests can be submitted online, over the phone or in person and are routed to the appropriate individual for action. Staff members receiving requests through this process respond to the member of the public making the request within a week to discuss the issue and provide information on the manner in which the need will be addressed.

As a step in the development of this plan, the DTD has adopted a grievance procedure. The grievance procedure and associated materials are available on the DTD Non-discrimination web page, and at the public counters of DTD offices. Complaints will be directed to the DTD ADA Coordinator. The ADA Coordinator will then work with the member(s) of the public submitting the grievance to resolve the issue, consistent with best practices that recommend resolution of local issues at a local level. Use of this procedure is not a prerequisite for filing a complaint with either a state or federal agency or a court, nor does it prevent such a filing.

Development of Internal Standards, Specifications and Design Details

A requirement of the ADA Transition Plan is the development of internal standards, specifications and design details that will guide the development and alteration of accessibility features under county jurisdiction. These items are critical for ensuring that new accessibility features and alterations to existing features achieve full compliance with the ADA and eliminate barriers to accessibility. Review and evaluation of current standards, specifications and internal procedures formed an important stage in the development of this plan and resulted in several specific recommendations. A detailed discussion of the evaluation of standards, specifications and procedures and of the recommendations can be found in the Chapter 3 – Removing Barriers to Accessibility.

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Chapter 2 Self-Evaluation

Introduction

Title II of the ADA requires that all public entities complete a self-evaluation to identify barriers to accessibility by those with disabilities.

There are different types of facilities for public access within the Clackamas County rights-of-way including curb ramps, traffic signals, sidewalks/driveways and pedestrian crossings of railroad grades. However, under Federal law, Oregon Revised Statutes and local ordinance, the county only has direct responsibility for some of these facilities. The following describes the county responsibility for each type of public access facility.

- **Curb Ramps** – Curb ramps within the rights-of-way for county-maintained roads are completely under county control and were included in this self-evaluation.
- **Traffic Signals** - Clackamas County owns 69 traffic signal systems. However, the county also maintains signals owned by cities and the Oregon Department of Transportation (ODOT) under agreements. The self-evaluation of traffic signals was carried out only for traffic signals owned by the County. ODOT and the cities that receive services from Clackamas County are responsible for assuring compliance of their facilities.
- **Sidewalks and Driveways** – The sidewalks and driveways on county-maintained roads are built by the county or by a property owner. However, under local ordinance the sidewalks and driveways are owned by the abutting property owner, and responsibility for maintaining sidewalks and driveways rests with the property owner. If a condition is identified by the public that creates a barrier to accessibility, the county has a process for notifying the property owner and requesting removal of access limitations. However, the county does not have a process to evaluate the sidewalks and driveways. Because Clackamas County is not responsible for fixing access limitations on sidewalks and driveways, these facilities were not included in the self-evaluation conducted for this Plan.



- **Railroad grade crossings** – At railroad grade crossings, public accessibility features such as sidewalks or multiuse paths cross the railroad grade. There are only 25 such pedestrian crossings of railroad grades in the county. While county road standards apply to most private facilities providing public access, that is not true of railroad grade crossings. Federal law substantially limits local authority over any aspect of the railroad grade. Since Clackamas County does not have jurisdiction to carry out improvements to the railroad grade, crossings of the railroad grade by sidewalks or multi-use paths were not included in the self-evaluation. However, as improvements to pedestrian facilities crossing the railroad grade are undertaken, the county should work with the railroads to ensure that those facilities meet accessibility standards.

- **Transit Stops** – There are over 500 transit stops in the Clackamas County owned public rights-of-way. However, the facilities at these transit stops are owned by and are the responsibility of transit providers – TriMet, Canby Area Transit, Sandy Area Metro, South Clackamas Transportation District service in the Molalla area, Wilsonville's South Metro Area Transit, and the Clackamas County operated Mt. Hood Express. As a result, the transit providers are responsible for meeting ADA accessibility requirements.
- **Street Furniture** – Clackamas County does not own any street furniture.

Given the above, this self-evaluation focused on the two accessibility features within the public rights-of-way of unincorporated Clackamas County for which the county has direct responsibility - curb ramps and traffic signals.

Self-Evaluation of Curb Ramps

Curb ramps are defined as "sloped areas at any intersection having curbs or other barriers to entry from a street level pedestrian walkway." Curb ramps have been included in public sidewalks in Clackamas County for at least 60 years. Virtually everyone uses curb ramps, so curb ramps must be designed to meet mobility needs and to improve safety for all sidewalk users:

- For those with mobility limitations, curb ramps provide a safe route to cross the curb using wheelchairs or other devices.
- For those who are blind or have low vision, curb ramps guide their movements in a complex environment so that they can chose their path using non-visual cues and receive warnings of hazards.
- For those without mobility or vision limitations, such as those on foot, those pushing or pulling a cart or stroller, or those on a bike, curb ramps provide a safe and easy way to cross the curb.

Any location at which pedestrians are required to cross the curb where there is no curb ramp, where the curb ramp is blocked, or where it fails to meet adopted standards is a barrier to accessibility under the ADA and represents a safety hazard for sidewalk users.



The Curb Ramp Self-Evaluation Process

For this self-evaluation, all locations on county roads in unincorporated areas of the county were evaluated during July and August 2016 for compliance with ADA accessibility standards within Clackamas County rights-of-way and under county control. Clackamas County has adopted the 2012 Public Right of Way Accessibility Guidance (PROWAG was released for use by public agencies on March 15, 2012) and used those standards for this evaluation of ADA accessibility. This evaluation took place in two steps.

Step 1 -- In the first step, all locations requiring a curb ramp per the provisions of the ADA and Oregon Revised Statutes were identified and were given a curb ramp identification number for record keeping and management purposes. Unique numbers were given to each curb ramp around an intersection, with some intersections including up to 12 curb ramps.

An initial screening of the curb ramp locations was then conducted using Google Maps/Streetview. The features evaluated in this manner were only those that could be reliably determined in the imagery. Curb ramp features cannot be measured using imagery, but it is possible to view the curb ramps and determine if required features are present.

The features identifiable in imagery are as follows:

- Presence of a curb ramp at a required location
- Structural issues in the curb ramp that make it non-functional. These can include the presence of a built obstruction blocking the ramp or landing, or a missing element like the top landing that makes the ramp unsafe for use.
- Presence of required texture contrast (truncated dome).

In Phase 1 of the self-evaluation 1,669 curb ramps were identified as requiring further evaluation and were advanced into Phase 2 for measurement in the field.

Step 2 -- Locations identified as having a curb ramp not blocked by a fixed object were advanced into the second phase of the self-evaluation. In this process, employees from DTD went into the field in August 2016 and measured all the features of each curb ramp. Depending on the type of curb ramp, specific measurements were collected for 12 to 19 features. This field data was stored on DTD computer servers in both spreadsheet and geographic information system formats to facilitate analysis of the data. These measurements were then analyzed to determine compliance with PROWAG standards.

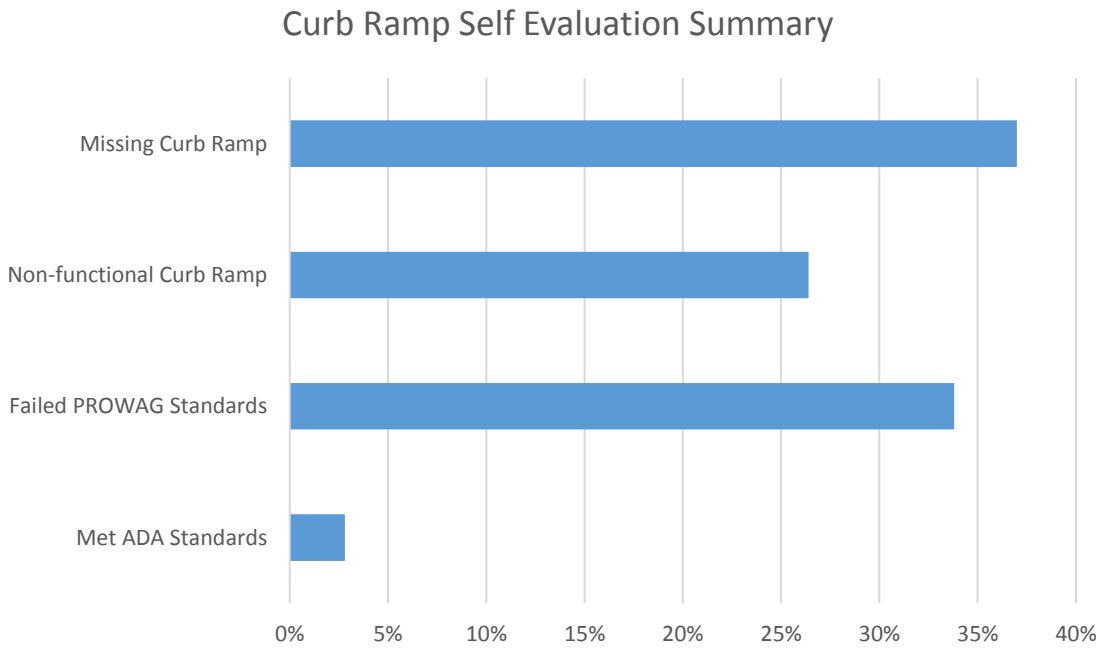
Results of the Curb Ramp Self-Evaluation

The following is a summary of the findings of the curb ramp self-evaluation:

- 4,745 locations were identified where curb ramps are required in unincorporated Clackamas County.
- 1,917 (39.0%) of locations that required curb ramps did not have a curb ramp present; 1,566 of these were at intersections or mid-block locations with a crosswalk.
- 1,352 (26.4%) of locations that required curb ramps had a curb ramp that was not non-functional for those with disabilities due to lack of a required element or an obstruction by a fixed object such as a pole, hydrant or building.
- 1,476 (31.7%) of locations that required curb ramps had a curb ramp that could be used to meet the mobility needs of those with disabilities since those ramps included all required elements and were not obstructed, but those ramps failed to meet one or more of the PROWAG ADA accessibility standards.
- 132 (2.8%) of locations that required curb ramps had a curb ramp present that was fully compliant with all PROWAG standards.

There was a wide variation in the points of failure identified for the 1,669 curb ramps that were field measured and compared with PROWAG standards. However, some patterns do stand out:

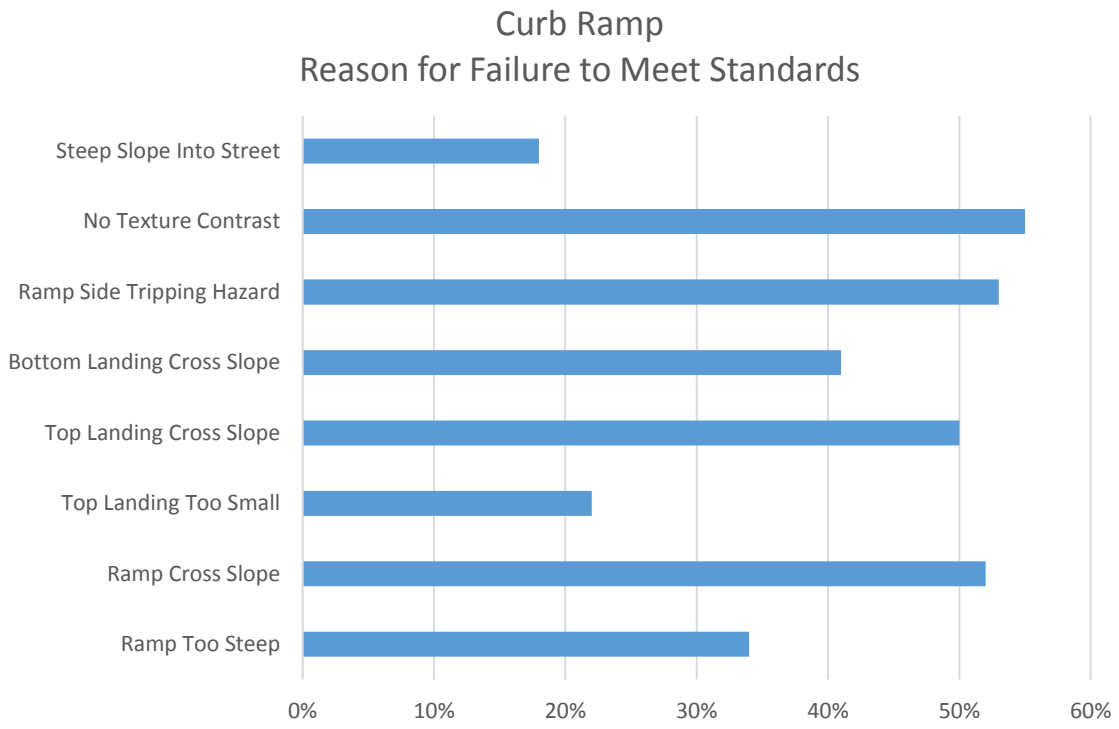
- **34.3% of measured curb ramps had a ramp slope in excess of the mandated standard of 8.33%.** The slopes above 8.33% are a problem for those using a manual wheelchair because it is difficult for many users to manually power a wheelchair up such a slope.
- **51.6% of measured curb ramps had a ramp cross slope in excess of the standard of 2.0%.** A cross slope is the slope perpendicular to the direction of travel. A cross slope in excess of 2.0% is difficult for a user of a manual wheelchair because the wheelchair will tend to steer toward the lower side of the cross slope. This increases the difficulty in controlling the wheelchair and using the curb ramp.



- **22.2% of measured curb ramps had a top landing smaller than the required dimensions of 48" x 48" and/or 49.6% had a top landing cross slope in excess of 2.0%.** All curb ramps are required to have a top landing to serve the needs of pedestrians and users of mobility devices. On the most common curb ramp designs, the top landing eliminates a tripping hazard by allowing pedestrians to pass around the curb ramp without the need to walk through it. The top landing also allows a user of a mobility device a space to make the turn between the curb ramp and the sidewalk. The top landing dimensions of 48" x 48" corresponds to a standard width requirement for pedestrian access and also provides sufficient space to turn a wheelchair. A cross slope in excess of 2.0% increases the difficulty of controlling the wheelchair while making a turn.
- **41.1% of the bottom landings of measured curb ramps had a cross slope is excess of 2.0%.** The bottom landing of certain types of curb ramps provides a level area for the wheelchair user to turn and align with the cross walk outside of the flow of traffic on the street. As with the ramp and the top landing, a cross slope in excess of 2.0% on the bottom landing increases the difficulty of controlling the wheelchair while making the turn.
- **52.9% of measured curb ramps had side treatments on the ramp that failed to meet PROWAG standards.** Side treatments on curb ramps are primarily intended to limit tripping hazards for walking pedestrians. Many ramps have triangular sides called "flares." The flares are not

intended to facilitate access by those using mobility devices, but are intended to mitigate a tripping hazard for those that are walking. To reduce that tripping hazard flares are required to have a slope no greater than 10%. Instead of flares, some curb ramps have small "returned" curbs or even no treatment at all. In such cases the PROWAG standards require that the curb ramp be bordered by a built obstacle or a ground cover that discourages pedestrians from walking across the curb ramp and tripping on the returned curb or side of the ramp.

- **55.1% of curb ramps did not have texture contrast ("truncated dome").** Texture contrast is an important safety aid for those that are blind or have low vision. It is intended to be felt through the soles of the feet and provide a warning of a hazard. Truncated dome panels of texture contrast are made of plastic to provide a contrasting sound when struck with a cane. The bright contrasting color is intended to help those with low vision notice the truncated dome.



- **18.1% of curb ramps had a gutter slope in excess of 5.0% or a grade break from the ramp to the street in excess of 11.0%.** A gutter slope in excess of 5.0% can make it difficult for the wheelchair user to maintain momentum and proceed either up the ramp or across the street. In addition to the maximum slope, the differential slope or "grade break" between the street and the curb ramp is vital in determining if the user will safely make that transition. Many types of wheelchairs and mobility devices have foot rests and other features that extend forward of the front wheels. In such cases those features can catch on the curb ramp or street if the grade break exceeds 11%. This can potentially cause the wheelchair to tip over.

Overall, out of the 1,669 curb ramps measured to determine compliance, only 132 curb ramps, or 2.8%, were found to be fully compliant with all PROWAG ADA accessibility standards. Although this rate of full

compliance is low, it is not unusual for the accessibility facilities within the public rights-of-way in many localities. There are several issues that have resulted in this very low rate of compliance.

- **Curb Ramps Built Before Current Standards** - Data from the self-evaluation shows that about 85% of all curb ramps on Clackamas County maintained roads were built before passage of the ADA and implementation of the PROWAG standards. About 3,963 out of the 4,745 on Clackamas County maintained sidewalks were built before the ADA standards were implemented.
- **Limited Right-of-Way -** Clackamas County roads and intersections are built in very limited spaces. In many cases Clackamas County roads were originally built with narrow right-of-way. Over time, those roads have expanded to serve higher traffic volumes. In addition, the space available in the road right-of-way is also used by critical features such as traffic signal masts or poles, overhead or underground utilities, storm water facilities, or fire hydrants. Space is also limited by the physical terrain or the presence of buildings. All the competing demands for space at intersections result in compromises that in some cases have sacrificed ADA accessibility to meet other system needs.
- **Terrain –** The varied terrain in Clackamas County can result in non-compliant curb ramps. Many sections of county roads with sidewalks have grades exceeding the maximum for a compliant curb ramp – 8.33%.
- **Meeting Standards -** The development of fully compliant curb ramps can be difficult within the context of typical project development procedures. All curb ramps include between 12 and 19 features that all must meet specific ADA requirements. As with most public works projects, curb ramps are the result of the combined work of many parties including consulting engineers, contractors and Clackamas County staff. All must make multiple decisions in the course of project development that determine if the resulting curb ramp will be ADA compliant. A very small error on the part of any of the parties can result in a curb ramp that is not ADA compliant. For example, the standard for a ramp slope is 1:12 or 8.33%, requiring a ramp length of 72" (6 feet) for a 6-inch curb height on level ground. If the ramp that is designed and built is 1 inch too short, 71 inches instead of 72 inches, the ramp will have a ramp slope of 8.5% and will fail to meet ADA standards.

Recognizing the complexity of building compliant curb ramps, case studies were conducted as part of the development of the ADA Transition Plan to identify the best approaches that could result in construction of compliant curb ramps. The results of that analysis were used to develop recommendations for process improvements that are described in Chapter 3, Removal of Barriers to Accessibility.



Self-Evaluation of Traffic Signals

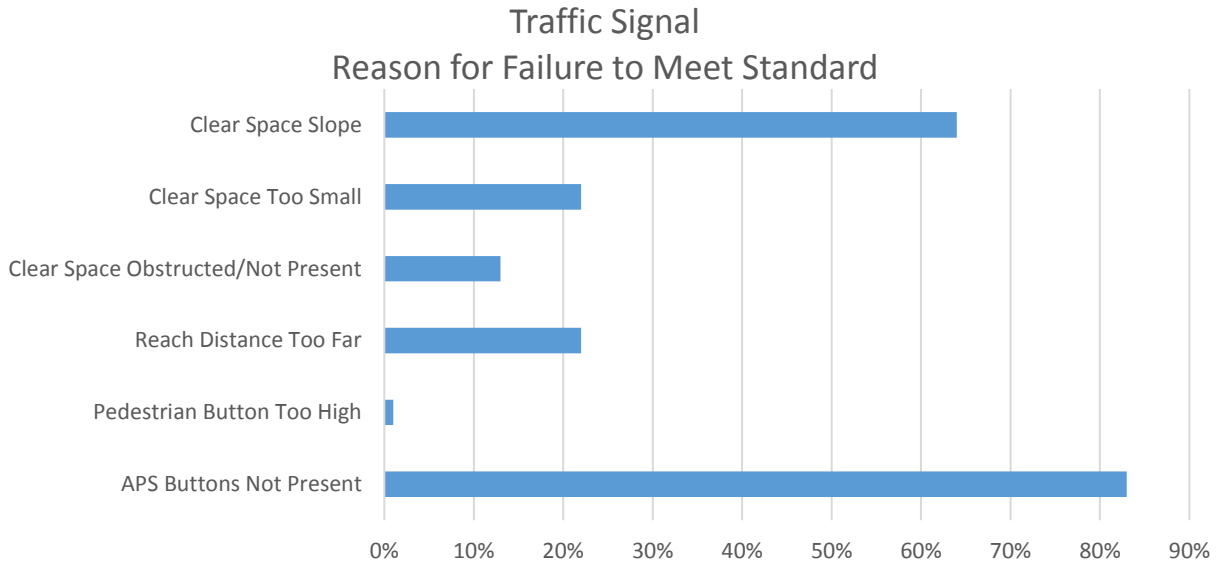
The self-evaluation of traffic signals for ADA accessibility is complex. Some of the ADA accessibility requirements for traffic signals can be found in the PROWAG standards, but others are in the Manual of Uniform Traffic Control Devices (MUTCD), which is incorporated into the PROWAG standards by reference. The PROWAG standards only establish standards for reach distance, either forward reach or side reach. The MUTCD establishes other standards for features such as accessible landings, location of pedestrian buttons, use of Accessible

Pedestrian Signal (APS) push button, and types of "ped heads" (the electronic warning signs that inform pedestrians when the pedestrian cycle is occurring).

The self-evaluation of traffic signal ADA accessibility was carried out by DTD staff in October 2016. Preliminary data was collected from the DTD traffic engineering staff to identify signalized locations, and information on the signal system phasing and number of crosswalks. Staff from DTD then went into the field to collect the required data for each signalized intersection.

There are 69 signal systems under county ownership of which 4 were under-construction at the time of field data collection. Data was collected at the 65 intersections with traffic signal systems that were not under construction to determine compliance. The following summarizes the findings from the traffic signal self-evaluation:

- Accessible Pedestrian Signal (APS) – There were 406 pedestrian push buttons found. Of these, 71 (17.5%) were APS push buttons; 82.5% were non-APS buttons.
- Push Button Height – Only 3 push buttons (0.74%) exceeded the maximum height allowed of 48 inches and none were lower than the minimum of 15 inches.
- Reach Distance – Of the 406 pedestrian push buttons found, 88 (21.7%) had a reach distance in excess of 10 inches, the maximum under PROWAG for new facilities but within the standard for existing facilities.



- Clear Space at Push Button –360 locations required a clear space adjacent to the pedestrian push button. Clear space was provided in 315 of the required locations or 87.5%. In 33 cases (9.2%) the clear space was obstructed, meaning that a user of a wheelchair or other mobility device would not be able to reach the pedestrian push button. In 12 cases (3.3%) there was no clear space.
- Clear Space Dimensions – As noted above, unobstructed clear space was provided for 315 of the push buttons. Of those, the clear space at 246 (78%) was a minimum of 48 inches x 48 inches, meeting the requirements. The remaining 69 (21.9%) were less than the minimum dimensions.

- Clear Space Slopes – Under ADA, pedestrian facilities such as sidewalks or curb ramps should not have a cross slope (perpendicular to the direction of travel) in excess of 2.0%. That 2.0% requirement applies to both directions (both parallel and perpendicular to the direction of travel) on the top and bottom landings of a curb ramp or the push button clear spaces at a signalized intersection. Of the 315 clear spaces provided for push buttons, 188 (59.7%) had a slope in excess of 2% perpendicular to the push button while 200 (63.5%) had a cross-slope parallel to the push button in excess of 2%.

Summary of Self-Evaluation

The self-evaluation demonstrated that Clackamas County must make considerable progress to achieve the goal of equal access within the public rights-of-way. If we consider all facilities, including those built before the ADA was enacted, more than 4,500 curb ramps and 44 traffic signal systems must be improved or replaced to provide complete equal access per the requirements of the Americans with Disabilities Act. The following chapter describes the steps recommended to be taken by Clackamas County to achieve that goal.



Chapter 3
Removal of Barriers to Accessibility

Introduction

As described in Chapter 1, the ADA provisions require all local governments to provide the same access to all public facilities for those with disabilities that is provided for those without disabilities. This sweeping requirement is difficult to meet for a large local government such as Clackamas County. Due to the number of barriers to accessibility in the county rights-of-way and very limited funding, reaching a state of full compliance, including facilities built before the ADA was enacted, will require many years. This chapter, which describes the steps that Clackamas County will take to achieve full accessibility within the unincorporated county right-of-way, focuses on four areas:

1. Adoption of a schedule and budget for removal of barriers to ADA accessibility,
2. Development and implementation of internal standards, specifications and procedures,
3. Monitoring progress on the implementation of the Transition Plan
4. Action Plan for the next four years

A required component of the ADA Transition Plan is the process for removing barriers to ADA accessibility, including a schedule and budget. There are several related issues that must be considered. These include:

- the state and federal regulations determining when removal of barriers to ADA accessibility must be incorporated other projects,
- county programs that typically result in accessibility improvements to facilities within the public rights-of-way,
- the rate of removal of barriers to accessibility in an average year, and
- an approach to prioritizing the removal of barriers.

State and Federal Requirements for Removal of Barriers to ADA Accessibility

The ADA Transition Plan must include a schedule and budget for removal of all barriers to ADA accessibility. This includes improvements to any non-compliant facilities that have been built since the passage of the ADA in 1990. But it also includes improvements to all facilities built prior to adoption of the ADA that are not accessible. Although this requirement seems like a burden on local government, it is in place due to the principle in the ADA of equality of access for all to any government facility, program or benefit. As a result, Clackamas County is required to plan for improvements to all 4,531 curb ramps that do not meet the ADA standards.

For local governments like Clackamas County, many of the improvements to ADA accessibility will be part of other transportation system maintenance or improvement projects. The following state and federal statutes provide direction regarding the removal of barriers to ADA Accessibility when other improvements are taking place.

> *Oregon Revised Statutes Chapter 447 – Standards and Specifications for Access by Persons with Disabilities – Section 447.310 sets minimum standards for curb ramps whenever a curb or*

sidewalk is constructed, replaced or altered at any point in a block which gives reasonable access to a crosswalk.

28 Code of Federal Regulations 35.151 – requires that whenever streets, roadways or highways are altered, local governments shall provide curb ramps where the street level pedestrian walkways cross the curb. On July 8, 2013, the U.S. Department of Justice and the U.S. Department of Transportation issued a Joint Technical Assistance memo further explaining the requirements to provide curb ramps when streets are altered through resurfacing projects. The following is quoted from the Joint Technical Assistance memo to help clarify Clackamas County's responsibilities:

"Where must curb ramps be provided? Curb ramps are needed whenever a sidewalk or other pedestrian walkway crosses a curb. Curb ramps must be located to ensure a person with a mobility disability can travel from a sidewalk on one side of the street, over or through any curbs or traffic islands, to the sidewalk on the other side of the street.

When are curb ramps not required? The ADA does not require installation of ramps or curb ramps in the absence of a pedestrian walkway with a prepared surface for pedestrian use. Curb ramps are not required in the absence of a curb, elevation, or other barrier between the street and the walkway.

What are the standards for alterations? An alteration is a change that affects or could affect the usability of all or part of a facility. Alterations of streets, roads, or highways include activities such as reconstructions, rehabilitation, resurfacing, widening and projects of similar scale and effect. Maintenance activities on streets, roads, or highways, such as filling potholes, are not alternations.

When is resurfacing considered to be an alteration? Resurfacing is an alteration that triggers the requirement to add curb ramps if it involves work on a street or roadway spanning from one intersection to another, and includes overlays of additional material to the road surface, with or without milling. Examples include, but are not limited to the following treatments or their equivalents: addition of a new layer of asphalt, reconstruction, concrete pavement rehabilitation and reconstruction, open-graded surface course, micro-surfacing and thin lift overlays, cape seals, and in-place asphalt recycling.

What kind of treatments constitute maintenance rather than an alteration? Treatments that serve solely to seal and protect the road surface, improve friction, and control splash and spray are considered to be maintenance because they do not significantly affect the public's access to or usability of the road. Some examples of the types of treatments that would normally be considered maintenance are: painting or striping lanes, crack filling and sealing, surface sealing, chip seals, slurry seals, fog seals, scrub sealing, joint crack seals, joint repairs, dowel bar retrofit, spot high-friction treatments, diamond grinding, and pavement patching. In some cases, the combination of several maintenance treatments occurring at or near the same time may qualify as an alteration and would trigger the obligation to provide curb ramps."

County Programs Resulting in ADA Accessibility Improvements within the Public Right-of-Way

There are currently five county programs that can result in new or altered ADA accessibility features in the public rights-of-way. These programs have a variety of legal mandates and funding sources.

Land Use & Development Permitting

The Land Use & Development Permitting Program in DTD reviews development applications to ensure the proposals meet the transportation requirements of local codes and ordinances, including for providing ADA accessibility features within public rights-of-way as required by the PROWAG standards and state and county ordinances. Under this program, development plans are submitted by private parties for permitting approval. These improvements must be provided on any proposed public right-of-way, sidewalk or multi-use path proposed as part of the development. The ADA accessibility improvements are required to be built to PROWAG and county standards and accepted by the county as an addition to the public rights-of-way. This program can result in new ADA accessibility features on new roads or facilities, the addition of ADA accessibility features where required and in some cases, improvement of existing ADA accessibility features to full compliance with the county and PROWAG standards. Traffic signals can also be improved as a condition of approval.

Transportation Maintenance

The Transportation Maintenance Program is responsible for maintaining the integrity and safety of the entire county transportation system, including roads, bridges and signs. As noted earlier, sidewalks are the responsibility of the abutting property owner. However, sidewalks and curb ramps within intersections are fully within county right-of-way and fall under Transportation Maintenance responsibility. Transportation Maintenance annually carries out road maintenance projects that trigger requirements for ADA accessibility improvements. However, ADA accessibility improvements are only required in locations with existing pedestrian facilities or when pedestrian facilities are added. In such locations, curb ramps and accessible traffic signal features are required to be added or brought up to PROWAG standards. There is great variation in the number of curb ramps that are improved on an annual basis through Transportation Maintenance depending on the types of roads projects being conducted each year. Roads in the rural area do not generally include sidewalks or curb ramps. When the maintenance program is focused on rural roads the number of ADA accessibility features that are improved is very small. When the maintenance program is focused on roads in the urban area of the county, the number of ADA accessibility features that are improved can be very large.

Transportation Construction

The Transportation Construction Program is responsible for development of projects on the five-year Transportation Capital Improvement Program, which can be funded by federal, state or county funds. The Transportation Construction Program can also serve as the project development/construction arm of the Clackamas County Development Agency. Regardless of the funding source, the requirements for ADA accessibility described previously apply for projects that either create or alter pedestrian facilities. In recent years, the Transportation Construction Program has been the largest builder of new or altered curb ramps and traffic signals.

Health, Housing and Human Services – Community Development

The Clackamas County Department of Health, Housing and Human Services (H3S) administers HUD Community Development Block Grant funds to support programs or accomplish projects identified in the Five-Year Consolidated Plan. The Community Development Program works with local governments and other organizations to provide funds to help develop public facilities (such as senior centers or recreation facilities) as well as CDBG-eligible infrastructure improvements including water system, street and sidewalk improvements. Curb ramps are an eligible project under CDBG and the Community Development program has done several in recent years. Traffic signal improvements are not typically eligible for CDBG funding.

Special Fund for ADA Curb Ramp Improvements

Anticipating the need for improvements to curb ramps, the Board of County Commissioners included in the DTD budget for FY2017/18 a special fund of $180,000 for improvements to curb ramps that are not programmed for improvement in any other project. This special fund was also proposed for inclusion in the budgets for the upcoming three years. These funds will be sufficient to improve between 15 and 20 additional curb ramps each year beyond those included in other projects.

Summary of County Programs

Across all five county programs described above, an average of 200 curb ramps will be built or altered in Clackamas County each year. In addition, there are 44 traffic signal systems under county jurisdiction requiring improvement that are being addressed in the course of existing projects.

Prioritization of Curb Ramp Improvements

The ADA requires that each local government identify priorities for making needed improvements to accessibility features that do not comply with the ADA standards, but gives governments broad discretion in the approach to the prioritization. Clackamas County DTD sought public input to help establish the priorities for improvements to curb ramps. Between April and June 2016, a questionnaire was distributed both online and as a paper handout to secure input from those with disabilities on their priorities for improvements to curb ramps.

The highest priority identified was the lack of a curb ramp at a location where pedestrians are required to cross the curb. Respondents identified the following priorities:

First priority -- Curb ramps missing at intersections / mid-block crosswalks, due to the importance of those locations for pedestrian travel. The self-evaluation identified 1,566 locations at intersections or mid-block crosswalks in unincorporated Clackamas County right-of-way at which curb ramps are required but not present.

Second priority -- Curb ramps with a fixed object obstructing the ramp or the landing. The self-evaluation identified 1,352 locations at which the curb ramps would not serve the needs of those with disabilities due to a fixed object that obstructed the ramp or landing, or the lack of a required element.

Third priority -- Curb ramps that were not obstructed and included all required elements but failed to meet ADA standards.

As part of the input process those with disabilities were also asked the type of street that should be the highest priority for improvement. A majority selected high traffic arterial streets as the highest priority, lower traffic collector streets as the second priority and residential streets as the third priority.



The self-evaluation also identified 351 locations that lack a required curb ramp on "orphan" sidewalk segments less that one block in length. Such very short sidewalk segments are not connected at either end to the sidewalk network and do not enhance pedestrian mobility. Staff identified locations requiring curb ramps on such orphan sidewalk segments to be the lowest priority that should not be improved until the sidewalk segment is connected to the sidewalk network.

Based on the input received from those with disabilities, the following table was created showing the broad priorities for improvements to curb ramps to be undertaken outside scheduled projects. Within each of the priority groups, curb ramps facilitating access to state and local government facilities, transportation facilities, places of public accommodation and employers would have a higher priority over those serving other areas.

Curb Ramp Priorities for Improvements – Priority (number of curb ramps)

Street Functional Classification	Curb Ramp Missing at an Intersection or Mid-block crossing	Non-Functional Curb Ramps	Curb Ramp Failed to Meet PROWAG Standards	Curb Ramp Missing on "Orphan" Sidewalk Segments
Arterial	1 (350)	2 (566)	3 (789)	10 (84)
Collector	4 (193)	5 (244)	6 (222)	11 (31)
Connector/Local	7 (1,023)	8 (542)	9 (465)	12 (236)

Schedule and Budget for Removal of Barriers to ADA Accessibility

Schedule -- The self-evaluation described in Chapter 2 determined that, as of August 2016 there were 4,531 curb ramps within Clackamas County unincorporated rights-of-way that must be replaced or altered to remove all barriers to ADA accessibility. Setting the schedule for removal of these barriers to accessibility is largely dependent on the funding that will be available for transportation maintenance and improvements. During recent years, Clackamas County has been experiencing a $17 million shortfall in funding for transportation maintenance and improvements. This shortfall has severely limited Transportation Maintenance and reduced the ability of the county to provide improvements to ADA accessibility features.

Based on funding levels over the last three years and existing project commitments, the department estimates that all barriers to accessibility in the three highest priority groups above can be improved

within 8½ years. Improvements to curb ramp locations on the collector streets in priority groups 4 to 6 above would be completed within an additional 4 years.

Budget -- Determining a budget for improving curb ramps that are barriers to accessibility is challenging. Due to the severe funding limitations being experienced by Clackamas County in recent years, county practice has been to bring ADA accessibility features up to standard when other improvements are underway. The average total cost of construction per curb ramp -- including all administration, design, review, right-of-way, traffic control and inspection – is about $11,000. Using that figure, the total budget for bringing all curb ramps (regardless of when built) to full compliance with PROWAG standards would be $49.84 million in 2016 dollars. Those costs would largely be paid as part of new development or included in the cost of Transportation Maintenance and Transportation Capital Improvement Projects and would not appear as a separate line item in the county budget. Given the funding limitations experienced by the county this has been the best approach to meeting needs for accessibility improvements. Recent actions by the Oregon Legislature will make new funding resources available for use by local governments for transportation maintenance and improvements. These new funds will increase the rate at which barriers to accessibility are removed within Clackamas County rights-of-way in two ways. Such funds will increase funding for Transportation Maintenance and Transportation Capital improvements, with a greater number of ADA accessibility improvements taking place as part of those projects. Increases in transportation funding may also make it possible for the county to provide on-going funding for accessibility improvements which would result in a more rapid schedule for the removal of all identified barriers to accessibility. Although it is clear that new funding will increase the rate of removal of barriers to accessibility the actual rate cannot be quantified at this point.

Next Five Years -- The department is already taking several steps that should allow it complete improvements to all curb ramp locations in priority groups 1 to 3 within 8½ years and to priority groups 4 to 6 within the following 4 years. These steps include:

- Capital Projects – Projects currently in the Five Year Transportation Capital Improvement Program will result in improvements to 218 curb ramp locations and about half of the 44 traffic signal systems requiring modifications. These improvements are exclusively in the top three priority groups described above.
- Transportation Maintenance – The Transportation Maintenance program estimates that on average 50 curb ramps a year will be improved as part of road maintenance projects. Over the course of the next five years maintenance projects will result in removal of 250 curb ramps that are barriers to accessibility.
- Curb Ramp Improvement Program – if funded through FY2021 this program will result in the improvement of 80 curb ramp locations from the top three priority groups during the next five years.
- Retrofit with Truncated Dome - It should also be noted that there are about 300 curb ramps identified during the self-evaluation that met all PROWAG standards with the exception of the presence of required texture contrast (truncated dome). The Oregon Department of Transportation and other localities in the Portland region have found that it is possible to retrofit curb ramps with truncated dome using maintenance staff, which would decrease the time and cost estimates described above. While these curb ramps are scattered across all

portions of the county road network, at least 250 are on the arterial streets and fall into the top three priority groups.

- Through these sources, the department estimates that 768 curb ramps will be improved in the next 5 years in the top three priority groups. This total represents 47% of the total need in those priority groups. Continued efforts at the same rate would complete all required improvements in the top three priority groups within 8½ years. Improvements to curb ramp locations on the collector streets in priority groups 4 to 6 above would be completed within an additional 4 years.

Estimating a future budget to bring traffic signals up to ADA accessibility standards is more complex. Traffic signals have a broader variety of possible improvement types with greater cost variation. Our analysis showed that there are three main points of failure for the traffic signals.

- Failure to provide an adequate push button clear space is the most common with 44 or 63.5% of traffic signal intersections failing to meet those requirements. DTD traffic engineering staff estimates that improvements to the push button clear space (including improvements to the associated curb ramps) would cost $100,000 per intersection, or $4.4 million for all 44 intersections. At an average of 8 curb ramps per signalized intersection, that expenditure would have the added benefit of improving 352 curb ramps.
- There are 8 intersections that will require installation of APS buttons to meet ADA standards with a total cost for all 8 intersections of $100,000.
- Only 8 pedestrian push buttons failed to meet ADA standards for either reach distance or button height. Correcting these problems are inexpensive and can be carried out by transportation maintenance staff at an estimated cost of less than $10,000.

Overall, the estimated budget to improve the traffic signals under county jurisdiction to meet ADA standards is $4.5 million. Given there are only 44 intersections with traffic signals under county jurisdiction that require improvement, and the variation in the types of projects carried out by the county each year, it is hard to identify an average rate at which improvements could take place. But given recent history, it is anticipated that it will take no more than 10 years to bring all remaining intersections up to full compliance with ADA standards.

Standards, Specifications and Procedures

Standards, specifications and procedures must be in place to ensure that all curb ramps and traffic signals are constructed to provide ADA accessibility consistent with the PROWAG standards. Given the scarce resources available to Clackamas County for removal of barriers to accessibility, development of every curb ramp and traffic signal to meet PROWAG standards is a very high priority. Recognizing this, the efficacy of the standards, specifications and procedures used by DTD for designing and building curb ramps and traffic signals was assessed during the development of this ADA Transition Plan. This was accomplished by conducting case studies of recent projects. These case studies focused on curb ramps as the area of greatest concern. The approach for the case studies was to compare both the final design and the measurements of the curb ramps as built with the PROWAG standards. Project managers, construction managers and field inspectors were then interviewed to identify the sources of departure from the PROWAG standards. Findings were discussed with the Project Management Team for the ADA Transition Plan to identify additional steps that could be taken to improve DTD's success in building curb

ramps that are compliant with PROWAG standards. The following describes areas for improvement that were identified:



Standards and Specification

1. **PROWAG Standards**
   The specific version of the PROWAG standards should be identified in the county Road Standards. There have been several versions of the PROWAG standards. The standards are incorporated into the county Road Standards by reference, but it is not clear which version of the standards are to be used. The case studies showed that some ramps were designed and built to the 2010 standards, rather than the 2012 standards currently in effect.
2. **County Road Standards**
   The County Road Standards should correctly identify current requirements and present reasonable alternatives to achieve compliance. Several changes to the County Road Standards would result in improved compliance with ADA standards, including:
   a. Requiring the use of transition panels between the required curb ramp and existing sidewalks to reduce issues with non-compliant slopes and cross-slopes.
   b. Adding several curb ramp designs that are not common in the county, but would help address steep terrain and limited right-of-way -- the most difficult problems faced in Clackamas County. Presentation of additional alternatives should help consulting engineers to find alternatives that will result in compliant curb ramps in difficult situations.
3. **Training**
   The PROWAG standards are complex and confusingly presented in published and online documents. Employees of DTD, particularly those with responsibilities for project management, design review and field inspection, should receive training to increase their knowledge of the standards and their application. Identification and training of ADA experts in design review and field inspection could also help improve compliance.
4. **Checklists**
   Checklists should be developed for consultants and contactors as well as DTD staff in project management, design review and field inspection roles to help all parties more accurately assess curb ramp compliance at each step in the process. It would also provide better documentation and enable better communication on ADA compliance issues with consulting engineers and contractors.

Procedures

Addressing the following procedural issues should increase the compliance rate for new curb ramps:

1. **Scoping**
   A scoping meeting with consulting engineers and contractors at the construction site and resulting documentation would clarify the requirements for each curb ramp including expected design and approaches required to achieve compliance, as well as any issues that may call for special treatment.
2. **New curb ramps versus alterations**
   The PROWAG standards for new curb ramps are somewhat different from the standards for alterations. Throughout the design and construction process both consultants and staff should clearly identify the curb ramps that are new in contrast to those that are alterations to help ensure application of the correct standards.
3. **Design review responsibility**
   DTD policies should be revised to clarify who is responsible for review of curb ramp plans for compliance with PROWAG standards.
4. **Exceptions policy**
   An exceptions policy for the PROWAG standards should be adopted that identifies documentation requirements and the approval process for exceptions. The PROWAG standards allow exceptions for new curb ramps or traffic signals under very limited circumstances and require those exceptions to be documented. The standard for exceptions on alterations are somewhat broader but still require documentation and specific sign-off.
5. **Field inspection**
   Establish checkpoints and procedures for the field inspection process to ensure that properly designed, PROWAG-compliant ramps are constructed as designed. Even when design drawings show PROWAG-compliant curb ramps, they are often not built as designed, resulting in non-compliant curb ramps. There are two key check points identified by DTD engineering and field inspection staff at which county involvement can greatly increase the likelihood that ADA compliant curb ramps will be built.
   a. The first point is the “forms inspection.” The forms should be inspected prior to pouring concrete to ensure that they correspond to the approved design. Collection of specific measurements at this point would help determine if the curb ramp was being built as specified in the drawings.
   b. The second point is the “post-build inspection.” In this step the DTD field inspector should measure every aspect of each curb ramp to ensure that the built product actually complies with PROWAG requirements and the approved design.
6. **Accountability for Consultants and Contractors**
   Clackamas County should adopt a policy that clearly assigns cost responsibility in contracts to ensure that consultants and contractors are accountable for costs associated with re-designing or reconstructing curb ramps that do not meet PROWAG standards due to an error by the consultant or contractor.



Monitoring Removal of Barriers to Accessibility

Establishing processes for monitoring removal of barriers to accessibility has been identified as a “best practice” for achieving compliance with ADA standards by the Federal Highway

Administration. Achieving full ADA compliance is a large task that will take many years to complete. Annual processes for tracking progress can help Clackamas County and DTD remain focused on the goal. Monitoring allows the process to move forward making best use of existing resources, and enables staff to determine progress towards full compliance, identify issues as they arise, and report on progress to the Board of County Commissioners and the public. Since the Clackamas County Transportation Maintenance Division is the administrative owner of county transportation facilities, we recommend that the monitoring files / databases and reporting responsibilities take place through that division.

The following activities have been identified as best practices for implementing and monitoring the removal of barriers to ADA accessibility.

1. Updated Inventory – As projects are completed that include curb ramps or traffic signal accessibility features, those features should be measured to ensure compliance and the data added to the computerized inventory established during the self-evaluation for this ADA Transition Plan.
2. Updating the Online Accessibility Data – As improvements are made the county should update the online accessibility data to provide information to the public regarding progress in achieving ADA Transition Plan goals.
3. Annual Evaluation Report – DTD should assess and report to the Board of County Commissioners and the public on progress toward removing barriers to accessibility.
4. Review of Requests and Grievances – The ADA coordinator should review all requests for ADA improvements or grievances that have been received throughout the year and evaluate responsiveness and decision-making.
5. Work Program – Each fall, a work program should be developed identifying the barriers to accessibility that will be removed in the coming construction season through all programs and funding sources.

Action Plan for the Next Five Years

The next five years are critical for Clackamas County in the long-term process of achieving full accessibility within the public rights-of-way. During this period, changes to budget, programming, standards and procedures must all be made and become part of the accepted annual work flow for DTD and county decision-makers. The following describes the steps to be undertaken.

Design

Develop changes to County Road Standards by working in partnership with all effected divisions. These will include improvements in the measurements shown on design drawings, as well as improvements in the drawings to include additional curb ramps types, and inclusion of PROWAG requirements that are not current included.

1) Policies

The following policies should be developed:

- Develop and adopt an exception policy. The ADA does allow exceptions to the requirements for accessibility, but only under unusual circumstances. For new facilities exceptions are allowed when extreme terrain or historic structures make it impossible

to meet the standards. In such cases, the accessibility feature is required to meet the requirements in as many features as possible. The requirements for an exception to an altered accessible feature are somewhat broader. In either case the exception must be approved by the Implementing Official and documented in the files for ADA accessibility.

- Policies requiring design engineers to change designs that are found to be not compliant with the PROWAG standards, and
- Policies requiring contractors to correct accessibility features that are properly designed but incorrectly constructed, resulting in non-compliance with county adopted ADA standards.

Consideration should be given to adopting standards below the PROWAG standards to provide a construction tolerance for new or altered accessibility features.

2) Checklists

Develop checklists for use by design engineers, county review staff, contractors and county field inspection staff to facilitate checking of every type of accessibility feature against the PROWAG standards for that feature.

3) Training

Conduct training for county staff, design engineers and contractors using the checklists to enable all participants to have a clear understanding of all the standards and their application in future projects.

4) Inclusion of PROWAG requirements

The review of County Road Standards identified several PROWAG standards not incorporated in the current version of the road standards. These included the PROWAG requirement of a top landing for every ramp, standards for bus stops within the public right-of-way, and for provision of ADA accessible temporary access when construction blocks the permanent Pedestrian Access Route.

Development

1) Scoping

Develop a scoping process specifically concerning the accessibility features of every project.

2) New or Altered Accessibility Features

Due to differences in the standards, prior to procurement of engineering services and bid-letting identify every accessibility feature as “New” or “Alteration” to clarify the standards that will be applied for design review and field inspection.

3) Review

Alter the approach to assigning review responsibilities for accessibility features to ensure clarity regarding those responsibilities.

Construction

1) Improvements to Curb Ramps and Traffic Signals through Currently Programmed Projects

   Proceed to improve 768 curb ramps that are in projects on the Transportation Capital Improvements Program, or on the Transportation Maintenance program in the next five years.

2) Improvements to Curb Ramps through Special Budget Allocations

   Move forward as quickly as possible to select the locations to be improved based on the priorities identified in this plan and develop the procedures for designing and constructing the improved curb ramps. Recognizing the large number of curb ramps that would need to be improved, the Board of County Commissioners and county management included a special budget allocation of $180,000 per year for FY2016/17 for the development and construction of new curb ramps, with this budget item proposed to be included in the following three fiscal years as well.