AGENDA
1:30pm - 3:30pm
Tuesday, October 10, 2023

In-Person Meeting
1101 Pacific Avenue, Suite 250, Santa Cruz, CA 95060

REMOTE PARTICIPATION: Remote participation is offered to members of the public, nonvoting alternates, and committee members unable to attend in person due to an emergency or for cause per AB2449. E&D TAC Members who need to participate remotely under AB2449 should provide justification prior to the meeting to amarino@sccrtc.org (see end of agenda for more information).

Join the online meeting to see presentations:
https://us02web.zoom.us/j/82217044415
Meeting ID: 822 1704 4415
Dial by your location: +1 669 900 9128

1. 1:30pm — Call to Order
2. 1:30pm — Introductions
3. 1:32pm — Consider AB2449 request(s) to participate in the meeting remotely due to emergency circumstances (a physical or family medical emergency that prevents a member from attending in person)
4. 1:35pm — Oral communications
5. 1:40pm — Additions or deletions to the consent or regular agenda

CONSENT AGENDA
All items appearing on the consent agenda are considered to be minor or non-controversial and will be acted upon in one motion if no member of the E&D TAC or public wishes an item be removed and discussed on the regular agenda.
Members of the E&D TAC may raise questions, seek clarification or add directions to Consent Agenda items without removing the item from the Consent Agenda as long as no other E&D TAC member objects to the change.

6. Approve Minutes from June 13, 2023— pg. 5

7. Receive RTC Meeting Highlights— pg. 10

8. Receive Information Items— pg. 16
   a. Santa Cruz County Local Road Safety Plan
   b. Lift Line Access for All

REGULAR AGENDA

9. 1:55 pm — Receive Program Updates— pg. 18
   a. Volunteer Center
   b. Community Bridges
   c. Santa Cruz Metro
   d. SCCRTC
   e. Pedestrian Ad-hoc Subcommittee
      i. Pedestrian Hazard Report
      ii. Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

10. E&D TAC New Member Appointments— pg. 80

11. Climate Adaptation Vulnerability Assessment and Priorities Report (CAVA) – Prioritization Framework— pg. 89

12. Measure D: Five Year Programs of Projects for Regional Projects and Strategic Implementation Plan (SIP) Update— pg. 93

13. Measure D: Community Bridges/Lift Line Five-Year Plan— pg. 124

14. Reimagine METRO Service Changes— pg. 129

3:30 pm — Adjourn

Next meeting: Special Meeting 1:30 pm, November 14, 2023, hosted in person at the SCCRTC office located at 1101 Pacific Avenue, Suite 250, Santa Cruz, CA 95060.
REMOTE PARTICIPATION – Committee Members (AB 2449)

This meeting is being held in accordance with the California Brown Act. Under traditional Brown Act rules, members of the Committee may attend by teleconference if the location they are attending from is also open to the public to participate and the remote meeting location is listed on the agenda. **Members of the Committee may also attend via Zoom up to two times per year due to an emergency or for a cause according to requirements set forth in AB 2449, as long as a quorum of the committee is present in person at the RTC office.** Committee alternates who are not voting are considered members of the public, not Committee members.

**AB 2449 defines “just cause” as:**

- Care of a child, parent, grandparent, grandchild, sibling, spouse, or domestic partner;
- a contagious illness that prevents a member from attending in person;
- a need related to a physical or mental disability as defined by statute; or
- travel while on official business of the RTC or another state or local agency.

**AB 2449 defines “emergency circumstances” as a physical or family medical emergency that prevents a member from attending in person. The Committee member must provide a general description of the circumstances relating to your need to appear remotely at the given meeting (not exceeding 20 words).** Medical condition does not need to be disclosed. **The Committee must take action to approve the request to participate due to an emergency circumstance at the start of their regularly scheduled meeting.**

ACCOMMODATIONS FOR PEOPLE WITH DISABILITIES

The Santa Cruz County Regional Transportation Commission does not discriminate on the basis of disability and no person shall, by reason of a disability, be denied the benefits of its services, programs, or activities. This meeting location is an accessible facility. If you wish to attend this meeting and require special assistance in order to participate, please contact RTC staff at 460-3200 (CRS 800/735-2929) at least three working days in advance of this meeting to make arrangements. People with disabilities may request a copy of the agenda in an alternative format. As a courtesy to those person affected, please attend the meeting smoke and scent-free.
SERVICIOS DE TRADUCCIÓN/TRANSLATION SERVICES

Si gusta estar presente o participar en esta junta de la Comisión Regional de Transporte del condado de Santa Cruz y necesita información o servicios de traducción al español por favor llame por lo menos con tres días laborables de antípico al (831) 460-3200 para hacer los arreglos necesarios. (Spanish language translation is available on an as needed basis. Please make advance arrangements (at least three days in advance by calling (831) 460-3200.

TITLE VI NOTICE

The RTC operates its programs and services without regard to race, color and national origin in accordance with Title VI of the Civil Rights Act. Any person believing to have been aggrieved by the RTC under Title VI may file a complaint with RTC by contacting the RTC at (831) 460-3212 or 1523 Pacific Avenue, Santa Cruz, CA, 95060 or online at www.sccrtc.org. A complaint may also be filed directly with the Federal Transit Administration to the Office of Civil Rights, Attention: Title VI Program Coordinator, East Building, 5th Floor-TCR, 1200 New Jersey Ave., SE, Washington, DC 20590.
1. Roll call

The meeting was called to order at 1:32 p.m.

**Members present:**
Tara Ireland, Social Service Provider-Persons of Limited Means
Jesus Bojorquez, CTSA (Lift Line)
Michael Pisano, Potential Transit User (60+)
Caroline Lamb, Potential Transit User (Disabled)
Janet Edwards, Vice Chair, 1st District
Veronica Elsea, Chair, 3rd District
Patty Talbott, Social Service Provider – Seniors Alternate
Christina Witt, Social Services Provider Disabled (County)
Patricia Fohrman, 4th District Hernandez
Phil Kipnis, 1st District Alternate

**Unexcused absences:**
Alex Weske, Social Service Provider – Disabled
Paul Elerick, 2nd District

**RTC staff present:**
Amanda Marino, Transportation Planner

**Others present:**
Heather Adamson, AMBAG
Patrice Theriot, City of Watsonville
Madilyn Jacobsen, Caltrans
Paul Guirguis, Caltrans
Russell Chen, County of Santa Cruz
Ben Vernazza, Member of the Public
Bryan Ramos, Member of the Public
Becky Steinbruner, Member of the Public
2. Introductions

3. Consider AB2449 request(s) to participate in the meeting remotely due to emergency circumstances (a physical or family medical emergency that prevents a member from attending in person)

A motion (Edwards, Fohrman) was made to approve committee member Jesus Bojorquez’s request to participate remotely due to emergency circumstances. The motion passed unanimously with members Tara Ireland, Michael Pisano, Caroline Lamb, Janet Edwards, Veronica Elsea, Patty Talbott, Christina Witt, and Patricia Fohrman voting in favor.

4. Oral communications

Janet Edwards, Committee Member, stated that she is writing a letter to the City of Capitola to add the website link to the RTC Pedestrian Hazard Report Form to the City of Capitola’s website.

Ben Vernazza, Member of the Public, communicated the need to have the Coastal Rail Trail wide enough for individuals with disabilities using mobility devices to reduce bicycle and pedestrian conflicts.

Russel Chen, County of Santa Cruz, provided an update to the committee on upcoming projects such as the Soquel Ave. buffered bike lanes and the Hwy 152 Complete Streets Intersection Improvements.

5. Additions or deletions to consent and regular agenda

CONSENT AGENDA

6. Approve Minutes from April 11, 2023

A motion (Pisano/Edwards) was made to approve the minutes from April 11, 2023. The motion passed unanimously with members Tara Ireland, Michael Pisano, Caroline Lamb, Janet Edwards, Veronica Elsea, Patty Talbott, Christina Witt, Patricia Fohrman, and Jesus Bojorquez voting in favor.

7. Receive RTC Meeting Highlights

8. Receive Information Items

A motion (Lamb/Ireland) was made to approve the consent agenda. The motion passed unanimously with members Tara Ireland, Michael Pisano, Caroline Lamb, Janet Edwards, Veronica Elsea, Patty Talbott, Christina
Witt, Patricia Fohrman, and Jesus Bojorquez voting in favor.

REGULAR AGENDA

9. Receive Program Updates
   a. Volunteer Center

   Tara Ireland stated that the Volunteer Center has reached a total of 198 participants with 96 volunteers, and 4 volunteer dispatchers. The Volunteer Center is always looking for additional volunteers. For more information visit: https://scvolunteercenter.org/programs/volunteer/

   b. Community Bridges

   Jesus Bojorquez announced that Community Bridges Lift Line purchased new electric vehicles for their transit fleet and are now fully staffed with dispatchers for the Lift Line program.

   c. Santa Cruz METRO

   No update, METRO committee member absent.

   d. SCCRTC – Covid Public Meeting Rules and AB 2449

   Amanda Marino, Transportation Planner, informed the committee that the TNC Access for All program application due date has been extended to July 7th to allow more time for transportation providers to submit applications to receive up to $114,103 to increase wheelchair accessible on-demand transportation services in Santa Cruz County.

   Ms. Marino notified the committee that the Santa Cruz County Parks Department requested a letter of support from the E&D TAC for Segments 10 and 11 (17th Ave to State Park Dr.) of the Coastal Rail Trail to apply for funds from the CPUC to add formal pedestrian crossings.

   A motion (Lamb/Ireland) was made to approve the E&D TAC chair to write a letter of support for the Coastal Rail Trail Segments 10 & 11 Formal Pedestrian Crossings CPUC grant application. The motion passed unanimously with members Tara Ireland, Lisa Berkowitz, Jesus Bojorquez, Michael Pisano, Caroline Lamb, Janet Edwards, and
Veronica Elsea voting in favor.

e. Pedestrian Ad-Hoc Subcommittee
   i. Pedestrian Hazard Report

Chair Veronica Elsea stated that the subcommittee is continuing to meet and discussing ways to improve response times in the pedestrian hazard report processes working with local jurisdictions. The subcommittee is continuing to monitor the public meetings and projects of local jurisdictions throughout Santa Cruz County. Ms. Elsea identified projects that they are monitoring, and the next subcommittee meeting will be on May 26th at 2:00 pm. Ms. Elsea also provided information on how the RTC is going to promote the Pedestrian Hazard Reports on RTC media outlets to report potholes or hazardous road conditions.

Vice Chair Janet Edwards informed the committee that Ms. Edwards met with City of Capitola Planner, Kailash Mozumder, and walked along 41st avenue identifying hazards for individuals using mobility devices.

10. Safer Access to Pajaro Valley High School and Beyond Project

Patrice Theriot, City of Watsonville staff presented the Safer Access to Pajaro Valley High School (PVHS) and Beyond Project including infrastructure improvements at the Highway 1/Harkins Slough Road overcrossing, other safety improvements in the vicinity of feeder schools, and non-infrastructure programing.

Committee members asked questions regarding safe pedestrian pathways during construction and community input to Spanish speaking communities.

No action taken.

11. Highway 129 Pavement Project

Madilyn Jacobsen and Paul Guirguis, Caltrans staff, gave a presentation on the Hwy 129 Pavement Project located in Watsonville. This project is on Route 129 between Route 1/129 Separation, Salsipuedes Creek Bridge, and on Route 152 between Main Street and Martinelli Street. The purpose of this project is to preserve and extend the life of the existing pavement, roadside safety, and multimodal access for pedestrian and bicycle users.
Committee members asked questions concerning the accessibility of bus stop facilities to allow space for individuals in wheelchairs. Members additionally made comments regarding the curb ramps and audible pedestrian signals. Caltrans staff stated that they will discuss with their staff to see if this project can include audible features with locator tones at pedestrian signals.

*No action taken.*

12. AMBAG Draft 2023 Public Participation Plan

Heather Adamson, AMBAG Staff, provided an overview of the 2023 Public Participation Plan (PPP). The Public Participation Plan is a comprehensive document that guides regional planning agencies and local jurisdictions in the public participation process for the tri-county Monterey Bay region that either receive federal funds or are subject to a federally required action.

Committee members provided feedback and asked questions regarding timeline and community outreach involved in the development of the 2023 Public Participation Plan.

*No action taken.*

Meeting adjourned at approximately 3:26 pm.

The next E&D TAC meeting is scheduled for Tuesday, August 8, 2023 at 1:30 located at the SCCRTC office at 1101 Pacific Ave, Suite 250, Santa Cruz, CA 95060

Respectfully submitted, Amanda Marino, Staff
Santa Cruz County Regional Transportation Commission (RTC)  
Aug. 3, 2023 Meeting Highlights

**Executive Director’s Report**  
Executive Director Guy Preston announced he will retire on Dec. 1, 2023. During his 5-year tenure with the agency, he has used his expertise in planning, engineering, public policy, and program/project management to develop and deliver multi-modal transportation projects. These include programs aimed at long-term sustainability, while maximizing the efficiency of Santa Cruz County’s current transportation system, improving mobility and providing for universal access. Executive Director Preston is a licensed civil engineer with a 34-year career, which included positions at Caltrans, the Sonoma County Transportation Authority, the California High-Speed Rail Authority, and his own consulting firm. The Commission plans to meet in Closed Session on August 17, 2023, to consider options related to the appointment of a new Executive Director effective as of December 2, 2023.

**Fiscal Year 21/22 Measure D Annual Report**  
The Commission accepted the Measure D Taxpayer Oversight Committee’s Measure D Annual Report for FY21/22 (English) (Spanish). Based on the committee’s review of the audits and expenditure reports from recipient agencies, the annual report includes a letter from the Committee confirming that agencies complied with the provisions and requirements of the voter-approved Ordinance in FY21/22. The annual report focuses on the financials and findings of the audits and highlights progress in delivering the Measure D Expenditure Plan.

**Highway 1 Construction Update**  
The Commission received an update on the construction of Highway 1 auxiliary lane and bus-on-shoulder projects. Phase 1 of the project from 41st Avenue to Soquel, including a bicycle/pedestrian overcrossing at Chanticleer Avenue, is currently under construction and is expected to be completed in 2025. The contractor is currently installing two retaining walls, a drainage system on the northbound side of the highway, and building the foundation for the new Chanticleer overcrossing. Phase 2 from State Park Drive to Bay/Porter, including the replacement of the Capitola Road overcrossing and a bicycle/pedestrian overcrossing at Mar Vista Avenue, will begin construction in fall 2023 and is expected to be completed in 2026. The RTC has a robust public outreach plan in place to ensure community members are aware of the construction timeline and impacts. Staff will also be coordinating with local agencies on public outreach for upcoming construction projects, including the Soquel Drive Multimodal Project (County of Santa Cruz), the
Murray Street Bridge Project (City of Santa Cruz), and the Harkins Slough bicycle/pedestrian bridge over Highway 1 (City of Watsonville).

**Draft 2023 Public Participation Plan Public Hearing**

The Commission held a public hearing on the **Draft 2023 Public Participation Plan**. A Public Participation Plan that guides regional planning agencies and local jurisdictions in the public participation process is federally required for agencies that either receive federal funds or are subject to a federally-required action. The Draft 2023 Public Participation Plan incorporates strategies to ensure that, to the greatest extent possible, interagency consultation and public participation are an integral part of the regional transportation planning and decision-making process. Public input received by August 23, 2023, will be considered for incorporation into the final plan. Written comments can be submitted via email to hadamson@ambag.org with the subject line “2023 PPP,” or mailed to Heather Adamson, AMBAG, 24580 Silver Cloud Court, Monterey, CA 95340.

**Zero-Emission Rail Planning – Contract and Transit and Intercity Rail Capital Program Grant**

The Commission authorized agreements with state agencies to use $3,450,000 in Transit and Intercity Rail Capital Program (TIRCP) grant funding to prepare the Project Concept Report for the Zero Emission Passenger Rail & Trail Project. The Commission also authorized an additional $1,630,000 in Measure D-Rail funding needed to fully fund the Project Concept Report and authorized the RTC to enter into a professional engineering and environmental services contract with HDR Engineering, Inc. for $7,703,548.

**Regional Transportation Improvement Program (RTIP) Call for Projects**

The Commission approved evaluation criteria and the proposed process for programming approximately $27 million in state and federal funds. The RTC is responsible for selecting projects to receive these federal and state funds. The RTC will issue a call for projects and select projects through a competitive application process. Projects will be recommended for funding based on project benefits, input from the RTC’s advisory committees, and a public hearing scheduled for the December 7, 2023, RTC meeting. Approved projects are programmed in the RTC’s Regional Transportation Improvement Program (RTIP).

**Upcoming RTC and Committee Meetings**

RTC and committee meetings are now being held in person. Non-voting members of the Commission and its committees, as well as members of the public and staff, will have the option to participate in person or remotely, provided equipment is available at the meeting location to allow remote participation. If there are technical difficulties during a meeting that prevent remote participation, the meeting will continue. Please check the RTC website [https://sccrtc.org/meetings/calendar/] or call 460-3200 to confirm meeting location and video conference information for future meetings. Agendas are posted to the RTC website at least 3 days before each meeting and will also include participation information. Meetings may be canceled if there are no action items to be considered by the committee.

The RTC is committed to its compliance with the Americans with Disabilities Act (ADA). Please contact the RTC at least 3 days in advance of a meeting if special accommodations are needed. If any document, webpage, meeting, or recording is inaccessible to you, kindly notify us at info@sccrtc.org or by calling 831-460-3200.
Special Regional Transportation Commission Meeting
Thursday, August 17, 2023

Regional Transportation Commission Meeting
Thursday, Sept. 7, 2023, 9:00 a.m.

Interagency Technical Advisory Committee
Thursday, Aug. 18, 2023, 1:30 p.m. (*Please note this meeting may be cancelled)

Public input on transportation issues is welcomed and encouraged. For more information, visit the SCCRTC website at www.sccrtc.org or call 460-3200. Some Regional Transportation Commission meetings are televised countywide by Community TV of Santa Cruz. Consult www.communitytv.org or call 831-425-8848 for schedule and station information.
Santa Cruz County Regional Transportation Commission (RTC)
Sept. 7, 2023 Meeting Highlights

Executive Directors Report
Executive Director Guy Preston announced that the RTC was awarded $1.9 million in Caltrans Sustainable Transportation Planning Grant Program funds for three sustainable transportation planning studies. The studies will focus on enhancing rural highway safety on the county's six conventional highways (1, 9, 236, 35, 129 & 152); transportation demand management strategies for 22 miles of coastal highway from the City of Santa Cruz northern city-limits to the Santa Cruz/San Mateo County line; and for Coastal Resiliency along the Highway 1 Corridor at Waddell and San Vincente creeks. RTC staff will provide more information regarding schedule and public participation opportunities over the next few months. Executive Director Preston also announced the launch of a new program to offer door-to-door transportation for all county residents requiring a wheelchair accessible vehicle to any destination in the county at a flat-rate fee of $5. The RTC received funding from the California Public Utilities Commission’s new Transportation Network Company’s Access for All program to administer and manage the program locally and the RTC selected Community Bridges to provide the service through an expansion of its existing Lift Line services. The program will launch Sept. 18 and Lift Line’s self-service mobile app will be the primary scheduling point of contact. To register for the program and receive a login for the app, local residents can contact the Community Bridges Lift Line office at 831-688-9663.

Highway 1 State Park-Freedom Auxiliary Lanes, Bus-on-Shoulder, and Coastal Rail Trail Segment 12 Project Cooperative Agreement with Caltrans
The Commission approved entering into a Cooperative Agreement with Caltrans for the right-of-way and final design components of the Highway 1 Auxiliary Lanes and Bus-on-Shoulder Project between State Park Drive and Freedom Boulevard, which includes Segment 12 of the Coastal Rail Trail. This agreement is needed to designate the RTC as the implementing agency, with Caltrans providing oversight. The agreement is also needed to memorialize the funding plan for the project. The Commission also amended the Professional Services Agreement with the project’s engineering consultant to add additional scope to the project identified through environmental and final design activities. Final design activities are scheduled to continue through the end of 2024, and the project is scheduled to begin construction in 2025 pending availability of funds for construction.
Rejection of bid for the Phase 2 Debris Removal and Erosion Repair Project along the Santa Cruz Branch Rail Line

The Commission rejected the bid for construction of the Phase 2 Debris Removal and Erosion Repair Project along the Santa Cruz Branch Rail Line (SCBRL). The project’s scope of work included debris removal and erosion control work in several areas of the SCBRL corridor that were impacted by the severe winter storms in December 2022 and January 2023. Staff recommended rejecting the bid because it was unreasonable, and because the bid prices may have been higher than typical unit prices for recent construction projects due to the lack of competition, the fact that specialized rail mounted equipment is needed to perform the work, and the construction window in which bidders were required to complete the work. Staff determined that most of the work can be postponed, and multiple/modified bid packages can be issued to address cost and schedule issues after the upcoming rainy season. However, one site (Milepost 8.32) needs to be addressed urgently before the rainy season begins this fall. Staff plans to issue an emergency contract to complete this urgent work.

Coastal Rail Trail Segment 5 Maintenance Agreements

The Commission approved entering into a Cooperative Agreement with the County of Santa Cruz to perform trail maintenance for North Coast Segment 5 of the Coastal Rail Trail for a five-year term. The Commission also approved entering into a Maintenance Agreement with Caltrans to assign to the RTC the responsibility for maintenance of proposed parking lots located within the Caltrans right-of-way. Maintenance of the trail includes regular sweeping, vegetation management, litter removal, monthly trail inspections, trash receptacle dumping, graffiti removal, encampment clean up, and comfort station servicing, as well as repairs of signage, fences, bike racks, and benches as needed. Segment 5 recently completed 100% project design and is scheduled to begin construction as soon as Spring 2024, with an estimated two-year construction period. Construction of Segment 5 will provide a 7.5-mile dedicated bicycle and pedestrian facility between Wilder Ranch and Davenport.

Recommendation for Executive Director Recruitment

The Commission held interviews during open session of the RTC meeting with two recruiting firms for recruitment of a new RTC Executive Director. Current Executive Director Guy Preston recently announced his retirement to be effective December 1, 2023. The RTC’s General Counsel issued a Request for Proposals for Executive Director Recruitment Services to six experienced recruitment firms. Four firms submitted proposals and two finalists were selected by an Ad Hoc Committee made up of RTC Commissioners. CPS-HR Consulting was selected to provide recruitment services for the Executive Director recruitment.

Upcoming RTC and Committee Meetings

RTC and committee meetings are now being held in person. Non-voting members of the Commission and its committees, as well as members of the public and staff, will have the option to participate in person or remotely, provided equipment is available at the meeting location to allow remote participation. If there are technical difficulties during a meeting that prevent remote participation, the meeting will continue. Please check the RTC website [https://sccrtc.org/meetings/calendar/] or call 460-3200 to confirm meeting location and video conference information for future meetings. Agendas are posted to the RTC website at least 3 days before each meeting and will also include participation information. Meetings may be canceled if there are no action items to be considered by the committee.
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**Regional Transportation Commission Meeting**
Thursday, Oct. 5, 2023, 9:00 a.m.

**Transportation Policy Workshop**
Thursday, Sept. 21, 2023, 9:00 a.m.

**Interagency Technical Advisory Committee**
Thursday, Sept. 21, 2023, 1:30 p.m.

**Bicycle Advisory Committee**
Monday, Oct. 2, 2023, 6:00 p.m.

**Elderly & Disabled Transportation Advisory Committee**
Tuesday, Oct. 10, 2023, 1:30 p.m.

**Budget & Admin/Personnel Committee**
Thursday, Oct. 12, 2023, 1:30 p.m.

Public input on transportation issues is welcomed and encouraged. For more information, visit the SCCRTC website at [www.sccrtc.org](http://www.sccrtc.org) or call 460-3200. Some Regional Transportation Commission meetings are televised countywide by Community TV of Santa Cruz. Consult [www.communitytv.org](http://www.communitytv.org) or call 831-425-8848 for schedule and station information.
Concerned about Roadway Safety in Santa Cruz County?
Do you want to make our streets safer?

Santa Cruz County Local Road Safety Plan

About the Project
Santa Cruz County is developing a comprehensive Local Road Safety Plan (LRSP). A Local Road Safety Plan (LRSP) provides a framework for identifying, analyzing, and prioritizing roadway safety improvements on local roads. The LRSP development process and content are tailored to local issues and needs.

Ways to Share Your Concerns
A successful LRSP depends on community feedback and input so we are interested in what you have to say. Please share your areas of concern either by visiting the project website or using the QR code below.

https://www.santacruzcountysafestreets.com/

For additional information, please contact:
Russell Chen - Senior Civil Engineer
County of Santa Cruz
831.454.2149

701 Ocean Street, Room 410
Santa Cruz, CA 95060

Russell.Chen@santacruzcounty.us
$5 FLAT RATE!

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ACCESS FOR ALL!

Now offering transportation to all county residents with disabilities, including wheelchair users who use a wheelchair-accessible vehicle to any destination within the county at an affordable flat fee of $5.

Schedule a ride through our easy-to-use App!

Sign up

Log in

Travel anywhere in Santa Cruz County!

Tailored to meet your needs and requirements.

Contact Us
831-688-9663

communitybridges.org/lifeline
<table>
<thead>
<tr>
<th>Date</th>
<th>First Name</th>
<th>Last Name</th>
<th>Location</th>
<th>Cross Street</th>
<th>City</th>
<th>Category</th>
<th>Additional Comments</th>
<th>Forwarded to</th>
<th>Forwarded Date</th>
<th>Response</th>
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<tbody>
<tr>
<td>09/10/23</td>
<td>Alejandro</td>
<td>Martinez</td>
<td>Branciforte</td>
<td>McCormick St</td>
<td>Santa Cruz</td>
<td>Ped: Other</td>
<td>Down power line.</td>
<td>DPW</td>
<td>09/08/23</td>
<td>Reporting party advised to call 911 for emergency hazards</td>
</tr>
<tr>
<td>09/05/23</td>
<td>Elizabeth</td>
<td>James</td>
<td>4774 Thurber Ln</td>
<td>N/A</td>
<td>Santa Cruz</td>
<td>Ped: Lack of sidewalk, No crosswalk or striping, Other</td>
<td>This section of Thurber already had discontinuity between sidewalk that terminates at Helen, and resumes at Kenny; likewise this side of the road lacked/lost a crosswalk to aid in crossing to the sidewalk across the street. In the last year the parking space removed lane was removed and the center stripe moved about 3 feet over—when vehicle traffic lanes were restored. Though seldom used (observed approx 5 bikes a day—only 1 using the bike lane, most ebikes) the bike lane now uses the gutter and part of what was parking lane—bringing downhill moving vehicles and (potentially) bikes up against the curb and driveways of houses on this side of the road. The road has a 30 mph speed limit (unusual for a residential road) and the majority of cars plummet downhill at 35-45mph. The removed parking has made speeding more appealing and many cars veer into the bike lane at curves. A more expensive design with meanders would have slowed traffic, preserved some needed parking and could have completed the sidewalk. A more expensive design with meanders would have slowed traffic, preserved some needed parking and could have completed the sidewalk. Residents, delivery and visitors to the residents must cross this traffic, residents must step into traffic to put out trash, get mail or to cross to use the sidewalk. This is not a debate about bike lanes, per se, although our household of daily bikers finds sharing the traffic lane preferable to hugging the gutter—we note that most other bicyclists do this as well. It was unconscionable to leave this stretch of road without sidewalk, and the nearest corner without a crosswalk. It should be noted that any pedestrians (many of whom are schoolchildren would have to cross unsafely, should they begin their journey on the Thurber sidewalk between Soquel and Helen, or Winkle and Kenny, in order to access sidewalk.</td>
<td>DPW</td>
<td>09/08/23</td>
<td>9/29/23 Ruby Zaragoza: Thanks for emailing in, I have forwarded the information to our Traffic division for review and response.</td>
</tr>
<tr>
<td>09/03/23</td>
<td>Timothy</td>
<td>Schmal</td>
<td>130 Market St</td>
<td>N/A</td>
<td>Santa Cruz</td>
<td>Ped: Other</td>
<td>Massive tree branch overhanging bike path. I did not go around to Market Street to specifically identify the street address, but I have plotted the approximate location on the bike path on the map. If the branch came down it could seriously injure or kill someone. The tree is on private property and is behind the fence, but overhanging the asphalt path. I attempted to attach any one of the three photographs that I took but it says the file size is too large.</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>09/05/23</td>
<td>9/6/23 Dan Estranero: Good Afternoon, We will forward this to our Street Maintenance crew.</td>
</tr>
<tr>
<td>08/28/23</td>
<td>Jeanell</td>
<td>Martin</td>
<td>733 Seacliff Dr</td>
<td>N/A</td>
<td>Aptos</td>
<td>Ped: Plant overgrowth or interference, Objects or vegetation blocking sidewalk</td>
<td>Resident with a disability reports that her absentee neighbor deliberately grows bamboo and bushes into the public right of way in order to discourage parking. The bamboo and bushes block visibility and present a hazard when resident crosses the streets to get her mail. Vegetation grown &quot;around a blind curb.&quot;</td>
<td>DPW</td>
<td>09/05/23</td>
<td>Follow up email sent 9/29/23</td>
</tr>
<tr>
<td>08/25/23</td>
<td>Debbie</td>
<td>Bulger</td>
<td>Mission St</td>
<td>Swift St</td>
<td>Santa Cruz</td>
<td>Ped: Traffic signal problem</td>
<td>The pedestrian button at this corner to cross Swift Street takes a lot of pressure to engage and activate ped walk signal. I have seen people try to press the button and then cross without getting a walk signal because the signal did not activate. Some people think the button has worked, but it hasn’t.</td>
<td>Katherine Osekowsky (Caltrans)</td>
<td>09/05/23</td>
<td>9/5/23 Katie Osekowsky: Good morning Debbie, Customer Service Request 977374 has been created for the report of the pedestrian button.</td>
</tr>
<tr>
<td>08/17/23</td>
<td>Richard</td>
<td>Stover</td>
<td>102 Mesa Ln</td>
<td>King St</td>
<td>Santa Cruz</td>
<td>Ped: Plant overgrowth or interference</td>
<td></td>
<td>Claire Gallogly, Dan Estranero</td>
<td>08/18/23</td>
<td>Follow up email sent 9/29/23</td>
</tr>
<tr>
<td>Date</td>
<td>First Name</td>
<td>Last Name</td>
<td>Location</td>
<td>Cross Street</td>
<td>City</td>
<td>Category</td>
<td>Additional Comments</td>
<td>Forwarded to</td>
<td>Forwarded Date</td>
<td>Response</td>
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<tr>
<td>08/07/23</td>
<td>Vanessa</td>
<td>Young</td>
<td>22790 E Cliff Dr</td>
<td>N/A</td>
<td>Santa Cruz</td>
<td>Ped: Lack of wheelchair access, No crosswalk or striping</td>
<td>DPW</td>
<td>08/08/23</td>
<td>8/8/23 Jana Vargas: Traffic section will review the ped location and the traffic hazards as reported by Vanessa Young.</td>
<td>8/8/23 John Lumicao: Traffic section will review the ped location and the traffic hazards as reported by Vanessa Young.</td>
</tr>
<tr>
<td>08/07/23</td>
<td>Mark</td>
<td>Sanchez</td>
<td>402 Ingalls St</td>
<td>Swift St</td>
<td>Santa Cruz</td>
<td>Ped: Damaged sidewalk</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>08/07/23</td>
<td>Follow up email sent 8/21/23</td>
<td></td>
</tr>
<tr>
<td>08/03/23</td>
<td>Nancy</td>
<td>Ogle</td>
<td>404 California Ave</td>
<td>Dufour St</td>
<td>Santa Cruz</td>
<td>Ped: Plant overgrowth or interference, Objects or vegetation blocking sidewalk</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>08/07/23</td>
<td>Follow up email sent 8/21/23</td>
<td></td>
</tr>
<tr>
<td>07/27/23</td>
<td>Debbie</td>
<td>Bulger</td>
<td>King St</td>
<td>Olive St</td>
<td>Santa Cruz</td>
<td>Ped: Objects or vegetation blocking sidewalk, Debris on sidewalk</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>08/07/23</td>
<td>Follow up email sent 8/21/23</td>
<td></td>
</tr>
<tr>
<td>07/18/23</td>
<td>Christopher Connery</td>
<td>303 Spring St</td>
<td>High St</td>
<td>Santa Cruz</td>
<td>Ped: Objects or vegetation blocking sidewalk, Lack of sidewalk</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>07/19/23</td>
<td>7/20/23 Dan Estranero: We will take a look and send a letter if appropriate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07/04/23</td>
<td>Rebecca</td>
<td>Downing</td>
<td>505 Rodriguez St</td>
<td>N/A</td>
<td>Watsonville</td>
<td>Ped: Damaged sidewalk</td>
<td>Watsonville Public Works</td>
<td>07/06/23</td>
<td></td>
<td></td>
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<tr>
<td>07/01/23</td>
<td>Cheryl</td>
<td>Edmonds</td>
<td>310 Atlantic Ave</td>
<td>2nd Ave</td>
<td>Santa Cruz</td>
<td>Ped: Plant overgrowth or interference</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>07/03/23</td>
<td>7/3/23 Dan Estranero: We will investigate the area and send a hazard letter, if applicable.</td>
<td></td>
</tr>
<tr>
<td>06/25/23</td>
<td>Jean</td>
<td>Brocklebank</td>
<td>722 Windham St</td>
<td>Darwin St</td>
<td>Santa Cruz</td>
<td>Ped: Plant overgrowth or interference, Objects or vegetation blocking sidewalk</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>06/27/23</td>
<td>6/27/23 Dan Estranero: Good Afternoon Jason, We will investigate the site and send a vegetation hazard letter to the properly owner, if appropriate.</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>First Name</td>
<td>Last Name</td>
<td>Location</td>
<td>Cross Street</td>
<td>City</td>
<td>Category</td>
<td>Additional Comments</td>
<td>Forwarded to</td>
<td>Forwarded Date</td>
<td>Response</td>
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<tr>
<td>06/13/23</td>
<td>Jean</td>
<td>Brocklebank</td>
<td>2272 Capitola Rd</td>
<td>Chanteicleer Ave</td>
<td>Live Oak</td>
<td>Ped: Plant overgrowth or interference</td>
<td>There is a fence covered with some kind of creeping growth along the front yard of this home. The overgrowth sticks out and covers half of the airshed of the sidewalk, forcing one of us to walk into the bike lane. The overgrowth needs trimming to allow pedestrians, especially mothers with strollers or wheeled chair users to pass the home without dealing with the branches.</td>
<td>DPW</td>
<td>06/20/23</td>
<td></td>
</tr>
<tr>
<td>06/09/23</td>
<td>Jean</td>
<td>Brocklebank</td>
<td>Murray Street sidewalk</td>
<td>N/A</td>
<td>Santa Cruz</td>
<td>Ped: Debris on sidewalk</td>
<td>As one can see with the attached photo, one half of the sidewalk is no longer available to pedestrians, especially pedestrians with special needs. The arrows point to the work done to expose the sidewalk several years ago when we first complained about this problem. Since that time, no regular maintenance has occurred and it shows.</td>
<td>Claire Gallogly, Dan Estranero</td>
<td>06/09/23</td>
<td></td>
</tr>
<tr>
<td>06/06/23</td>
<td>Jean</td>
<td>Brocklebank</td>
<td>Capitola Rd</td>
<td>30th Ave</td>
<td>Live Oak</td>
<td>Ped: Plant overgrowth or interference, Debris on sidewalk, Other</td>
<td>Poison Oak has grown onto the sidewalk. Every person can get the toxic oil on their shoes and clothing. Every dog that accompanies a person can also take the oil home on its feet and fur. This is an annual problem and we report it every year. Why do we have to do this? Why doesn’t Public Works have an Annual Work Plan to protect pedestrians from poison oak encroachment on the public sidewalks?</td>
<td>DPW</td>
<td>06/09/23</td>
<td></td>
</tr>
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ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

36 CFR Part 1190
[Docket No. ATBCB 2011–0004]
RIN 3014–AA26

Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

AGENCY: Architectural and Transportation Barriers Compliance Board.

ACTION: Final rule.

SUMMARY: The Architectural and Transportation Barriers Compliance Board (Access Board or Board) issues its final rule that provides minimum guidelines for the accessibility of pedestrian facilities in the public right-of-way. These guidelines, once adopted, would ensure that facilities used by pedestrians, such as sidewalks and crosswalks, constructed or altered in the public right-of-way by Federal, state, and local Governments are readily accessible to and usable by pedestrians with disabilities. When the guidelines are adopted, with or without modifications, as accessibility standards in regulations issued by other Federal agencies implementing the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act, compliance with those enforceable accessibility standards is mandatory.

DATES: The final rule is effective September 7, 2023.

Telephone (202) 272–0025 (voice) or (202) 272–0028 (TTY). Email address row@access-board.gov.

SUPPLEMENTARY INFORMATION:

I. Executive Summary

The purpose of these guidelines is to ensure that pedestrian facilities located in the public right-of-way are readily accessible to and usable by pedestrians with disabilities. Despite on-going efforts to improve access, pedestrians with disabilities throughout the United States continue to face major challenges in public rights-of-way because many sidewalks, crosswalks, and other pedestrian facilities are inaccessible. Equal access to pedestrian facilities is of particular importance because pedestrian travel is the principal means of independent transportation for many persons with disabilities.

Key accessible features of pedestrian facilities specified in these guidelines include:

- Pedestrian Access Routes: Sidewalks, shared use paths and other pedestrian circulation paths must contain a “pedestrian access route,” which is required to be accessible to and traversable by individuals with disabilities. The portions of these sidewalks and paths that comprise the pedestrian access route must be wide enough to minimize the possibility of a pedestrian using a mobility device falling into a roadway when passed by another pedestrian. Pedestrian access routes have specified cross slopes and running slopes so that they are traversable by pedestrians using manual wheelchairs or other mobility aids without exhaustive effort. Surfaces of paths in the pedestrian access route must be firm, stable, and slip resistant, without large openings or abrupt changes in level. Objects may not hazardously protrude onto sidewalks, shared use paths, or other pedestrian circulation paths.

- Alternate Pedestrian Access Routes: When an entity closes a pedestrian access route for construction, it must provide a temporary alternate pedestrian access route with basic accessible features. Alternate pedestrian access routes ensure that construction in the public right-of-way does not prevent pedestrians with disabilities from reaching their destinations.

- Accessible Pedestrian Signals: All new and altered pedestrian signal heads installed at crosswalks must include “accessible pedestrian signals” (APS), which have audible and vibrotactile features indicating the walk interval so that a pedestrian who is blind or has low vision will know when to cross the street. Pedestrian push buttons must be located within a reach range such that a person seated in a wheelchair can reach them. The walk speed used to calculate the crossing time allows pedestrians with disabilities sufficient time to cross.

- Crosswalks: Curb ramps and detectable warning surfaces are required where a pedestrian circulation path meets a vehicular way. Crosswalks at multilane roundabouts and channelized turn lanes must have additional treatments that alert motorists to the presence of pedestrians or slow or stop traffic at those crosswalks.

- Transit Stops: Boarding and alighting areas at sidewalk or street level, as well as elevated boarding platforms, must be sized and situated such that a person with a disability can board and alight buses and rail cars. Pedestrian access routes must connect boarding and alighting areas and boarding platforms to other pedestrian facilities. Transit shelters must have clear space for use by a person in a wheelchair.

- On-Street Parking: On-street non-residential parking must have designated accessible parking spaces sized so that a person with a disability may exit a parked vehicle and maneuver to the sidewalk without entering a vehicular way. Standard size designated accessible on-street parking spaces must be situated near an existing crosswalk with curb ramps.

These guidelines are issued pursuant to the ADA and the Rehabilitation Act, which provide statutory authority for the Access Board to issue minimum accessibility guidelines to ensure that transportation facilities are usable by persons with disabilities. See 29 U.S.C. 792(b)(3)(B), 42 U.S.C. 12204. These guidelines serve as the minimum requirements for enforceable standards issued by other agencies pursuant to their responsibilities under the ADA and the ABA. 29 U.S.C. 792(b)(3)(B); 42 U.S.C. 4151 et seq., 12134(c), 12149(b). As described in the Rulemaking History section below, these final guidelines have been long awaited, particularly by state and local governments subject to Title II of the ADA. Both the Access Board’s 2004...
Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (2004 ADAAG/ABAAG), and the Board’s initial 1991 Americans with Disabilities Act Accessibility Guidelines, were developed primarily for buildings and facilities on sites. 36 CFR part 1191; 56 FR 35408 (July 26, 1991). While some of the requirements can be readily applied to pedestrian facilities in the public right-of-way, others need substantial modification, and many issues specific to public rights-of-way were simply not addressed. Further, the magnitude of existing physical constraints in public rights-of-way poses unique considerations that are not present in the context of buildings and sites.

In the absence of final technical requirements for accessibility of pedestrian facilities, state and local governments have been left to determine on their own how to comply with the ADA’s existing mandate to make public pedestrian transportation facilities accessible. The lack of final Federal standards has contributed to uncertainty about the relevant standards, which has resulted in courts determining technical requirements for accessibility, in some cases applying requirements for buildings and sites to public rights-of-way, where those of public rights-of-way are, for the most part, not specifically addressed by these standards (see e.g., Kirola v. City & Cty. of S.F., 860 F.3d 1164 (9th Cir. 2017) (finding that ADAAG applies to public rights-of-way); Fortuny v. City of Lomita, 766 F.3d 1098 (9th Cir. 2014) (applying the 2010 ADA Standards to diagonal parking in public rights-of-way in the absence of enforceable accessibility standards for public rights-of-way); see also Sarfy v. City of L.A., No. 2:17-cv–03594–SVW–KS, 2020 U.S. Dist. LEXIS 40893 (C.D. Cal. Feb. 7, 2020) (concluding that neither PROWAG draft guidelines nor the 2010 ADA Standards are applicable to on-street parking).

In addition, the Federal Government similarly lacks accessibility criteria for public rights-of-way, although there are numerous Federal sites that contain public rights-of-way, such as national parks, medical and educational campuses, and military installations. Consequently, the Federal Government, which seeks to be a leader in accessibility, has been without clear, specific, enforceable technical standards for accessibility in public rights-of-way. These final accessibility guidelines for pedestrian facilities in public rights-of-way will serve as the technical basis of enforceable standards issued under the ABA by GSA, USPS, DoD, and HUD.


III. Rulemaking History

The Access Board began developing accessibility guidelines for pedestrian facilities in public rights-of-way shortly after the ADA was enacted in 1990. In 1992, the Board issued proposed guidelines for state and local government facilities, including pedestrian facilities in public rights-of-way, followed by final guidelines in 1994 that also contained provisions for public rights-of-way. 57 FR 60612 (December 21, 1992); 59 FR 31676 (June 20, 1994).

In response to the proposed and interim guidelines, the Board received numerous public comments that indicated a need for further outreach, education, and research on accessible pedestrian facilities in public rights-of-way. Consequently, when the Board issued its first final guidelines for state and local governments in 1998, the requirements for pedestrian facilities in the public right-of-way were not included. 63 FR 2000 (January 13, 1998).

In 1999, the Access Board established a Federal advisory committee to recommend accessibility guidelines for pedestrian facilities in public rights-of-way. The committee included a wide range of stakeholders, including representatives of state and local governments, the transportation industry, disability rights advocacy organizations, and other interested groups. 1

In 2001, the advisory committee presented its consensus

1 The following organizations were members of the advisory committee: AARP, America Walks, American Association of State Highway and Transportation Officials, American Council of the Blind, American Institute of Architects, American Public Transit Association, American Public Works Association, Association for Education and Rehabilitation of the Blind and Visually Impaired, Bicycle Federation of America, Californians for Disability Rights, Canadian Standards Association (Technical Committee on Barrier-Free Design), City of Birmingham (Department of Planning, Engineering and Permits), Council of Citizens with Low Vision International, Disability Rights Education and Defense Fund, Federal Highway Administration, Hawaii Commission on Persons with Disabilities, Hawaii Department of Transportation, Institute of Traffic Engineers (now called Institute of Transportation Engineers), Los Angeles Department of Public Works (Bureau of Street Services), Massachusetts Architectural Access Board, Missouri Department of Transportation, Institute of Traffic Engineers of America, Portland Office of Transportation, San Francisco Mayor’s Office on Disability, State of Alaska, TASH, Texas Department of Transportation, and The Seeing Eye.


The NPRM requested public comments on all provisions of the proposed Accessibility Guidelines for Public Rights-of-Way (proposed rule or proposed guidelines). In particular, the Access Board sought comments from regulated entities, including state and local governments, on the costs and impacts of certain portions of the proposed rule. The comment period ended on November 23, 2011, and was subsequently reopened until February 2, 2012.
2012. During the two comment periods, 460 commenters submitted approximately 600 comments. The Board also held public hearings in Dallas, Texas and Washington, DC in fall 2011.

On February 13, 2013, the Board issued a supplemental notice of proposed rulemaking (SNPRM) announcing its intent to add requirements for shared use paths (SUPs) to the proposed guidelines for pedestrian facilities in the public right-of-way. 78 FR 10110 (Feb. 13, 2013). The SNPRM specified which provisions of the proposed rule would be changed to include requirements for SUPs. During the 90-day comment period that followed, 55 commenters provided feedback on the provisions outlined in the SNPRM.

The Board carefully reviewed the public comments received in response to the NPRM and SNPRM, consulted with DOJ and USDOT, and revised the rule text for final publication. In 2015, the Board entered into a second interagency agreement with the Volpe Center to assess costs of the final provisions. However, in January 2017, in response to Executive Order 13771 (January 30, 2017), which required that agencies identify two regulations for elimination for every new regulation proposed and that the total incremental cost of any new regulations and deregulatory actions be zero, the Board ceased work on the PROWAG final rule. Staff shifted efforts to education, outreach, and technical assistance. From 2017 through 2022, Board staff addressed hundreds of technical assistance inquiries related to PROWAG.

In 2021, following issuance of E.O. 13992 (January 20, 2021), which rescinded E.O. 13771, the Board resumed work on the PROWAG rulemaking and entered into a final interagency agreement with the Volpe Center to prepare the final regulatory impact analysis (FRIA). The FRIA is available in the docket for this rulemaking on regulations.gov and on the Access Board’s website, www.access-board.gov.

In consideration of the FRIA, public comments and testimony, feedback from other Federal agencies, and many years of close collaboration with stakeholders, the Access Board now issues these final guidelines on accessible pedestrian facilities in the public right-of-way.

IV. Summary of Significant Changes

The significant changes to the final rule text from the versions proposed in the NPRM and SNPRM are as follows:

- Alterations. There are three major changes with the way alterations are treated in the final rule. First, any portion of a pedestrian facility that is altered must be altered to comply with these guidelines regardless of the intended “scope of the project” by the entity undertaking the alteration (R201.1). This approach is consistent with the way accessibility guidelines for buildings and sites are applied. The change is described in the Major Issues section below.

- Second, in the final rule, facilities and portions of facilities that are “added” to an existing, developed public right-of-way are “alterations,” and are subject to the requirements for altered facilities (see R104.3; R201.1; R202). This includes that compliance with the requirements is required to the maximum extent feasible where existing physical constraints make compliance with the applicable requirements technically infeasible (R202.3). In the proposed rule, added elements were treated as new construction and subject to full compliance with all applicable requirements regardless of existing physical constraints (NPRM R202.2). This change is addressed in the Major Issues section below.

- Third, altered facilities must be connected to an existing pedestrian circulation path by a pedestrian access route (R202.2). In the proposed rule, only select alterations required a connection; however, to ensure that pedestrians with disabilities can realize the benefits of an accessible pedestrian facility that is made accessible consistent with these guidelines, the final rule requires all altered facilities to connect to a pedestrian circulation path.

- • Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). In the final rule, MUTCD provisions are not incorporated by reference. The Board proposed to incorporate by reference various sections of the MUTCD in the NPRM. As explained in the major issues section below, this created confusion as to the application of those provisions in the context of PROWAG. Consequently, the Board has stated all required technical provisions directly in the rule text, many of which were taken from the MUTCD, as explained in the Section-by-Section discussion below.

- • Alterations that Trigger Installation of Accessible Pedestrian Signals. In the NPRM, the Board indicated that the alteration of a signal controller and software, or the replacement of a signal head, would trigger the requirement to install an accessible pedestrian signal (NPRM R209.2). Upon consideration of public comments, the Access Board acknowledges the diverse nature of alterations that affect pedestrian signals, and declines in the final guidelines to list specific actions that trigger the requirement to install accessible pedestrian signals. Rather, pedestrian signals are subject to the same alteration requirements as other pedestrian facilities. The entity making the alteration will assess, according to requirements in the guidelines as adopted by USDOT and DOJ, whether installation of an accessible pedestrian signal is required. The Board notes that USDOT and DOJ may provide further specifics as to alterations triggering installation of APS in their rulemakings adopting these guidelines.

- Crosswalk Treatments at Roundabouts. The final rule expands the crosswalk treatment options among which jurisdictions must select for installation at multilane pedestrian crossings at roundabouts to include: a traffic control signal with a pedestrian signal head, a pedestrian hybrid beacon, a pedestrian actuated rectangular rapid flashing beacon, and a raised crossing. This change is discussed in the Major Issues section below.

V. Summary of Comments and Major Issues Raised by Commenters

A. Overview of Commenters

In response to the NPRM, 460 commenters submitted approximately 600 comments on the provisions of the proposed rule, including 25 state departments of transportation and highway administrations, 2 state utility organizations, and 1 state transit...
authority. Eighty-seven local government organizations commented, including city and county departments of transportation, engineering, public works, and planning; city councils and mayor’s offices; and highway districts and transit authorities.

The Access Board received comments from approximately 255 individuals commenting on their own behalf, including persons with a range of disabilities who will directly benefit from these guidelines, and mobility specialists with experience teaching persons with disabilities how to navigate public rights-of-way. Individual commenters also included numerous civil engineers and planners with expertise in the design and construction of pedestrian facilities.

In addition, the Access Board received comments from representatives of approximately 90 organizations including national and local disability rights advocacy organizations, engineering companies, law firms involving ADA litigation, professional associations, and pedestrian and citizen advocacy organizations.

In addition to soliciting written comments, the Board also held two public hearings on the proposed rule. NPRM, 76 FR at 44664. In Dallas, Texas, on September 12, 2011, twelve witnesses testified regarding the proposed guidelines. See PROW NPRM Public Hearing, Dallas, Sept. 2011, Docket ID ATBCB–2011–0346. Witnesses included engineers and architects, local government officials, and disability rights advocates, among others. Id. Fifteen individuals testified at a public hearing in Washington, DC on November 9, 2011, including representatives from organizations working with people with disabilities, private industry, and professional associations. See Transcript from PROW NPRM, Docket ID ATBCB–2011–0607.

In response to the SNPRM to add shared use paths to the proposed rule, the Access Board received comments from 55 commenters. Eighteen state and local government entities commented, as well as seven disability rights organizations, three engineering companies, four citizens’ organizations, and two industry associations. In addition, over 20 individuals, including industry professionals and persons with disabilities, responded to the SNPRM.

The Access Board appreciates the robust and thoughtful public response to the PROWAG rulemaking, and carefully considered all testimony and comments received in response to both the NPRM. Commenters provided feedback on many specific provisions of the proposed rule. The majority of these comments are addressed in the Section-by-Section Analysis in Section VI of this preamble. However, numerous commenters raised concerns regarding four issues: the application of the guidelines to new construction and alterations; the requirements regarding accessible pedestrian signals; the requirement for pedestrian signals or pedestrian hybrid beacons at roundabouts; and the extension of the leveling out of intersections to pedestrian crossings. The Board addresses these major issues below.

B. Major Issues

1. Application of the Guidelines to New Construction and Existing Facilities

Treatment of New Construction, Added Facilities, and Alterations

In the proposed rule, the Board identified three types of pedestrian facilities subject to PROWAG: newly constructed facilities, added facilities, and altered facilities. The NPRM specified that newly constructed and added facilities were subject to full compliance with PROWAG (NPRM R201.1; NPRM R202.2), while alterations were expected to comply to the maximum extent practicable where existing physical constraints make it impracticable to fully comply (NPRM R202.3.1). These three classifications of facilities were carried over from the accessibility guidelines for buildings and sites, where they have been used successfully for many years. 69 FR 44083, 36 CFR part 1191 (July 23, 2004) and 56 FR 35408 (July 26, 1991). However, in response to the PROWAG NPRM, the Board received comments from state DOTs and others indicating confusion as to how to distinguish between new, added, and altered facilities in the public right-of-way. In addition, since publication of the NPRM, the Board has regularly received technical assistance inquiries from individuals seeking to determine whether a particular public right-of-way construction project must fully comply with requirements for new construction or is subject to considerations for existing physical constraints for alterations.

The Board concurs that the distinctions between new construction, added facilities, and alterations, which are readily apparent in construction of a building, are not as clear in the public right-of-way. For example, under the language of the NPRM, a jurisdiction that affects or could affect pedestrian access, circulation, or usability” (R104.3). In so defining “alteration,” the Board has revised the requirements for added facilities, now allowing them to comply to the maximum extent feasible where existing physical constraints make compliance with applicable requirements technically infeasible (R202.3). The Board has also provided a definition for “developed” as “(c)containing buildings, pedestrian facilities, roadways, utilities, or elements” (R104.3). Taken together, the Board expects full compliance with the requirements for new construction on undeveloped land (i.e., greenfield), while any construction undertaken in an existing developed right-of-way is expected to comply to the maximum extent feasible where existing physical constraints make compliance with applicable requirements technically infeasible. The Board has concluded that these expectations for compliance are reasonable in light of existing infrastructure in developed rights-of-way, and the opportunity for full compliance in a new public right-of-way built on undeveloped land.

Alterations vs. Maintenance

In response to the NPRM, the Board received several comments seeking clarity on what types of roadwork would constitute an “alteration” within the meaning of the rule. The proposed guidelines defined “alteration” as “[A] change to a facility in the public right-of-way that affects or could affect pedestrian access, circulation, or use. Alterations include, but are not limited to resurfacing, rehabilitation, reconstruction, historic restoration, or changes or rearrangement of structural
part or elements of a facility” (NPRM R105.5).

One state department of transportation, four local government entities, a national parks and recreation organization, and an individual engineer commenter requested further clarification on the definition of “alteration,” or additional examples.

Much of the concern centered on the Board’s inclusion of the example of “resurfacing.” Five states and AASHTO, seven local government entities, various organizations associated with the construction industry, an independent Federal agency, and an engineering company expressed concern that “resurfacing” was included in the definition of alteration and sought additional information on the definition of “resurfacing.” These commenters were concerned that “maintenance” operations and “pavement preservation” would trigger an obligation to comply with these guidelines.

Since the publication of the NPRM, this issue has largely been resolved. In 2013, DOJ and USDOT issued joint guidance clarifying when resurfacing is considered an “alteration” for purposes of ADA Title II compliance and specifying the types of treatments that are considered maintenance. See DOJ and USDOT, Department of Justice/Department of Transportation Joint Technical Assistance on Title II of the Americans with Disabilities Act Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing (July 8, 2013), available at https://www.ada.gov/doj-fhwa-ta.htm; see also Q & A Supplement to the 2013 DOJ/DOT Joint Technical Assistance on the Title II of the ADA Requirements To Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing, available at https://ada.gov/doj-fhwa-ta-supplement-2013.html.

The Board’s revised definition of “alteration” in the final rule omits the examples of specific roadway treatments, deferring to USDOT’s and DOJ’s joint technical assistance as to which treatments and types of construction are considered alterations for purposes of enforcement of their standards. However, the Board here clarifies that where a roadway treatment is determined to be an alteration, compliance with PROWAG is triggered and the technical requirements apply, regardless of the “scope of the altered project.” The elimination of the “scope of the project” language from the final rule is discussed below.

Scope of the Project

The proposed guidelines indicated that where existing elements are altered, each altered facility “within the scope of the project” must be made to comply with the guidelines (NPRM R202.3). One state and several local government entities requested clarification on the intended meaning of “scope of the project,” and disability rights advocacy organizations expressed concern that regulated entities may define the scope of the project to avoid compliance. The Board has thus removed this language from the final rule.

Under the final rule, altered portions of existing pedestrian facilities are expected to comply with the requirements (R201.1). This means that the portion of a pedestrian facility that is altered is expected to comply with all applicable technical requirements. Where existing physical constraints make compliance with applicable requirements technically infeasible, compliance with these requirements is required to the maximum extent feasible (R202.3). This is the same approach that is employed in the 2004 ADA and ABA Accessibility Guidelines for buildings and sites.

Existing Physical Constraints

Section R202.3.1 of the NPRM stated that where existing physical constraints make full compliance with these guidelines “impracticable,” alterations must comply with the technical specifications of these guidelines to the “extent practicable.” The proposed section R202.3.1 provided examples of existing physical constraints, including “underlying terrain, right-of-way availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.”

Numerous commenters expressed varying concerns about section R202.3.1 of the proposed rule. One state public utility commission, four local government entities, and an engineering firm requested that the Access Board provide further explanation of the meaning of “extent practicable” and one state DOT recommended replacing the term with “maximum extent practicable.” A disability rights advocacy organization requested a requirement for full compliance with the guidelines unless “technically infeasible.” Three disability rights advocacy organizations and two individuals expressed concern that the language describing existing physical constraints was too broad or might be used as an excuse to deviate from the technical requirements. Three state DOTs and one local government entity requested clarification on “right-of-way availability” as an existing physical constraint and wondered whether they would be expected to obtain additional right-of-way.

In the final rule, the Board has replaced the term “impracticable” with “technically infeasible” and “extent practicable” with “maximum extent feasible,” which are the terms used in the 2004 ADA and ABA Accessibility Guidelines. See e.g., 36 CFR part 1191, App. B.202.3

The Board acknowledges that “impracticable” and “extent practicable” were intended to be interpreted in the same way as “technically infeasible” and “maximum extent feasible,” and the use of different terms was creating confusion. The expectation is that in the context of alterations, entities are responsible for compliance with applicable technical requirements to the maximum extent feasible where existing physical constraints make compliance with those requirements technically infeasible.

The Board also eliminated “right-of-way availability” as an example of an existing physical constraint. The Board acknowledges that in many cases regulated entities have authority to acquire additional right-of-way, which made it a confusing example of an existing physical constraint. DOJ and USDOT may provide further information as to any expectations that entities acquire additional right-of-way to meet accessibility requirements.

A disability rights advocacy organization requested that the Board apply the “primary function” and “path of travel” requirements from the 2004 ADA and ABA Accessibility Guidelines. 36 CFR part 1191, App. B.202.4. In addition, a local chapter of a national public works association, seven local government entities, and a disability rights advocacy organization would like the final rule to contain a 20% threshold for determining whether the cost of providing accessibility features is disproportionate to the overall cost of the alteration.

Section 202.4 of the 2004 ADA and ABA Guidelines states that an alteration that affects or could affect the usability of or access to an area containing a primary function shall be made so as to ensure that, to the maximum extent feasible, the path of travel to the altered area, including the rest rooms, telephones, and drinking fountains serving the altered area, are readily accessible to and usable by individuals with disabilities, unless such alterations are disproportionate to the overall alterations in terms of cost and scope as determined under criteria established by the Attorney General. In existing transportation facilities, an area of primary function shall be as defined under regulations published by the Secretary of the Department of Transportation or the Attorney General. 36 CFR part 1191, App. B, §202.4.
commenters to the detailed explanation in the preamble to the NPRM as to why the primary function area and path of travel concepts are not appropriate for pedestrian rights-of-way. 76 FR 44664, 446672 (July 26, 2011).

Existing Facilities

Several commenters expressed concern about their obligations under Title II of the ADA and Section 504 of the Rehabilitation Act for existing facilities that are not altered. See 28 CFR 35.150 (containing DOJ accessibility requirements for state and local governments’ existing facilities); see also 49 CFR 27.11(c) (requiring recipients of USDOT Federal financial assistance to undertake accessibility compliance planning). When DOJ and USDOT conduct rulemaking to include accessibility standards for pedestrian facilities in the public right-of-way in regulations implementing Title II of the ADA and Section 504 of the Rehabilitation Act, they will address the application of their accessibility standards to existing facilities that are not altered. Comments concerning existing facilities that are not altered should be directed to DOJ and USDOT at that time. These guidelines address only new construction and alterations of existing facilities, and are voluntary until adopted by other agencies, with or without modifications, as enforceable standards.

2. Accessible Pedestrian Signals

Scoping for Accessible Pedestrian Signals

Accessible Pedestrian Signals are devices that communicate information about pedestrian signal timing in non-visual formats such as audible tones, speech messages, and/or vibrating surfaces (R104.3). In the NPRM, the Board proposed that all new and altered pedestrian signals conform to the requirements for accessible pedestrian signals in sections 4E.08 through 4E.13 of the MUTCD (NPRM R209.1). Several entities submitted comments opposing universal installation of accessible pedestrian signals. Eight state and three local government entities advocated for their jurisdictions’ more limited practices with respect to determining where accessible pedestrian signals should be installed: six states and one local government installed accessible signals upon citizen request or as part of planned upgrades;

DOJ’s 2010 ADA Standards state in part that alterations made to provide an accessible path of travel to the altered area will be deemed disproportionate to the overall alteration when the cost exceeds 20% of the cost of the alteration to the primary function area. 28 CFR 35.151(h)(4)(ii)(A).

one state and one local government consulted with mobility specialists or disability advocacy groups before installing an accessible pedestrian signal in a given location; one state only installed accessible pedestrian signals where a substantial population of blind individuals is known to travel, such as near a school for students who are blind; one city installed accessible pedestrian signals within a quarter mile of light rail stations, and elsewhere upon request.

Two local governments, while not stating a current practice, indicated that they would like to work with organizations representing the “low vision community” to determine where accessible signals should be installed. Fifteen other local government commenters and six individual commenters from the engineering industry, and an association of city transportation engineers preferred that the guidelines leave the decision as to whether to install accessible pedestrian signals to “engineering judgment,” as specified in the MUTCD. A national organization of transportation officials expressed that the guidelines should require accessible pedestrian signals only where there is a demonstrated need. Three states and two cities indicated that they already provide accessible pedestrian signals whenever possible when new pedestrian signals are installed, or existing signals are altered.

This requirement for the installation of accessible pedestrian signals was also one of the proposed provisions of PROWAG that generated the most public support. More than 115 commenters, including disability rights organizations, individuals with disabilities, and mobility specialists, supported the proposed requirement.

Upon careful consideration of the comments, as well as the costs and benefits of this requirement, the Board has decided to retain in the final rule scoping specifying that accessible pedestrian signals be installed whenever new pedestrian signals are provided, and whenever pedestrian signals are altered. Accessible pedestrian signals are crucial to the independent movement of individuals who are blind or have low vision throughout public rights-of-way.5 Over time this requirement will make accessible pedestrian signals ubiquitous throughout the United States, allowing people who are blind or have low vision to undertake independent pedestrian travel to any destination where pedestrian facilities exist. Anything less than a universal requirement is unlikely to achieve a uniform nationwide result.

The Board has assessed the incremental costs associated with the installation of accessible pedestrian signals. FRIA at 46. The Board acknowledges that the requirement for universal installation of APS is the single most costly provision of PROWAG. Id. However, it is the provision expected to provide the greatest advance in equity for persons who are blind or have low vision, as the use of accessible pedestrian signals is one of the accessibility features of public rights-of-way that has not been uniformly adopted across the United States. The Board has assessed the costs and benefits of this requirement and is confident that the combination of the monetizable and unmonetizable benefits greatly outweigh the costs. See FRIA at 129.

Specific changes to language of the provision are addressed in the section-by-section analysis below.

Alterations of Accessible Pedestrian Signals

In the NPRM, the Board specified alteration of the signal controller and software, and replacement of a signal head as alterations that would trigger supported installation of accessible pedestrian signals. 76 FR at 44676. In response to the NPRM, commenters indicating a vision disability overwhelmingly expressed support for accessible pedestrian signals. In 2001, the National Federation of the Blind (NFB) opposed the universal installation of accessible pedestrian signals on the grounds that they were unnecessary in most circumstances, and that the sounds emitted by accessible signals interfered with detection of vehicles through audible cues. See Public Rights of Way Advisory Committee, Building a True Community, Minority Report. 153 (January 10, 2001). However, even at that time, the NFB noted changing features of public rights-of-way that complicated the traditional reliance on traffic noises for navigation, including quieter cars, complex signal intersections, wide streets, and the use of pedestrian actuated signals. Id. In response to the NPRM, the NFB advised that it now supports the use of accessible pedestrian signals when installed in consultation with the blind community. See NFB, Public Comment, ATBCB–2011–0004–0251, available at www.regulations.gov. The Access Board notes that accessible pedestrian signals must be equally available to all individuals, whether or not they are affiliated with or known to any particular advocacy organization or civic group. The Board observes that the American Council of the Blind strongly supports the installation of accessible pedestrian signals wherever pedestrian signals exist. See American Council of the Blind, Public Comment, ATBCB–2011–0004–0341, available at www.regulations.gov.

5 The Access Board acknowledges a historical difference of opinion between advocacy organizations for people who are blind as to the need for accessible pedestrian signals. The Board further notes that this difference of opinion has diminished over time. In the NPRM, the Access Board observed that in response to the 2002 draft guidelines, two thirds of commenters identifying themselves as being blind or having low vision

26
installation of an accessible pedestrian signal consistent with the technical requirements (NPRM R209.2). The Access Board received numerous comments disagreeing with the proposed provision. Ten state departments of transportation and 28 local government entities responded, in addition to five professional organizations. These commenters indicated that neither altering a signal controller and software, nor replacing a signal head offers an opportunity to convert an existing pedestrian signal to an accessible pedestrian signal. Some of these commenters were concerned that under the proposed language, a minor modification or repair could result in an extensive project to upgrade an entire intersection. Others worried that they would have to forgo regular software upgrades provided by signal manufacturers unless they intended to convert existing equipment to accessible pedestrian signals.

Four disability rights advocacy organizations, one pedestrian advocacy organization, and four individuals supported the proposed specifications regarding specific actions that should trigger installation of accessible pedestrian signals, and requested that the Access Board add other triggering actions in the final rule. The National Committee on Uniform Traffic Control Devices (NCUTCD) recommended requiring installation of accessible pedestrian signals when traffic signal equipment modification or timing changes affect the ability of a pedestrian with a disability to be aware of the change. See NCUTCD, Public Comment, ATBCB–2011–0004–0477, available at www.regulations.gov. NCUTCD cited reduction of walk time or pedestrian clearance, and installation of modified turn phasing as examples of such changes that should warrant conversion to an accessible pedestrian signal. Id.

The Access Board proposed the requirements of section R209.2 to ensure that accessible pedestrian signals would be installed during alteration projects. Upon consideration of public comments, the Access Board acknowledges the diverse nature of alterations that affect pedestrian signals, and declines in the final guidelines to specify specific actions that trigger the requirement to install accessible pedestrian signals. Rather, pedestrian signals are subject to the same alteration requirements as other pedestrian facilities. The entity making the alteration will assess, according to requirements in the guidelines as adopted by USDOT and DOJ, whether installation of an accessible pedestrian signal is required. The Board notes that USDOT and DOJ may provide further specifics as to alterations triggering installation of APS in their rulemakings adopting these guidelines.

3. Pedestrian Crossing Treatments at Roundabouts

In the NPRM, the Board proposed a requirement for installation of an accessible pedestrian actuated signal at multilane pedestrian street crossings at roundabouts (NPRM Section R306.3.2). In an advisory issued with the proposed rule, the Board indicated that a Pedestrian Hybrid Beacon (PHB) could be used in lieu of a standard pedestrian signal.7 Roundabouts present unique challenges for pedestrians who are blind. At roundabouts, entering and exiting vehicles yield, but do not stop. The continuous traffic flow removes many of the audible cues that pedestrians who are blind use to navigate pedestrian street crossings. Without signals that periodically stop vehicles, pedestrians must assess when there is a sufficient gap in traffic to cross. Sighted pedestrians visually assess the distance and speed of on-coming cars to decide when they should cross. However, pedestrians who are blind or have low vision are not able to identify breaks in on-coming traffic by sight and lack the audible cues that might otherwise substitute for visible information.

The Board included the requirement for an accessible pedestrian signal or an accessible PHB at multilane pedestrian street crossings at roundabouts to make those complex pedestrian street crossings accessible to people who are blind or have low vision. At multilane roundabouts, pedestrians who are blind or have low vision face additional challenges. While a vehicle in the lane nearest the curb might stop for a pedestrian who is blind, the stopped vehicle may mask the audible cues of a car in the next lane that does not yield. See Transportation Research Board, NCHRP Report 674: Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities, 6 (2011), available at https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_674.pdf. As a result, pedestrians who are blind take substantially more time to locate a crossing opportunity and make more errors in assessing such opportunities than sighted pedestrians. Id. To address these challenges, the proposed rule specified a requirement for a pedestrian actuated signal to be provided at all multilane pedestrian street crossings at roundabouts.

The Access Board received numerous comments on this proposed provision. Five state departments of transportation, eleven local government entities, two professional associations for engineers, three engineering companies, and two individuals opposed a universal requirement for the proposed pedestrian treatments at multilane roundabouts. These commenters opined that engineering judgment and/or warrant criteria should be used on a case-by-case basis to determine whether a pedestrian treatment is appropriate at a given roundabout crossing. Two states, seven local government entities, a local public works association, and AASHTO opposed the requirement on the grounds that pedestrian signals and PHBs will create a false sense of safety for pedestrians as drivers who would not be expecting signals at roundabouts would fail to yield to pedestrians.

One state, five local government entities, and a professional association related to the construction industry expressed concern that the addition of pedestrian signals or PHBs would make the purpose of using roundabouts instead of traditional intersections. Specifically, these commenters noted that roundabouts keep traffic continuously flowing, reduce air pollution from idling vehicles, reduce accidents, and may cost less to build as compared to fully signalized intersections. Three local government entities expressed concern that PHBs would be confusing to motorists in parts of the country where, at the time the comments were submitted, they were not frequently used. Three state departments of transportation, eight local government entities, a transportation engineering firm, and a public works professional association found the proposed provision too restrictive as written and urged the Access Board to consider other pedestrian crossing treatments such as raised crosswalks and rapid rectangular flashing beacons (RRFBs).

Many other commenters supported the proposed requirement for signals or PHBs at multilane pedestrian street crossings at roundabouts. Two municipalities, seven disability rights advocacy organizations, two pedestrian...
advocacy organizations, one engineering firm, and 99 individuals, including persons with disabilities, mobility specialists, and others, supported the proposed provision. Three disability rights organizations requested that the final rule require signals or PHBs at all roundabouts, including single lane pedestrian crossings. Two researchers who generally supported the proposed rule also encouraged further study on other acceptable treatments, such as raised crosswalks and RRFBs.

The Access Board considered all of the comments submitted regarding pedestrian treatments at roundabouts. In addition to the comments, the Board considered relevant research on alternate pedestrian treatments such as raised crosswalks and RRFBs. Raised crosswalks are marked pedestrian crossings on elevated speed tables that require a driver to slow down to cross the speed table. Because drivers must slow their vehicles to traverse the raised crossing, they are more likely to yield to pedestrians waiting to cross. RRFBs are flashing yellow rectangular lights that are activated by the pedestrian and supplement a pedestrian warning sign. The flashing beacons draw a driver’s attention to the pedestrian in the crosswalk, increasing the likelihood that the driver will yield to the pedestrian. Unlike the PHB, neither the raised crosswalk nor the RRFB provide the driver with a “stop” signal. Rather, they bring increased awareness to the presence of a pedestrian.

National Cooperative Highway Research Program Project 674 assessed the use of PHBs and raised crosswalks at a multilane roundabout by blind pedestrians in Golden, Colorado. See Transportation Research Board, NCHRP Report 674: Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities 6 (2011), available at https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_674.pdf. Researchers found positive effects on decision making regarding crossings by blind pedestrians using both types of treatments. Id.

A study undertaken by Western Michigan University confirmed the effectiveness of PHBs at multilane roundabouts and showed that RRFBs could be effective in some instances. See Dept. of Blindness and Low Vision Studies, Western Michigan University et al., Road Commission for Oakland County PHB and RRFB Study: Final Report, 5–7 (October 5, 2011) available at https://www.rcoweb.org/Documents/Center/View/99 (indicating that RRFBs installed at two-lane roundabout entries had a positive impact on decision making by blind pedestrians as to assessing when to cross; however, RRFBs were less effective at two-lane roundabout exits and three-lane roundabouts).


Id.


Multilane roundabouts remain highly complex crossings for pedestrians who are blind or have low vision. In light of the lack of clear audible cues at these crossings and the additional challenges posed by the geometry of multilane crossings in these locations, in the final rule the Board has retained the requirement for an enhanced crosswalk treatment at each multilane pedestrian crossing at roundabouts. However, based on commenter feedback and the Board’s review of available research, the final rule includes three treatment options for crosswalks at roundabouts, in addition to standard accessible pedestrian signals: PHBs, raised crosswalks, and RRFBs. All three treatments demonstrated positive effects over untreated crossings in the research studies described above. While the three treatments did not perform identically in each research study, the Board finds that each treatment was effective in certain scenarios. The final rule requires that, like other accessible pedestrian signals, all new and altered PHBs provide audible information in addition to visible cues, and all new and altered RRFBs provide audible information communicating that the warning lights are flashing.

The Board notes that research on single lane roundabouts indicates that certain single lane roundabouts pose challenges to pedestrians with disabilities attempting to cross. See David A. Guth et. al., Blind and Sighted Pedestrians’ Road Crossing Judgments at a Single-Lane Roundabout, 55 Human Factors, 632 (June 2013). However, it is not clear from the limited available research, whether all single lane roundabouts, or only those with certain characteristics, pose barriers to safe crossing for pedestrians who are blind such that enhanced crossing treatments are required. USDOT plans to undertake additional research to study the conditions under which single lane crossings at roundabouts present challenges for pedestrians who are blind.

4. Leveling Out of Intersections Extended Through Pedestrian Crossings

In the NPRM, the Board proposed to require that the grade of pedestrian access routes in crosswalks not exceed 5% (NPRM R302.5.1). The proposed rule also limited the cross slope of pedestrian access routes to 2% (NPRM R302.6), and the cross slope of pedestrian access routes contained within crosswalks at approaches without yield or stop control to 5% (NPRM R302.6.1). The effect of these provisions was to require that in new construction, the leveling out of streets at intersections be extended to crosswalks. It is common practice to level out streets at intersections so that the slope of a street does not present a significant cross slope to the intersecting roadway. AASHTO recommends that at intersections, grades in excess of three percent should be avoided. See AASHTO, Policy on Geometric Design of Highways and Streets at 9–34.

The cross slope of a crosswalk is the same as the grade of the roadway that runs through it. Where traffic is required to slow down at a crosswalk because there is a device such as a stop or yield sign, the grade of the road (and the cross slope of the crosswalk) can be flatter because vehicles move more slowly through the crosswalk. However, where traffic will flow across a crosswalk without slowing or stopping, such as during a green light or at an intersection without any traffic control device, abrupt changes in the grade of the road should be minimized to prevent a vehicle from jolting or bottoming out on the grade change in hilly areas.

The proposed rule limited cross slope of pedestrian street crossing in
new construction and alterations according to the type of traffic control provided at the intersection. At NPRM section R302.6.1, the proposed guidelines called for a maximum 5% cross slope for pedestrian street crossings “without yield or stop control.” In an advisory at R302.6.1, the Board explained that crossings “without yield or stop control” refer to those crossings that do not have a stop or yield sign, or alternately have a traffic signal that is “designed for the green phase.” The Board further clarified that crossings “without yield or stop control” are those intersections where “vehicles can proceed through the intersection without slowing or stopping.” Proposed provision R302.6 provided for a 1:48 maximum cross slope for other pedestrian street crossings at intersections, which would include those with a stop or yield sign, or other type of traffic control device requiring a full stop or yield.

In response to the NPRM, ten state entities, six local government entities, eight individuals from the engineering and planning industry, and one engineering firm indicated that the Board should use clearer language to distinguish between the types of crossings. Thus, in the final rule, the Board has separated the requirements according to the type of traffic control at the crosswalk: crosswalk with yield or stop control devices (R302.5.2.1); crosswalk at an uncontrolled approach (R302.5.2.2); crosswalk with traffic control signal or PBH (R302.5.2.3); and midblock and roundabout crossings (R302.5.2.4).

Many commenters expressed concern about the application of the cross slope provisions in alterations. Three state departments of transportation and one local government entity were concerned that changes in signalization alone, without any construction to the roadway itself, would trigger a requirement to comply with the cross slope requirements at pedestrian crossings. Two states, one association representing state departments of transportation, one local government, and one engineer pointed out that signalization of intersections change over time and questioned whether the requirement should be tied to a fluid marker. The local government and engineer commenters noted that while 5% maximum cross slope might be acceptable at the time of new construction, once more houses and facilities are built around an intersection warranting a stop sign, the requirement would shift to 2%. Commenters noted that a 2% maximum cross slope is less easily achieved in an alteration than in new construction. The Board notes that an alteration to a traffic control device would not necessarily trigger a requirement to comply with cross slope requirements at that crosswalk if the crosswalk is not being altered.

One state expressed concern that resurfacing roadways would trigger a requirement to regrade intersections. A local government indicated that retrofitting cross slopes of existing crossings would have more than minimal impacts, and another local government requested that existing crossings be entirely exempted from the requirement. Four organizations associated with the construction and public works industries expressed concern about the cost of compliance for existing intersections. One state was not sure that it could meet the cross slope requirements given existing infrastructure. Seven local government entities expressed that altering intersections to comply with cross slope requirements would be “unreasonable,” “burdensome,” “impractical,” “difficult,” or “not feasible without major reconstruction.”

The Board acknowledges that full compliance with the cross slope requirements for crosswalks, which is expected in new construction, may be challenging in some alterations due to existing physical constraints. In alterations, compliance with R302.5.2.2 is required to the maximum extent feasible where existing physical constraints, as discussed in R202.3, make compliance technically infeasible. If existing curbs, gutters, sidewalks, and utilities are not part of the facility being altered, they are generally considered “adjacent developed facilities” which are a type of existing physical constraint under R202.3 that could constrain the technical feasibility of compliance with R302.5.2. Thus, if a public entity is not otherwise altering the adjacent developed facilities as part of its crosswalk alteration and those existing physical constraints would make compliance with R302.5.2 technically infeasible, then compliance is required to the maximum extent feasible without needing to alter the adjacent developed facilities.

If a public entity is not otherwise altering the adjacent developed facilities as part of its crosswalk alteration, the Board disagrees that the technical requirements, when properly implemented, will result in the engineering concerns expressed by some commenters. Further, the Board observes that if an entity can demonstrate that the unique characteristics of the underlying terrain of a specific newly designed intersection preclude full compliance with the cross slope requirements, under DOE’s Title II regulations under the ADA, full compliance with the cross slope requirements may not be required. See 28 CFR 35.151. In alterations, where compliance is technically infeasible,
alterations must comply with requirements to the maximum extent feasible (R202.3). In addition, the Board has provided an exception for the grade of crosswalks where superelevation exceeds 5% (R302.4.3).

Other commentators supported the proposed requirements. A professional organization of mobility specialists for people who are blind requested that the Board encourage tabling wherever feasible. A pedestrian advocacy organization asserted that 2% should be the maximum cross slope for all pedestrian crossings. A non-profit accessible design organization also indicated that 2% maximum cross slope should be the standard for all pedestrian crossings, noting that a 5% cross slope is too steep for many manual wheelchair users.

After careful review of the comments, the Board has retained the substantive cross slope requirements for crosswalks as proposed. A cross slope of 1:48 (2.1%) is well established in accessibility guidelines as the appropriate maneuverable cross slope for most individuals in manual wheelchairs and persons with balance impairments. See, e.g., Uniform Federal Accessibility Standards (UFAS), 49 FR 31528 (Aug. 7, 1984) and the 2004 ABA and ADA Accessibility Guidelines, 36 CFR part 1191.

The Board notes that if the 1:48 cross slope ratio were expressed as a percentage to the nearest hundredth, the relevant percentage would be 2.08%. This percentage has been expressed as 2.1% in the regulatory text due to the limitations of current digital measuring tools commonly used in sidewalk construction, which would round 2.08% to 2.1%.

In these guidelines, the Board balances accessibility with engineering considerations. The Board has assessed the costs of compliance with the crosswalk cross slope requirements in the FRIA. See FRIA at 114.

5. MUTCD

The proposed guidelines incorporated by reference portions of the 2009 edition of the USDOT Federal Highway Administration’s (FHWA’s) Manual on Uniform Traffic Control Devices (MUTCD), which is the standard for traffic control devices used throughout the United States. The incorporated sections included several definitions and technical requirements for alternate pedestrian access routes and accessible pedestrian signals and push buttons (NPRM R105.2; R205; R209.1).

Several disability rights advocacy organizations objected to this approach. Two organizations objected to the Access Board’s use of the MUTCD in lieu of creating its own technical specifications for these regulated features, while others did not oppose the use of the MUTCD standard but felt that the relevant text of the MUTCD should be reproduced within the guidelines or in an appendix. A variety of commentators urged the Access Board to include the full text of MUTCD definitions for specified terms incorporated by reference.

The National Technology Transfer and Advancement Act requires Federal agencies to use technical standards developed by voluntary consensus standards organizations to carry out policy objectives. 15 U.S.C. 3701 et seq. Wherever practical and appropriate, government adoption of voluntary standards reduces the burden of compliance with Federal regulations on regulated entities, and also reduces costs to the government. See generally, Office of Management and Budget (OMB), Circular A–119. The MUTCD was developed as a voluntary consensus standard for traffic control devices and was subsequently adopted by the FHWA as a national standard. See FHWA, Evolution of MUTCD, available at https://mutcd.fhwa.dot.gov/know-history.htm. States must adopt the content of the MUTCD within two years of issuance. 23 CFR part 655, subpart F.

Consistent with its statutory obligations and OMB guidance to reduce the burden on regulated entities, the Access Board uses existing technical standards where possible to meet its policy objectives. Accordingly, the Board proposed incorporation by reference of the MUTCD sections. However, upon review of the comments, and after over a decade of providing technical assistance on the application of those provisions, the Board concurs with commentators that incorporating MUTCD provisions by reference does not provide sufficient clarity for a mandatory standard.

Specifically, the Board notes that the MUTCD contains several types of provisions, some of which are mandatory standards and some of which are guidance, options, and supporting explanations. The Board proposed to incorporate by reference the standards, but further indicated that the guidance, options, and support statements must be used to interpret the standards. The NPRM further stated that if there were any differences between the MUTCD and the proposed rule, the proposed rule applied. Upon review, and in light of the comments, it is clear that this approach provided insufficient specificity to achieve uniform nationwide accessibility. In addition, application of the MUTCD relies heavily on engineering judgement, which further invites the possibility of subjective determinations of the need for specific accessibility features.

In the final rule, the Board has addressed this confusion by eliminating all references to the MUTCD and including the specific definitions and requirements directly in the rule text. The technical provisions and the definitions included in the rule text adhere closely to substantive requirements of the MUTCD. The origin of the substantive requirements, and any deviations from the MUTCD, are explained in the Section-by-Section discussion below.

The Board notes that four state DOTs and three local government commentators expressed concern that these guidelines “conflict” with the MUTCD. One state DOT and two local governments indicated that where MUTCD and these guidelines differ, the MUTCD should apply. Two state DOTs commented that if certain treatments are required for accessibility purposes, they should be contained in the MUTCD. Another state department of transportation observed that the MUTCD and the guidelines should not be interpreted as conflicting.

In the development of this final rule, the Access Board consulted representatives from USDOT’s Federal Highways Administration, which issues the MUTCD. In addition, the Access Board reviewed USDOT’s proposed rule to update the MUTCD. National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision, 85 FR 80898 (proposed Dec. 14, 2020)(to be codified at 23 CFR parts 470, 635, and 655). When USDOT undertakes its own rulemaking to adopt these guidelines as enforceable standards, USDOT will determine how to ensure that there is no “conflict” within its own regulations.

VI. Section-by-Section Analysis

A. Structural Changes to the Rule Text

To improve clarity of the rule text, the Board made some non-substantive structural changes. First, while not a change to the rule text itself, the advisories that appeared with the proposed rule text have been removed. The Access Board no longer publishes advisories in the Code of Federal Regulations (CFR) as the information contained in those advisories is guidance, not mandatory requirements. The Access Board will provide guidance on its website to assist regulated parties understand and properly implement the final enforceable standards that are
issued by the standard-setting agencies. In some areas, information that previously appeared in an advisory has been moved to the rule text. Those instances are discussed in the section-by-section discussion below.

Second, as previously noted, the Board eliminated incorporation by reference of portions of the MUTCD, opting instead to state the requirements directly in the PROWAG rule text. The Board agreed with numerous commenters who indicated that stating the requirements in the rule text would provide greater clarity. Substantive changes relating to the specific MUTCD sections referenced in the proposed rule are discussed in their respective sections below.

B. Chapter 1: Application and Administration

R101 Purpose and Application

The final rule contains scoping and technical requirements that ensure that pedestrian facilities located in public rights-of-way are readily accessible to and usable by pedestrians with disabilities. This includes both pedestrian facilities in a street or highway right-of-way and pedestrian facilities located in an independent right-of-way or easement, such as a shared use path. These scoping and technical requirements apply to facilities covered by both the ADA and the ABA and become mandatory once adopted for enforcement by another Federal agency issuing regulations implementing the ADA, Section 504 of the Rehabilitation Act, or the ABA.

The intent of this section has not changed from what was proposed in the NPRM; however, the text has been edited for clarity. Specifically, R101.1 states that the guidelines apply to public rights-of-way, including a public right-of-way that forms the boundary of a site or that lies within a site. This clarification is provided so that jurisdictions understand that these guidelines apply to public rights-of-way that may also be part of a “site,” and thus subject to 36 CFR 1191. See CFR part 1191, App. B, 106.5 & App. C F106.5 (defining “site” as a “parcel of land bounded by a property line or a designated portion of a public right-of-way”). Where a public right-of-way is part of a site covered by the ABA or Title II of the ADA, these guidelines apply to the public right-of-way portion of that site.

As stated in the Major Issues section above, these guidelines do not address existing facilities unless they are altered at the discretion of a covered entity. DOJ’s and USDOT’s regulations implementing these guidelines under the ADA, will address requirements for existing pedestrian facilities in the public right-of-way.

R102 Deviations From These Guidelines

This section, titled “Equivalent Facilitation” in the proposed rule, states that under the ADA, the use of alternative designs, products, or technologies that result in substantially equivalent accessibility and usability than the proposed guidelines is permitted. The Access Board has added language clarifying that the use of alternative designs, products, or technologies is not permitted for facilities subject to the ABA. The Board has also added a provision at R102.2 explaining that under the ABA, deviations from an enforceable standard issued by GSA, HUD, DoD, or USPS require an approved waiver or modification, which is issued by the standard-setting agency upon a determination that the waiver or modification is “clearly necessary.” See 42 U.S.C. 4156.

R103 Conventions

R103.1 Conventional Industry Tolerances

Conventional industry tolerances apply where dimensions are not stated as a range. The final rule clarifies that dimensions that are stated as having a specific minimum or maximum endpoint are considered a range. For example, a cross slope specified as “1:48 (2.1%) maximum” is considered a range from zero to 1:48 (2.1%). Designing to a dimension below the maximum allows for construction inaccuracies without the need for a tolerance.

Several engineers and state DOTs requested that we provide a list of specific tolerances. Tolerances are determined by the industry for the material used. It would not be beneficial to codify specific tolerances in these guidelines that cannot be easily updated when revised by industry. The Board also receives requests requesting guidance on how measurements should be taken to assess compliance and others expressing concern about how construction variations would be treated in enforcement scenarios. These concerns should be directed to the enforcing agencies when they issue their proposed rules.

R103.2 Calculation of Percentages

Where the required number of elements or facilities to be provided based on the specified ratio or percentage is not a whole number, the result is rounded up to the next whole number. For example, if a group of five benches is provided at a location that is not a transit stop or shelter, R209.6.2 requires 50% of the benches to provide clear space complying with R404. Since 50% of five is 2.5, the result is rounded up and three benches would be required to provide the clear space.

In the final rule, the Board has omitted the proposed sentence indicating that rounding down for values less than one half is permitted where the determination of the required size or dimension of an element or facility involves ratios or percentages. The Board notes the potential for misinterpretation of this sentence as allowing a regulated entity to round down the measurement of a slope, for example a cross slope of 2.44%, to a whole number. The Board further notes that while this provision is included in the 2004 ABA and ADA Accessibility Guidelines, it has long been a source of confusion. Notably, the Board received a comment from a local government entity erroneously applying this provision to the walking speed used to determine pedestrian signal timing.

R103.3 Units of Measurement

Linear measurements in these guidelines are stated in both U.S. customary units and metric units. Slopes are expressed in both ratios and percentages. Each system should be used independently and consistently, as they may not be exact equivalents.

In the proposed rule, slope measurements were stated only in percentages, which in most cases had been rounded to whole numbers. For consistency with the 2004 ADA and ABA Accessibility Guidelines, which expresses slope only in ratios, in the final rule slopes are expressed in both ratios and percentages. The practical effect of this change is that slopes stated as 2 percent in the proposed rule are 1:48 (2.1%) in the final rule, which is the ratio used in the 2004 ADA and ABA Accessibility Guidelines. The Board has elected to state percentages to one decimal place for ease of implementation, as current digital measuring tools commonly used in sidewalk construction typically provide measurements to one decimal place.

R104 Definitions

This was section 105 in the NPRM but was redesignated as section 104 when the Board deleted proposed section 104 as the result of the decision to eliminate the reference to the MUTCD in favor of providing the actual language from the MUTCD (sometimes as modified) throughout the rule.
R104.1 Undefined Terms

The proposed rule indicated that undefined terms are defined using a collegiate dictionary in the sense that the context implies. The final rule implements the Board’s current standard approach to undefined terms, stating that undefined terms shall be given their ordinary meaning in the sense that the context implies.

R104.2 Interchangeability

This provision states that the plural and singular forms of a word are used interchangeably in these guidelines.

R104.3 Defined Terms

The Board’s decision to include all substantive requirements in the final rule text in lieu of incorporating MUTCD provisions by reference has resulted in significant expansion of the number of defined terms in these guidelines. The proposed rule text, as modified by the SNPRM, included 17 definitions and nine MUTCD definitions that were incorporated by reference. In addition, the proposed rule specified that terms appearing in the sections of the MUTCD that were incorporated by reference would have the meanings as stated in the definition section of the MUTCD. In moving MUTCD requirements and definitions that had been previously incorporated by reference directly into the rule text, the Board also added to the rule text the relevant defined terms from MUTCD that appeared in these sections.

The Board also added several terms to provide clarity to the rule text and removed a few defined terms that were no longer needed in light of revisions to the proposed rule. In total, the final rule has 52 defined terms, which are identified throughout the rule text in italic font.

The following terms were added from the MUTCD, either verbatim, or with minimal edits made for clarity: Accessible Pedestrian Signal, Crosswalk, Highway, Median, Pedestrian, Pedestrian Interval Change, Pedestrian Hybrid Beacon, Pedestrian Signal Head, Push Button, Push Button Locator Tone, Roadway, Roundabout, Sidewalk, Splitter Island, Traveled Way, and Walk Interval. The following additional terms, which have definitions that are not taken from MUTCD, have been added to provide further clarity to the rule text: Block Perimeter, Boarding Platform, Building, Curb, Detectable Warning Surface, Developed, Grade, Parallel Curb Ramp, Passive Tone, Pedestrian Activated Warning Devices, Pedestrian Refuge Island, Perpendicular Curb Ramp, Ramp, Ramp, Stair, Standard Curb Height, Street,8 Transit Shelter, Transit Stop, Transitional Segment, and Vibrotactile.

A few proposed defined terms have been removed from the final rule:
- “Facility,” a term and definition that came from ADAAG, has been replaced by “pedestrian facility” and a corresponding definition that more accurately reflects how the term is used in PROWAG. In addition, the reference to “elements” was removed from the definition of pedestrian facility, since elements are components of a pedestrian facility.
- “Island,” which was proposed to be incorporated by reference from MUTCD, has been replaced by “Pedestrian Refuge Island” with a corresponding definition that clarifies the characteristics that make an island suitable for pedestrian refuge (specifically, that the traversable path of the island be at least 72 inches long in the direction of travel to allow sufficient space for two detectable warning surfaces, separation of those surfaces, and space for a pedestrian to wait).
- “Intersection,” which was proposed to be incorporated by reference from MUTCD, has been eliminated from the defined terms. The Board concluded that future regulated entities, specifically state and local departments of transportation, can readily identify an intersection, and that reproducing the highly technical MUTCD definition of intersection in the rule text would not provide additional clarity.
- “Vertical Surface Discontinuities” was eliminated entirely from the rule text. In the final rule, this concept is expressed in the relevant provisions as “changes in level,” which is a widely understood requirement of ADAAG.

In the final PROWAG rule text, most of the original definitions that were proposed have been edited for clarity as follows:
- Accessible: The word “facility,” which is no longer a defined term, has been replaced with “pedestrian facility” and “element.”
- Alteration: The defined term now also includes “altered.” As explained in the Major Issues section above, the definition has been edited to clarify that an addition of a pedestrian facility to an existing, developed right-of-way is considered an alteration within the requirements of PROWAG.

commenters requested edits to or clarifications regarding the examples that were included in the proposed definition. The Board has removed the examples from the definitions. Providing examples, if necessary, is better left to the enforcing agencies.
- Blended Transition: This definition has been revised to more accurately describe the portion of a pedestrian access route that is a blended transition, and to differentiate blended transitions from curb ramps.
- Cross Slope: The word “grade” has been changed to slope, which reflects more typical usage.
- Curb Line: The word “highway” was removed for clarity, as “street” sufficiently conveys the concept.
- Curb Ramp: The edited definition clarifies that the words “parallel” and “perpendicular” are stated relative to the curb or street that curb ramps serve.
- Element: The word “pedestrian facility” has been substituted for “facility,” reflecting the substitution of defined terms, as described above.
- Grade Break: The term “running slope” has been substituted for “grade” for consistency in the way these terms are used throughout the rule text.
- Operable Part: The phrase “interact with the element” has been added to as a use of an operable part. This addition is designed to cover QR codes and any other markings that are intended to be scanned with a mobile device.
- Pedestrian Access Route: The term “accessible” has been added to clarify that the pedestrian access route is the portion of a pedestrian circulation path that complies with the pedestrian access route accessibility requirements in these guidelines. The phrase “coinciding with” has been removed as redundant.
- Pedestrian Circulation Path: The word “travel” was removed in favor of the word “use” for clarity.
- Qualified Historic Building or Facility: The term “qualified historic facility” was updated to “qualified historic building or facility” for clarity to match the term that is used in the 2004 ABA and ADA Accessibility Guidelines.
- Running Slope: The word “slope” has been substituted for “grade” for consistency. In response to comments, the Board has clarified that grade and running slope are synonymous.
- Shared Use Path: In response to comments from state and local government entities, the Board has edited the definition to emphasize the transportation purpose of shared use paths. While many shared use paths are also used for recreation, a path that is used primarily for recreation is not subject to the shared use path definitions.
requirements in this rule. Regulated entities should carefully consider the purpose and use of paths when determining whether to treat them as shared use paths under these guidelines. A wooded cut-through in a suburban area regularly used by residents on foot and on bicycles to reach a transit stop is likely a shared use path. A hiking trail through a mountainous area used primarily for recreational hiking and biking is probably not a shared use path under these guidelines.

C. Chapter 2: Scoping Requirements

R201.1 General Scope (R201.1)

All newly constructed pedestrian facilities and elements, and all altered portions of existing pedestrian facilities must comply with these guidelines. There is no substantive change in the general scope of the final rule from what was proposed. However, as described in the major issues section above, the Board clarified that newly constructed pedestrian facilities are those that are constructed on greenfield. Any pedestrian facilities or elements that are constructed on or added to developed land, as defined in section R104 are subject to the requirements for alterations, described in section R202.

R201.1 excepts from compliance pedestrian facilities within areas used only by service personnel for maintenance, repair, or monitoring of equipment. This exception was included in the proposed rule as a separate provision entitled "R203 Machinery Spaces."

Temporary and Permanent Pedestrian Facilities (R201.2)

This provision specifies that both temporary and permanent pedestrian facilities in the public right-of-way must comply with these guidelines. Temporary facilities might include outdoor festival structures or pop-up service counters. In the final rule, the provision clarifies that when a pedestrian circulation path or transit stop is temporarily closed, an alternate pedestrian access route or transit stop must be provided in accordance with R204. As stated in R204, temporary alternate pedestrian access routes are subject to the technical requirements of R303 and R402 in lieu of the full requirements for permanent pedestrian access routes described at R203.

Buildings, Structures, and Elements (R201.3)

This provision explains that buildings, structures, and elements that are in the public right-of-way and are not specifically covered by these guidelines are subject to the applicable requirements for buildings and sites at 36 CFR part 1191. In response to commenters’ requests for clarity as to what is intended here, the Board added examples of buildings, structures and elements at safety rest areas or park and ride lots, and temporary performance stages and reviewing stands. As stated in R201.2, all permanent and temporary pedestrian facilities in the public right-of-way must comply with accessibility standards. However, PROWAG does not provide technical requirements for every type of structure that is provided for pedestrian use in the public right-of-way. For example, technical accessibility requirements for performance stages are not included in PROWAG, but this provision directs a jurisdiction constructing a performance stage in the public right-of-way to the buildings and sites guidelines for technical accessibility requirements of that structure.

R202 Alterations

The main purpose of this section is to describe the additional flexibilities provided for compliance when construction of pedestrian facilities and elements occurs on developed land as compared to the expected full compliance of new construction on undeveloped land. These flexibilities are as follows.

• R202.1: Alterations to qualified historic buildings or facilities must comply with a requirement to the maximum extent feasible where full compliance with the requirement would threaten the historic significance of the qualified historic building or facility. The wording of this provision was changed slightly from the proposed language to clarify that this exception is not intended to protect every element of a historic property, for example every historic cobblestone, present in a public right-of-way. Rather, the intent is to protect the historic significance of the facility generally. The revised language clarifies, for example, that the removal of a portion of cobblestones to install a curb ramp that provides access to individuals with disabilities does not necessarily threaten the historic significance of the entire facility.

• R202.2: Alterations to qualified historic buildings or facilities must comply with the requirements for new construction. The Board agreed with numerous commenters who expressed the view that existing physical constraints present on developed property might affect the extent to
which some added elements and facilities in the public right-of-way could comply strictly with new construction standards.

Second, also as discussed in the Major Issues section, the Board stated at proposed R202.3 that each altered element, space, or facility “within the scope of the [alteration] project” was required to comply with these guidelines. Some state and local government commenters indicated confusion over the meaning of “scope of the project,” and some disability rights advocacy organizations expressed concern that the phrase did not clearly convey expectations for compliance with these guidelines. The Board concurs that this provision was an unnecessary source of confusion and has eliminated the proposed R202.3 (which would have appeared at 202.1 in the final rule) as duplicative with the general scoping provision at R201.1. The term “scope of the project” no longer appears in the guidelines. As in the 2004 ABA & ADA Accessibility Guidelines, whatever is altered must be made compliant.

R203 Pedestrian Access Routes

This section contains scoping requirements that explain where pedestrian access routes are required, and scoping requirements that point to the technical requirements in Chapters 3 and 4 applicable to each component of pedestrian access routes.

Pedestrian access routes are a portion of the traversable pedestrian facilities in a public right-of-way that must comply with the accessibility requirements in these guidelines. In new construction, there will be a continuous network of pedestrian access routes that connect all accessible elements, spaces, and pedestrian facilities (R203.2). In alterations, a continuous network of pedestrian access routes will be established piece-by-piece as pedestrian facilities are altered and brought into compliance with PROWAG. A pedestrian access route exists within or is connected by each newly constructed or altered traversable pedestrian facility; pedestrian circulation paths (including shared use paths) (R203.3); crosswalks (R203.4); pedestrian at-grade rail crossings (R203.5); curb ramps and blended transitions (R203.6); pedestrian overpasses and underpasses (R203.7); ramps (R203.8); elevators and limited use/limited application elevators (R203.9); platform lifts (R203.10); and doors and gates (R203.11). Again, the goal, over time, is a continuous accessible pathway through all traversable facilities in the public right-of-way.

The structure of section R203 Pedestrian Access Routes in the final rule has been revised from the proposed section R204 of the NPRM (as modified by the SNPRM). First, with edits to R203.1 General, the Board has clarified that the facilities listed in R203 either “contain” or “connect” a pedestrian access route. In the years since the NPRM was published, Access Board technical staff have received inquiries related to whether each piece of sidewalk or pedestrian facility is expected to be part of a pedestrian access route, or whether, for example, a pedestrian access route could be provided on one side of the street and not the other. This confusion stems from a requirement in the 2004 ABA and ADA Accessibility Guidelines that at least one accessible route connect buildings, sites, elements, and spaces, but does not require that each route between these locations be accessible. See 36 CFR part 1191, App. A, Ch. 2, 206.2.2.

The public right-of-way in this aspect is not analogous to buildings and sites. Every new or altered pedestrian facility must be made accessible. Thus, the Access Board clarifies that the requirements for pedestrian access routes are applicable to every newly constructed or altered pedestrian circulation path, crosswalk, pedestrian at-grade rail crossing, and pedestrian overpass and underpass, and the curb ramps, ramps, elevators, platform lifts, and doors and gates that connect pedestrian facilities with pedestrian access routes must also comply with the accessibility requirements of PROWAG.

Second, the Board has moved the scoping for crosswalks (referred to as pedestrian street crossings in the proposed rule at NPRM R206) and the scoping for curb ramps and blended transitions (NPRM R207) into the final rule’s scoping section for pedestrian access routes at R203. The Board made this change to further clarify that crosswalks, curb ramps, and blended transitions are pedestrian facilities that comprise part of the continuous network of pedestrian access routes present in the public right-of-way.

Third, in response to numerous technical assistance inquiries over the years since the NPRM was published, in the final rule the Board has added detailed scoping as to the required placement of curb ramps. The scoping clarifies when curb ramps are required at intersection crosswalks, midblock and roundabout crosswalks, on-street parking, and passenger loading zones. It further clarifies that when alterations are made to crosswalks, missing curb ramps must be added as part of the alteration. This added scoping is discussed in greater detail below.

Pedestrian Circulation Paths (R203.3)

In response to the proposed rule (NPRM 204.2), some commenters requested that the Access Board explicitly require that jurisdictions provide sidewalks, while others requested that the Board clarify that the PROWAG rule does not require sidewalks. The final rule requires that pedestrian access routes connect accessible elements, spaces, and pedestrian facilities (R203.2). A pedestrian access route is comprised primarily of conforming portions of a pedestrian circulation path, which are defined as “a prepared exterior or interior surface provided for pedestrian use in the public right-of-way” (R104.3). It does not matter under the rule whether the pedestrian access route runs through a sidewalk, shared use path, shoulder intended for pedestrian use, or other type of prepared surface, as long as it meets the technical requirements for pedestrian access routes. Jurisdictions may meet the requirements of PROWAG using any of the available options.

In the final rule the Board has revised this provision to indicate that transitional segments, as defined in R104.3, may be used to connect new or altered pedestrian access routes to existing pedestrian circulation paths. Transitional segments appeared in the proposed rule at NPRM R203.2.

As noted above, in the final rule, the Board has relocated the scoping for crosswalks to the scoping section for pedestrian access routes to reinforce that crosswalks have a pedestrian access
route within them and are part of the continuous network of accessible pedestrian facilities required through public rights-of-way. In addition, the Board has substituted the MUTCD-defined term “crosswalk,” with minor revisions to the MUTCD definition, for the term “pedestrian street crossing” that was used in the proposed rule (NPRM R204.3). In doing so the Board clarifies that there is no distinction between the places the Access Board expects pedestrian crossings to occur and the industry understanding of the places where crosswalks are located. The main impact of the use of the MUTCD-defined term “crosswalk” in place of “pedestrian street crossing” is to further clarify the places where curb ramps are required. This is detailed below in the discussion of R203.6.

Pedestrian At-Grade Rail Crossings (R203.5)

The Board has added scoping for pedestrian at-grade rail crossings to clarify that pedestrian at-grade rail crossings are provided they contain a pedestrian access route. The technical requirements are referenced.

Curb Ramps and Blended Transitions (R203.6)

The 2011 NPRM specified that a curb ramp (or blended transition) must be provided for each pedestrian crossing (NPRM R207.1). The proposed rule indicated that a diagonal curb ramp would continue to be permitted in an alteration scenario where physical constraints prevented the installation of a curb ramp for each crossing (NPRM R207.2). In response to these proposed provisions, a few state and local government commenters requested flexibility to install a single curb ramp based on engineering judgement, while others either agreed with the changes or requested that the Board more clearly state the requirements. Two local government commenters lamented the costs of having installed non-compliant curb ramps over a number of years. Other individuals and disability rights advocacy organizations agreed with limiting the use of diagonal curb ramps.

The final rule maintains the requirement that one curb ramp or blended transition be provided for each crosswalk at an intersection corner, and alternatively allows a blended transition to span all crosswalks at an intersection corner. Use of a single curb ramp at the apex of an intersection corner is permitted in alterations where existing physical constraints make compliance technically infeasible. Diagonal curb ramps often route users into the roadway, not within a crosswalk. To provide equity to persons with disabilities in the public right-of-way, PROWAG must ensure that a person in a wheelchair who requires a curb ramp to cross a street is afforded the same opportunity to stay within the safety of a crosswalk as a person who is able to step off the curb directly into a crosswalk. Thus, unless there are existing physical constraints that prohibit the provision of a curb ramp for each crosswalk, one curb ramp per crossing that is contained within the crosswalk must be provided.

The Board notes that since 2011, numerous state and local jurisdictions have adopted a requirement for one curb ramp per crosswalk at an intersection corner, and the Board is not aware of widespread engineering concerns that have resulted from this shift in local policies. See FRIA at 99. In addition, the Board notes that when requesting flexibility for new construction, jurisdictions were characterizing newly installed curb ramps in existing rights-of-way as new construction. Such installations are considered alterations under the final rule, and the flexibility for a single curb ramp would be permitted if physical constraints make compliance technically infeasible. The Board does not anticipate that insurmountable engineering issues would prevent full compliance in new construction, which as described above, would be construction on undeveloped land.

In response to numerous technical assistance inquiries received by the Board since the NPRM was published seeking clarification on the places where curb ramps must be installed, the Board has added detailed scoping for the required placement of curb ramps. The NPRM stated that curb ramps or blended transitions are required at each pedestrian street crossing. This substantive requirement has not changed, but the Board has provided further clarification regarding what it meant by “pedestrian street crossing” to explain where curb ramps are required. As described above, the Board replaced the term “pedestrian street crossing” with the MUTCD-defined term “crosswalk.”

The MUTCD definition of crosswalk, which appears in R104.5, indicates that a crosswalk is present wherever there is a pedestrian circulation path on one side of a street that approaches the roadway at an angle such that the path would cross the street if the lateral lines of the path were continued (regardless of whether it is marked or unmarked), or where pavement markings indicate a crosswalk. R203.6.1.1 and R203.6.2 clarify that a curb ramp or blended transition must be provided at each end of a crosswalk at an intersection corner, a midblock crossing, and a roundabout crossing. These provisions further clarify that where crossing is prohibited at an intersection or not intended midblock or at a roundabout, jurisdictions must take care to ensure that there is no crosswalk, no curb ramp, and the pedestrian circulation path is separated from the roadway.

Information on how to ensure that no crosswalk is present has been added to these provisions for clarity. This information was previously stated in an advisory that accompanied the NPRM rule text (NPRM Advisory 206).

Equity in the public right-of-way requires that persons with disabilities have equal access to crosswalks and information about whether a crosswalk is present. Where pedestrian crossing is permitted, curb ramps must be provided so that persons who use wheelchairs can access them. Where pedestrian crossing is prohibited at an intersection or is not intended midblock or at a roundabout, cane-detectable features must indicate to persons who are blind that this is not a place to cross. Several state DOTs commented on the NPRM advisory, expressing concern that the addition of detectable treatments would be costly, unnecessary, or obstruct sightlines for motorists. The Board has included an assessment of the costs in its Final Regulatory Impact Analysis and notes that jurisdictions have options for ensuring that they do not create a crosswalk where crossing is prohibited or not intended. This includes options, such as grass strips and landscaping, that can be used where a jurisdiction is concerned that a sign or barrier might obstruct motorists’ sightlines.

The Board is aware of concerns expressed by individuals seeking technical assistance implementing the proposed rule that a curb ramp is required on each side of a crosswalk, even in scenarios where there is a pedestrian circulation path on one side. The purpose of this requirement is to ensure that a person in a wheelchair who has entered a crosswalk on one side is able to safely exit the roadway on the other side as a person who does not use a wheelchair would do by stepping onto the curb. Jurisdictions that do not wish to provide a curb ramp on the side of the street where no pedestrian circulation path is present must ensure that there is no crosswalk, as defined in R104.3. Thus, the jurisdiction must provide a separation between the pedestrian circulation path and the roadway to indicate to pedestrians that crossing is prohibited. Where no
crosswalk is present and a separation treatment exists, curb ramps are not required. USDOT and DOJ may provide additional information regarding the acceptable characteristics of a separation treatment used to indicate the absence of a crosswalk.

The Board has added scoping provisions at R203.6.1 clarifying that curb ramps or blended transitions may be required to connect on-street parking spaces, on-street parking space access aisles, and passenger loading zones to pedestrian access routes if needed to accomplish the required connection.

At R203.6.2, the Board has clarified that when alterations are made to crosswalks, curb ramps or blended transitions must be provided on both ends of the crosswalk where the pedestrian access route crosses a curb. This provision provides consistency with DOJ's and USDOT's joint technical assistance document on the requirements to provide curb ramps when streets, roads, or highways are altered through resurfacing. See Department of Justice/Department of Transportation Joint Technical Assistance on Title II of the Americans with Disabilities Act Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfaces, available at https://www.fhwa.dot.gov/civilrights/programs/ada/doi_fhwa_ta_cfm; see also Q & A Supplement to the 2013 DOJ/DOT Joint Technical Assistance on the Title II of the ADA Requirements To Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing, available at https://ada.gov/doi-fhwa-ta-supplement-2015.html. By adding this requirement to PROWAG, the Board seeks to minimize confusion as to the legal obligations of jurisdictions to provide curb ramps.

Pedestrian Overpasses and Underpasses (R203.7)

In R203.7, the Board has clarified that pedestrian overpasses and underpasses include overpasses and underpasses on shared use paths. In addition, the Board has eliminated platform lifts as an option to achieve accessibility of these structures in new construction. A state disability council opined in its comments that limited use/limited application elevators and platform lifts do not provide equal access because of limited functionality. Platform lifts are more difficult for users with disabilities to independently operate and are more likely to breakdown in outdoor environments than elevators and limited use/limited application elevators. The Board is aware of many instances of maintenance issues and mechanical failures with respect to platform lifts and has thus revised the rule text to allow these devices only in alterations when installation of an elevator or limited use/limited application elevator is not technically feasible. Jurisdictions that install platform lifts should be aware of their maintenance obligations to ensure platform lifts remain operable at all times that the pedestrian facility is open for pedestrian use.

Ramps (R203.8); Elevators and Limited Use/Limited Application Elevators (R203.9); Platform Lifts (R203.10)

At R203.8 through R203.10, the Board added scoping provisions for ramps, elevators and limited use/limited application elevators, and platform lifts so that it is clear that wherever these facilities are present in the public right-of-way, they must comply with accessibility requirements.

Doors, Doorways, and Gates (R203.11)

In the final rule, the Board has revised the scoping for doors, doorways, and gates to require that all doors, doorways and gates that are part of a pedestrian access route must comply with the specified technical accessibility requirements. This is a change from the proposed rule, which required all doors, doorways, and gates of any pedestrian facility to comply with requirements (NPRM R218), and a change from the SNPRM which exempted doors, doorways, and gates on shared use paths from compliance (SNPRM R218). In the preamble to the SNPRM, the Board indicated that the exemption for shared use paths was provided to avoid a perceived conflict with AASHTO guidance. 78 FR 10110, 10113 (Feb. 13, 2013). AASHTO discourages the use of physical barriers on shared use paths. See AASHTO, Guide for the Development of Bicycle Facilities at 5-46.

In response to the SNPRM, several disability rights advocacy organizations commented that doors, doorways, and gates on shared use paths should not be exempted, and two state DOTs requested clarity regarding applicable technical standards for these facilities. The Board concurred with commenters that pedestrian gates on shared use paths should not be exempted from accessibility requirements. Persons with disabilities must be able to access shared use paths through gates if they are provided. The Board has thus reinstated the technical requirements for doors, doorways, and gates in the final rule. Further, consistent with AASHTO guidance, which recommends the use of bollards if physical barriers are needed to restrict motor vehicle entry, the final rule permits the use of bollards on shared use paths (R302.2).

R204 Alternate Pedestrian Access Routes, Transit Stops, and Passenger Loading Zones

Alternate Pedestrian Access Route (R204.1)

The proposed scoping for alternate pedestrian access routes stated that an alternate pedestrian access route is required when a pedestrian circulation path is closed due to construction, alterations, maintenance operations, or other similar conditions (NPRM R205). In the final rule, the Board has maintained similar scoping; however, it has removed the term “alterations” from the list of conditions to avoid confusion as “construction” accurately covers the intended scenario. In addition, the Board has edited the text to indicate that the requirement to provide an alternate pedestrian access route is triggered by a pedestrian circulation path being made inaccessible due to the described conditions, rather than being completely closed, since a pedestrian circulation path can be unusable for persons with disabilities without being completely closed to all users. The Board has added “closure” to the list of conditions triggering the requirement for an alternate pedestrian access route to clarify that where a pedestrian circulation path is completely closed for any reason, an alternate pedestrian access route must be provided.

In the proposed rule, the scoping provision for alternate pedestrian access routes pointed to provisions of the MUTCD that were incorporated by reference. The final rule instead points to the relevant technical provisions of chapters 3 and 4, as the MUTCD provisions are no longer incorporated by reference.

In response to the proposed rule, state and local government commenters raised concerns regarding scenarios where the alternate route would need to deviate substantially from the original pedestrian circulation path. For example, one state DOT indicated that freeway widening projects may necessitate the complete closure of a bridge, including the pedestrian facilities, making an alternate pedestrian access route infeasible or impossible to provide.

In response to these concerns, in the final rule the Board has added an exception allowing an “alternate means of providing access” for pedestrians with disabilities where establishing an alternate pedestrian access route is technically infeasible. An “alternate
means of providing access” does not mean an alternate pedestrian access route that falls short of the technical requirements stated at R303. Rather, this exception is intended to allow for completely different means of access in scenarios such as a bridge closure, where establishing an alternate pedestrian access route is not technically feasible. For example, in the case of a bridge closure, an alternate means of providing access might be the provision of accessible shuttle bus service. DOI and USDOT may provide additional information regarding acceptable alternate means of providing access and the circumstances under which this exception may be used.

The Access Board received numerous public comments supporting a requirement for the provision of alternate pedestrian access routes, including approximately 150 individual commenters and several disability rights and pedestrian advocacy organizations. Several local government commenters and one state DOT requested flexibility to provide alternate accessible routes only when deemed practicable. In addition, two state DOTs, two local government commenters, and two industry organizations expressed concern regarding the cost of providing alternate routes.

The Board acknowledges that there are costs involved in providing alternate pedestrian access routes and has assessed those costs in the FRIA. See FRIA at 126. However, equity in our public rights-of-way cannot be achieved without the provision of temporary accessible facilities where permanent accessible facilities are temporarily unavailable. A person without a disability may readily assess safety and traffic conditions and navigate around a closed pedestrian circulation path if an alternate facility is not provided. However, a pedestrian with a disability may not be able to see alternatives, assess traffic to step into a roadway, or may not be able to see alternatives. A pedestrian with a disability may readily assess safety and traffic conditions at crosswalks or guards. The proposed rule indicated that where a temporary passenger loading zone is provided, it must be accessible per the relevant technical provisions. This requirement is already covered by the general scoping provision R201.2, which indicates that the requirements in the guidelines apply to temporary pedestrian facilities. However, the Board added this provision to emphasize that alternate passenger loading zones provided in the public right-of-way during construction or maintenance operations must be accessible.

R205 Detectable Warning Surfaces

Detectable warning surfaces are standardized surfaces built in or applied to certain pedestrian walking surfaces to warn pedestrians who are blind or have low vision of a hazard. A distinct cane-detectable pattern of truncated domes provides a tactile cue of transitions to vehicular routes and of open drop-offs at transit platforms. The proposed rule required detectable warning surfaces at curb ramps or blended transitions, which remove tactile cues otherwise provided by curb faces: at cut-through pedestrian refuge islands to indicate their presence within a crosswalk; at at-grade rail crossings not located in a street or highway; along drop-offs at the boundary of passenger boarding platforms, which are above standard curb height; and along boarding sidewalk and street-level rail boarding and alighting areas not protected by screens or guards.

In the final rule, the Board is also requiring detectable warning surfaces on pedestrian circulation paths at driveways with stop or yield control to alert pedestrians who are blind or have low vision that they are walking into an active vehicular way. The Board indicated in an advisory that accompanied the proposed rule text that detectable warning surfaces should be provided at commercial driveways with stop or yield control (NPRM Advisory R208.1). Several commenters, including state and local governments, requested clarification on the provision of detectable warning surfaces at commercial driveways. In the final rule, the Board clarifies that detectable warning surfaces are required at driveways where stop or yield control is provided. In the final rule, the Board declines to limit the covered driveways to “commercial” driveways to ensure that pedestrian circulation paths at driveways to multifamily housing facilities that have stop or yield control also have detectable warning surfaces.

Some state and local government commenters encouraged the Board to move the requirement for detectable warning surfaces at commercial driveways from the advisory to the rule text. Two state DOT commenters questioned whether stop or yield control was the appropriate threshold for application of the requirement. The Board has concluded that where there is sufficient vehicular traffic to provide stop or yield control (i.e., stop or yield signage) or traffic signals, there is a sufficient hazard to pedestrians who are blind or have low vision such that a detectable warning surface is warranted to advise individuals that they are entering an active vehicular way. Two state DOTs objected to implementing detectable warning surfaces at commercial driveways because they would be provided at sidewalk as opposed to street level. In response to these concerns, the Board notes that detectable warning surfaces are consistently used to provide tactile notification of a vehicular way where a curb is not present. This could be at street level, in the case of curb ramps, or at sidewalk level in the case of driveways.

Several commenters questioned whether the Board intended to require detectable warning surfaces at street or sidewalk level bus stops. In R104.3, the Board added a definition of “boarding platform” to clarify that detectable warning surfaces are only required where the bus boarding and alighting area is on a platform raised above standard curb height.

The proposed rule indicated that detectable warning surfaces are neither required nor desirable at cut-through pedestrian refuge islands that are less than 6 feet in length in the direction of pedestrian travel (NPRM R208.2 and NPRM Advisory R208.2). In the final
rule, the Board has clarified this substantive requirement by defining the term “pedestrian refuge island” at R104.3. The definition clarifies that only islands that are at least 72 inches in length in direction of pedestrian travel are considered suitable for pedestrian refuge. Islands that are at least 72 inches in length allow for a 24-inch detectable warning surface at each edge and at least 24 inches between the surfaces to provide detectable separation of the surfaces and to have sufficient space to wait. A cut-through island that is shorter than 72 inches is not suitable for pedestrian refuge, and there is thus no need to distinguish the cut-through from the rest of the crosswalk; the timing provided for pedestrian crossing must allow for the pedestrian to cross the entire traveled way as required by R306.2.

In the final rule, the Board has restructured for clarity the scoping section for detectable warning surfaces at R205 to provide a separate provision for each place that detectable warning surfaces are required. Each provision indicates that technical requirements relevant to that placement.

R206 Pedestrian Signal Heads and Pedestrian Activated Warning Devices

Where pedestrian signal heads and pedestrian activated warning devices are provided at crosswalks, they must be accompanied by audible information devices that make those visual signals accessible to persons who are blind or have low vision. In the proposed rule, the Board incorporated by reference sections of the MUTCD in lieu of providing technical requirements for these devices.

As proposed by incorporation by reference of MUTCD section 4E.09 paragraph 7 (NPRM R209.1), the final rule requires that the accessible features of pedestrian signal heads and pedestrian activated warning devices must be available at all times.

Commenters expressed confusion regarding the expectations for implementation of the incorporated sections of the MUTCD. In response to these concerns, in the final rule the Board has stated the technical requirements for accessible pedestrian signal heads and accessible pedestrian activated warning devices directly in the rule text. The scoping section for these devices has been modified to provide detailed references to the new technical sections.

Numerous state and local government commenters objected to a universal requirement that pedestrian signal heads are provided as described above in the Major Issues section, after careful consideration of these comments, the Board has retained the requirement for accessible features for all new and altered pedestrian signal heads and pedestrian activated warning devices.

In the proposed rule, the Board specified that altering the signal controller and software, or replacing the signal head, would constitute an alteration requiring compliance with the technical requirements for accessible pedestrian signals and push buttons. As described above in the Major Issues section, in the final rule the Board has removed the provision specifying the types of alterations that would trigger implementation of the technical accessibility requirements for pedestrian signal heads and pedestrian activated warning devices. USDOT and DOJ may provide additional guidance on these issues.

Finally, in the final rule the Board has updated the terminology used in the heading of this section for consistency with the terminology used by MUTCD and USDOT, and to better described the devices that must be made accessible.

R207 Protruding Objects and Vertical Clearance

Limitations on the extent to which objects may protrude horizontally into a pedestrian circulation path, as well as vertical clearance requirements above a pedestrian circulation path, apply to the full width of pedestrian circulation paths. The specific technical requirements for protruding objects and vertical clearances appear in section R402 of the final rule.

In the public right-of-way context, a “protruding object” is anything that extends into the three-dimensional space above a pedestrian circulation path, or an object contained wholly within it. Examples include, but are not limited to, streetlights, utility poles and equipment cabinets, signposts and signs, parking meters, trash receptacles, public telephones, mailboxes, newspaper vending machines, benches, transit shelters, kiosks, bicycle racks, planters and planted trees, and street sculptures. Technical requirements for protruding objects are designed to ensure that objects located within pedestrian circulation paths are cane-detectable, so they do not present hazards for people who are blind or have low vision.

Regulated entities will need to comply with the requirements for protruding objects when installing or permitting alterations to utilities, trees, awnings, street furniture, and other objects on or adjacent to pedestrian circulation paths. The American Association of State Highway and Transportation Officials (AASHTO) recommends that trees and shrubs be pruned to maintain usability of walkways, and that permitted uses of public rights-of-way, such as sidewalk cafes, be monitored to ensure that they do not encroach upon the pedestrian access route. See AASHTO, Guide for the Planning, Design, and Operation of Pedestrian Facilities 4–3 (2021). State and local governments will be responsible for enforcing compliance with maintenance agreements to prevent tree branches or other objects from impermissibly protruding into a pedestrian circulation path where the jurisdiction does not provide the maintenance directly.

The scoping provision for protruding objects included in the SNPRM modified the proposed scoping provision text indicating that protruding objects must not reduce the clear width required for pedestrian access routes (NPRM R401.2). In the final rule, the Board has added an 8-foot vertical clearance requirement for shared use paths (SNPRM 210.3). In the final rule, the Board has moved both vertical clearance and clear width requirements to the technical section on protruding objects and vertical clearance at R402.4 and R402.5. Comments received regarding those provisions are addressed in the discussion of R402.4 and R402.5 below. The Board has renamed the section to “Protruding Objects and Vertical Clearance” for clarity.

In response to the NPRM, a local government and an engineer commented that the requirements for protruding objects should apply only to the pedestrian access route portion of the pedestrian circulation path. A local government entity commented that an exception should be provided applying protruding objects requirements to only 36 inches of the pedestrian circulation path in constrained conditions. While a person using a wheelchair can visually assess a sidewalk to determine which portion has less cross slope or fewer changes in level, a blind pedestrian or a person with low vision is not going to know which portion of the pedestrian circulation path has been designated as a pedestrian access route. Thus, objects that protrude into any portion of the pedestrian circulation path could create a hazard if not cane-detectable. The Board thus maintains the requirement that the entire pedestrian circulation path comply with the technical requirements for protruding objects.

The Board acknowledges that the public rights-of-way, such as sidewalk cafes, be monitored to ensure that they do not encroach upon the pedestrian access route.
regarding the concepts of clear width and protruding objects (NPRM Advisory 210). Clear width refers to the width of pedestrian access route walking surface that is required to be completely clear of any objects. This means that within the width of the pedestrian access route, there can be no street furniture, utility poles, or other objects of any kind directly on the walking surface. Clear width technical requirements for pedestrian access routes are specified in R302.2. Protruding objects refer to objects that are in the three-dimensional area above the walking surface, but not directly touching the walking surface. Those objects must conform to the technical requirements for protruding objects at R402.

R208 Pedestrian Signs

Signs that are intended solely for pedestrians, including transit signs, and all signs serving shared use paths, must comply with the technical requirements for visual characters at R410. Thus, signs that are not on shared use paths and are intended for both motorists and pedestrians, or bicyclists and pedestrians, are not required to comply. However, all signs on shared use paths are required to comply as pedestrians (1) should be aware of the potential movement of bicycles in the shared space, and (2) have a reasonable expectation that any sign on a shared use path is potentially providing pedestrian information.

The scoping excepts two categories of pedestrian signs from compliance with technical requirements for visual characters at R410. First, transit schedules, timetables, and maps are not required to comply. Compliance with the technical requirements for these specific types of transit signs would render them too large. Other types of transit signs, such as signs that identify stops and routes, must comply with the requirements. The second category of signs that are exempted from compliance are signs that are mounted immediately above or incorporated into a push button detector unit. The requirements of R410 may also make these signs too large.

In the NPRM, the Board used inartful language to convey that signs intended solely for pedestrians are the signs covered by this rule (NPRM 211.2). The Board has edited this language for clarity. Also, in the NPRM, the Board proposed that where audible sign systems and other technologies are used to provide equivalent information to information contained on pedestrian signs, then signs did not need to comply with technical requirements for visual characters (NPRM R211.1). In an accompanying advisory, the Board presented remote infrared signs as an example of an audible technology, that if used, would make it unnecessary for the sign to comply with technical requirements for visual characters (NPRM Advisory 211.1). In response to the proposed rule, two advocacy organizations for people who are blind or have low vision and a state DOT commented that the provision of audible signs does not negate the need for compliance with technical requirements for visual characters.

The Board concurs that reliance on audible signs in lieu of compliance for visual characters is insufficient for persons who have both low vision and hearing impairments. Further, while acknowledging the 14 commenters who indicated support for the use of remote infrared signs, the Board has concluded that relying on technologies that require a pedestrian to have a receiver does not currently provide equal access to visual signs; however, in the future this may be a possibility with more widespread development and adoption of wayfinding mobile applications. Thus, in the final rule, all signs intended solely for pedestrians must comply with technical requirements for visual characters except for the two categories of signs described above.

Requirements for accessible parking space signs have been moved to the technical section for on-street parking spaces (R310). The requirement for signage at accessible passenger loading zones has been eliminated in the final rule for consistency with ADAAG and to avoid misinterpretation of the sign as indicating exclusive use for passengers with disabilities, particularly where there is only one loading zone.

R209 Street Furniture

Drinking Fountains (R209.2)

Each drinking fountain in the public right-of-way must comply with accessibility requirements at 602.1 through 602.6 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines).

Public Street Toilets (R209.3)

Each permanent public street toilet must comply with sections 603 through 610 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). Permanent street toilets are standalone toilet room units that are provided in public rights-of-way in cities throughout the United States. Specific examples of these permanent street toilets are discussed in the FRIA, FRIA at 125. Street toilets are different than, for example, traditional restroom facilities provided at highway rest stops. Those traditional bathroom facilities are in a building; pursuant to R201.3, they are subject to the applicable requirements of 36 CFR part 1191 (ADA & ABA Accessibility Guidelines).

Portable toilet units must comply with section 603 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). There are multiple portable toilet units clustered in a single location, at least 5 percent, but no fewer than one of each type of toilet unit at each cluster must comply with the referenced technical requirements. In this context, “type” references those units differentiated by gender.

The Board has revised the scoping of the public street toilet section for clarity, including revising the heading, which reads “Public Toilet Facilities,” to avoid the confusion between public street toilets and traditional toilet facilities that was reflected in the public comments. The Board has also corrected the references to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines) and provided separate provisions for permanent street toilets and portable toilet units.

Tables (R209.4)

At each group of adjacent tables, at least 5 percent, but no fewer than one table, must comply with technical accessibility requirements at 902 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). The proposed rule had stated the requirements relative to each “location” where tables were provided, and a state government commenter indicated that this language was unclear. The Board has thus revised the text of this provision to clarify that the requirement applies to each group of adjacent tables, as opposed to all tables in a larger area that might be considered a “location.”

Sales or Service Counters (R209.5)

Each sales or service counter in the public right-of-way must comply with section 904.4 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). In the final rule, the Board has added exceptions (one applicable to facilities subject to the ADA and a second applicable to facilities subject to the ABA) to this scoping for sales and service counters that are located in a building that is not itself in the public right-of-way, but that directly serves the public right-of-way, such as a walk-up service window on a sidewalk. The Board added these exceptions to eliminate confusion for sales and service counters that are part of a building and thus subject to 36 CFR part
1191, but directly serve the public right-of-way. In buildings, at least one of each type of sales or service counter must comply with technical requirements. In the public right-of-way, each sales or service counter must comply.

Bench (R209.6)

In the proposed rule, the Board provided a single scoping provision for all benches in the public right-of-way except for those at tables (which are covered under the technical requirements for tables) (NPRM R212.6). This included benches along pedestrian circulation paths and those at transit stops and shelters. Commenters indicated that the requirement that clear space not overlap the area within 1.5 feet of the front of the bench was confusing. The Board concluded that while the requirement is appropriate for transit shelters, it should be revised for other contexts.

In the final rule, the Board has clarified that for benches at transit stops (R209.6.1) and benches not at transit stops or shelters (R209.6.2) the clear space complying with R404 must be next to either end of the bench, or if the bench does not have an “end,” such as a circular bench, the clear space must be either integral to the bench or located no more than 18 inches (455 mm) from the front of the bench. Where the clear space is integral to the bench, there will be a break in the bench where the clear space is located. These requirements ensure that a pedestrian using a wheelchair may sit in proximity to a companion seated on the bench. The Board has restructured the provision for clarity.

In the final rule, the Board has maintained the requirement that the clear space not overlap the area within 18 inches (455 mm) for benches provided within transit shelters. See R209.6.1; R309.2.2. In a transit shelter, the primary goal is to provide shelter to as many individuals as possible within the limited space. Thus, the clear space may be situated at the end of a bench or at least 18 inches from the front edge of the seat, ensuring that the bench may be fully occupied while the clear space is in use.

Four commenters requested that the Board provide technical criteria for benches. The Board concurs with commenters that benches in the public right-of-way should have armrests and back support for maximum accessibility. As stated in the advisory that accompanied the proposed rule, benches that provide full back support and armrests in sitting and standing are more useable by pedestrians with disabilities. However, as the Board did not propose specific technical requirements, such as specifications for armrest loads and dimensions and back height, the Board declines to add those now at the final rule stage.

One company that provides jurisdictions with advertisement-funded bus stop benches requested that the Board exempt bus stop benches located on unimproved surfaces from the requirement to provide clear space in order to protect the company’s business model. The Access Board declines this request. Consistent with the implementation approach of many accessibility regulations, new construction and alterations provide an opportunity for a jurisdiction to add accessibility to a pedestrian facility at minimal additional cost. PROWAG requires the provision of boarding and alighting areas at all newly constructed and altered transit stops. Thus, when installing concrete for the boarding and alighting areas required by PROWAG, a jurisdiction has the opportunity to install a concrete pad for a bench if the jurisdiction so desires. PROWAG does not require jurisdictions to provide benches at transit stops, but where provided, they must comply with accessibility requirements.

Operable Parts of Other Fixed Elements (R209.7)

Operable parts of other fixed elements to be used by pedestrians, including street furniture, not specifically addressed by this rule must comply with technical requirements for operable parts at R403. This provision has been added in response to commenters’ concerns about other types of street furniture that are not specifically addressed in the rule text. The Board notes that operable parts on parking meters and pay stations other than those that serve accessible parking spaces, which have additional technical requirements specified at R310.6, are covered under R209.7 and must comply with the technical requirements for operable parts at R403. This means that all parking meters and pay stations must meet clear space, reach range, and operation requirements; however, they do not need to comply with requirements for visual displays stated at R310.6 that ensure information is visible to a person using a manual wheelchair. Two disability rights advocacy organizations commented in support of clear space at all parking meters and pay stations. The Board observes that many individuals with disabilities use parking spaces other than accessible spaces; to ensure equity in public rights-of-way, persons with disabilities must be able to access parking meters and pay stations wherever they park.

R210 Transit Stops and Transit Shelters

Where provided, transit stops and transit shelters shall comply with the technical requirements at R309. In response to the NPRM, a local government transit advisory group commented that the Board had failed to propose a scoping provision for vending machines at transit shelters. The Board concurs that this was an oversight, and has added a scoping provision for fare vending machines that references the operable parts technical requirements at R403 and the relevant provisions of Section 707 of 36 CFR part 1191. The Board has also added a scoping provision for operable parts of other fixed elements at transit stops and shelters intended to be used by pedestrians.

R211 On-Street Parking

Where on-street parking is provided and is metered or designated by signs or pavement markings, accessible parking spaces complying with the technical provisions at R310 must be provided. The minimum number of accessible on-street parking spaces required is determined according to Table R211 assessing the total number of spaces.

The Board has made several revisions to this scoping section based on public comments. In the proposed rule, the board used the total number of spaces on a “block perimeter” to determine the number of accessible spaces required. Several commenters indicated that the meaning of block perimeter was unclear, while others noted that not all on-street parking is located on a block perimeter. In response to these concerns, the Board has defined block perimeter in R104.3 and included an example within the definition for clarity. In addition, the Board has added a provision for parking not on a block perimeter to clarify that those on-street parking spaces are also subject to accessibility requirements.

In response to commenter concerns, the Board has excepted on-street spaces that are designated exclusively for commercial or law enforcement vehicles, or residential parking. Those excepted spaces are not counted for the purpose of determining the required number of accessible spaces. These spaces must be designated for use solely for the excepted purpose; spaces that are designated for commercial or law enforcement vehicle use or residential parking only during certain hours are not excepted and must be counted for the purpose of determining the required number of accessible spaces. Another
exception states that where on-street parking spaces are altered, the requirements of R211 shall apply only to the affected parking spaces until the minimum number of accessible on-street parking spaces as specified in Table R211 are provided. Thus, for example, alteration of a single on-street parking space on a block perimeter would not trigger the obligation to provide the total number of required accessible spaces on the block perimeter. Only the altered space would need to be made accessible if an insufficient number of accessible spaces were available.

The Board notes that these minimum guidelines for the provision of accessible parking in public rights-of-way do not prevent regulated entities from providing additional accessible parking, including residential accessible parking. Standard-setting agencies may also adopt a more stringent standard. In response to the NPRM, a local government commenter asked whether on-street accessible spaces are required where there is an adjacent public off-street lot, and a state government DOT requested that the Board allow jurisdictions to combine the number of on-street and off-street parking spaces for the purpose of designating accessible spaces. On-street parking spaces are covered by PROWAG and off-street parking in lots or garages is covered by the requirements at 36 CFR 1191. Accessible parking must be separately designated for on-street and off-street locations. To ensure equity for persons with disabilities, if on-street parking is provided then accessible on-street parking must also be provided.

Several local government commenters requested flexibility for the provision of accessible on-street parking where paratransit or other parking management programs, such as free parking, are provided for persons with disabilities. The Board has carefully considered these comments and has declined to provide exceptions for jurisdictions with paratransit or parking management programs. The provision of accessible on-street parking spaces consistent with PROWAG ensures that parking spaces are available that will allow persons with disabilities to park close to their destinations and have either a direct or nearby connection to a pedestrian access route or pedestrian circulation path. The provision of paratransit or free parking for persons with disabilities does not address the availability of accessible parking for persons with disabilities who rely on private vehicle transportation. Jurisdictions that allow persons with disabled parking placards to park in “no parking” or loading zone areas cannot guarantee that those areas will have accessible features such as proximity to a curb ramp or an adjacent sidewalk clear of obstructions such that a ramp can be deployed.

One commenter indicated that the rule should include guidelines for accessible electric vehicle charging stations. The Board is undertaking a separate rulemaking to address the accessibility of electric vehicle charging stations, which may ultimately address electric vehicle charging stations in the public right-of-way. See ATBCB Fall 2022 Unified Agenda, available at https://www.reginfo.gov/public/do/E/AgendaViewRule?pubId=202210& RIN=3014-AA48.

R212 Passenger Loading Zones
Where permanently designated passenger loading zones other than transit stops are provided, at least one accessible passenger loading zone complying with technical requirements must be provided in every continuous 100 feet (30 m) of loading zone space, or fraction thereof. The Board revised the text of this scoping provision to clarify that the passenger loading zones covered by this rule are those that are permanently designated for passenger loading, other than transit stops. This includes passenger loading zones permanently designated for ride share.

Often, permanent passenger loading zones in the public right-of-way are comprised of a sidewalk cut out so that vehicles can pull out of the traveled way to unload passengers. However, a permanently affixed sign designating a passenger loading zone is sufficient to bring the loading zone under coverage of this rule. Passenger loading zones that vary with the time of day or the occupancy of a particular retail space, such as valet stands that are provided only during certain hours, are not considered permanently designated and are therefore not subject to PROWAG.

R213 Stairs and Escalators
Where provided on pedestrian circulation paths, stairs must comply with technical requirements at R408 and escalators must comply with section 810.9 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). Stairs and escalators are not part of pedestrian access routes, but where they are provided in the public right-of-way, they must conform to the technical requirements of R409 regardless of whether they are required by PROWAG or have been placed voluntarily.

D. Chapter 3: Technical Requirements
R301 General
The technical requirements contain accessibility design criteria and apply as specified in the scoping provisions of Chapter 2 or where referenced by another technical requirement in Chapter 3 or 4. These technical requirements were developed specifically for pedestrian facilities in the public right-of-way.

R302 Pedestrian Access Routes
The technical requirements for pedestrian access routes at R302 are intended to provide a continuous path throughout the pedestrian facilities of a
public right-of-way that is accessible to persons with disabilities. These technical requirements include clear width, passing spaces, grade, cross slope, and surface characteristics. The technical requirements as proposed in the NPRM were adapted from the technical requirements for accessible routes for buildings and facilities at 36 CFR part 1191, Appx. A 206. Based on careful consideration of the many comments received in response to the proposed and supplemental proposed rules, the Board has modified several of the pedestrian access route technical provisions for consistency with the public right-of-way context and for clarity of the requirements.

In the final rule, the Board eliminated the list of components of pedestrian access routes that appeared in NPRM R302.2. The Board concurred with a local government commenter who opined that each facility included in this list should have scoping in Chapter 2. The Board revised R203 to provide scoping for each pedestrian facility, and then determined that the list of facilities with associated technical provisions at NPRM R302.2 was duplicative of the revised section R203. Further, the Board concluded that the list at NPRM R302.2 added to the confusion regarding the concept of a pedestrian access route in the public right-of-way.

As explained above in the discussion of R203, pedestrian access routes in the public right-of-way function differently than accessible routes in buildings and on sites. Accessible routes in buildings and on sites are required to connect accessible facilities and elements to other accessible facilities and elements and may consist of various components. 36 CFR part 1191, Appx. D 206.2, 402.2. A pedestrian access route in the public right-of-way runs through nearly every traversable surface within the pedestrian facilities; thus, unlike the requirements for a building, every new and altered traversable surface in the public right-of-way, except for stairs and facilities that have been specifically excepted, must comply with pedestrian access requirements. As a result of elimination of the proposed R302.2, the sub-provisions of R302 have been renumbered.

Continuous Clear Width (R302.2)

The requirements for clear width of pedestrian access routes have not changed from what the Board proposed, as modified by the SNPRM (SNPRM R302.3). Specifically, a 48-inch (1220 mm) continuous clear width is required for most pavements of the pedestrian access route. There are two exceptions: (1) places where a pedestrian access route crosses medians and pedestrian refuge islands, which require 60 inches of clear width or the width of the crosswalk (whichever is greater), and (2) shared use paths where the clear width must extend the entire width of the path. In response to commenter questions, the Board revised the language of the provision to clarify that the required width is measured exclusive of any curb. Also, in response to comments, the Board has added a sentence clarifying that bollards are permitted on shared use paths as long as the clear width of the pedestrian access route is 48 inches (1220 mm) or wider (R302.2.2).

In response to the NPRM, three state DOTs and two utility companies requested that the Board allow a reduction in the clear width of pedestrian access routes to accommodate utility poles, traffic signal poles, and similar obstructions. An additional 28 individual commenters employed by utility companies requested that the Board revise the clear width requirement to 36 inches. In alterations, including the addition of a pedestrian circulation path to an existing right-of-way, where existing physical constraints make compliance with the clear width requirements technically infeasible, compliance with these requirements is required to the maximum extent feasible. See R202.3. In that circumstance, the jurisdiction must comply with the requirement to the maximum extent feasible. Thus, these guidelines permit a jurisdiction to reduce the clear width of a pedestrian access route to account for existing utility infrastructure if the pedestrian circulation path cannot be rerouted around the utility and the utility cannot reasonably be relocated.

In the context of alterations, where there are existing physical constraints, the width must still comply to the maximum extent feasible; a pedestrian circulation path narrower than 36 inches may be impassable by a person with a mobility device. In new construction of undeveloped land, by contrast, the Board expects jurisdictions to insist that utilities, traffic signals, and street furniture be located to allow for full compliance with accessibility requirements. However, as provided in DOJ’s Title II regulations, full compliance with the relevant accessibility requirements is not required in the context of new construction where a public entity can demonstrate that it is structurally impracticable to meet the requirements. Full compliance is considered structurally impracticable only in those rare circumstances when the unique characteristics of terrain prevent the incorporation of accessibility features. 28 CFR 35.151.

Some commenters, including two disability rights advocacy organizations, a pedestrian advocacy organization and a local government DOT, requested that the Board expand the required clear width to 60 or 72 inches. The Board acknowledges that its public rights-of-way advisory committee recommended a width of 60 inches. See Public Rights of Way Access Advisory Committee, Building a True Community: Final Report, 13 (2001) available at https://www.access-board.gov/files/advocacy-committee-reports/row-report.pdf. However, that recommendation included several circumstances where a reduction in width would be permitted. Id. The Board opted to require 48 inches clear width with a requirement for 60 inch passing spaces as a minimum accessibility requirement. Forty-eight inches allows room for a person using a mobility device to traverse a pedestrian circulation path. In response to the SNPRM, some commenters requested that the Access Board add a minimum width for shared use paths. Jurisdictions determine the width for a shared use path using criteria related to anticipated user volumes. AASHTO recommends that two-directional shared use paths should be 10 feet wide minimum. AASHTO, Guide for the Development of Bicycle Facilities 5–3 (4th ed. 2004). Where shared use paths are anticipated to serve a high percentage of pedestrians and high user volumes, AASHTO recommends that the paths should be 11 to 14 feet wide to enable a bicyclist to pass another path user travelling in the same direction, at the same time a path user is approaching from the opposite direction. Id. In certain “very rare” circumstances, AASHTO permits the width of shared use paths to be reduced to 8 feet. Id.

The Board is concerned that stating a minimum width, such as the width required for a pedestrian access route, may cause confusion that would result in the installation of narrower shared use paths than what would otherwise be used. Thus, the Board has maintained the requirement stated in the SNPRM that technical requirements for pedestrian access routes are applicable to the full width of shared use paths, whatever the width. In response to a local government commenter that expressed concern that motorists would mistake a full-width curb ramp of a shared use path for a driveway, and a state DOT requested an exception for bollards that prohibit vehicular travel, the Board has added a
sentence to R302.2.2 clarifying the obstructions such as bollards are permitted on shared use paths as long as the clear width of the pedestrian access route is not reduced to less than 48 inches (1220 mm).

One local government commenter sought clarification regarding the applicable clear width for a path where bicyclists and pedestrians travel on separate but adjacent paths. A state’s department of recreation asserted that for pedestrian paths with adjacent equestrian paths, the requirements should apply only to the pedestrian portion of the path. Whether a particular pedestrian facility should be considered a shared use path or not will be determined by the specific characteristics of the path. The question is whether there is a shared use path, or a pedestrian circulation path and an adjacent bike path or equestrian path.

If there is a detectable separation between the pedestrian portion of the path and the bike or equestrian portion of the path, then it may not actually be a shared use path, but rather two distinct facilities in close proximity.

Passing Spaces (R302.3)

Passing spaces must be provided at intervals of 200 feet (61 m) maximum where the clear width of the pedestrian access route is less than 60 inches (1525 mm). The passing spaces, which are 60 inches by 60 inches, are provided to allow sufficient space for two persons in wheelchairs to pass each other. Pedestrian access routes and passing spaces may overlap. In response to the NPRM, a utility company expressed concern about passing spaces being added to a pedestrian access route near an at-grade rail crossing where typically pedestrians would be channeled into the crossing. Passing spaces must be added at intervals no greater than 200 feet, but jurisdictions have flexibility to place some passing spaces at shorter intervals to ensure that specific areas are avoided.

A local government commenter requested clarification as to what length of a pedestrian circulation path would need to be altered to trigger the requirement for a passing space. As this is a question regarding how the technical requirements will be enforced, the Board notes that USDOT and DOJ may provide further specifics on this issue.

Grade (R302.4)

The grade of a pedestrian access route is the running slope of the route in the direction of pedestrian travel. Grade is the vertical change in elevation over the horizontal distance covered and is expressed as either a ratio or, when dividing these two numbers, as a percent. The grade of pedestrian access routes must comply with the specifications corresponding to the location of the pedestrian access route, except for the grade of curb ramps and blended transitions, and ramps, which must comply with the grade specifications of their respective technical requirements (R304, R407).

Where pedestrian access routes are contained within a street or highway right-of-way, the grade of the pedestrian access route shall not exceed 1:20 (5.0%). An exception permits the grade of the pedestrian access route to not exceed the grade established for the adjacent street or highway, where the grade established for that adjacent street or highway exceeds 1:20 (5.0%). However, where pedestrian access routes are contained within crosswalks, a maximum grade of 1:20 (5.0%) is required (R302.4.3). This is consistent with AASHTO guidance, which recommends that the sidewalk grade follow the grade of adjacent roadways, and also recommends maximum cross slopes for roadways. See AASHTO, A Policy on Geometric Design of Highways and Streets 4–7 (7th ed. 2018); see also AASHTO, Guide for the Development of Bicycle Facilities 5–16 (4th ed. 2012). Where pedestrian access routes are not contained within a street or highway right-of-way, such as a shared use path that runs through either a separate right-of-way or an easement on private land, a maximum grade of 1:20 (5.0%) is required (R302.4.2).

In response to comments from state and local government entities, the Board restructured R302.4.1 (NPRM 302.5) to clarify that a pedestrian access route within a highway right-of-way may be graded to 1:20 (5.0%), even where the grade of the adjacent street is less than 1:20 (5.0%). The Board has restructured this provision to provide a general requirement of 1:20 (5.0%) maximum grade of the pedestrian access route, with an exception stating that where the grade of the adjacent street exceeds 1:20 (5.0%), the grade of the pedestrian access route shall not exceed the grade of the adjacent street. In some circumstances where the grade of the adjacent street is less than 1:20 (5.0%), compliance with the general requirement could result in a pedestrian access route with a grade of 1:20 (5.0%) maximum being steeper than the grade of the adjacent street if the grade of the adjacent street is less than 1:20 (5.0%).

The Board also received comments from four state DOTs indicating that their standard maximum for superelevation exceeds 5%. To address this concern, the Board has added an exception for the grade of the pedestrian access route within a crosswalk, which specifies that where roadway design requires superelevation greater than 1:20 (5.0%) at the location of a crosswalk, the grade of the pedestrian access route within the crosswalk may be the same as the superelevation (R302.4.3).

In the SNPRM, the Board added a provision requiring compliance with grade requirements to the “extent practicable” in both new construction and alterations where compliance with grade requirements for pedestrian access routes “not practicable” due to existing terrain or infrastructure, right-of-way availability, a notable natural feature, or similar existing physical constraints (SNPRM R302.5.2). The Board explained that this provision was responsive to comments to the Advance Notice of Proposed Rulemaking (ANPRM) on accessibility guidelines for shared use paths indicating that physical constraints may prevent full compliance with grade requirements.

The comments received in response to the SNPRM indicate that the proposed language at SNPRM R302.5.2 did not provide additional clarity or substantial flexibilities beyond what is already available through other provisions and standards. The Board received comments from some state DOTs and local governments detailing circumstances where the grade of SUPs in their jurisdictions exceed 5% principally due to underlying terrain. For example, one local government located in a mountainous area noted that only 17% of the land within its jurisdiction has a slope of 5% or less and indicated that its design guidelines allow the grade of shared use paths to exceed 5% for short sections where topographical constraints necessitate design flexibility. A state DOT observed that the language of the SNPRM created a “grey area” where jurisdictions would use engineering judgement in determining whether compliance with the 5% maximum grade was “practicable” due to existing terrain. An accessibility advocacy organization commented that accessibility standards should be applied “100 percent” and only scaled back where existing site conditions warrant.

Upon consideration of the comments and further reflection and research, the Board has concluded that the proposed provision at SNPRM R302.5.2 specifically allowing the grade of the pedestrian access route to comply with grade requirements to the “extent
practicable” 12 where compliance is “not practicable” is not needed for the following reasons.

First, the Board notes that the Volpe Center, which assessed the costs of compliance with this provision, observed that the majority of shared use path miles cataloged in available documentation are built on abandoned or converted railroad track beds, and thus have a grade of less than 1:100 (1.0%) due to their railroad origins. See FRIA at 66. Further, the Board notes that the grade of shared use paths built within a highway right-of-way may match the grade of the adjacent street if it exceeds 1:20 (5.0%) (R302.4.1 Exception). In addition, AASHTO advises that the grade of a shared use path in an independent right-of-way should not exceed 5%. See AASHTO, Guide for the Development of Bicycle Facilities 5–16 (4th ed. 2012).

Consequently, the majority of shared use paths will meet the technical requirements for the grade of pedestrian access routes at R302.4.

Second, the Board notes that most shared use paths are built on existing rights-of-way and thus considered alterations under the final rule. See FRIA at 66. As explained above, “added” pedestrian facilities were required to fully comply with technical requirements as “new construction” under the proposed rule; however, under the final rule pedestrian facilities added to existing, developed rights-of-way are alterations. See 104.3. Section R202.3 of the final rule allows a regulated entity to comply with a requirement to the maximum extent feasible where existing physical constraints make compliance technically infeasible (see R202.3). Second, with respect to newly constructed shared use paths not within a highway right-of-way, the Access Board observes that DOJ regulations implementing accessibility requirements under Title II of the ADA state that full compliance with the relevant accessibility requirements is not required in the context of new construction where a public entity can demonstrate that it is structurally impracticable to meet the requirements. 28 CFR 35.151. While under DOJ’s regulation full compliance is considered structurally impracticable only in those rare circumstances when the unique characteristics of terrain prevent the incorporation of accessibility features, the comments received in response to the SNPRM indicate that the main impediment to full compliance with grade requirements is the underlying terrain. DOJ and USDOT may elect to provide additional information regarding the unique characteristics of terrain that would make compliance with grade requirements structurally impracticable.

In sum, the Board has eliminated SNPRM R302.5.4 from the final rule as unnecessary in light of other available flexibilities to address circumstances where the characteristics of the underlying terrain prevent full compliance with the technical requirements for grade.

In the final rule, the Board has also eliminated a provision that provided flexibilities for instances where compliance with grade requirements is precluded by laws intended to preserve threatened or endangered species, the environment, or archeological, cultural, historical, or significant natural features (SNPRM R302.5.5). This provision was modeled after a provision in the Board’s supplemental rulemaking under the ABA for Federal outdoor areas. 36 CFR part 1191, Appx. D 1019.1. Upon further consideration, the Board has concluded that while this provision was suitable for recreational trails in National Parks and other Federal lands, is not appropriate for the construction of transportation facilities, including shared use paths, which should be designed to prioritize equitable transportation for all, and are already subject to environmental review.

Cross Slope (R302.5)

Cross slope is the slope perpendicular to the direction of pedestrian travel (see R104.3). On a sidewalk, the cross slope is measured perpendicular to the curb line or edge of the street or highway. Excessive cross slope impedes travel by pedestrians who use wheelchairs mobility devices, since energy must be expended to counteract the perpendicular force of the cross slope. Excessive cross slope makes it more difficult for pedestrians who use wheelchairs to travel on uphill slopes and to maintain balance and control on downhill slopes. Excessive cross slope also negatively affects pedestrians who use braces, lower limb prostheses, crutches, or walkers, as well as pedestrians who have gait, balance, or stamina impairments.

A maximum cross slope of 1:48 (2.1%) is specified for pedestrian access routes, except for pedestrian access routes contained within certain crosswalks. This is the same cross slope specified for accessible routes in buildings and facilities. 36 CFR part 1191, Appx. D 403.3. In exterior environments, this cross slope is adequate to allow water to drain off paved walking surfaces.

The Board has added an exception to this general rule to clarify that the portion of a pedestrian access route within a street that connects an accessible parallel parking space to the nearest crosswalk as specified in R310.2.2 is not required to comply with cross slope requirements.

In crosswalks, the slope of the roadway is taken into consideration because the grade or running slope of the roadway perpendicular to the direction of pedestrian travel will comprise the cross slope of the crosswalk. The NPRM specified 5 percent maximum cross slope for pedestrian access routes contained within pedestrian street crossings “without yield or stop control” (NPRM R302.6.1). The purpose of allowing a steeper cross slope at these crosswalks is to avoid a jolt to vehicles at the change of grade where vehicles do not need to slow to a yield or stop at a crossing.

In an advisory that accompanied the proposed rule text, the Board indicated that a pedestrian street crossing “without yield or stop control” included intersections with a traffic signal designed for the green phase. In response to the NPRM, several commenters indicated that the meaning of “without yield or stop control” was unclear. The Board concurs with these commenters, and in the final rule has provided more specific requirements for different types of approaches.

In R302.5.2 of the final rule, the Board breaks down the cross slope for pedestrian access routes contained within a crosswalk. Specifically, the Board addresses crosswalks where the
intersection approach has a stop or yield control device such as a stop or yield sign or a flashing red or yellow light (R302.5.2.1); crosswalks at uncontrolled intersection approaches where there is no indication that traffic must slow or stop (R302.5.2.2); and crosswalks at intersection approaches with a traffic control signal or pedestrian hybrid beacon, which have phases where traffic need not slow to cross the intersection, such as when the traffic signal is green or when the pedestrian hybrid beacon is not activated (R302.5.2.3).

The cross slope of the pedestrian access route within a midblock crosswalk or a crosswalk at a roundabout is permitted to be the same as the grade of the street that it crosses (R302.5.2.4). The Board added a reference to crossings at roundabouts to clarify that these crosswalks, which do not occur at traditional intersections, operate similarly to midblock crossings.

In response to the NPRM, the Board received numerous comments on the topic of cross slope, which are addressed above in the Major Issues section. The Board has assessed the costs of compliance of R302.5.2 in the FRIA. See FRIA at 14.

Surfaces (R302.6)

The walking surfaces of pedestrian access routes, elements, and spaces that are required to be accessible shall be stable, firm, and slip resistant (R302.6). This is the same requirement as the proposed rule (NPRM 302.7); in the final rule, the Board made edits for clarity.

The NPRM contained a provision regarding vertical alignment of surfaces, which was intended to communicate that adjacent surfaces, such as pavers, portions of sidewalk, or other pedestrian facilities and elements within the pedestrian access route, be on the same plane. The provision further required grade breaks to be flush (i.e., without a gap between them), and stated requirements for at-grade rail crossings. Commenters mostly expressed confusion regarding the purpose of this provision. In the final rule, the Board has removed most of this provision, leaving only the requirement that grade breaks be flush (R302.6.1). The Board determined that the proposed requirement for planar surfaces was not needed in light of requirements for grade (R302.4), cross slope (R302.5) and changes in level (R302.6.2). The requirements for at-grade rail crossing surfaces have been consolidated at R302.6.4.

Changes in Level (R302.6.2)

In the proposed rule, the Board used the term “vertical surface discontinuities” to describe what is referred to as “changes in level” in the 2004 ABA and ADA Accessibility Guidelines. See NPRM R302.7.2; see also 36 CFR part 1191, Appx. A 303. In response to the NPRM, commenters suggested that this section be revised for better consistency with the 2004 ABA and ADA Accessibility Guidelines. The Board concurred with this suggestion and has updated the language at R302.6.2 to address “changes in level.” The term “surface discontinuities” has been eliminated from the guidelines.

The term “changes in level” as used in these guidelines refers to an abrupt increase or decrease in the level of the walking surface of a pedestrian access route, such as when one sidewalk panel is slightly higher than an adjacent panel. It is measured relative to the plane of the walking surface; it does not take into consideration the grade of the pedestrian access route. The text of this provision has been revised for clarity. The requirements state that changes in level up to ¼ inch (6.4 mm) may be vertical. Changes in level between ¼ inch (6.4 mm) high and ½ inch (13 mm) high must be beveled. The Board has also included an additional clarification that changes in level greater than ½ inch (13 mm) up to 6 inches (150 mm) must have a slope no greater than 1:12 (8.3%), and changes in level greater than 6 inches (150 mm) must comply with the requirements for ramps at R407. The Board added these provisions in response to comments and due to the many technical assistance inquiries seeking clarification as to where in the public right-of-way pedestrian access routes are to be treated as ramps.

In the public right-of-way, changes in level of 6 inches (150 mm) or less are not subject to the ramps technical requirements and thus do not require handrails, edge protection, or landings. This clarification addresses local government commenters’ concerns about the difficulty of limiting changes in level to ½ inch (13 mm) in the public right-of-way due to soil movements. The Board acknowledges that sidewalk panels shift over time due to tree root growth, soil movement, and other factors. The Board anticipates that the clarified provisions will help jurisdictions better plan for sustained compliance through regular maintenance programs.

Surfaces at Pedestrian At-Grade Rail Crossings (R302.6.4)

In the final rule, the Board has consolidated at R302.6.4 all of the surface requirements for pedestrian access routes at pedestrian at-grade rail crossings. The surface alignment requirement (R302.6.4.1) has not changed from the proposed rule, except...
that it was moved from the proposed vertical alignment section (NPRM R302.7.1), which was eliminated. Where a pedestrian access route crosses rails at grade, the pedestrian access route surface must be level and flush with the top of rail at the outer edges of the rails, and the surface between the rails must be aligned with the top of rail. This requirement keeps the surface of these crossings as consistent as possible except for the flangeway gap.

Flangeway gaps are the horizontal opening immediately adjacent to the rails that allow passage of train wheel flanges. Flangeway gaps, like other horizontal openings in a walking surface, can pose a potential hazard to pedestrians with certain disabilities because they can entrap wheelchair casters, walker wheels, and crutch or cane tips.

The requirements for flangeway gaps have been set at the narrowest dimension that allows a train to safely traverse a pedestrian crossing. There are two dimensions for flangeway gaps: 3 inches maximum for crossings located on railroad track subject to Federal Railroad Administration (FRA) safety regulations at 49 CFR part 213, and 2 and 1⁄2 inches maximum for all others (R302.6.4.2). In the proposed rule, the Board had described these two categories as “freight rail track” and “non-freight rail track,” but revised the description for clarity at the request of the FRA.

In response to the proposed rule a public utilities commission requested that the Board include a specification for field side gaps (i.e., gaps on the outer side of the rail). An additional specification is not needed for field side gaps because the general requirement for horizontal openings (1⁄2 inch) at R302.6.3 applies. A railroads association commented that while a 3-inch gap is acceptable for new construction, flangeway gaps widen over time. The Board acknowledges that, similar to many accessibility requirements, maintenance to sustain compliance may be required.

The same railroads association also commented that a 2 and 1⁄2 inch gap is not sufficient for Amtrak and other commuter railroads. However, those railroads generally operate on track subject to FRA safety regulations at 49 CFR part 213, and thus would be subject to the 3-inch maximum, not the 2 and 1⁄2 inch maximum. A state DOT questioned whether the maximums set would cause derailments, but did not provide any factual basis for this concern.

An association of transportation engineers requested an exception where specific freight safety issues are identified. The association did not provide further information regarding the specific freight safety issues that would be presented by the 3-inch (75 mm) maximum requirement. The Board notes that this maximum is applicable only at pedestrian crossings; in alterations, compliance is expected to the maximum extent feasible where existing physical constraints make compliance with applicable requirements technically infeasible (R202.3).

A public utilities commission requested a requirement for flange filler. In the NPRM, the Board asked a question seeking information or research on materials and devices that fill the flangeway gap but received no responses. At the time that the NPRM was published, the Board anticipated that significant research would be undertaken on this topic. The Board acknowledges that flangeway gap fillers are used at some light rail station stops; however, there has not been sufficient research for the Board to conclude that a national mandatory requirement for flangeway gap fillers at grade-level crossings is appropriate. The Board intends to encourage further research on this topic, and may revisit a requirement for flangeway gap fillers in the future.

R303 Alternate Pedestrian Access Routes

The proposed rule did not contain technical provisions for alternate pedestrian access routes. Rather the scoping incorporated by reference specific provisions of the MUTCD. In response to commenter concerns, and as described above, the Board has eliminated references to the MUTCD and included technical requirements directly in the rule text.

In proposed section NPRM 205, the Board indicated that alternate pedestrian access routes must comply with sections 6D.01, 6D.02 and 6G.05 of the MUTCD (2009 Edition). The proposed rule further noted that where provided, pedestrian barricade and channelizing devices were required to comply with sections 6F.63, 6F.68, and 6F.71 of the MUTCD.13

The guiding principle with respect to accessibility for MUTCD alternate pedestrian access routes is found in MUTCD 6D.02 paragraph 3, which states, “When existing pedestrian facilities are disrupted, closed, or relocated in a [temporary traffic control] zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.” In section R303, the Board has specified the required accessibility features of alternate pedestrian access routes to ensure that they are detectable and contain the basic accessibility features of the closed route without being overly burdensome.

Signs (303.2)

The final rule requires that jurisdictions provide signs identifying alternate pedestrian access routes in advance of decision points. The signs must comply with technical requirements for characters at R410. In addition, proximity actuated audible signs or other non-visual means of conveying the information on the signs must be provided within the public right-of-way.

The signs are intended to provide clarity to pedestrians as to where any alternate pedestrian access route is located. Placing signs ahead of decision points, such as at an intersection that precedes a closed sidewalk, reduces the need for pedestrians to retrace their steps or alternately attempt to cross a roadway at a place other than a crosswalk.

The proposed rule referenced MUTCD 6D.01 paragraph 3, which requires that jurisdictions provide advance notification of sidewalk closures. Equity requires that whatever information is made available to sighted persons must also be provided in a non-visual format. Equitable access to information on alternate pedestrian access routes is contemplated in the guidance to MUTCD 6D.02, which was referenced in the proposed rule:

Because printed signs and surface delineation are not usable by pedestrians with visual disabilities, blocked routes, alternate crossings, and sign and signal information should be communicated to pedestrians with visual disabilities by providing audible information devices, accessible pedestrian signals, and barriers and channelizing devices that are detectable to pedestrians traveling with the aid of a long cane or who have low vision.

The Board also indicated in an advisory that accompanied the proposed rule that proximity-actuated audible signs are a preferred means to warn pedestrians who are blind or have low vision about sidewalk closures (NPRM Advisory R205).

In response to the NPRM, the Board received comments from four disability rights advocacy organizations, one state
council on disability, and one state DOT in support of the use of proximity actuated audible signs. Two engineering organizations expressed concern that proximity actuated audible signs are not commonly used, would be expensive, and would likely be stolen. A rail transit and crossings branch of a public utility expressed concern that proximity actuated signs should not be required at rail crossings, where they might not be heard.

As stated above, equity requires that information provided in a visual format to pedestrians also be provided in a non-visual format so that pedestrians who are blind or have low vision have equal access to the information. The Board has evaluated the costs of these devices in the FRIA. See FRIA at 128. Further, the Board is confident that jurisdictions will find ways to secure these devices, as they do other types of equipment, to reduce the risk of theft. There is no exception for at-grade rail crossings. While the noise of a passing train may momentarily compete with an audible sign during all other times it would be as functional as anywhere else. It is critical that dangerous areas for pedestrians, such as at-grade rail crossings, offer maximum accessibility with respect to safety information, such as information relating to an alternate route.

Surface (R303.3)

The surface of an alternate pedestrian access route must comply with technical accessibility requirements for surfaces at R302.6 at least to the extent that the closed route complied with those surface requirements. This is consistent with the proposed rule’s reference to MUTCD 6D.02, which requires that temporary pedestrian facilities have accessibility features consistent with the closed route.

Continuous Clear Width (R303.4)

The minimum continuous clear with of alternate pedestrian access routes must be 48 inches, except where an alternate pedestrian access route utilizes an existing pedestrian circulation path, in which case the width must be at least the width of the temporarily closed pedestrian circulation path. MUTCD 6D.02 paragraph 3, which was referenced in the proposed rule, requires that temporary facilities include accessibility features consistent with the features present in the existing pedestrian facility.

With respect to the requirements for clear width of alternate pedestrian access routes, the Board has sought to balance the concerns of over 150 individual commenters and several disability rights and pedestrian advocacy organizations who support mandatory alternate pedestrian access routes usable by persons with disabilities, with the concerns of six state and local DOTs that would like the accessibility requirements for alternate routes not to exceed the existing accessibility of the temporarily closed route.

The Board has provided a general requirement for a minimum clear width of 48 inches, which as described in the discussion of pedestrian access routes at R302.2 above, is the minimum width that the Board has determined to be accessible for persons with disabilities. This width is achievable where an alternate pedestrian access route is provided within the roadway using barricades, or where an existing sidewalk used for the alternate pedestrian access route is at least 48 inches (as is the case in most central business districts and many jurisdictions that have already adopted 48 inches as a minimum sidewalk width). See FRIA at 76. However, as the Board is aware that there are existing sidewalks that will need to be used as alternate pedestrian access routes that are not 48 inches, the Board has provided an exception indicating that where an existing pedestrian circulation path is used as the alternate pedestrian access route, the width of the alternate route must not be less than the width of the temporarily closed path.

Curb Ramps or Blended Transitions (R303.5)

Where an alternate pedestrian access route crosses a curb, a curb ramp or blended transition complying with the requirements must be provided to ensure that the alternate pedestrian access route is useable by persons with mobility disabilities. A curb ramp or blended transition is required regardless of whether the temporarily closed pedestrian circulation path contained this accessibility feature. Again, the Board is seeking to balance the concerns of over 150 individual commenters and disability rights and pedestrian advocacy organizations with the concerns of local and state DOTs about the burden of building temporary facilities. An alternate pedestrian access route that does not provide a curb ramp or blended transition over a curb would not be useable for many persons with mobility disabilities, and they would not have equal access to the alternate route.

Detectable Edging of Channelizing Devices (R303.6)

Where a channelizing device is used to delineate an alternate pedestrian access route, continuous detectable edging complying with technical requirements must be provided for the length of the route. An exception is provided for places where pedestrians or vehicles turn or cross, which would necessitate a gap in the channelizing device and detectable edging. Where detectable edging is provided, the top of the topmost part of the detectable edging cannot be lower than 32 inches above the ground and must not be sharp or abrasive. These specifications allow for persons who are blind or have low vision to detect the edging by running their hands along the topmost part of the edging. The bottommost part of the edging cannot be more than 2 inches above the ground, to allow for continuous cane detection. These specifications for detectable edging come from MUTCD 6F.63 paragraph 5, which was incorporated by reference in the proposed rule.

Pedestrian Signal Heads (R303.7)

Temporary pedestrian signals at alternate pedestrian access routes are not required by these guidelines. However, when a jurisdiction decides to provide temporary pedestrian signal heads in the public right-of-way, they are subject to these guidelines, as specified at R201.2. The Board has reiterated this requirement at R307.7 to ensure that jurisdictions understand that when a temporary pedestrian signal head is provided at a crosswalk that is part of an alternate pedestrian access route, pedestrian pushbuttons or passive detection devices complying with the technical requirements at R307 must be provided. Similar to the requirements for temporary signage, equity requires that visual information provided on pedestrian signal heads must be available to persons who are blind or have low vision in a non-visual format.

R304 Curb Ramps and Blended Transitions

Curb ramps provide a smooth transition where a pedestrian access route crosses a curb. Blended transitions provide a smooth wraparound connection at a corner or a flush connection where there is no curb to cut through. There are two types of curb ramps: perpendicular and parallel. Perpendicular curb ramps have running slopes that are perpendicular to the curb or street served. Parallel curb ramps have running slopes that are parallel to the curb or street served. Parallel curb
ramps provide a smooth transition to a landing at street level where a turn is made to enter the crosswalk. Blended transitions connect a pedestrian circulation path to the crosswalk with a grade no steeper than 1:20 (5.0%). Examples of blended transitions are depressed corners or a connection from a sidewalk to a raised crosswalk. Although curb ramps may have slopes of 1:20 (5.0%) or less, blended transitions are not curb ramps with slopes 1:20 (5.0%) or less.

In the final rule, this section has been reorganized for clarity. In response to commenter concerns, the Board has provided definitions in R104.3 for "perpendicular curb ramp," "parallel curb ramp," and "blended transitions." In addition, in the final rule, the Board has substituted the term "landing" for "turning space," in response to commenters' requests for consistency with ADAAG terminology. The Board had used the term "turning space" in the NPRM to avoid confusion with the "landings" associated with ramps (R407). However, the Board acknowledges that "landing" is the commonly used term for these curb ramp-associated spaces, and in the final rule now uses the term "landing." It is important to note, however, that the landings associated with ramps (R407) have different technical requirements than the landings associated with curb ramps (R304.2.4 and R304.3.4). Curb ramps are not "ramps" for the purposes of PROWAG (see definition of "ramp" at R104.3) and are thus not subject to the requirements for ramps at R407.

Perpendicular Curb Ramps (R304.2)

Numerous commenters from state and local government entities and an engineering association expressed confusion as to the proposed 1:20 (5.0%) minimum for the running slope of curb ramps, pointing out that in many cases a curb ramp need not reach 5% depending on the grade of the adjacent pedestrian facilities. The Board concurred with commenters and in the final rule has removed the minimum running slope and stated only a maximum of 1:12 (8.3%) (R304.2.1). In addition, the Board has added an exception to clarify that where the curb ramp length must exceed 15 feet (4.6 m) to achieve a 1:12 (8.3%) running slope, the curb ramp length shall extend at least 15 feet (4.6 m) and may have a running slope greater than 1:12 (8.3%). A curb ramp complying with the exception to R304.2.1 need not exceed 15 feet in length. The maximum of perpendicular curb ramp runs is specified at 1:48 (2.1%) maximum (R304.2.2). The Board has provided an exception stating that for curb ramps at a crosswalk, the cross slope may be equal to or less than the cross slope permitted at the crosswalk. This exception corrects an error in the proposed rule indicating that at certain pedestrian street crossings, the cross slope could equal the highway grade (NPRM R304.5.3); this conflicted with the cross slope provisions for certain crosswalks.

The requirements for grade breaks were moved out of the common requirements section to the perpendicular and parallel curb ramps sections for clarity. Grade breaks at the top and bottom of a curb ramp run must be perpendicular to the direction of the curb ramp run (R304.2.3). Grade breaks are not permitted on the surfaces of curb ramp runs and landings. Surface slopes that meet at grade breaks must be flush. There are no changes to this requirement from the proposed rule. For each perpendicular curb ramp, a clear area 48 inches (1220 mm) wide by 48 inches (1220 mm) long must be provided beyond the bottom grade break and within the width of the crosswalk (R304.2.4). The clear area must be located outside the vehicle lanes, including any bike lanes, that run parallel to the crosswalk. The running slope of the clear area cannot exceed 1:20 (5.0%) maximum, and the cross slope is as specified by R302.5. The purpose of the clear area is to allow pedestrians an area outside of the vehicle lanes to orient themselves to the crossing.

In the proposed rule, this provision was entitled, "Clear Space" and appeared in the common requirements for curb ramps and blended transitions (NPRM R304.5.5). In the final rule it has been renamed "Clear Area" to avoid confusion with the clear spaces described at R404 and has been moved to the section specific to perpendicular curb ramps for clarity. Also in the final rule, the Board has specified slope and cross slope of clear areas in response to commenters' request for clarity on these requirements. In addition, the Board has clarified that vehicle lanes include any bike lanes.

Numerous state and local government entity commenters expressed confusion regarding the required location of the clear space, and in particular the requirement that the clear space be located wholly outside the parallel vehicle travel lane. Some commenters erroneously thought that an additional 48 inches of shoulder would be required to comply with this requirement. The cross slope reflects a reasonable understanding of how compliance is assessed. Each curb ramp is assessed separately, so although the clear space may be in a vehicle travel lane that is perpendicular to the pedestrian direction of travel, vehicle travel of that lane would be stopped when pedestrians enter the clear area to orient themselves to the crossing. The appropriate inquiry to assess compliance is whether the clear area is wholly outside the parallel vehicle travel lane when looking at the individual curb ramp.

When a change in direction is necessary to access the top of a perpendicular curb ramp from a pedestrian access route, a landing 48 inches (1220 mm) wide minimum by 48 inches (1220 mm) long minimum must be provided at the top of the curb ramp (R304.2.5). At shared use paths, the landing must be as wide as the shared use path. In response to numerous comments, the final rule eliminates a proposed requirement for a larger landing where the turning space is constrained. The cross slope requirements for landings, which appeared in the proposed rule at NPRM R304.5.5, have been consolidated into the perpendicular curb ramp section. Slope requirements have been added for clarity.

Perpendicular curb ramps must have flared sides with a 1:10 (10.0%) maximum slope where a pedestrian circulation path crosses the side of a curb ramp (R304.2.6). The slope of the flared sides is measured parallel to the curb line. In the NPRM, the Board sought comment on whether a steeper side flare slope should be specified (NPRM Question 18). While a few state and local government entities and other commenters expressed support for increasing the slope of flared sides, others, mostly disability rights advocacy organizations and individuals sought to retain the 1:10 (10.0%) maximum citing hazards to pedestrians. The Board carefully considered the comments and was persuaded that increasing the slope of flares beyond 1:10 (10.0%) would present accessibility issues. Thus, the Board has retained the 1:10 (10.0%) maximum side flare slope.

The Board has added a new provision at R304.2.7 which clarifies that a transitional segment may be used in the connection of a perpendicular curb ramp or its landing to a pedestrian access route. A transitional segment is defined in R104.3 as "[t]he portion of a pedestrian circulation path that connects adjacent surfaces with different slopes or dimensions to provide a smooth transition." The purpose of allowing a transitional segment is to accommodate circumstances such as the warping in the pedestrian circulation path that will need to occur.
even in new construction, to connect a curb ramp or landing with a cross slope that exceeds 1:48 (2.1%) to a pedestrian access route with a cross slope of 1:48 (2.1%) maximum.

Parallel Curb Ramps (R304.3)

Numerous commenters from state and local government entities and a public works association expressed confusion as to the proposed 1:20 (5.0%) minimum for the running slope of curb ramps, pointing out that in many cases a curb ramp need not reach 5% depending on the grade of the adjacent pedestrian facilities. The Board concurred with commenters and in the final rule has removed the minimum running slope and stated only a maximum of 1:12 (6.3%) (R304.3.1). In addition, the Board has added an exception to clarify that where the curb ramp length must exceed 15 feet (4.6 m) to achieve a 1:12 (8.3%) running slope, the curb ramp run length shall extend at least 15 feet (4.6 m) and may have a running slope greater than 1:12 (8.3%).

Curb ramps complying with the exception to R304.3.1 need not exceed 15 feet.

The cross slope of parallel curb ramp runs is 1:48 (2.1%) maximum (R304.3.2). This provision was moved from the common requirements for curb ramps and blended transitions in the proposed rule (NPRM R304.5.3).

The requirements for grade breaks were moved out of the common requirements section to the perpendicular and parallel curb ramps sections for clarity. Grade breaks at the top and bottom of a curb ramp run must be perpendicular to the direction of the curb ramp run (R304.3.3). Grade breaks are not permitted on the surfaces of curb ramp runs and landings. Surface slopes that meet at grade breaks must be flush. There are no changes to this requirement from the proposed rule.

Landings that are 48 inches (1220 mm) wide minimum by 48 inches (1220 mm) long minimum must be provided at the bottom of parallel curb ramps (R304.3.4). As discussed above, in the proposed rule these landings were referred to as “turning spaces” (NPRM R304.3.1). In response to numerous comments, the final rule eliminates a proposed requirement for a larger landing where the turning space was constrained. The cross slope requirements for parallel curb ramp landings, which appeared in the proposed rule at NPRM 304.5.3, have been moved into the parallel curb ramp section. Slope requirements have been added for clarity.

Blended Transitions (R304.4)

A blended transition is a wraparound connection at a corner, or a flush connection where there is no curb to cut through, other than a curb ramp (R104.3). A blended transition is permitted in lieu of a curb ramp where a pedestrian access route crosses a curb, and where there is a flush connection between the sidewalk or shared use path and a crosswalk, such as at a raised crossing. When designed properly, one blended transition can serve all of the crosswalks at an intersection corner. The running slope of blended transitions is 1:20 (5.0%) maximum (R304.4.1).

The cross slope of a blended transition must be equal to or less than the cross slope of the crosswalk it serves (R304.4.2). The final rule corrects an error in the proposed rule indicating that at certain pedestrian street crossings, the cross slope of a blended transition may equal the highway grade (NPRM R304.5.3); this conflicted with the cross slope provisions for certain crosswalks. As explained above, the cross slope provision was moved from the common requirements for curb ramps and blended transitions in the proposed rule (NPRM R304.5.3) to provide greater clarity.

In the final rule, the Board has added a provision requiring a bypass where a blended transition serving more than one pedestrian circulation path has a running slope greater than 1:48 (2.1%). This is provided so that a pedestrian with a disability may bypass the slope of blended transition that the individual does not need to use. Without a bypass an individual with a disability may be forced to unnecessarily traverse a corner at a 1:20 (5.0%) cross slope. A bypass for blended transitions was not included in the proposed rule; individuals contacting the Board for technical assistance in implementing the proposed guidelines brought this issue to the attention of the Board.

Common Requirements (R304.5)

R304.5 specifies technical requirements applicable to both curb ramps and blended transitions.

Clear Width (R304.5.1)

The minimum clear width of curb ramps and blended transitions not on shared use paths is 48 inches (1220 mm) (R304.5.1.1). The minimum clear width of curb ramps and blended transitions on shared use paths is the width of the shared use path (R304.5.1.2). In response to the SNPRM, the Board received comments from a few local government entities indicating concerns about the requirement that a curb ramp or blended transition on a shared use path be the same width as the shared use path. One local government commenter expressed concern that motorists would mistake a full-width curb ramp for a driveway. Another indicated that a full width curb ramp might be hard to achieve in an alteration. Another indicated that drainage, bridges, or utility poles might preclude full compliance.

The Board notes that jurisdictions have options to discourage motorists from erroneously entering a shared use path at a curb ramp, including signage or properly installed bollards (see R302.2.2). The Board further notes that alterations subject to existing physical constraints that make compliance with applicable requirements technically infeasible must comply with the applicable requirements to the maximum extent feasible (R202.3); in new construction of undeveloped land, the placement of drainage, bridges, or utility poles should not be an issue. In the SNPRM, the Board indicated that the requirement that a curb ramp or blended transition on a shared use path be the same width as the shared use path was similar to section 5.3.5 of the AASHTO Guide for the Development of Bicycle Facilities (2012). That provision states that the opening of a shared use path at a roadway should be the same width as the shared use path itself. While the Board considers the AASHTO approach to be best practice and anticipates that most jurisdictions will maintain the same width in a shared use path approaching a crosswalk, especially in new construction on undeveloped land, the language of R304.5.3 does not preclude a jurisdiction from tapering the width of a shared use path as it approaches a crosswalk. The clear width of the curb ramp must be the width of the shared use path at the place that the curb ramp meets the shared use path.

Change of Grade (R304.5.2)

A change of grade is an abrupt difference in the grades of two adjacent surfaces. Change of grade is determined by adding the two opposing slopes together. Where a change of grade that exceeds 13.3% occurs between a curb ramp or blended transition and the street or gutter, the final rule requires a transition space, with a running slope of 1:48 (2.1%) maximum and a cross slope no greater than the cross slope of the crosswalk as specified by R302.5, between the two surfaces that is a minimum of 24 inches in depth in the direction of pedestrian travel and the full width of the curb ramp.
requirement is intended to prevent a wheelchair from tipping over while traversing an abrupt change of grade.

An accessible design firm commented that the change of grade should be limited to 11%. The Board acknowledges that its Public Rights-of-Way Access Advisory Committee recommended an 11% limit on change of grade in its 2001 report. See Public Rights-of-Way Access Advisory Committee, supra, at 18. However, the proposed change of grade has been 13% for many years, as described below, and the Access Board is not aware of safety issues resulting from this practice.

The proposed rule addressed change of grade as “Counter Slope” (NPRM R304.5.4) and specified a 5% maximum counter slope. Commenters requested additional clarity with respect to this provision. This provision has been reworded for clarity, and also to add an option for a change of grade that exceeds 13.3% if a transitional space is provided. However, the substantive requirement has not changed; the 13.3% maximum is a function of the 1:12 (8.3%) upper limit on curb ramp running slope (R304.2.1) and the 1:20 (5.0%) limit on grade of the pedestrian access route (R302.4), which was the permitted counter slope in the proposed rule.

Crosswalks (R304.5.3)

To ensure equitable safety to pedestrians with disabilities, in the final rule the Board has added a separate provision clarifying that curb ramps and blended transitions must lead directly into crosswalks. Specifically, perpendicular curb ramp runs and parallel curb ramp landings must be contained wholly within the width of the crosswalk they serve. In addition, the full width of blended transitions at shared use paths and 48 inches (1220 mm) of blended transitions at all other pedestrian circulation paths must be contained wholly within the width of the crosswalks they serve. In the proposed rule, the Board stipulated that the clear area required at the bottom of curb ramps be contained wholly within the width of the crosswalk served (NPRM R304.5.5). In light of the confusion exhibited by commenters with respect to the proposed clear area provision, the Board has made explicit the requirement that curb ramps and blended transitions lead directly into crosswalks.

Surfaces (R304.5.4)

In the final rule, the Board has added a provision clarifying that surfaces of curb ramps and blended transitions must comply with the technical requirements for surfaces of pedestrian access routes at R302.6; however, changes in level as described at R302.6.2 are not permitted.

R305 Detectable Warning Surfaces

Detectable warning surfaces are cane detectable surfaces consisting of truncated domes aligned in a square or radial grid pattern. As indicated in R205, detectable warning surfaces are required at specified locations to warn pedestrians who are blind or have low vision that they are entering or exiting a vehicular way, or that there is a drop from a boarding platform into a track street.

Two individual commenters and a manufacturer of detectable warning surfaces requested that the Board add wayfinding elements to the technical requirements for detectable warning surfaces. The Board is aware that there are detectable wayfinding surfaces that exist that provide tactile directional guidance. However, these serve a different purpose than the detectable warning surfaces required by ADAAG and PROWAG, which serve to warn pedestrians of the presence of a vehicular way.

As described in the final regulatory impact analysis, detectable warning surfaces as described in the proposed rule have been widely implemented throughout the United States over the past decade. FRIA at 13. Widespread consistent implementation of detectable warning surfaces coupled with the final rule’s clarified requirement at R304.5.4 that curb ramps and blended transitions lead directly into crosswalks will provide additional wayfinding for pedestrians who are blind or have low vision. The Board will continue to monitor developments in outdoor wayfinding for possible future updates to PROWAG.

Dome Size and Spacing (R305.1.1 and R305.1.2)

The truncated domes on detectable warning surfaces have a base diameter of 0.9 inches (23 mm) minimum and 1.4 inches (36 mm) maximum, a top diameter of 50 percent of the base diameter minimum and 65 percent of the base diameter maximum, and a height of 0.2 inches (5.1 mm) (R305.1.1). In the final rule, in consideration of technical assistance inquiries received by the Access Board since publication of the proposed rule, the Board has added a sentence clarifying that when detectable warning surface tiles are cut to fit, partial domes are permitted along the cut edges.

With respect to spacing, truncated domes have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inches (17 mm) minimum, measured between the most adjacent domes (R305.1.2). In the final rule, the Board has added an exception to clarify that when detectable warning surfaces are cut to fit, center-to-center spacing measured between domes adjacent to cut edges may exceed the spacing requirement up to twice the normal spacing between domes (R305.1.2 Exception 1). In addition, the Board has added an exception to clarify that dome spacing requirements do not apply at a gap in a detectable warning surface at an expansion joint, provided that the detectable warning surface aligns with both edges of the expansion joint (R305.1.2 Exception 2). This exception is particularly relevant to the installation of detectable warning surfaces on boarding platforms in the public right-of-way.

An advocacy organization for people who are blind commented that the Board should restate the dome size with exact specifications to ensure uniformity and to avoid the potential domes that are too large and close together to be detected. The Board maintains a narrow range in the permitted dome size to account for the various materials used for detectable warning surfaces. Again, over the past decade the proposed guidelines for detectable warning surfaces have been implemented by numerous jurisdictions throughout the United States; the Board is not aware of a detectability issue for detectable warning surfaces made within the required specifications.

A few other concerns were raised by commenters regarding the truncated dome design of detectable warning surfaces: one individual indicated that the truncated domes are too rough on wheelchair users; another individual asserted that the truncated dome design is difficult to keep free of snow and ice; and a regional association of engineers was concerned that the spacing would present a hazard to rollerbladers and skateboarders. The Board is aware that people who use wheelchairs typically prefer smooth surfaces for rollability; however, the Board must balance the accessibility needs of individuals with various types of disabilities. With respect to the concern regarding maintenance of detectable warning surfaces, the Board notes that over the past decade numerous jurisdictions that experience winter weather have been able to implement and appropriately maintain detectable warning surfaces. Further, the Board is not aware of widespread hazards to rollerbladers and
skateboarders posed by detectable warning surfaces.

Contrast (R305.1.3)

Detectable warning surfaces must contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light. Four commenters requested a more specific measure of contrast, such as 70%. Ten individual commenters, three disability rights advocacy organizations, and a pedestrian advocacy organization requested that the Board require that detectable warning surfaces be “federal yellow.” The Board has carefully considered these comments and declines to require a specific color or contrast percentage. The Board appreciates the desire for measurable standards; however, the percentage of contrast between surfaces is difficult to measure in outdoor environments that will have varying lighting conditions throughout the day. Further, as PROWAG does not specify a color or building material for any pedestrian surfaces, it would be difficult to specify a single color that would provide appropriate contrast in all circumstances. For example, federal yellow may provide less contrast with a concrete sidewalk than a maroon or black detectable warning surface. The Board has concluded that contrast is appropriately assessed on a case-by-case basis in consideration of the building materials used.

Size of Detectable Warning Surface (R305.1.4)

Detectable warning surfaces must extend 24 inches (610 mm) minimum in the direction of pedestrian travel. The width is specified depending on the type of pedestrian facility where the detectable warning surface is installed. This provision has been restructured for clarity. In the final rule, the Board has clarified that at cut-through pedestrian islands, the width of the detectable warning surface is the full width of the pedestrian circulation path; detectable warning surfaces at pedestrian refuge islands with curb ramps were already covered under the specification for the full width of a curb ramp. The Board is not aware of the location of detectable warning surfaces requiring a border cladding for proper installation. The option for up to a 6-inch (150 mm) setback between the detectable warning surface and the edge of pavement is provided to minimize the potential for damage to detectable warning surfaces during snow removal operations.

In the final rule, the substantive requirements for the location of detectable warning surfaces (except for the setback allowances described above) at perpendicular curb ramps (R305.2.1), parallel curb ramps (R305.2.2), blended transitions (R305.2.3), pedestrian refuge islands (R305.2.4), and sidewalk and street-level rail boarding and alighting areas (R305.2.7) are unchanged, although the Board has clarified some of the language. Specifically, the Board removed the requirement in the NPRM R305.2.1(2) that detectable warning surfaces are to be placed within one dome spacing of the bottom grade break. The final rule requires that the detectable warning surface be placed on the ramp run at the bottom grade break.

With respect to pedestrian at-grade rail crossings (R305.2.5), the Board has added a sentence clarifying that where a curb is present, as is the case with some bus rapid transit platforms, the detectable warning surface may be placed at the back of curb.

As described above in the discussion of R205, the final rule specifies that detectable warning surfaces be provided at driveways controlled with yield or stop control devices or traffic signals. Thus, the Board has added a corresponding technical provision at R305.2.8 stating that detectable warning surfaces at driveways controlled with yield or stop control devices or traffic signals are to be provided on the pedestrian circulation path where the pedestrian circulation path meets the driveway.

In response to the NPRM, the Board received various comments on the location of detectable warning surfaces at curb ramps. With respect to perpendicular curb ramps, two local government commenters requested clarification as to the placement of detectable warning surfaces at commercial driveways. For driveways where detectable warning surfaces are required, jurisdictions must follow any of the options for perpendicular curb ramps as appropriate. A level transition between the pedestrian access route and the driveway is treated as a blended transition.

In response to comments regarding the placement of detectable warning surfaces on perpendicular curb ramps at
a corner, in R305.2.1.(B) the Board changed “either end” to “both ends” for clarity. The Board received a comment asserting that the permitted 60-inch (1525 mm) setback was too great, while another requested an 8-foot setback instead. The Board notes that a setback of 5 feet is appropriate because it is still close enough to the curb to provide an aim of vehicle way and allow use of audible cues for crossing.

With respect to the location of detectable warning surfaces at parallel curb ramps, two commenters raised concerns regarding the clarity of the use of the terms “flush transition” and “turning space” in this context. In the final rule, these terms have been replaced (see R305.2.2). Two state DOTs expressed concerns regarding the clarity of the provision describing the location of the detectable warning surfaces at blended transitions. The Board has revised this language for clarity (see R305.2.3). The Board also received comments regarding the location for the detectable warning surface at pedestrian at-grade rail crossings. Two state DOTs and a state public utilities commission expressed concern that 72 inches from the centerline of the nearest rail is too close to the rail to place the detectable warning. The Board notes that this provision provides a range that allows the detectable warning surface to be placed between 72 inches (1830 mm) and 15 feet (4.6 m) from the centerline of the nearest rail. This range applies to light rail and commuter train crossings. Seventy-two inches (1830 mm) is appropriate for some light rail crossings; the Board concurs that freight crossings would likely be placed farther back from the rail. The Board is confident that jurisdictions will apply appropriate safety considerations for particular crossings when determining where to place the detectable warning surface within the required range.

Two advocacy organizations for persons with disabilities expressed concern about how close the detectable warning surface would be placed to pedestrian gates at pedestrian at-grade rail crossings. In response, the Board added language clarifying that pedestrian gates must not overlap detectable warnings (R305.2.5). The Board received three comments requesting that it clarify the meaning of “boarding platform,” as used in R305.2.6 so that it is clear that the Board does not intend for detectable warning surfaces to be placed at standard sidewalk ramps. In the final rule, the Board added a definition of “boarding platform” at R104.3, which clarifies that boarding platforms are platforms “raised above standard curb height.”

R306 Crosswalks
The technical requirements for crosswalks address the required pedestrian signal phase timing and accessible walk indication, as well as specifications for crosswalks at roundabouts and channelized turn lanes.

Pedestrian Signal Phase Timing (R306.2)
Where pedestrian signal indications are provided at a crosswalk, the pedestrian signal phase timing is based on a pedestrian clearance time that is calculated using a pedestrian walking speed of 3.5 ft/s (1.1 m/s) or less from the location of the pedestrian push button to a pedestrian refuge island or the far side of the traveled way. This is the same walking speed proposed in the NPRM. Four state DOTs and ten local government entities objected to this provision in the NPRM, pointing out that in the MUTCD this walk speed appears as guidance (MUTCD 4E.06 paragraph 7) and is thus not required. These jurisdictions would like to use engineering judgment to determine the clearance time, expressing potential issues that might result from longer clearance times, such as an increase in air pollution from vehicular delays, jaywalking, and red light running. Six disability rights advocacy organizations requested that pedestrian clearance times be calculated using a slower walking speed of 3.0 ft/s to 3.25 ft/s.

The Board has carefully considered the comments received on this issue. In the final rule, the Board has maintained the requirement that pedestrian clearance time be calculated using a walking speed of 3.5 ft/s (1.1 m/s) or less, and further requires that the walk interval be 7 seconds minimum.

In addition, the final rule states that where the pedestrian clearance time is calculated to a pedestrian refuge island, an additional pedestrian push button or passive detection device must be provided on the pedestrian refuge island. This was a proposed requirement that comes directly from MUTCD section 4E.06 paragraph 13, which was incorporated by reference in the NPRM (NPRM R209.1).

In using a walking speed of 3.5 ft/s (1.1 m/s), the Board seeks to balance the traffic management concerns of state and local jurisdictions while ensuring that pedestrians with disabilities are afforded sufficient time to traverse crosswalk. The Board notes that in 2009, FHWA made a research-based decision to revise the MUTCD recommended walking speed for calculating pedestrian clearance times. The Board acknowledges that disability rights advocacy organizations cited an AAA Foundation study that found that pedestrians with mobility impairments who do not use wheelchairs had an average walking speed of 3.30 ft/s (1.01 m/s), but also found that a walking speed of 3.5 ft/s would generally accommodate a 15th percentile older adult. However, a more recent study found a 3.41 ft/s (1.04 m/s) walking speed for pedestrians with physical disabilities at unsignalized crosswalks. The Board concludes that the combination of a 7-second minimum walk interval and a pedestrian clearance time based on a 3.5 ft/s (1.1 m/s) walking speed will provide sufficient crossing time for most persons with disabilities. This requirement should not cause significant vehicular delays.

Further, in the final rule, the Board incorporated another option from MUTCD section 4E.06 paragraph 8 in an exception allowing a faster walking speed to be used if a passive detection device is provided that automatically adjusts the pedestrian clearance time based on the pedestrian’s actual clearance of the crosswalk (R306.2 Exception). These devices tailor the clearance to the actual presence of the pedestrian in the crosswalk.

One state DOT and one local government commenter, as well as the National Committee on Uniform Traffic Control Devices, requested that the Access Board add a provision allowing a 4 ft/s walking speed where an extended pushbutton press allows additional time. This is an option under MUTCD section 4E.06 paragraph 8. The Board declines to allow jurisdictions to raise the walking speed to 4 ft/s where an extended pushbutton press is provided as pedestrians may not be aware that they need additional time until they are already in the crosswalk. However, as noted above, the Board has provided additional flexibility for

17 See AAA Foundation for Traffic Safety, Pedestrian Signal Safety for Older Adults at 19.
jurisdictions if a passive detection device is used that auto-adjusts to the pedestrian’s actual clearance of the crosswalk. See R306.2 Exception.

As noted above, in the final rule text, the Board has specified a requirement that the walk interval be 7 seconds minimum for all signalized crosswalks, which is the length recommended by the MUTCD. Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) 2009 Edition, 4E.06 paragraph 11. The MUTCD provides guidance indicating that walk intervals as short as 4 seconds may be used where pedestrian volumes and characteristics do not require a 7-second walk interval; however, walk intervals of less than 7 seconds do not provide a sufficient amount of time for many people with disabilities to leave the curb as they need to wait for a curb ramp to be clear and then navigate down the ramp.

Accessible Walk Indication (R306.3)

An accessible walk indication complying with the technical requirements at R308.2 must have the same duration as the walk interval. However, where the pedestrian signal rests in “walk,” the accessible walk indication may be limited to the first 7 seconds of the walk interval. If the pedestrian signal is resting in walk and there is sufficient time remaining to provide an accessible walk interval before the beginning of the pedestrian change interval, the accessible walk indication may be recalled by a button press (R306.3 Exception). This requirement is based on MUTCD section 4E.11, which was among the sections of the MUTCD incorporated by reference in the proposed rule. In consultation with USDOT, the Board has slightly revised the second sentence of the exception from the MUTCD language to clarify that the accessible walk interval may be recalled only when there is sufficient time remaining for a full walk interval before the pedestrian change interval begins. This change ensures that an accessible walk indication is provided only when there is enough crossing time remaining to disembark the sidewalk and fully cross the street.

Roundabouts (R306.4)

Section R306.4 specifies the edge detection and crosswalk treatments required at roundabouts. A roundabout is a circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island (R104.3).

Several commenters requested an explanation as to why edge detection treatments are needed at roundabouts but not elsewhere. Edge detection treatments are required at roundabouts to assist pedestrians who are blind or have low vision to locate the crosswalk (R306.4.1). At roundabouts, the orientation of the crosswalks to the circular roadway eliminates traditional tactile cues at crosswalks inherent to standard rectilinear intersections. In addition, the continuous circular traffic flow at these unsignalized crosswalks obscures the audible cues that pedestrians who are blind would otherwise use to detect a crossing and gaps in the traffic. Thus, edge detection treatments are needed to ensure that pedestrians who are blind or have low vision have the same opportunity to use a crosswalk at a roundabout as individuals with vision.

There are two options to ensure that crosswalks at roundabouts are detectable. The pedestrian circulation path can be separated from the curb, crosswalk to crosswalk, with landscaping or another nonprepared surface of 24 inches wide minimum (R306.4.1.1). Alternatively, where sidewalks are flush against the curb, a continuous and detectable vertical edge treatment must be provided along the street side of the sidewalk wherever pedestrian crossing is not intended (R306.4.1.2). The bottom of the vertical edge treatment can be no higher than 15 inches (380 mm) maximum above the walking surface of the pedestrian circulation path.

In the proposed rule, the Board addressed continuous and detectable edge treatment at curb-attached sidewalks (NPRM R306.3.1). In the final rule, the Board has clarified that the other option is separation between the curb and the pedestrian circulation path by landscaping or nonprepared surface (R306.4.1.1).

The Board’s reference in the proposed rule (NPRM R306.3.1) to chains, fencing, and railings created confusion for commenters and others who have sought technical assistance from the Board regarding vertical edge detection. The Board indicated a maximum height for the bottom edge of these treatments but did not intend to convey that these are the only options for vertical edge detection that jurisdictions may use. Consequently, in the final rule, the Board has removed the reference to chains, fencing and railings. The Board will provide examples of vertical edge detection options in its technical assistance materials.

Two state DOTs and one engineer commented that a standard or raised curb should be a sufficient indication that crossing is not intended. Four state DOTs expressed concern that vertical edge treatments would negatively impact snow removal operations. The Board notes that jurisdictions that have these concerns may opt for separation instead of a vertical edge treatment. One state DOT requested that cobblestone treatment be permitted for separation. Cobblestone surfaces are prepared surfaces that are used in existing facilities for pedestrian circulation. Thus, they are not useful for wayfinding because they are easily mistaken for a walking surface. See e.g., Transportation Research Board, NCHRP 3–78b: Guidelines for the Application of Crossings Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities at 3–2 (showing a blind pedestrian mistaking a cobblestone separation for a walking surface at a roundabout).

The Board observes that while several state DOTs and local government commenters expressed concern regarding the implementation or need for detectable edge treatment at roundabouts, over 150 individuals, five disability rights organizations, and one local government official commented in support of a requirement for edge detection at roundabouts. The Board is confident that persons with disabilities need edge detection for equitable use and safety of pedestrian facilities at roundabouts.

Crosswalks at multi-lane segments of roundabouts and multi-lane channelized turn lanes require one or more of the following treatments: a traffic control signal with a pedestrian signal head; a pedestrian hybrid beacon; a pedestrian actuated rectangular rapid flashing beacon; or a raised crosswalk (R306.4.2 and R306.5). The requirement for crosswalk treatments at multi-lane roundabouts is discussed in the Major Issues section above. For the same accessibility reasons that these treatments are needed at roundabout crossings, they are also needed at multi-lane channelized turn lanes.

Accordingly, the Board has included that requirement at R306.5.

R307 Pedestrian Pushbuttons and Passive Pedestrian Detection

An accessible pedestrian signal is a device that communicates information about pedestrian signal timing in non-visual formats such as audible tones or speech messages, and vibrating surfaces. In the proposed rule, technical requirements for accessible pedestrian signals were incorporated by reference from the MUTCD. Specifically, the...
proposed rule indicated that accessible pedestrian signals and pushbuttons would comply with MUTCD sections 4E.08 through 4E.13. A rehabilitation design firm and a state DOT requested that the Board clarify whether the MUTCD provisions were required or recommended, and three disability rights advocacy organizations expressed concern that engineering judgement would be permitted in a jurisdiction’s implementation of the incorporated MUTCD provisions. In addition, one engineering association requested that the requirements be consistent with the MUTCD.

The Board concurs that additional clarification as to the technical requirements for accessible pedestrian signals is appropriate and has thus added technical sections for pedestrian pushbuttons and passive pedestrian detection (R307) and accessible pedestrian signal walk indications (R308) directly to the rule text, based on the technical requirements of the MUTCD sections referenced in the proposed rule. The MUTCD sections are not incorporated by reference. The requirements are generally consistent with the MUTCD, as described in the provision-specific discussions below; however, the language used in the final rule text clarifies that these requirements are mandatory.

In general, accessible pedestrian signals have three features: (1) a method of activation, which is either a pushbutton that activates accessible features when pressed or a passive detection device that uses technology to detect the presence of pedestrians and then automatically activates accessible features; (2) a device that provides audible indications of visual pedestrian signals for people who are blind or have low vision; and (3) a pushbutton with a tactile arrow that provides vibrotactile cues to individuals who are deaf and also blind or have low vision. These three features may be integrated into one device or presented in multiple devices that work together as a system. Operable parts must comply with the technical requirements for operable parts at R403 (R307.1).

**Activation (R307.2)**

Pedestrian push buttons and passive detection devices activate the accessible pedestrian signals and, where applicable, the walk interval. This provision was incorporated by reference in the proposed rule from MUTCD section 4E.09 paragraph 13, but referred only to pedestrian push buttons. In the final rule, the Board revised the language to clarify that push buttons or passive detection will activate the accessible pedestrian signals and walk interval, where applicable. In addition, the language of the proposed MUTCD provision suggested that pushbuttons were optional, which was inconsistent with the language of NPRM R209.1 indicating that pushbuttons are required. The revised language in the final rule removes this inconsistency, clarifying that pushbutton push buttons are required.

**Extended Push Button Press (R307.3)**

Where an extended push button press is used to provide additional features, a push button press of less than one second actuates only the pedestrian timing and any associated accessible walk indication, and a push button press of one second or more actuates the pedestrian timing, any associated accessible walk indication, and any additional features. If additional crossing time is provided by means of an extended pushbutton press, a sign so indicating shall be mounted adjacent to or integral with the pedestrian push button. This provision is taken from MUTCD section 4E.13 paragraph 2.

**Location (R307.4)**

Pedestrian push buttons must be located no greater than 5 feet from the side of a curb ramp run or the edge of the farthest associated crosswalk line from the center of the intersection (R307.4). Pedestrian push buttons must be located between 1.5 and 10 feet from the edge of the curb or pavement. The purpose of this provision is to ensure that push buttons are placed in close proximity to the crosswalk they serve as individuals who need the tactile features will need to stand next to the push button while awaiting the walk interval, and often the audible signals emanate from the push button housing.

This provision is taken from MUTCD 4E.08 paragraph 4, which states that pedestrian pushbuttons should be located between 1.5 and 6 feet from the edge of the pavement and 4E.08 paragraph 6, which states that where physical constraints prevent that location, the pushbutton should not be farther than 10 feet from the edge of curb or pavement. The Board agrees that placing the pushbutton between 1.5 and 6 feet from the edge of curb or pavement is preferable but has extended the requirement to 10 feet in acknowledgment that the geometry of some intersections, even in new construction, will necessitate placement further than 6 feet from the edge of curb or pavement.

Where two pedestrian push buttons are provided on the same corner, they must be 10 feet or more apart; however, in alterations where it is technically infeasible to provide 10 feet of separation between pedestrian push buttons on the same corner, the pedestrian pushbuttons may be closer together and a pedestrian push button information message complying with R308.3.2 must be provided (R307.4.1). This provision is taken from MUTCD sections 4E.08 paragraphs 7 and 8 and 4E.10 paragraph 3. Two local government commenters and AASHTO expressed concern regarding the requirement for 10 feet of separation between pedestrian push buttons on the same corner. The Board notes that in the final rule this requirement applies to new construction on undeveloped land. Pedestrian push buttons that are added to existing rights-of-way are considered alterations, and alterations subject to existing physical constraints that make compliance with applicable requirements technically infeasible must comply with the applicable requirements to the maximum extent feasible (R202.3).

**Push Button Orientation (R307.5)**

The face of the push button must be aligned parallel to its associated crosswalk. This alignment ensures that the tactile arrow points in the direction of pedestrian travel, and provides uniformity for wayfinding. This provision is taken from MUTCD section 4E.08 paragraph 4.

**Audible and Vibrotactile Walk Indications for Pedestrian Signal Heads (R307.6)**

Pedestrian push buttons or passive detection devices must activate audible and vibrotactile walk indications complying with R308. This requirement specifies that both audible and vibrotactile indications are required, and is taken from MUTCD section 4E.11 paragraph 2.

**Audible and Vibrotactile Indication for Pedestrian Activated Warning Devices Without a Walk Indication (R307.7)**

Where a pedestrian push button or a passive detection device is provided for pedestrian activated warning devices, such as rectangular rapid flashing beacons, the pedestrian push button or passive detection device must activate a speech message that indicates the status of the beacon in lieu of an audible walk indication. The speech message volume must comply with requirements stated at R308.4. Where a pedestrian push button is provided, it must not include vibrotactile features indicating a walk interval.

This provision clarifies the type of accessible indications that are required.
for pedestrian activated warning devices. Pedestrian activated warning devices, such as rectangular rapid flashing beacons, do not stop traffic. Rather they provide flashing lights that draw drivers’ attention to the crosswalk to warn them of the presence of pedestrians. Because these devices do not stop traffic, there is no walk interval, and thus no audible or vibrotactile walk indication. An audible or vibrotactile walk indication would falsely convey to a pedestrian who is blind or has low vision that the traffic has been stopped by a traffic control device. Instead, the speech message will state the status of the beacon, such as the beacon is flashing or the beacon has been activated, which is consistent with the visual indications of the device.

Locator Tone (R307.8)

Pedestrian push buttons must have a locator tone complying with R307.8. This provision is taken from MUTCD section 4E.12 paragraph 2. The locator tone is a sound that emanates from the push button housing that enables individuals who are blind or have low vision to locate the push button.

Locator tones have a duration of 0.15 seconds or less and repeat at one-second intervals except when another audible indication from the same device is active (R307.8.1). This requirement is taken from MUTCD section 4E.12 paragraph 4. To avoid a scenario in which multiple sounds are simultaneously emanating from the same device, the Board has added language clarifying that when another audible indication from the same device is active, the locator tone is to be silenced. The Board has also added an exception allowing the locator tone to be silenced if a passive detection system activates the locator tone when a pedestrian is within a 12-foot radius of the pedestrian push button. This addresses some commenter concerns regarding sounds bothering nearby residents. However, the Board also notes that those concerns are likely no longer an issue due to evolving technology; when the proposed rule was published, speakers were placed closer to the pedestrian signal heads, and were not typically integrated into the pedestrian push button device as they are now. This resulted in louder audible cues than those that emanate from today’s devices.

Pedestrian push button locator tones must be intensity responsive to ambient sound and audible 6 to 12 feet from the push button, or to the building line, whichever is less (R307.8.2). The push button locator tone must be louder than ambient sound up to a maximum volume of 5 dBA louder than ambient sound. Automatic volume adjustment in response to ambient traffic sound level is capped at a maximum volume of 100 dBA. This requirement is taken from MUTCD sections 4E.11 paragraphs 9 and 10 and 4E.12 paragraph 6.

Section R307.8.3 requires that where audible beaconing is used, the volume of the push button locator tone during the pedestrian change interval of the called pedestrian phase be increased and operated in one of the following ways: the louder audible walk indication and louder locator tone comes from the far end of the crosswalk, as pedestrians cross the street; the louder locator tone comes from both ends of the crosswalk; or 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. This requirement is taken from MUTCD section 4E.13 paragraph 8.

When the traffic control signal is operating in a flashing mode, pedestrian push button locator tones must remain active, and the pedestrian push button must activate a speech message that communicates the operating mode of the traffic control signal (R307.8.4). Where traffic control signals or pedestrian hybrid beacons are activated from a flashing or dark mode to a stop-and-go mode by pedestrian actuations, a speech message communicating the operating status of the traffic control signal is not required. Flashing mode refers to when traffic signals flash either red or yellow at night when traffic volumes are reduced, or at intersections in rural areas with low regular traffic flow.

Requirements for push button locator tones are addressed at MUTCD section 4E.12 paragraph 5. The MUTCD states that push buttons must be deactivated when the traffic control signal is in flashing mode. In response to comments from a national disability rights advocacy organization that emphasized the importance of visual information being provided in non-visual format for pedestrians who are blind or have low vision, the Board has explicitly deviated from the MUTCD’s approach in this instance to ensure that pedestrians who are blind or have low vision can access information regarding the status of the traffic control device.

Tactile Arrow (R307.9)

Pedestrian push buttons must have a tactile arrow with high visual contrast that is aligned parallel to the direction of travel and their associated crosswalks. This requirement is taken from MUTCD 4E.12 paragraph 1.

R308 Accessible Pedestrian Signal Walk Indications

Audible and vibrotactile walk indications are provided by audible pedestrian signals during a walk interval. The walk interval occurs when a traffic control device signals traffic to stop and a pedestrian signal head signals to pedestrians using the illuminated “walking person” visual signal, to exit the curb and begin to cross the street. The remainder of the time allotted for pedestrians to complete the crossing is called the “pedestrian change interval,” and is signaled by an illuminated flashing “upraised hand.” The technical requirements in section R308 pertain mostly to the audible and vibrotactile cues during the walk interval. The Board acknowledges and concurs with commenters’ requests for standardization with respect to audible cues. These requirements will provide standardization with respect to the type of sound, pattern of speech message, and volume of the audible cues provided.

Audible and Vibrotactile Walk Indications (R308.2)

Accessible pedestrian signals have an audible and vibrotactile walk indication during the walk interval only. The audible walk indication must be audible from the beginning of the associated crosswalk. During the pedestrian change interval, audible cues of the accessible pedestrian signals revert to the pedestrian push button locator tone. This requirement is taken from MUTCD sections 4E.11 paragraphs 4 and 25.

Audible Walk Indications (R308.3)

There are two types of audible walk indications: a percussive tone (R308.3.1) and a speech walk message (R308.3.2). A percussive tone is required where an accessible pedestrian signal is provided at a single crossing or where two accessible pedestrian signals are 10 feet or more from each other at a corner. The percussive tone repeats eight to ten ticks per second with multiple frequencies and a dominant component at 880 Hz. In alterations, where it is technically infeasible to provide 10 feet separation between pedestrian push buttons on the same corner, the audible walk indication for each signal is a speech walk message that complies with R308.3.2. These requirements are taken from MUTCD section 4E.11 paragraphs 7 and 8.

Several commenters objected to the “chirping” noise that was used by early accessible pedestrian signals. The Board notes that the final rule prescribes either a percussive tone or an audible speech
message depending on the circumstances; chirping noises are not permitted.

The Board carefully considered comments on the format of audible walk indications from two national advocacy organizations for people who are blind or have low vision. Both organizations requested that the audible walk indications be limited to speech messages to ensure that the same information available to a sighted pedestrian is provided to a pedestrian who is blind or has low vision.

In the absence of additional significant research studies regarding audible walk indications, the Board has accepted the MUTCD’s preference for percussive tones over speech messages. The Board notes that MUTCD adopted this approach based on research that concluded that speech walk indications were not understandable to pedestrians under all ambient sound conditions. See Transportation Research Board, NCHRP Document 117B: Guidelines for Accessible Pedestrian Signals: Final Report, 91–92 (2007) available at https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w117b.pdf. The principal purpose of visual pedestrian signal heads is to provide safety to pedestrians who are crossing the street by informing pedestrians of the walk interval, that is, the duration during which they are to step off the curb so that they have sufficient time to cross the street before the traffic light changes. In accepting the MUTCD’s preference for percussive tones, the Board is prioritizing audible communication of the walk indication over other information, and the available research indicates that the percussive tone is more widely audible across various ambient sound conditions. Id.

The Board acknowledges that this approach does not wholly address issues that may face pedestrians who are blind or have low vision, as they are not provided with the same information that is provided visually, specifically the pedestrian countdown. Consequently, persons who are blind or have low vision approaching a crosswalk during the pedestrian clearance interval will not know how many seconds remain and may then wait an entire cycle for the audible walk indication even if they would have had sufficient time to cross. The Board will encourage additional research regarding speech messages at crosswalks, including the viability of an audible pedestrian countdown.

Jurisdictions have the option of providing speech information messages at a pedestrian signal, regardless of whether it is a pretimed signal or actuated with the pedestrian push button or passive detection; however, the speech information message may only be actuated when the walk interval is not timing (R308.3.2.1). Speech information messages provide wayfinding assistance for persons who are blind or have low vision and can be especially helpful at intersection corners with multiple crossings. If provided, the speech message must begin with the term “Wait,” followed by intersection identification information modeled after: “Wait to cross Broadway at Grand.” Information on intersection signalization or geometry may also be provided after the intersection identification information.

Where a speech walk message is used as the audible walk indication, it must use the following pattern: “Walk sign is on for all directions while pedestrians cross in all directions, the speech message must be patterned after the model: “Broadway. Walk sign is on to cross Broadway.” (R308.3.2.2). At intersections with exclusive pedestrian phasing, meaning that traffic is stopped in all directions while pedestrians cross in all directions, the speech message must be patterned after the model: “Walk sign is on for all crossings” (R308.3.2.3). Where a pilot light is provided, the speech message “Wait” must be provided if actuated while the walk interval is not timing (R308.2.3.4). These speech message requirements come from MUTCD sections 4E.11 paragraphs 18 and 19 and 4E.08 paragraph 17.

Volume (R308.4)

Audible walk indications must be louder than ambient sound, up to a maximum volume of 5 dBA louder than ambient sound. For automatic volume adjustment in response to ambient traffic sound, the maximum volume is 100 dBA. Where audible beaconing is provided in response to an extended push button press, the beaconing can exceed 5 dBA louder than ambient sound; however, the maximum volume remains 100 dBA. Volume requirements come from MUTCD section 4E.10 paragraphs 9 and 10.

Vibrotactile Walk Indication (R308.5)

The pedestrian push button must vibrate during the walk interval. People who use vibrotactile cues, such as people who are both deaf and blind, will stand with their hand on the pedestrian push button until it vibrates indicating the walk interval. The only vibrotactile cue provided is the walk interval. The walk indication requirement comes from MUTCD section 4E.11 paragraph 3.
mm) minimum, measured perpendicular to the face of the curb or street edge, and a clear width of 60 inches (1525 mm) minimum, measured parallel to the street. These are the same substantive requirements proposed in the NPRM (NPRM R308.1.1.1). In response to the NPRM, five local government entities and one state DOT expressed concern that 8 feet of clear space would not be feasible at existing shuttle stops, and a state DOT requested to orient the boarding and alighting area in the other direction to accommodate limited right-of-way. The orientation of boarding and alighting areas is important because the dimensions as specified accommodate deployment of a lift or ramp. The Board notes that alterations, including transit stops that are added to existing right-of-way, are required to comply with the applicable requirements to the maximum extent feasible where existing physical constraints make compliance with these requirements technically infeasible (R202.3). The Board thus anticipates that there will be instances in existing right-of-way where full compliance of the 96-inch length will not be achieved.

The slope of boarding and alighting areas measured parallel to the street must be the same as the grade of the street (R309.1.1.2). The slope of boarding and alighting areas measured perpendicular to the street must be 1:48 (2.1%) maximum. There are no substantive changes to this provision from the proposed rule. The provision has been reitled “slope,” as the term “grade,” as used in the proposed rule, connotes a specific direction of pedestrian travel.

Boarding platforms in the public right-of-way must comply with technical requirements for platform and vehicle coordination (R309.1.2.1) and slope (R309.1.2.2) as well as common requirements for all transit stops (R309.1.3). The final rule defines “boarding platform” as “[a] platform raised above standard curb height used for transit vehicle boarding and alighting” (R203.2). Standard curb height is defined as, “[t]he typical height of a curb according to local standards for a given road type, but usually between 3 inches (75 mm) and 9 inches (230 mm) high relative to the surface of the roadway or gutter” (R104.3). Examples of boarding platforms in the public right-of-way include, but are not limited to, bus rapid transit stops and bus stops where the boarding and alighting area is higher than the standard curb height. This may include places where the stop is on the sidewalk, but the sidewalk is raised higher than the standard curb height.

Boarding platforms must be positioned to coordinate with vehicles in accordance with DOT’s applicable requirements in 49 CFR parts 37 and 38, which require the height of the vehicle floor and the platform to be coordinated so as to minimize vertical and horizontal gaps. There is no change to this requirement from the proposed rule.

The slope of boarding platforms measured parallel to the track or street must be the same as the grade of the track or street, while the slope of the boarding platform measured perpendicular to the track or street must be 1:48 (2.1%) maximum. This is a change from the proposed rule, which required the slope to be 2% maximum in each direction for new construction. Upon consideration, the Board has concluded that similar to boarding and alighting areas at street level, the slope of boarding platforms measured parallel to the street or track must be the same as the grade of the track or street even in new construction.

Boarding and alighting areas and boarding platforms must comply with surface characteristics stated at R302.6 (R309.1.3.1). In new construction on undeveloped land, boarding and alighting areas and boarding platforms connect to pedestrian access routes in accordance with R203.2. In alterations, boarding and alighting areas and boarding platforms must connect to existing pedestrian circulation paths by pedestrian access routes complying with R302 (R309.1.3.2). This connection is required by R202.2 but also expressed here to ensure that jurisdictions understand that any altered boarding and alighting areas and boarding platforms must be connected to an existing pedestrian circulation path. This requirement seeks to avoid a scenario in which a person with a disability alights a transit vehicle but is then trapped in the alighting area because there is no connection to a pedestrian circulation path. In response to the NPRM, two individuals and a state DOT requested in support of a connection requirement.

The Board acknowledges a comment from a national advocacy organization for individuals who are blind or have low vision requesting that the Board require all transit stops in new construction to have boarding and alighting areas or boarding platforms that are at least 6 inches higher than street level. The organization asserts that such a requirement will minimize gaps between the vehicle and the alighting area and reduce the slope of low-floor transit bus ramps when extended, and prevent transit vehicles from encroaching into alighting areas and possibly hitting a passenger. The Board is unaware of research indicating that these are widespread problems for transit riders with disabilities in jurisdictions where transit stops are located at street-level. The Board thus declines to require a specific height for transit stops.

Transit Shelters (R309.2)

Pedestrian access routes must connect transit shelters to boarding and alighting areas or boarding platforms (R309.2.1). This requirement, which appeared at NPRM R308.2 in the proposed rule, ensures that persons with disabilities are able to access transit shelters. Transit shelters must have a clear space complying with the technical requirements at R404 entirely within the shelter (R309.2.2). This clear space allows a person using a wheelchair sufficient space inside the shelter to await the transit vehicle. Where seating is provided within the shelter, the clear space must be located at one end of a seat or so as not to overlap the area within 18 inches (460 mm) from the front edge of the seat to leave leg room for seating provided within the shelter.

Any environmental controls provided within a transit shelter, such as lights or heating, must be proximity actuated to ensure that persons with disabilities can use them (R309.2.3). Protruding objects within transit shelters must comply with technical requirements for protruding objects at R402 to ensure that they are not hazards to persons who are blind or have low vision (R309.2.4).

There are no substantive changes in the final rule for technical requirements for transit shelters, although the provisions have been restructured for clarity. In response to the proposed rule, a disability rights advocacy organization requested that the Board add a requirement for a wheelchair turning space. Two design firms also commented on turning space, indicating that any required turning space should be permitted to be partially outside the shelter. The Board considered these comments and concluded that a requirement for turning space is not necessary in light of the typical designs of transit shelters, which would allow a person in a wheelchair to make a turn either partially inside the shelter or directly outside.

The Board acknowledges a comment from a design firm requesting technical criteria for benches. As stated above in the discussion of street furniture (R209), the Board concurs that technical criteria for benches, wheelchair-accessible supports, and armrest requirements, would be useful to ensure accessibility, but as the
Board did not propose specific dimensions for accessible benches in the proposed rule, the Board declines to add them now in the final rule. The Board may consider technical criteria for benches in a future rulemaking.

R310 On-Street Parking Spaces

In the proposed rule, technical requirements for accessible on-street parking spaces were addressed at NPRM R309. There are few substantive changes from the proposed requirements; however, in the final rule, the provisions have been restructured for clarity.

Parallel On-Street Parking Spaces (R310.2)

In the proposed rule, the Board presented two sets of specifications for accessible parallel on-street parking spaces: specifications for wide sidewalks where the width of the adjacent sidewalk or available right-of-way exceeds 14 feet (NPRM R309.2.1) and specifications for narrow sidewalks, where the available sidewalk or right-of-way is 14 feet or less.

In the final rule, the Board had restructured this section to clarify that in new construction on undeveloped land, larger accessible parallel on-street parking spaces are required. Specifically, in the final rule, the default dimensions of accessible parallel on-street parking spaces are 24 feet long, minimum parallel to the sidewalk and 13 feet wide minimum perpendicular to the sidewalk (R310.2.1). The 13-foot width accounts for the typical width of a parallel parking space plus an additional five feet, which in the proposed rule was characterized as an “access aisle” (NPRM R309.2.1). The 24-foot length accounts for the 20-foot length of a typical parking space (the dimension that the Board has used in R211 as a proxy to count unmarked parking spaces) plus 48 inches that will allow a person exiting on the driver side of the vehicle to access the connection to the pedestrian access route, such as a curb ramp, on the passenger side of the vehicle.

In the final rule, the Board concurred with an individual commenter who recommended that the Board provide total dimensions for the accessible parallel space instead of dimensions for an additional access aisle. The Board has observed in the implementation of the proposed guidelines that some jurisdictions have marked the access aisles, which creates confusion for both drivers and parking enforcement officers around whether a vehicle may be parked in the access aisle. The point of the additional space of the access aisle (now additional width in the final rule) is to allow the driver to situate the vehicle anywhere within the full width of the space so that a person with a disability may exit the vehicle on whichever side is needed without exiting directly into a travelled way. Some persons with disabilities will need space on the driver side of their vehicle, outside of the travelled way, to transfer to a wheelchair.

The Board has provided two exceptions to the required dimensions for accessible parallel on-street parking spaces that are applicable in alterations. First, in Exception 1, the Board states that where parallel on-street parking spaces are altered but the adjacent pedestrian circulation path is not, any accessible parallel on-street parking spaces provided may have the same dimensions as the adjacent parallel on-street parking spaces if they are provided nearest the crosswalk at the end of the block face or nearest a midblock crosswalk, and a curb ramp or blended transition is provided serving the crosswalk. This exception clarifies that where a jurisdiction is not altering a sidewalk, it need not alter the sidewalk solely to provide accessible parallel on-street spaces with the prescribed dimensions of R310.2.1, if they meet the conditions above. Rather, where, for example, the parking lane is being repaved (altered), but the sidewalk will not be altered, the jurisdiction is permitted to provide typically-sized, accessible parking spaces if they are provided nearest a crosswalk at the end of the block face or nearest a midblock crosswalk, and a curb ramp or blended transition is provided serving the crosswalk. The substantive content of this exception appeared at NPRM R309.2.1.1. The language has been revised to clarify that the spaces must be provided nearest to a crosswalk where a curb ramp or blended transition is provided serving the crosswalk. The language of this provision has been edited to clarify that there must be a curb ramp or blended transition present where the accessible spaces are located, as was the intention in the proposed rule of requiring that they be located “at the end of the block face.” In addition, in the final rule, the Board has clarified that these accessible spaces may have the same dimensions as the adjacent parallel on-street spaces.

As in the proposed rule, the Board limits the requirement for the larger sized parking space to places where 9 full feet of available right-of-way will remain. Nine feet of available right-of-way allows for the required 48-inch clear width of the pedestrian access route and an additional 5 feet for street furniture and building frontage.

Two local government commenters and one state DOT objected to the requirement to locate typically-sized accessible parallel on-street parking spaces nearest to curb ramps. They asserted that local programs may locate spaces based on need or have requirements that the must be a certain distance from an intersection. The Board acknowledges that in the absence of Federal requirements, some state and local jurisdictions have created their own specifications for the location of accessible on-street spaces. However, to provide equity to persons with disabilities with respect to their personal safety, the amount of time that they spend in the roadway between their vehicle and the sidewalk must be minimized. Thus, it is crucial that accessible spaces are located nearest the crosswalk at the end of the block face or nearest mid-block crosswalk with a curb ramp or blended transition serving the crosswalk.

Each accessible parking space complying with the dimensions of R310.2.1 must have an independent connection to a pedestrian access route (R310.2.2). If there is a curb between the parking space and the pedestrian access route, a curb ramp or blended transition complying with R304 must be provided in accordance with R203.6.1.3 and R310.2.2; however, a detectable warning surface is not required. Built-up curb ramps within the parking space are not permitted. The clear area requirement for a curb ramp directly serving a parking space complying with the dimensions of R310.2.1 is satisfied within the additional length of the space. Accessible spaces provided in accordance with R310.2.1 must be connected to the curb ramp serving the crosswalk by a
pedestrian circulation path that complies with technical requirements for surfaces at R302.6, except that changes in level are not permitted.

A state disability board requested that the rule specify slope and cross slope for parking spaces. The Board considered this request, but concluded that roadway design considerations preclude the Board from specifying slope and cross slope for on-street parking. However, in the final rule, the Board has added a provision requiring surfaces of parking spaces to comply with technical specifications for surfaces at R302.6, except that changes in level are not permitted (R310.2.3). As indicated in the advisory at NPRM 309.1, accessible parking spaces should be located where the street has the least crown and grade (and close to key destinations).

A state DOT and a local government entity pointed out in response to the proposed rule that the access aisle (now additional width) of a parallel parking space is critical for lift side lift and ramp users because they typically deploy onto the sidewalk. In the final rule, the Board has added a provision requiring that the center 50 percent of the length of the sidewalk or other surface adjacent to accessible parking spaces be free of obstructions (R310.2.4). This requirement will ensure that there is an adjacent unobstructed area to accommodate deployment of a lift or ramp.

In the final rule, the Board, concurring with a comment from an association of accessibility professionals, also added a provision clarifying the requirement for identification of accessible on-street parking spaces with a sign bearing the International Symbol of Accessibility installed 60 inches (1525 mm) minimum above the ground measured to the bottom of the sign (R310.2.5).

Perpendicular Parking Spaces (R310.3)

In the final rule, the Board has split perpendicular and angled on-street parking spaces into separate provisions, with an additional common requirements provision applicable to both, to address a change in the dimensions of the spaces and access aisles. In response to comments expressing confusion as to the need for a 96-inch access aisle for perpendicular and angled parking, the Board notes that the purpose of the access aisle is to allow sufficient space between an accessible vehicle and the next vehicle to deploy a ramp.

In R310.3.1 of the final rule, the Board has retained the proposed requirement that perpendicular spaces have an adjacent 96-inch (2440 mm) minimum access aisle extending the full length of the space. The Board has also retained the allowance that one access aisle may be shared by two spaces, but has clarified that this is only permitted where the front entry and rear entry parking are both allowed. Most wheelchair vans that are equipped with a ramp deploy on the passenger side. Thus, where a driver can park the vehicle such that the access aisle is on the passenger side, regardless of which side of the space the access aisle is located, it is appropriate that access aisle be shared by two spaces.

Angled Parking Spaces (R310.4)

In the final rule, the Board has reallocated the total amount of space anticipated for the angled parking space and access aisle as follows. The Board has stated the width of accessible angled parking spaces to 132 inches (3350 mm) and reduced the width of the access aisle to 60 inches (1525 mm) (R310.4.1). The access aisle must extend the full length of the parking space on the passenger side (R310.4.2).

Because most wheelchair vans equipped with a ramp deploy on the passenger side, the Board requires that the access aisle be located on that side of the vehicle. The larger parking space allows a driver flexibility to situate the vehicle within the space so that a person with a disability on either side of the vehicle will have sufficient clearance to disembark. A person deploying a ramp on the passenger side would pull all the way to the left in the space, which would allow the equivalent of the proposed 96-inch access aisle (see NPRM R309.3).

However, for a person with a disability exiting the vehicle on the driver’s side, the vehicle would be situated immediately adjacent to the access aisle, which would allow an additional three feet of clearance on the driver’s side.

Common Requirements for Perpendicular and Angled Parking Spaces (R310.5)

The following requirements apply to accessible perpendicular and accessible angled on-street parking spaces. The access aisles must be marked to discourage people from parking in them (R310.5.1). The access aisles must be located at the same level as the parking space they serve and cannot encroach on the traveled way (R310.5.2). These requirements are substantively the same as those proposed at NPRM R309.3.

In new construction on undeveloped land, access aisles must connect to pedestrian access routes (R310.5.3); in alterations, the access aisle may connect to an existing pedestrian circulation path in accordance with R202.2 (R310.5.3 Exception 1). In the proposed rule, this provision was entitled, “Curb Ramps or Blended Transitions” (NPRM R309.4). The Board has replaced this section with more precise language requiring a connection to a pedestrian access route, as in some areas there is no curb between the parking and the pedestrian access route and thus, no curb ramp is needed. Where curb ramps are used to make the connection, they must be provided in accordance with R203.6.1.4 and must comply with the technical requirements for curb ramps at R304 (R310.5.3); however, a detectable warning surface is not required on a curb ramp or blended transition used exclusively to connect on-street parking access aisles to pedestrian access routes.18

Where curb ramps or blended transitions are used, they must not reduce the required width or length of the access aisles or accessible parking spaces (R310.5.3). This requirement clarifies a statement made in the proposed rule that “[c]urb ramps shall not be located within the access aisle” (NPRM R309.4), which a state DOT indicated was unclear. The Board has observed jurisdictions install curb ramps within an access aisle that obstruct the area intended for deployment of a ramp. The connection to the pedestrian access route, which could be a curb ramp, blended transition, or a section of pedestrian access route, must be wholly outside the required dimensions of the access aisle. A built-up curb ramp within the access aisle that reduces the required dimensions or otherwise obstructs deployment of a ramp or lift is not permitted.

Surfaces of parking spaces and access aisles serving them must comply with technical requirements for surface characteristics at R302.6, except that changes in level are not permitted (R310.5.4). A state DOT, a local government entity, and an engineer commented on the slope and cross slope characteristics of access aisles; however, the Board neither proposed nor included in the final rule any slope or cross slope requirements for on-street parking spaces or access aisles due to roadway design considerations.

In the final rule, the Board, concurring with a comment from an

18 The Board acknowledges an error in NPRM Figure R309.3 depicting a detectable warning surface on a curb ramp serving an access aisle. Several commenters pointed out this error. The error will be corrected in technical assistance materials made available on the Access Board’s website in support of the final rule.
association of accessibility professionals, has added a provision clarifying the requirement for identification of accessible on-street parking spaces with a sign bearing the International Symbol of Accessibility installed 60 inches (1525 mm) minimum above the ground measured to the bottom of the sign (R310.5.5).

Parking Meters and Parking Pay Stations (R310.6)

The operable parts of parking meters and parking pay stations that serve accessible parking spaces must comply with technical requirements for operable parts at R403. The clear space required by R403.2 shall be located so that displays and information on parking meters and pay stations are visible from a point located 40 inches (1015 mm) maximum above the center of the clear space in front of the parking meter or parking pay station.

The only change to the substantive requirements of this section from the proposed rule is the elimination of NPRM 309.5.1 which required that parking meters for parallel parking spaces be located at the head or foot of the parking space. This requirement has been superseded by R310.2.4, which requires the center 50 percent of the length of each parking space to be free from obstructions. The provision in the final rule more precisely accomplishes the goal of ensuring that the area adjacent to a parallel parking space needed to deploy a ramp will not be obstructed, while eliminating a concern expressed by a commenter as to the uncertainty of where the “head” and “foot” of the parking space are located, and the concern expressed by other commentators that the proposed language prescribed the provision of parking meters even for jurisdictions where users of accessible spaces do not pay for parking.

R311 Passenger Loading Zones

The substantive technical requirements for accessible passenger loading zones differ minimally from the proposed requirements at NPRM R310; however, in the final rule they have been reorganized for clarity.

Accessible passenger loading zones must provide a vehicular pull-up space that is 96 inches (2440 mm) wide minimum and 20 feet (6.1 m) long minimum (R311.2). Vehicle pull-up spaces have adjacent access aisles that are 60 inches (1525 mm) wide minimum extending the full length of the vehicle pull-up space (R311.3). Two local governments of this section commented that the dimensions specified do not account for sidewalk widths or pedestrian volumes. The Board does not require that accessible passenger loading zones be provided. In new construction on undeveloped land, neither of the issues raised should be a concern as the design would reflect these considerations. In alterations, jurisdictions must comply with the applicable requirements to the maximum extent feasible where existing physical constraints make compliance with these requirements technically infeasible (see R202.3).

Access aisles must be at the same level as the vehicle pull-up space they serve and must not encroach on the traveled way. In alterations, where existing right-of-way precludes the installation of an access aisle separate from the pedestrian access route and the vehicle drop-off area is at-grade with the sidewalk, there may be overlap between the pedestrian access route and the access aisle.

As with accessible parallel parking spaces, the Board has added a requirement for accessible passenger loading zones that the center 50 percent of the adjacent sidewalk, or other surface, be free of obstructions to ensure that there is room for a vehicle to deploy a side lift or ramp.

Access aisle surfaces must be marked to discourage parking in them (R311.3.2). Surfaces of vehicle pull-up spaces and the access aisles serving them must comply with characteristics of surfaces specified at R302.6; in the final rule the Board has clarified that changes in level are not permitted (R311.4). Some commenters requested clarification regarding the required slope and cross slope of accessible passenger loading zones; however, the Board neither proposed nor included in the final rule any slope or cross slope requirements for passenger loading zones due to roadway design considerations.

Similar to the final requirements for accessible parking spaces, the Board has replaced a proposed provision requiring curb ramps or blended transitions to connect the access aisle to the pedestrian access route (NPRM R310.3) with language simply requiring the connection in consideration of places where there is no curb between the passenger loading zone and the adjacent pedestrian access route (R311.5). In alterations, the access aisle may connect to an existing pedestrian circulation path in accordance with R202.2. Where curb ramps and blended transitions are used, they must comply with technical requirements for curb ramps, except that determinations of infeasibility are not required on curb ramps and blended transitions used exclusively to connect access aisles to pedestrian access routes.

Curb ramps and blended transitions also must not reduce the required width or length of access aisles. A built-up curb ramp within the access aisle that reduces the required dimensions or otherwise obstructs deployment of a ramp or lift is not permitted.

E. Chapter 4: Supplemental Technical Requirements

Chapter 4 contains technical requirements that, as originally proposed in the NPRM, were virtually the same as similarly titled provisions in the 2004 ADA and ABA Accessibility Guidelines. In response to public comments, and to improve the clarity of the final rule text, several of these provisions have been revised to address the public rights-of-way context more precisely. Consequently, the original distinction between Chapter 3 and Chapter 4 of the PROWAG rule text, where Chapter 3 was specific to PROWAG and Chapter 4 was taken almost directly from the 2004 ADA and ABA Accessibility Guidelines, no longer applies. However, as the proposed guidelines have been widely adopted by state and local government entities, the Board has maintained the two-chapter structure of the technical requirements to ease the transition from the proposed guidelines to the final Guidelines.

R401 General

The supplemental technical requirements in Chapter 4 apply as specified in the scope provisions of Chapter 2 or where referenced by another technical requirement in Chapter 3 or 4. These technical requirements have been adapted specifically for pedestrian facilities in the public right-of-way. In the final rule, the Board has replaced the term “finish surface,” which is typically used to refer to an interior surface, with “walking surface” or “ground surface,” which are more appropriate in the rights-of-way context. Measurements are taken from the top of the surface.

R402 Protruding Objects and Vertical Clearance

The name of this section, called “Protruding Objects” in the proposed rule (NPRM R402) has been revised in the final rule to more precisely reflect the content. There are many types of protrusions in the public right-of-way, including but not limited to signs, awnings, and landscaping. Landscaping protrusions in the public rights-of-way are common and pose special challenges to pedestrians with disabilities. For example, low hanging tree branches pose a hazard to pedestrian who are

60
blind or have low vision. Overgrown shrubbery may impede a blind pedestrian’s ability to trail on the edge of a sidewalk or force a pedestrian in a wheelchair hazardously close to the roadway. Thus, to ensure equal access to public rights-of-way for persons with disabilities, jurisdictions must take care to ensure that protrusions do not exceed the specified limits, and that vertical clearance is properly maintained.

Protrusion Limits (R402.2)

Objects with leading edges that are more than 27 inches (685 mm) and less than 80 inches (2030 mm) above the walking surface cannot protrude horizontally more than 4 inches (100 mm) into pedestrian circulation paths. The text of this provision has been revised for clarity, but the substantive requirement has not been changed from the proposed provision, which was based on the 2004 ABA and ADA Accessibility Guidelines. However, in the final rule, the Board has added an exception that allows handrails to protrude 4.5 inches (115 mm) into a pedestrian circulation path to account for consistency with the 2004 ABA and ADA Accessibility Guidelines. See 36 CFR part 1191, Appx. D 307.2 Exception (allowing handrails to protrude 4.5 inches (115 mm)).

In response to the NPRM, one local government entity indicated that the protrusion limits could affect landscaping requirements and increase landscape trimming costs. The Board notes that it is common practice for jurisdictions to manage and maintain the landscaping abutting sidewalks and other pedestrian circulation paths; the final rule’s protrusion limits are unlikely to significantly affect those costs.

Post-Mounted Objects (R402.3)

Post-mounted objects must be installed in compliance with these technical requirements so they do not pose a hazard to persons who are blind or have low vision. In the final rule, the Board has revised the text of these provisions for clarity. The Board has also excepted the sloping portion of handrails serving stairs and ramps from compliance with R402.3.

Where objects mounted on a single post or pylon are more than 27 inches (685 mm) and less than 80 inches (2030 mm) above the walking surface, the objects must not protrude more than 4 inches horizontally into the pedestrian circulation path, as measured horizontally either from the post or pylon or from the outside edge of the base if the base is at least 2½ inches (64 mm) high (R402.3.2). A 2½ inch solid base is cane detectable.

Where objects within a pedestrian circulation path are mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of the object must be 27 inches (685 mm) maximum above the walking surface (low enough so that it is cane-detectable) or 80 inches (2030 mm) minimum above the walking surface (high enough that someone could walk under it) (R402.3.2). In the final rule, the Board has added an exception allowing objects mounted on two or more posts or pylons that do not comply with the above dimensions if a barrier with its lowest edge at 27 inches maximum above the walking surface is provided. The barrier is cane-detectable, and thus reduces the hazard.

Vertical Clearance (R402.4)

The vertical clearance of a pedestrian circulation path must be 80 inches high minimum. Where the vertical clearance is less than 80 inches, guards or other barriers must be provided to prohibit pedestrian travel. This will prevent pedestrians from colliding with objects overhead. The lowest edge of the guard or barrier must be no higher than 27 inches above the walking surface to ensure that it is cane detectable. These substantive requirements for vertical clearance have not changed from those in the proposed rule, although they have been revised for clarity. In addition, the Board has substituted the word “guard” for “guardrail,” which has a different meaning in the transportation context.

In response to the NPRM, the Board received comments from a disability rights advocacy organization and an accessible design firm requesting that the Board required vertical clearance of 96 inches to account for sagging wet branches, awnings, and wires. The Board has maintained the vertical clearance at 80 inches, which provides sufficient head clearance for most people. As in the case of several of PROWAG’s technical requirements, some maintenance may be needed to maintain compliance.

Required Clear Width (R402.5)

In the final rule, the Board has added a provision to clarify that protruding objects may not reduce the clear width required for pedestrian access routes, as specified at R302.2. That means, for example, that an object mounted between posts cannot be placed in the middle of a sidewalk, even if it complies with the requirements at R402.3.2, if it obstructs the required clear width of the path.

Clear Spaces (R404)

Clear spaces are required at operable parts so that a person with a wheelchair or other mobility aids (such as a walker or crutches) has sufficient room and a stable surface to access an operable part. Clear spaces are also provided adjacent or integral to benches so that a person using a wheelchair may sit in proximity to a companion using the bench. Two disability rights advocacy organizations requested in their comments that the Board remove the advisory specifying
Clear spaces are required at parking meters and parking pay stations "that serve accessible parking spaces" (NPRM Advisory R404.1), because they believe that clear space should be provided at all parking meters and pay stations. All advisory notes have been removed from the final rule text; however, the Board also notes that with the addition of R209.7 in the final rule, operable parts of all fixed elements, which would include all parking meters and pay stations, must comply with technical requirements for operable parts at R403. 

Clear spaces are 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum (R404.3). Their surfaces must comply with technical requirements for surface characteristics at R302.6 (R404.2). The slope of a clear space must be 1:48 (2.1%) maximum in both directions (R402.2). This is a change from the proposed rule, which required a running slope consistent with the grade of the adjacent pedestrian access route and a cross slope of 2 percent. The Board agreed with commenters that minimizing the slope in both directions provides better accessibility, particularly where both hands are needed for an operable part, leaving a person without a hand to stabilize a manual wheelchair. The Board has retained an exception where the grade of an adjacent pedestrian access route conforms to the requirements of R302.4; in those situations, the slope of the clear space may be consistent with the slope of the pedestrian access route.

Two state DOTs and a regional association of engineers raised concerns about the cross slope exceeding 2 percent in circumstances where a pedestrian pushbutton for an accessible pedestrian signal is adjacent to a curb ramp and the clear space then overlaps the curb ramp. The Board notes that full compliance is expected for new construction on undeveloped land, and that in alterations, where existing physical constraints make compliance with applicable requirements technically infeasible, compliance with these requirements is required to the maximum extent feasible (see R202.3). The final rule also allows pedestrian push buttons to be located up to 10 feet away from the edge of curb to help avoid the scenario where clear space is located on a curb ramp (see R307.4).

Clear spaces may include knee and toe clearance complying with R405 (R404.4.). Clear spaces are positioned either for a forward approach or parallel approach (R404.5). In the final rule, the Board has clarified the orientation of the clear space for each approach: the 30-inch side is nearest to the element for a forward approach, and the 48-inch side is nearest to the element for a parallel approach (R404.5).

Clear spaces must not be located on curb ramp runs or flares. One fully unobstructed side of a clear space must adjoin a pedestrian access route or another clear space (R404.6). If a clear space is confined on all or part of three sides, additional maneuvering clearance must be provided (R404.7). For a forward approach where the depth of the confined space exceeds 24 inches measured perpendicular to the element, the clear space and additional maneuvering clearance must be 36 inches (915 mm) wide minimum (R404.7.1). The clear space and additional maneuvering clearance must be 60 inches (1525 mm) wide minimum for a parallel approach where the depth of the confined space exceeds 15 inches.

R405 Knee and Toe Clearance

The technical requirements for knee and toe clearance apply where space beneath an element is included as part of the clear space and additional maneuvering clearance (R406.2). Where the clear space configured solely for a forward approach (R404.5), the toe clearance range extends up to 6 inches (150 mm) above the available knee clearance at 9 inches above the ground surface is not considered toe clearance. The Board added this provision for consistency with section 306.2.4 of the 2004 ABA and ADA Accessibility Guidelines. The only change from the proposed rule is that the Board added a clarifying provision at R405.2.4 stating that space extending more than 6 inches (150 mm) beyond the available knee clearance at 9 inches above the ground surface is not considered toe clearance. The Board notes that most of the concerns expressed related to existing rights-of-way. Alterations must comply with the applicable requirements to the maximum extent feasible where existing physical constraints make compliance with these requirements technically infeasible (R202.3). An engineering firm expressed concern that the 10-inch obstruction depth limit would present challenges for mounting push buttons within the specified reach range. The Board notes that push button extensions, which are readily available, mitigate this concern.

R407 Ramps

Ramps in the public right-of-way are used to provide access to a pedestrian overpass or underpass, to the entrance of a building or facility, and in instances where the grade of the sidewalk exceeds the allowances specified at R302.4. In the final rule, the Board has defined a “ramp” as a “sloped walking surface with a running slope steeper than 1:20 (5.0%) that accomplishes a change in level and is not part of a pedestrian circulation path that follows the roadway grade. A curb ramp is not a ramp” (R104.3).

In addition, the Board has revised R407.1 to state that R407 does not apply to curb ramps or pedestrian access routes following the grade established for the adjacent street consistent with the requirements of R302.4.1. This definition and revisions to R407.1 address two repeated concerns in the comments to the NPRM and in subsequent technical assistance inquiries the Board has received since the NPRM was published. First, the Board clarifies that “curb ramps” and “ramps” are different types of pedestrian facilities and have distinct technical requirements. Two state DOTs, one local government entity, an
accessible design firm, and an association of accessibility professionals requested that the Board clarify that R407 does not apply to curb ramps. In the final rule, both “ramp” and “curb ramp” are defined in R104.3. The technical requirements for curb ramps appear at R304 in accordance with the scoping at R203.6. The technical requirements for ramps appear at R407. Second, the Board clarifies that pedestrian circulation paths that follow the street grade are not ramps, even if they exceed a slope of 1:20 (5.0%) and thus do not require compliance with R407 (see R302.4.1).

The running slope of a ramp run is 1:12 (8.3%) maximum (R407.2) and the cross slope of a ramp run is 1:48 (2.1%) maximum (R407.3). In the proposed rule, the Board had specified a minimum running slope of 5 percent, which was derived from the proposed maximum grade of a pedestrian access route (NPRM R407.2). A state DOT requested that the Board eliminate the minimum slope, and the Board concurred that setting a minimum slope was contributing to the confusion as to the applicability of the ramp technical requirements. Thus, the final rule does not state a minimum running slope for ramp runs.

The clear width of a ramp run must be 48 inches (1220 mm) minimum, and if handrails are provided, the clear width between handrails must be 48 inches (1220 mm) minimum (R407.4). This is a departure from the NPRM in which the Board proposed that the clear width of the ramp run be 36 inches minimum, consistent with the 2004 ADA and ABA Accessibility Guidelines. Several commenters, including three state DOTs and a local government entity, recommended that ramps have a minimum width of 48 inches, consistent with the rest of the pedestrian access route in the public right-of-way. The Board concurred, but also provided an exception allowing a minimum width between handrails of 36 inches (915 mm) for ramps that exclusively serve a building entrance.

The rise for any ramp run is 30 inches (760 mm) maximum (R407.5). Landings must be provided at the top and bottom of each ramp run (R407.6). Landing slopes must be 1:48 (2.1%) maximum parallel and perpendicular to the ramp running slope. Landings are 60 inches (1525 mm) long minimum (R407.6.3) and as wide as the widest ramp run leading to the landing (R407.6.2). Ramps that change direction between runs at landings must have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum where the ramps change direction (R407.6.4). A state DOT requested 48 inch (1220 mm) minimum landings; the Board declines this suggestion as switchbacks require more space for maneuvering. A state disability board requested that the Board clarify that handrails cannot overlap the minimum clear dimensions of the landing. The Board does not think this modification to the rule text is needed, as R407.4 indicates that clear width is measured inside any handrails.

Surfaces of ramp runs and landings must be 48 inches (1220 mm) minimum, and if handrails are provided, the clear width of at least one side of the ramp run or landing 12 inches (305 mm) minimum beyond the inside face of the handrail (R407.9.1). The other is to provide a 4- inch (100 mm) high curb or a barrier that prevents the passage of a 4-inch sphere (R407.9.2). In the final rule, the Board has specified the minimum height of the curb for clarity and consistency with guidance for the 2004 ADA and ABA Accessibility Guidelines. See U.S. Access Board, Guide to ADA Accessibility Standards, “Edge Protection” available at https://www.access-board.gov/ada/guides/chapter-4-ramps-and-curb-ramps/ (stating, “Curbs if used must be at least 4” high”). The Board emphasizes that only one edge protection option is required; if a curb or barrier is provided, the extended surface is not required. R408 Stairs

Technical accessibility requirements for stairs are needed for individuals with disabilities who are ambulatory and use stairs. For example, a person who drags a foot may catch it on a nosing if it does not comply with the requirements. For individuals who walk with difficulty or have challenges with balance, it is often preferable to use stairs rather than a ramp when both are provided as stairs may represent a shorter distance to be traveled or a more even surface.

The final technical requirements for stairs in the public right-of-way are almost identical to the requirements for stairs in the 2004 ADA and ABA Accessibility Guidelines, and those proposed in the NPRM with two exceptions. First, consistent with the requirements in the 2004 ADA and ABA Accessibility Guidelines but different than the NPRM, the Board has clarified that at R408.4 that treads are permitted to slope to a 1:48 (2.1%) maximum. Second, in response to a request from over 80 commenters, the Board has added a requirement for visual contrast on stair treads and landings.

All steps on a flight of stairs must have uniform riser heights and uniform tread depths (R408.2). Risers must be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads must be 11 inches (280 mm) deep minimum. Two commenters requested that the Board permit the bottom riser to be of varying height to accommodate the grade of the sidewalk. The Board does not find that a modification to the rule text is needed to account for this scenario. DOJ regulations implementing accessibility requirements under Title II of the ADA state that full compliance with the relevant accessibility requirements is not required in the context of new construction where a public entity can demonstrate that it is structurally impracticable to meet the requirements. 28 CFR 35.151. In alterations, where compliance with a requirement is technically infeasible, compliance is required to the maximum extent feasible (see R202.3).

Open risers are not permitted (R408.3). Stair treads must comply with technical requirements for surface characteristics at R302.6, except that changes in level are not permitted (R408.4). However, treads may have a slope not steeper than 1:48 (2.1%).

The radius of curvature at the leading edge of the tread must be 0.5 inches (13 mm) maximum (R408.5). If the nosing projects beyond the riser, the underside of the leading edge of the nosing must be curved or beveled. Risers are permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The nosing may project 1.5 inches (38 mm) maximum over the tread below.

The leading edge of each step tread and top landing must be marked by a 1-inch (25 mm) wide stripe (R408.6). The stripe must contrast visibly with the rest of the step tread or circulation path surface, either light-on-dark or dark-on-light. In adopting a requirement for contrast striping, the Board notes that a 1- to 2-inch stripe of contrasting color (either dark-on-light or light-on-dark) is required by American National Standard (ANSI) through adoption of international building codes (IBC) to help users distinguish each step.19 In
addition, the Access Board requires contrast striping on vehicle stairs to assist individuals with low vision. To distinguish between steps, 36 CFR part 1192, Appx. A T405.3. The Board assessed the costs of contrast striping on stairs and finds them reasonable with respect to the accessibility for persons with low vision. FRIA at 109.

Stairs must have handrails complying with the technical requirements for handrails at R409.

R409 Handrails

Wherever handrails are provided in the public right-of-way, regardless of whether or not they are required, they must comply with technical requirements for handrails. The Board received several comments in response to the handrails technical requirements in the NPRM asking the Board to clarify where handrails are required. Again, handrails are required on ramps and stairs (R409.2); they are not required on curb ramps or pedestrian circulation paths complying with the grade requirements at R302.4. The Board added a statement to R409.1 clarifying that R409 does not apply to curb ramps.

The technical requirements for handrails in the final rule are substantively the same as the technical requirements in the NPRM. The Board provided clarification, described below, as to how jurisdictions are to handle scenarios where handrail extensions would reduce the clear width of a pedestrian access route (see R409.10).

Handrails must be continuous within the full length of each ramp run or stair flight (R409.3). Inside handrails on switchback or dogleg ramps and stairs must be continuous between ramp runs or stair flights.

The top of handrail gripping surfaces must be between 34 inches (865 mm) and 38 inches (965 mm) above walking surfaces, ramp surfaces, and stair nosings (R409.4). Handrails must be installed at a consistent height. There must be at least 1.5 inches (38 mm) between the handrail gripping surface and any other adjacent surface to allow sufficient room to grip the handrail (R409.5).

Handrail gripping surfaces must be continuous along their length and unobstructed along their tops and sides (R409.6). The bottoms of handrail gripping surfaces must not be obstructed for more than 20 percent of their length. Any horizontal projections must be at least 1.5 inches (38 mm) below the bottom of the handrail gripping surface.

Handrail gripping surfaces’ cross sections comply with either R409.7.1 (circular) or R409.7.2 (non-circular). Where expansion joints are necessary for large spans of handrails, the expansion joint cross section may be smaller than the specified cross section diameters for sections no more than 1 inch (25 mm) long. Handrail gripping surfaces with a circular cross section must have an outside diameter of 1.25 inches (32 mm) minimum and 2 inches (51 mm) maximum (R409.7.1). Handrail gripping surfaces with a non-circular cross section must have a perimeter dimension of 4 inches (100 mm) minimum and 6.25 inches (160 mm) maximum, and a cross-section dimension of 2.25 inches (57 mm) maximum (R409.7.2). Handrail gripping surfaces and any surfaces adjacent must not be sharp or abrasive and must have rounded edges (R409.8).

Handrails must not rotate within their fittings; however, where expansion joints are necessary for large spans of handrails, the expansion joint may rotate in its fitting (R409.9). Handrail gripping surfaces must extend beyond and in the same direction of ramp runs and stair flights in accordance with R409.10. In response to a comment from a state DOT requesting clarification on the requirement for handrail extensions where they would protrude into a pedestrian circulation path, the Board has clarified that in new construction on undeveloped land, handrails must not extend into a roadway or pedestrian circulation path. However, in alterations, if handrail extensions complying with R409.10 would reduce the clear width of a pedestrian access route, they shall extend as far as possible without reducing the clear width. Extensions are not required for continuous handrails at the inside turn of switchback or dogleg ramps and stairs.

The required extensions are as follows. Ramp handrails must extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs (R409.10.1). Extensions must either return to a wall, guard, or the landing surface, or be continuous to the handrail of an adjacent ramp run. At the top of a stair flight, handrails must extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing (R409.10.2). Extensions must either return to a wall, guard, or the landing surface, or be continuous to the handrail of an adjacent stair flight. At the bottom of a stair flight, handrails must extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing (R409.10.3).

Extensions must either return to a wall, guard, or the landing surface, or be continuous to the handrail of an adjacent stair flight.

R410 Visual Characters on Signs

Technical requirements for pedestrian signs provide accessibility to pedestrians with low vision. As stated in the scoping at R208, all signs on shared use paths and all other signs in the public right-of-way intended for pedestrians other than those explicitly excepted are required to comply with the technical requirements. The Board notes, in response to a local government comment, that a noncompliant sign accompanied by a compliant sign does not meet the requirements. All signs covered by the scoping must comply with the technical requirements.

The only change to the final technical requirements for signs from the proposed provisions is that the Board has relocated the requirement for height to the end of the section as a more logical placement. The technical requirements for visual characters on signs are substantively identical to the character requirements in the 2004 ADA and ABA Accessibility Guidelines. 36 CFR part 1191, Appx. D 703.

Characters and their background must have a non-glare finish (R410.2), contrast with their background (R410.2), and be conventional in form (R410.4). Characters may be uppercase or lowercase or a combination of both (R410.3).

Characters must be selected from fonts where the width of the uppercase letter “O” is 55 percent minimum and 110 percent maximum of the height of the uppercase letter “T” (R410.5). Minimum character heights are specified in Table R410.6. The viewing distance is measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign (R410.6). Character height is based on the uppercase letter “T.”

Stroke thickness (R410.7), character spacing (R410.8), and line spacing (R410.9) are specified. Visual characters must be at least 40 inches (1015 mm) above the ground surface.

411 International Symbol of Accessibility

The International Symbol of Accessibility (ISA) is provided as a figure. Wherever the ISA is used, it must have a non-glare finish and contrast with its background. In the final rule, this provision has been slightly restructured, but there are no

access from ANSI A117.1 (2009); Accessible and Usable Buildings and Facilities (mzarchitects.com)
substantive changes from the proposed requirements.

**VII. Regulatory Process Matters**

*A. Regulatory Planning and Review (Executive Orders 12866 and 13563)*

The Office of Management and Budget has reviewed this final rule pursuant to E.O. 12866, 58 FR 51735 (Sept. 30, 1993), Principles of Regulations, and E.O. 13563, 76 FR 3821, (Jan. 21, 2011), Improving Regulation and Regulatory Review.

The USDOT Volpe Center prepared the final regulatory impact analysis (FRIA) on behalf of the Access Board. The FRIA is available on the Access Board’s website at www.access-board.gov and in the regulatory docket at www.regulations.gov. The FRIA estimates the annual costs of PROWAG, and describes the significant benefits, some of which are quantifiable. While the benefits of regulations that ensure civil rights cannot be fully quantified and monetized, according to the Volpe Center’s estimates, the monetizable benefits of this final rule far outweigh the costs. The Board concludes that consistent with E.O. 13563, the benefits of this final rule, (quantitative and qualitative) justify the costs.

Pursuant to E.O. 13563, the Volpe Center has used “the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible”; however, the final rule and the underlying statutes create many important benefits that, in the words of E.O. 13563, stem from “values that are difficult or impossible to quantify.” In addition to considering the rule’s quantitative effects, the Board has considered the rule’s qualitative effects.

Executive Order 13563 states that in making a reasoned determination that a regulation’s benefits justify its costs, “each agency may consider and (discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.” The proposed guidelines promote important societal values that are difficult or impossible to quantify. When enacting the ADA, Congress found “the discriminatory effects of architectural, transportation, and communication barriers” to be a continuing problem that “denies people with disabilities the opportunity to compete on an equal basis and to pursue those opportunities for which our free society is justifiably famous, and costs the United States billions of dollars in unnecessary expenses resulting from dependency and nonproductivity.” 42 U.S.C. 12101(a)(5) and (9).

Congress declared that “the Nation’s proper goals regarding individuals with disabilities are to assure equality of opportunity, full participation, independent living, and economic self-sufficiency.” 42 U.S.C. 12101(a)(8). This final rule promotes the goals declared by Congress by eliminating the discriminatory effects of architectural, transportation, and communication barriers in the design and construction of pedestrian facilities in the public right-of-way. The proposed guidelines are also important to achieving the benefits of the other parts of the Americans with Disabilities Act. As the House Report for the Americans with Disabilities Act stated, “[t]he employment, transportation, and public accommodation sections . . . would be meaningless if people who use wheelchairs were not afforded the opportunity to travel on and between the streets.” H.R. 485, 101st Cong., 2d Sess. 84 (1990).

In the FRIA, the Volpe Center presents a discussion of potential compliance costs for pedestrian overpasses and underpasses; sidewalk dimensions and materials; handrails; public street toilets; transit stops and shelters; and alternate pedestrian access routes. However, these are not listed in the summary table because they are expected to have little to no overall cost impact relative to the baseline. Similarly, a number of other benefits were identified that could not be monetized using the available data.

As the relevant analysis time periods can vary by provision, the costs and benefits have been converted to annualized equivalents (using 3% and 7% discount rates) to ease comparisons. As the figures indicate, estimated monetized benefits exceed estimated compliance costs by a considerable margin. However, some of the most important benefits of this rule, in the form of equal access to public facilities, personal freedom and independence, and the elimination of accessibility barriers to mobility, are not quantified due to the inherent difficulty in monetizing such impacts.

### SUMMARY OF ESTIMATED BENEFITS AND COSTS

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<th>PROWAG provision</th>
<th>Annualized cost/benefit ($ millions, 7% discounting to 2021 base year)</th>
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</table>

B. Regulatory Flexibility Act

The impacts of the proposed guidelines on small governmental jurisdictions with a population of less than 50,000 are discussed below. This information is required by the Regulatory Flexibility Act (5 U.S.C. 603).

1. Statement of the Need for, and Objectives of, the Rule

The Access Board’s current accessibility guidelines, the 2004 ADA and ABA Accessibility Guidelines, were developed primarily for buildings and facilities on sites. Some of the requirements in the 2004 ADA and ABA Accessibility Guidelines can be readily applied to pedestrian facilities in the public right-of-way, but other requirements are developed specifically for pedestrian facilities in the public right-of-way and address conditions and constraints that exist in the public right-of-way.

The Access Board is required to issue accessibility guidelines by the Americans with Disabilities Act (ADA) (42 U.S.C. 12204) and Section 502 of the Rehabilitation Act (29 U.S.C. 792) to ensure that newly constructed and altered facilities are readily accessible to and usable by pedestrians with disabilities.

2. Statement of Significant Issues Raised by Public Comments in Response to the Initial Regulatory Flexibility Analysis

The NPRM received 14 comments from entities considered “small”, i.e., government entities with a population under 50,000. In these comments, the most common concern was about the cost of APS, although in at least some instances this was due to a misunderstanding that the final rule requires retrofitting equipment, which is not the case. This final rule applies only to new construction and alterations.

Other comments asked clarifying questions about definitions and the applicability of the proposed rule, and one commentor explicitly supported the proposed rule in its entirety.

The Access Board carefully considered all comments, including those from small government entities, and revised the final rule in light of those comments. No changes were made, however, that solely affect small government entities.

3. Response of the Agency to Any Comments Filed by the Chief Counsel for Advocacy of the Small Business Administration in Response to the Proposed Rule

No comments were filed by the Chief Counsel for Advocacy of the Small Business Administration in response to the proposed rule.

4. Small Governmental Jurisdictions Affected by Proposed Accessibility Guidelines

The number of small governmental jurisdictions with a population less than 50,000 affected by the proposed guidelines is shown in the table below. The total number of jurisdictions with populations under 50,000 is 36,931.

More than 65 percent of municipal governments (12,701) and almost 75 percent of towns and townships (12,062) have a population of less than 2,500. Many of these small governmental jurisdictions are located in rural areas, which generally do not construct pedestrian transportation networks (e.g., sidewalks, pedestrian street crossings, and pedestrian signals).

In addition, some jurisdictions do not have full responsibility for all rights-of-way within their town or county boundaries, and accordingly would only be affected by this final rule with respect to the right-of-way that is in their purview. For example, in Delaware, North Carolina, and West Virginia, the State DOT is responsible for the management of roadways, which means that small governmental jurisdictions in these states are less likely to be burdened by the final rule, as the State DOTs may be primarily

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21 There are 90 counties and 821 municipal governments with population under 50,000 per U.S. Census data in these three states.
responsible for the affected infrastructure.

5. Compliance Requirements

The public rights-of-way accessibility guidelines address the design, construction, and alteration of pedestrian facilities in the public right-of-way, including sidewalks, crosswalks, pedestrian overpasses and underpasses, curb ramps and blended transitions at crosswalks, pedestrian signals, street furniture (i.e., drinking fountains, public toilet facilities, tables, counters, and benches), pedestrian signs, transit stops and transit shelters for buses and light rail vehicles, on-street parking that is marked or metered, and passenger loading zones. The Section-by-Section Analysis of the preamble describes the proposed accessibility guidelines. Compliance with the proposed accessibility guidelines is not mandatory until they are adopted, with or without additions and modifications, as accessibility standards by other Federal agencies. There are no reporting or recordkeeping requirements.

6. Significant Alternatives Which Minimize Any Significant Economic Impacts on Small Entities

The regulatory assessment analyzes the following five requirements in the final rule that will have more than minimal impacts on state and local transportation departments:

- **Accessible pedestrian signals and pedestrian pushbuttons required when pedestrian signals are newly installed or altered at signalized intersections.** Accessible pedestrian signals and pedestrian pushbuttons communicate the information about the WALK and DON’T WALK intervals at signalized intersections in non-visual formats (i.e., audible tones and vibrotactile surfaces) to pedestrians who are blind or have low vision.
- **Pedestrian activated signals or raised crossings at roundabouts with pedestrian street crossings.** A roundabout is a circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island. Pedestrian activated signals or raised crossings are required at roundabouts with pedestrian street crossings to facilitate crossing by pedestrians who are blind or have low vision. Some small governmental jurisdictions with a population less than 50,000 do construct roundabouts, and accordingly may be affected by this requirement, although they may only construct a small number of roundabouts.
- **Accessible shared use paths located in the public right-of-way.** The shared use paths requirements that are likely to impose costs include those related to detectable warning surfaces, grade, and trail surface. The existing data suggests that shared use paths in small governmental jurisdictions are not necessarily any more or less compliant than all shared use paths in the U.S., suggesting that this will be an area of costs for small jurisdictions in line with the overall prevalence of shared use paths.
- **One curb ramp per street crossing provided at each corner of intersections.** Existing guidelines allow for a single diagonal curb ramp serving street crossings; however, the final rule will require two parallel or perpendicular curb ramps. There is no requirement where no pedestrian crossing exists.
- **On-street parking must meet minimum thresholds for the number of accessible spaces per block perimeter or other location.** On-street parking is typically found along the curbside in retail, office, and mixed-use areas, but it is unknown how common this type of parking is in small governmental jurisdictions.

There are no significant alternatives that will minimize any significant impacts of these requirements on small governmental jurisdictions and achieve the objectives of the ADA, Section 504 of the Rehabilitation Act, and the ABA to eliminate the discriminatory effects of architectural, transportation, and communication barriers in the design and construction of pedestrian facilities in the public right-of-way.

C. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act does not apply to legislative or regulatory provisions that establish or enforce any "statutory rights that prohibit discrimination on the basis of race, color, religion, sex, national origin, age, handicap, or disability." 2 U.S.C. 658a. Accordingly, it does not apply to this rulemaking.

D. Paperwork Reduction Act

This regulation contains no information collection requirements subject to review by the Office of Management and Budget under the Paperwork Reduction Act. See 44 U.S.C. 3501, et seq.

E. Congressional Review Act

To the extent this rule is subject to the Congressional Review Act, the Access Board has complied with its requirements by submitting this final rule to Congress and the Government Accountability Office prior to publication in the Federal Register.

F. Federalism (Executive Order 13132)

The proposed rule adheres to the fundamental federalism principles and policy making criteria in Executive Order 13132. The portion of this rule applicable to state and local governments is issued under the authority of the Americans with Disabilities Act, civil rights legislation that was enacted by Congress pursuant to its authority to enforce the Fourteenth Amendment to the U.S. Constitution and to regulate commerce. The Americans with Disabilities Act was enacted “to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities.” 42 U.S.C. 12101(b)(1). The Americans with Disabilities Act recognizes the authority of State and local governments to enact and enforce laws that “provide for greater or equal protection for the rights of individuals with disabilities than are afforded by this chapter.” 42 U.S.C. 12201(b). This rule is based largely on the recommendations of a Federal advisory committee which included representatives of state and local governments. The Access Board made drafts of the proposed rule available for public review and comment. State and local governments provided comments on the drafts of the proposed rule.

List of Subjects in 36 CFR Part 1190


Approved by vote of the Access Board on March 15, 2023.

Christopher Kuczynski, General Counsel.

Accordingly, for the reasons set forth in the preamble, the Access Board adds 36 CFR part 1190 to read as follows:

PART 1190—ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY

Sec. 1190.1 Accessibility Guidelines.

Appendix to Part 1190—Accessibility Guidelines for Pedestrian Facilities in the Public Right-Of-Way


§ 1190.1 Accessibility Guidelines.

The accessibility guidelines for pedestrian facilities in the public right-
of-way are set forth in the appendix to this part. When the guidelines are adopted, with or without additions and modifications, as accessibility standards in regulations issued by other Federal agencies implementing the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act, compliance with the accessibility standards is mandatory.

Appendix to Part 1190—Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

Chapter 1: Application and Administration

R101 Purpose and Application

R101.1 Purpose. These guidelines contain scoping and technical requirements to ensure that pedestrian facilities located in the public right-of-way (including a public right-of-way that forms the boundary of a site or that lies within a site bounded by a property line), are readily accessible to and usable by pedestrians with disabilities.

R101.2 Application to ADA-Covered Facilities. These guidelines apply to pedestrian facilities in public rights-of-way to the extent required by regulations issued by Federal agencies under the Americans with Disabilities Act of 1990, as amended (42 U.S.C. 12101 et seq.) (ADA).

R101.3 Application to ABA-Covered Facilities. These guidelines apply to pedestrian facilities in public rights-of-way to the extent required by regulations issued by Federal agencies under the Architectural Barriers Act of 1968 (42 U.S.C. 4151 et seq.) (ABA).

R101.4 Effect on Existing Pedestrian Facilities. These guidelines do not address existing pedestrian facilities unless the pedestrian facilities are altered at the discretion of the owner. The Department of Justice has authority over existing facilities that are subject to the requirement for program access under title II of the ADA. Any determination that this document applies to existing facilities subject to the program access requirement is solely within the discretion of the Department of Justice and is effective only to the extent required by regulations issued by the Department of Justice.

R102 Deviations From These Guidelines

R102.1 ADA-Covered Facilities and Equivalent Facilitation. The use of alternative designs, products, or technologies that result in substantially equivalent or greater accessibility and usability than the requirements in these guidelines shall be permitted for pedestrian facilities in the public right-of-way subject to the ADA.

R102.2 ABA-Covered Facilities and Waivers or Modifications. Equivalent facilitation is not permitted for pedestrian facilities in the public right-of-way subject to the ABA. The ABA authorizes the Administrator of the General Services Administration, the Secretary of the Department of Housing and Urban Development, the Secretary of the Department of Defense, and the United States Postal Service to modify or waive the accessibility standards for buildings and facilities covered by the ABA on a case-by-case basis, upon application made by the head of the department, agency, or instrumentality of the United States concerned and upon a determination that the waiver is clearly necessary. Pursuant to Section 502(b)(1) of the Rehabilitation Act of 1973, 29 U.S.C. 792(b), the Access Board shall ensure that modifications and waivers are based on findings of fact and are not inconsistent with the ABA.

R103 Conventions

R103.1 Conventional Industry Tolerances. All dimensions are subject to conventional industry tolerances except where requirements are stated as a range with specific minimum or maximum endpoints.

R103.2 Calculation of Percentages. Where the required number of elements or facilities to be provided is determined by calculations of ratios or percentages and remainders or fractions result, the next greater whole number of such elements or facilities shall be provided.

R103.3 Units of Measurement. Measurements are stated in U.S. customary units and metric units. The values stated in each system (U.S. customary units and metric units) may not be exact equivalents, and each system shall be used independently of the other. Slopes are expressed in terms of both ratios and percentages. Ratios and percentages may not be exact equivalents, and each shall be used independently of the other.

R104 Definitions

R104.1 Undefined Terms. Terms that are not defined in R104.3 or in regulations issued by the Department of Justice and the Department of Transportation under the ADA, the four standard setting agencies under the ABA or other Federal agencies that adopt these guidelines as accessibility standards shall be given their ordinarily accepted meaning in the sense that the context implies.

R104.2 Interchangeability. Words, terms, and phrases used in the singular include the plural and those used in the plural include the singular.

R104.3 Defined Terms. For the purpose of these guidelines, the following terms have the indicated meanings:

Accessible. A pedestrian facility or element in the public right-of-way that complies with these guidelines.

Accessible Pedestrian Signal. A device that communicates information about pedestrian signal timing in non-visual formats such as audible tones or speech messages, and vibrating surfaces.

Alteration or added. A change to an existing, developed public right-of-way that affects or could affect pedestrian access, circulation, or usability.

Blended Transition. A wraparound connection at a corner, or a flush connection where there is no curb to cut through, other than a curb ramp.

Block Perimeter. The near side of the streets surrounding a block. For example, on a square block bounded by Main Street to the south, Pine Street to the north, 1st Street to the east, and 2nd Street to the west, the block perimeter includes the north side of Main Street, the south side of Pine Street, the west side of 1st Street, and the east side of 2nd Street.

Boarding Platform. A platform raised above standard curb height used for transit vehicle boarding and alighting.

Building. Any structure used or intended for supporting or sheltering any use or occupancy.

Crosswalk. That part of a roadway that is located at an intersection included within the connections of the lateral lines of the pedestrian circulation paths on opposite sides of the roadway measured from the curbs, or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a pedestrian circulation path on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the pedestrian circulation path at right angles to the center line; or at any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface. Crosswalks at intersections may be marked or unmarked.

Cross Slope. The slope that is perpendicular to the direction of pedestrian travel.

Curb. A raised feature along the side of a street that delineates the edge of the roadway or pedestrian circulation path.

Curb Line. A line at the face of the curb that marks the transition between the curb and the gutter or street.

Curb Ramp. A sloped connection that is cut through or built up to a curb. Curb ramps may be perpendicular or parallel to the curb or to the street they serve or be a combination thereof.

Detectable Warning Surface. A standardized surface feature built in or applied to pedestrian circulation paths and other pedestrian facilities to warn of hazards. Developed. Containing buildings, pedestrian facilities, roadways, utilities, or elements.

Element. An architectural or mechanical component of a building, pedestrian facility, space, site, or public right-of-way.

Grade. See Running slope.

Grade Break. The line where two surface planes with different running slopes meet.

Highway. A general term denoting a public way for purposes of vehicular travel, including the entire area within the public right-of-way.

Median. The area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges, and at opposite approaches of the same intersection.

Operable Part. A component of an element used to insert or withdraw objects, to activate, deactivate, or adjust the element, or to interact with the element.

Parallel Curb Ramp. A curb ramp with a running slope that is parallel to the curb or street it serves.

Passenger Loading Zone. An area that is specifically designed or designated for
loading and unloading passengers, but that does not primarily serve vehicles on a fixed or scheduled route.

Pedestrian. A person on foot, travelling by wheelchair or other mobility device, on skates, or on a skateboard.

Pedestrian Access Route. An accessible, continuous, and unobstructed path of travel for use by pedestrians with disabilities within a pedestrian circulation path.

Pedestrian Activated Warning Devices. Devices that are installed in conjunction with a warning sign and are activated to alert vehicle operators to the presence of a pedestrian, such as rectangular flashing beacons.

Pedestrian Change Interval. An interval during which the flashing upraised hand (symbolizing “don’t walk”) signal indication is displayed.

Pedestrian Circulation Path. A prepared exterior or interior surface provided for pedestrian use in the public right-of-way.

Pedestrian Facility. A structure, route, or space for pedestrian circulation or use located in the public right-of-way.

Pedestrian Hybrid Beacon. A special type of hybrid beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street at a marked crosswalk.

Pedestrian Refuge Island. A defined area 72 inches (1828 mm) long minimum in the direction of pedestrian travel located between traffic lanes for pedestrian refuge within a median, split island, or channelizing island.

Pedestrian Signal Head. A device containing the walking person symbol (symbolizing “walk”) and the upraised hand symbol (symbolizing “don’t walk”), that is installed to direct pedestrian traffic at a crosswalk.

Perpendicular Curb Ramp. A curb ramp with a running slope that is perpendicular to the curb or the street it serves.

Public Right-Of-Way. Public land acquired for or dedicated to transportation purposes, or other land where there is a legally established right-of-way by the public for transportation purposes.

Push Button. A button to activate a device or signal timing for pedestrians, bicyclists, or others crossing a roadway.

Push Button Locator Tone. A repeating sound that informs approaching pedestrians that a push button exists to activate pedestrian timing or receive additional information and that enables pedestrians who are blind or have low vision to locate the push button.

Qualified Historic Building or Facility. A building or facility that is listed in or eligible for listing in the National Register of Historic Places or designated as historic under an appropriate state or local law.

Ramp. A sloped walking surface with a running slope steeper than 1:20 (5.0%) that accomplishes a change in level and is not part of a pedestrian circulation path that follows the roadway grade. A curb ramp is not a ramp.

Roadway. That portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder.

Roundabout. A circular intersection with yield control at entry, which permits a vehicle on a circular roadway to proceed, and with deflection of the approaching vehicle counterclockwise around a central island. Running Slope. The slope that is parallel to the direction of pedestrian travel.

Shared Use Path. A multi-use path designed primarily for use by bicyclists, pedestrians, and other authorized motorized and non-motorized users, for transportation purposes, and that may also be used for recreation. Shared use paths are physically separated from motor vehicle traffic by an open space or barrier and are either within the highway or other public right-of-way.

Sidewalk. That portion of a highway between the curb line, or the lateral line of a roadway, and the adjacent property line, or on easements of private property, that is paved or improved and intended for use by pedestrians.

Splitter Island. A median island used to separate opposing directions of traffic entering and exiting a roundabout.

Stair. A change in elevation comprised of at least one tread and riser. A curb is not a stair.

Standard Curb Height. The typical height of a curb according to local standards for a given road type, but usually between 3 inches (75 mm) and 9 inches (230 mm) high relative to the surface of the roadway or gutter.

Street, See Roadway.

Transit Shelter. A structure provided at a transit stop to provide passengers protection from the weather.

Transit Stop. An area that is designated for passengers to board or alight from buses, rail cars, and other transportation vehicles that operate on a fixed route or scheduled route, including bus stops and boarding platforms. This definition does not include intercity rail boarding platforms.

Transitional Segment. The portion of a pedestrian circulation path that connects adjacent surfaces with different slopes or dimensions to provide a smooth transition.

Traveled Way. The portion of the roadway for the movement of vehicles, exclusive of the shoulder, berm, sidewalk, and parking lane.

Vibrotactile. A method of communicating information by touch using a vibrating surface.

Walk Interval. An interval during which the walking person (symbolizing “walk”) signal indication is displayed.

Chapter 2: Scoping Requirements

R201 General

R201.1 Scope. All newly constructed pedestrian facilities and altered portions of existing pedestrian facilities for pedestrian circulation and use located in the public right-of-way shall comply with these guidelines and exiting a roundabout.
pedestrian facilities required to be accessible and connect to accessible routes required by section 206.2.1 of appendix B to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines) that connect building and facility entrances to public streets and sidewalks.

Exception: Where elements are altered, on or adjacent to an existing pedestrian circulation path, the existing pedestrian circulation path need not be altered to provide a pedestrian access route complying with R202.2.

R203.2 Connection to Accessible Facilities subject to the ABA. Pedestrian access routes subject to the ABA shall connect accessible elements, spaces, and pedestrian facilities required to be accessible and connect to accessible routes required by section R206.2.1 of appendix C to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines) that connect building and facility entrances to public streets and sidewalks.

Exception: Where elements are altered, on or adjacent to an existing pedestrian circulation path, the existing pedestrian circulation path need not be altered to provide a pedestrian access route complying with R202.2.

R203.3 Pedestrian Circulation Paths. Pedestrian access routes complying with R302 shall be provided within pedestrian circulation paths, including sidewalks and shared use paths. Transitional segments may be used to connect new or altered pedestrian access routes to existing pedestrian circulation paths, and the differences between adjacent surface characteristics shall be minimized to provide a smooth transition.

R203.4 Crosswalks. A pedestrian access route complying with R302 shall be provided within and for the full length of a crosswalk, including medians and pedestrian refuge islands. Crosswalks shall comply with R306.

R203.5 Pedestrian At-Grade Rail Crossing. Where a pedestrian circulation path crosses at-grade rail tracks, a pedestrian access route complying with R302 shall be included within the pedestrian at-grade rail crossing. Pedestrian at-grade rail crossings shall comply with R306.

R203.6 Curb Ramps and Blended Transitions. A curb ramp, blended transition, or a combination of curb ramps and blended transitions shall be provided in accordance with R203.6.1 and shall comply with R304.

R203.6.1 Placement. Placement of curb ramps and blended transitions shall comply with R203.6.1.

R203.6.1.1 Crosswalks at an Intersection. At an intersection corner, one curb ramp or blended transition shall be provided for each crosswalk, or a single blended transition that spans all crosswalks at the intersection corner may be provided. Where pedestrian crossing is prohibited, curb ramps or blended transitions shall not be provided, and the pedestrian circulation path shall be either (a) separated from the roadway with landscaping or other non-prepared surface or (b) separated from the roadway by a detectable vertical edge treatment with a bottom edge 15 inches maximum above the pedestrian circulation path.

Exception: In alterations, where existing physical constraints make compliance with R203.6.1.1 technically infeasible, a single curb ramp complying with R304 shall be permitted at the apex of the intersection corner.

R203.6.1.2 Mid-Block and Roundabout Crosswalks. At a mid-block or roundabout crosswalk, curb ramps or blended transitions shall be provided on both ends of the crosswalk. Where pedestrian crossing is not intended, curb ramps or blended transitions shall not be provided, and the pedestrian circulation path shall be either (a) separated from the roadway with landscaping or other non-prepared surface or (b) separated from the roadway by a detectable vertical edge treatment with a bottom edge 15 inches maximum above the pedestrian circulation path.

R203.6.1.3 Parallel On-Street Parking. At parallel on-street parking spaces complying with the dimensions specified in R310.2.1, a curb ramp or blended transition shall be provided at either end of the parking space if needed to connect the parking space to a pedestrian circulation path.

R203.6.1.4 Perpendicular and Angled On-Street Parking and Passenger Loading Zones. At perpendicular and angled on-street parking spaces, and at passenger loading zones, a curb ramp or blended transition shall be provided if needed to connect the access aisle to a pedestrian access route.

R203.6.2 Alterations to Crosswalks. When alterations are made to crosswalks, curb ramps or blended transitions shall be provided on both ends of the crosswalk where the pedestrian access route crosses a curb.

R203.7 Pedestrian Overpasses and Underpasses. Pedestrian overpasses and underpasses shall contain a pedestrian access route complying with R302. Where an overpass, underpass, bridge, or similar structure is designed for pedestrian use only, or pedestrian and bicycle use only, and the approach slope to the structure exceeds 1:20 (5.0%), a ramp complying with R407, or an elevator or limited use/limited application elevator complying with sections 407 or 408 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines), shall be provided. Elevators and limited use/limited application elevators shall be unlocked and independently usable during the operating hours of the pedestrian facility served.

Exception: In alterations, where existing physical constraints make compliance with R203.7 technically infeasible, a platform lift complying with section 410 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines) shall be permitted.

R203.8 Ramps. Where provided, ramps shall comply with R407.

R203.9. Elevators and Limited Use/Limited Application Elevators. Where provided, elevators and limited use/limited application elevators shall comply with sections 407 or 408 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines).

R203.10 Platform Lifts. In alterations where the use of elevators or limited use elevators is not technically feasible, platform lifts may be used and shall comply with section 410 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines).

R203.11 Doors, Doorways, and Gates. Doors, doorways, and gates that are part of a pedestrian access route shall comply with section 404 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines).

R204 Alternate Pedestrian Access Routes, Transit Stops, and Passenger Loading Zones

R204.1 Alternate Pedestrian Access Route. When a pedestrian circulation path is temporarily not accessible due to construction, maintenance operations, or other similar conditions, an alternate pedestrian access route must be provided and comply with R303 and R402.

Exception: If establishing or maintaining an alternate pedestrian access route is technically infeasible due to site conditions or existing physical constraints, an alternate means of providing access for pedestrians with disabilities shall be permitted.

R204.2 Alternate Transit Stops. Where accessible transit stops are temporarily not accessible due to construction, maintenance operations, or other similar conditions, alternate transit stops complying with R309 shall be provided.

R204.3 Alternate Passenger Loading Zones. Where a permanently designated passenger loading zone is temporarily not accessible due to construction, maintenance operations, or other similar conditions, and a temporary passenger loading zone is provided, it must comply with R311.

R205 Detectable Warning Surfaces

R205.1 General. Detectable warning surfaces shall be provided in accordance with R205.

R205.2 Curb Ramps and Blended Transitions. Curb ramps shall have detectable warning surfaces complying with R205.2.1. Blended transitions shall have detectable warning surfaces complying with R205.2.2.

Exception: Detectable warning surfaces are not required on curb ramps and blended transitions used exclusively to connect passenger loading zones, accessible parallel on-street parking spaces, and access aisles for perpendicular and angled parking spaces to pedestrian access routes.

R205.2.1 Curb Ramps. Curb ramps located at crosswalks shall have detectable warning surfaces complying with R305.1 and either R305.2.1 or R305.2.2.

R205.2.2 Blended Transitions. Blended transitions located at crosswalks shall have detectable warning surfaces complying with R305.1 and R305.2.3.

R205.3 Pedestrian Refuge Islands. Cut-through pedestrian refuge islands shall have detectable warning surfaces complying with R305.1 and R305.2.4.

R205.4 Pedestrian At-Grade Rail Crossings. Pedestrian at-grade rail crossings not located within a street shall have detectable warning surfaces complying with R305.1 and R305.2.5. Pedestrian at-grade rail crossings located within a street at a crosswalk shall not have detectable warning surfaces adjacent to the railway.

R205.5 Boarding Platforms. Boarding platforms at transit stops that are not protected by screens or guards along the sides of the boarding and alighting areas facing the transit vehicles shall have detectable warning surfaces complying with R305.1 and R305.2.6.
R205.6 Sidewalk and Street-Level Rail Boarding and Alighting Areas. Boarding and alighting areas at sidewalk or street-level transit stops for rail vehicles that are not protected by screens or guards along the side of the boarding and alighting areas facing the rail vehicle shall have detectable warning surfaces complying with R305.1 and R305.2.7.

R205.7 Driveaways. Pedestrian circulation paths at driveaways controlled with yield or stop control devices or traffic signals shall have detectable warning surfaces complying with R305.2.8.

R206 Pedestrian Signal Heads and Pedestrian Activated Warning Devices

R206.1 General. Where provided, pedestrian signal heads and pedestrian activated warning devices shall comply with R206. The accessible features required by these guidelines shall be available at all times.

R206.2 Traffic Control Signals and Hybrid Beacons with Pedestrian Signal Heads. Where pedestrian signal heads are provided at crosswalks, the walk indication shall comply with R308. Pedestrian signal heads must have a pedestrian push button complying with section 1191 Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). Portable unit complying with section 603 shall be identified by the International Symbol of Accessibility complying with R410.

R209.4 Tables. At least 5 percent of tables at each group of adjacent tables, but no fewer than one, shall comply with section 904.4 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). Sales or service counters shall comply with section 904.4 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). Sales or service counters shall comply with section 904.4 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines).

R209.6 Benches. Benches, other than those that are part of tables complying with R209.4, shall comply with R209.6.

R209.6.1 Benches at Transit Stops and Shelters. Benches provided at transit stops shall have clear space complying with R404 next to either end of the bench, or if the bench has no end, such as a circular bench, the clear space shall either be integral to the bench or no more than 18 inches (455 mm) from the front of the bench. Benches provided within transit shelters shall have clear space complying with R309.2.2.

R209.6.2 Benches Not at Transit Stops and Shelters. At least 5 percent, but no less than one, of benches at each group of adjacent benches shall provide clear space complying with R404. The clear space shall be located next to either end of the bench, or if the bench has no end, such as a circular bench, the clear space shall either be integral to the bench or no more than 18 inches (455 mm) from the front of the bench.

R209.7 Operable Parts of Other Fixed Elements. Operable parts of other fixed elements at transit stops and shelters intended to be used by pedestrians shall comply with R403.

R211 On-Street Parking Spaces

R211.1 General. Where on-street parking is provided and is metered or designated by signs or pavement markings, accessible parking spaces complying with R310 shall be provided in accordance with Table R211. Where parking is metered or designated by signs or pavement markings, but individual spaces are not marked, each 20 feet (6.1 m) block perimeter where parking is designated shall be counted as one parking space.

R211.2 Parking on Block Perimeter. Where parking spaces are provided on a block perimeter and are metered or designated by signs or pavement markings, accessible parking spaces complying with R310 shall be provided in accordance with Table R211. Where parking is metered or designated by signs or pavement markings, but individual spaces are not marked, each 20 feet (6.1 m) block perimeter where parking is designated shall be counted as one parking space.

R211.3 Parking not on Block Perimeter. Where parking spaces are provided on a section of a street that is not part of a block perimeter, accessible parking spaces complying with R310 shall be provided in accordance with Table R211. Where parking is metered or designated by signs or pavement markings, but individual spaces are not marked, each 20 feet (6.1 m) block where parking is designated shall be counted as one parking space.

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<thead>
<tr>
<th>TABLE R211 ON-STREET PARKING SPACES</th>
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<tbody>
<tr>
<td><strong>Total number of metered or designated parking spaces</strong></td>
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<tr>
<td>1 to 25</td>
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<tr>
<td>26 to 50</td>
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<tr>
<td>51 to 75</td>
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<td>76 to 100</td>
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<td>151 to 200</td>
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<td>201 and over</td>
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<td>1 percent of total.</td>
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R212 Passenger Loading Zones

R212.1 General. Where permanently designated passenger loading zones other than transit stops are provided, at least one accessible passenger loading zone complying with R311 shall be provided in every continuous 100 feet (30 m) of loading zone space, or fraction thereof.
R213 Stairs and Escalators

R213.1 General. Where provided on pedestrian circulation paths, stairs shall comply with R408 and escalators shall comply with section 810.9 of Appendix D to 36 CFR part 1191 (ADA & ABA Accessibility Guidelines). Stairs and escalators shall not be part of pedestrian access routes.

R214 Handrails

R214.1 General. Where provided on pedestrian circulation paths, handrails shall comply with R409.

Chapter 3: Technical Requirements

R301 General

R301.1 Scope. The technical requirements in Chapter 3 shall apply where required by Chapter 2 or where referenced by a requirement in these guidelines.

R302 Pedestrian Access Routes

R302.1 General. Pedestrian access routes shall comply with R302.

R302.2 Continuous Clear Width. Except as provided in R302.2.1 and R302.2.2, the continuous clear width of pedestrian access routes shall be 48 inches (1220 mm) minimum, exclusive of the width of any curb.

R302.2.1 Medians and Pedestrian Refuge Islands. The clear width of pedestrian access routes crossing medians and pedestrian refuge islands shall be 60 inches (1525 mm) minimum, except that where shared use paths cross medians and pedestrian refuge islands the clear width of the pedestrian access route shall be 60 inches (1525 mm) minimum or at least as wide as the crosswalk, whichever is greater.

R302.2.2 Shared Use Paths. On shared use paths, the clear width of the pedestrian access route shall extend the full width provided for pedestrian circulation on the path. Obstructions, such as bollards, shall not reduce the clear width of the pedestrian access route to less than 48 inches (1220 mm) measured from the edge of the obstruction.

R302.3 Passing Spaces. Where the clear width of pedestrian access routes is less than 60 inches (1525 mm), passing spaces shall be provided at intervals of 200 feet (61 m) maximum. Passing spaces shall be 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum. Passing spaces and pedestrian access routes are permitted to overlap.

R302.4 Grade. The grade of pedestrian access routes shall comply with R302.4, except the grade of curb ramps and blended transitions shall comply with R304 and the grade of ramps shall comply with R407.

R302.4.1 Within Highway Right-of-Way. Except as provided in R302.4.3, where a pedestrian access route is contained within a highway right-of-way, the grade of the pedestrian access route shall not exceed 1:20 (5.0%).

R302.4.3 Grade. Within a Crosswalk. Where a pedestrian access route is contained within a crosswalk, the grade of the pedestrian access route shall be 1:20 (5.0%) maximum. Exception: Where roadway design requires a superelevation greater than 1:20 (5.0%) at the location of a crosswalk, the grade of the pedestrian access route within the crosswalk may be the same as the superelevation.

R302.5 Cross Slope. The cross slope of a pedestrian access route shall comply with R302.5.

R302.5.1 Not Contained Within A Crosswalk. The cross slope of a pedestrian access route not contained within a crosswalk shall be 1:48 (2.1%) maximum.

R302.5.2 Crosswalk At Uncontrolled Approach. Where a pedestrian access route is contained within a crosswalk at an intersection approach with yield or stop control devices, the cross slope of the pedestrian access route shall be 1:48 (2.1%) maximum.

R302.5.3 Crosswalk At Traffic Control Signal Or Pedestrian Hybrid Beacon. Where a pedestrian access route is contained within a crosswalk at an intersection approach controlled by a traffic control signal or pedestrian hybrid beacon, the cross slope of the pedestrian access route shall be 1:20 (5.0%) maximum.

R302.5.4 Midblock and Roundabout Crosswalks. The cross slope of a pedestrian access route within a midblock crosswalk or at a crosswalk at a roundabout shall not exceed the street grade.

R302.6 Surfaces. The walking surfaces of pedestrian access routes, of a combination of materials, and spaces that are required to be accessible shall be stable, firm, and slip resistant and shall comply with R302.6.

R302.6.1 Grade Breaks. Grade breaks shall be flush.

R302.6.2 Changes in Level. Changes in level of 1⁄4 inch (6.4 mm) maximum shall be permitted to be vertical. Changes in level between 1⁄4 inch (6.4 mm) and 1⁄2 inch (13 mm) shall be beveled with a slope not steeper than 1:2 (50.0%). Changes in level greater than 1⁄2 inch (13 mm) up to 6 inches shall have a 1:12 (8.3%) maximum slope. Changes in level greater than 6 inches (150 mm) shall comply with R407.

R302.6.3 Horizontal Openings. Horizontal openings in ground surfaces, such as those in gratings and joints, other than flangeway gaps (see R302.6.4), shall not allow passage of a sphere larger than 1⁄2 inch (13 mm) in diameter. Except where multiple directions of travel intersect, elongated openings are permitted and shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

R302.6.4 Flangeway Gaps. Flangeway gaps shall comply with R302.6.4.2.

R302.6.4.2 Flangeway Gaps at Tracks Subject to FRA Safety Regulations. At pedestrian at-grade rail crossings that cross tracks that are subject to safety regulations at 49 CFR part 213, issued by the Federal Railroad Administration, flangeway gaps shall be 3 inches (75 mm) wide maximum.

R302.6.4.2.1 Flangeway Gaps at Tracks Not Subject to FRA Safety Regulations. At pedestrian at-grade rail crossings that cross tracks that are not subject to safety regulations at 49 CFR part 213, issued by the Federal Railroad Administration, flangeway gaps shall be 2 1⁄2 inches (64 mm) wide maximum.

R303 Alternate Pedestrian Access Routes

R303.1 General. Alternate pedestrian access routes shall comply with R303.

R303.2 Signs. Signs identifying alternate pedestrian access routes shall be provided in advance of decision points and shall comply with R410. Proximity actuated audible signs or other non-visual means within the public right-of-way of conveying the information that identifies the alternate pedestrian access route shall also be provided.

R303.3 Surface. Alternate pedestrian access routes shall comply with R302.6 or shall not be less accessible than the surface of the temporarily closed pedestrian circulation path.

R303.4 Continuous Clear Width. The minimum continuous clear width of alternate pedestrian access routes shall be 48 inches (1220 mm) exclusive of the width of any curb.

R303.5 Curb Ramp Or Blended Transition. Where an alternate pedestrian access route crosses a curb, a curb ramp or blended transition complying with R304 shall be provided.

R303.6 Detectable Edging of Channelizing Devices. Where a channelizing device is used to delineate an alternate pedestrian access route, continuous detectable edging complying with R303.6 shall be provided throughout the length of the route.

R303.6.1 Top. The top of the top detectable edging shall be no lower than 32
Ramps (815 mm) above the walking surface and be free of sharp or abrasive surfaces. 
R303.6.2 Bottom. The bottom of the bottom detectable edging shall be 2 inches (51 mm) maximum above the walking surface.

R303.7 Pedestrian Signal Heads. Where temporary pedestrian signal heads are provided at a crosswalk that is part of an alternate pedestrian access route, pedestrian pushbuttons or passive detection devices shall be provided and shall comply with R307.

R304 Curb Ramps and Blended Transitions

R304.1 General. Curb ramps and blended transitions shall comply with R304 and have detectable warning surfaces in accordance with R205.

R304.2 Perpendicular Curb Ramps. Perpendicular curb ramps shall comply with R304.2 and R304.5.

R304.2.1 Running Slope. The running slope of a curb ramp shall be perpendicular to the curb ramp sur face. The running slope of the curb ramp shall be 1:12 (8.3%) maximum.

Exception: Where the curb ramp length must exceed 15 feet (4.6 m) to achieve a 1:12 (8.3%) running slope, the curb ramp length shall extend at least 15 feet (4.6 m) and may have a running slope greater than 1:12 (8.3%).

R304.2.2 Cross Slope. The cross slope of a curb ramp run shall be 1:48 (2.1%) maximum.

Exception: At crosswalks, the cross slope of the curb ramp run shall be permitted to equal or less than the cross slope of the crosswalk as specified by R302.5.

R304.2.3 Grade Breaks. Grade breaks at the top and bottom of a curb ramp run shall be perpendicular to the direction of the curb ramp run. Grade breaks shall not be permitted on the surfaces of curb ramp runs and landings. Surface slopes that meet at grade breaks shall be flush.

R304.2.4 Clear Area. A clear area 48 inches (1220 mm) wide by 48 inches (1220 mm) minimum shall be provided beyond the bottom grade break of the perpendicular curb ramp run and within the width of the crosswalk. At shared use paths, the clear area shall be as wide as the shared use path. The clear area shall be located wholly outside the vehicle travel lanes, including bicycle lanes, that run parallel to the crosswalk. The running slope of the clear area shall be 1:20 (5.0%) maximum. The cross slope of the clear area shall be as specified by R302.5.

R304.2.5 Landing. When a change in direction is necessary to access a curb ramp from a pedestrian access route, a landing shall be provided at the top of the curb ramp. The landing shall be 48 inches (1220 mm) wide by 48 inches (1220 mm) long minimum. At shared use paths, the landing shall be provided as a shared use path. Where a landing serves only one curb ramp, the landing slope measured perpendicular to the curb ramp run shall be equal to or less than the cross slope of the curb ramp run, and the landing slope measured parallel to the curb ramp run shall be 1:48 (2.1%) maximum. Where a landing serves two curb ramps, the landing slope in either direction of travel shall not exceed the cross slope of the crosswalk parallel to the direction of travel as specified by R302.5.

R304.2.6 Side Treatments. Where a pedestrian circulation path crosses the side of a curb ramp, the side of the curb ramp shall be flared. The slope of the flared side shall be 1:10 (10.0%) maximum, measured parallel to the adjacent curb line.

R304.2.7 Connection to Pedestrian Facilities. Perpendicular curb ramps or their landings shall be adjacent to pedestrian facilities by pedestrian access routes complying with R302. A transitional segment may be used in the connection.

R304.3 Parallel Curb Ramps. Parallel curb ramps shall comply with R304.3 and R304.5.

R304.3.1 Running Slope. The running slope of the curb ramp run shall be parallel to the curb and shall be 1:12 (8.3%) maximum.

Exception: Where the curb ramp run length must exceed 15 feet (4.6 m) to achieve a 1:12 (8.3%) running slope, the curb ramp run length shall extend at least 15 feet (4.6 m) and may have a running slope greater than 1:12 (8.3%).

R304.3.2 Cross Slope. The cross slope of the curb ramp run shall be 1:48 (2.1%) maximum.

R304.3.3 Grade Breaks. Grade breaks at the top and bottom of a curb ramp run shall be perpendicular to the direction of the curb ramp run. Grade breaks shall not be permitted on the surfaces of curb ramp runs or landings. Surface slopes that meet at grade breaks shall be flush.

R304.3.4 Landings. Landings shall be provided at the bottom of parallel curb ramps. Landings shall be 48 inches (1220 mm) wide by 48 inches (1220 mm) long minimum. The slope of the landing, measured parallel to the direction of travel on the curb ramp run, shall be permitted to be equal to or less than the slope of the roadway or the cross slope of the crosswalk as specified by R302.5. The cross slope of the landing shall be 1:48 (2.1%) to adjacent measured perpendicular to the direction of travel on the curb ramp run.

R304.4 Blended Transitions. Blended transitions shall comply with R304.4 and R304.5.

R304.4.1 Running Slope. The running slope of blended transitions shall be 1:20 (5.0%) maximum.

R304.4.2 Cross Slope. The cross slope of blended transitions shall be equal to or less than the cross slope of the crosswalk as specified by R302.5.

R304.4.3 Bypass. Where a blended transition serving more than one pedestrian circulation path has a running slope greater than 1:48 (2.1%), a pedestrian access route shall be provided so that a pedestrian not crossing the street may bypass the blended transition.

R304.5 Common Requirements. Curb ramps and blended transitions shall comply with R304.5.

R304.5.1 Width. The width of curb ramp runs (excluding any flared sides) and blended transitions shall comply with R304.5.1.1 or R304.5.1.2, as applicable. 

R304.5.1.1 Curb Ramps and Blended Transitions Not on Shared Use Paths. The clear width of curb ramp runs (excluding any flared sides) and blended transitions not on shared use paths shall be 48 inches (1220 mm) minimum.

R304.5.1.2 Curb Ramps and Blended Transitions on Shared Use Paths. On shared use paths, the width of curb ramp runs (excluding any flared sides) and blended transitions shall be equal to the width of the shared use path.

R304.5.2 Change of Grade. At gutters and streets where a change of grade occurs adjacent to curb ramps and blended transitions, the change of grade shall comply with the requirements contained in (A) or (B) below:

A. The change of grade shall not exceed 13.3 percent, or

B. A transitional space shall be provided at the bottom of the running slope of the curb ramp run or blended transition. The transitional space shall extend 24 inches (610 mm) minimum in the direction of pedestrian travel and the full width of the curb ramp run or blended transition. Transitional spaces shall have running slopes of 1:48 (2.1%) maximum and cross slopes no greater than the cross slope of the crosswalk as specified by R302.5.

R304.5.3 Crosswalks. Perpendicular curb ramp runs, parallel curb ramp landings, and 48 inches (1220 mm) minimum width of blended transitions, except those at shared use paths, shall be contained wholly within the width of the crosswalks they serve. At shared use paths, the full width of a perpendicular curb ramp run, parallel curb ramp landing, or the blended transition shall be contained wholly within the width of the crosswalk it serves.

R304.5.4 Surfaces. Surfaces of curb ramps and blended transitions shall comply with R206 except that changes in level are not permitted.

R305 Detectable Warning Surfaces

R305.1 General. Detectable warning surfaces shall consist of truncated domes in a square or radial grid pattern and shall comply with R305.

R305.1.1 Dome Size. The truncated domes shall have a base diameter of 0.9 inches (23 mm) minimum and 1.4 inches (36 mm) maximum, a top diameter of 30 percent of the base diameter minimum and 65 percent of the base diameter maximum, and a height of 0.2 inches (5.1 mm). When detectable warning surface tiles are cut to fit, partial domes are permitted along the cut edges.

R305.1.2 Dome Spacing. The truncated domes shall have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inches (17 mm) minimum, measured between the most adjacent domes.

Exception: 1. When detectable warning surfaces are cut to fit, center-to-center spacing measured between domes adjacent to cut edges shall not exceed twice the normal spacing between domes not adjacent to cut edges.

2. Dome spacing requirements do not apply at a gap in a detectable warning surface at an
expansion joint provided that the detectable warning surface aligns with both edges of the expansion joint.

R305.1.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light.

R305.1.4 Surface Size. Detectable warning surfaces shall extend 24 inches (610 mm) minimum in the direction of pedestrian travel. The width of detectable warning surfaces shall be as follows:

A. At curb ramps and blended transitions, detectable warning surfaces shall extend the full width of the curb ramp run (excluding any flared sides), blended transition, or landing.

B. At cut-through pedestrian refuge islands, detectable warning surfaces shall extend the full width of the pedestrian circulation path opening.

C. At pedestrian at-grade rail crossings not located within a street, detectable warning surfaces shall extend the full width of the pedestrian circulation path.

D. Where required at boarding platforms, detectable warning surfaces shall extend the full length of the unprotected areas of the platform.

E. At boarding and alighting areas at sidewalk or street level, transit stops for rail vehicles, detectable warning surfaces shall extend the full length of the unprotected area of the transit stop.

R305.2 Location. The location of detectable warning surfaces shall comply with R306.2. Where a concrete border is required for the installation of a detectable warning surface, a concrete border not exceeding 2 inches (51 mm) shall be permitted on all sides of the detectable warning surface except between the detectable warning surface and the edge of pavement where a setback is already permitted.

R305.2.1 Perpendicular Curb Ramps. On perpendicular curb ramps, detectable warning surfaces shall be located as follows:

A. Where the ends of the bottom grade break are in front of back of curb or at the edge of pavement where there is no curb, the detectable warning surface shall be placed at the back of curb or no greater than 6 inches (150 mm) from the edge of pavement where there is no curb.

B. Where the ends of the bottom grade break are behind the back of curb or edge of pavement where there is no curb and the distance from both ends of the bottom grade break to the back of curb or edge of pavement where there is no curb is 60 inches (1525 mm) or less, the detectable warning surface shall be placed on the ramp run at the bottom grade break.

C. Where the ends of the bottom grade break are behind the back of curb or edge of pavement where there is no curb and the distance from either end of the bottom grade break to the back of curb or edge of pavement where there is no curb is more than 60 inches (1525 mm), the detectable warning surface shall be placed on the clear area so that both front corners of the detectable warning surfaces are at the back of curb or no greater than 6 inches (150 mm) from the edge of pavement where there is no curb.

R305.2.2 Parallel Curb Ramps. On parallel curb ramps, detectable warning surfaces shall be located on the landing at either the back of curb or the edge of pavement where there is no curb.

R305.2.3 Blended Transitions. On blended track transitions, detectable warning surfaces shall be located on the blended transition so that both front corners of the detectable warning surfaces are at the back of curb or no greater than 6 inches (150 mm) from the edge of pavement where there is no curb.

R305.2.4 Pedestrian Refuge Islands. At cut-through pedestrian refuge islands, detectable warning surfaces shall be located no greater than 6 inches (150 mm) from the edges of the pedestrian refuge island or at back of curb and shall be separated by a 24 inch (610 mm) minimum length of surface in the direction of travel without detectable warning surfaces.

R305.2.5 Pedestrian At-Grade Rail Crossings. At at-grade rail crossings not located within a street, detectable warning surfaces shall be located on each side of the rail crossing. The edge of the detectable warning surface nearest the rail crossing shall be 6 feet (1.8 m) minimum and 15 feet (4.6 m) maximum from the centerline of the nearest rail. Where pedestrian gates are provided, detectable warning surfaces shall be located on the side of the gate opposite the rail. Pedestrian gates shall not overlap detectable warning surfaces.

R305.2.6 Boarding Platforms. At boarding platforms for transit vehicles, detectable warning surfaces shall be located at the boarding edge of the platform.

Exception: Where a curb is present at the boarding edge of the platform, the detectable warning surface may be placed at the back of curb.

R305.2.7 Sidewalk and Street-Level Rail Boarding and Alighting Areas. At boarding and alighting areas at sidewalk or street-level transit stops for rail vehicles, detectable warning surfaces shall be located at the edge of the boarding and alighting area closest to the rail vehicle.

R305.2.8 Driveways. Where driveways are controlled with yield or stop control devices or traffic signals, detectable warning surfaces shall be provided on the pedestrian circulation path where the pedestrian circulation path meets the driveway.

R306 Crosswalks

R306.1 General. Crosswalks shall comply with R306.

R306.2 Pedestrian Signal Phase Timing. Where a traffic control signal with pedestrian signal indications is provided at a crosswalk, pedestrian signal phase timing shall be based on a pedestrian clearance time that is calculated using a pedestrian walking speed of 3.5 ft/s (1.1 m/s) or less from the location of the edge of the pedestrian refuge island or the far side of the traveled way. The walk interval shall be 7 seconds minimum. Where the pedestrian clearance time is calculated to a pedestrian refuge island, an additional pedestrian push button or passive detection device shall be provided on the pedestrian refuge island.

Exception: If a passive pedestrian detection device is used to automatically adjust the pedestrian clearance time based on the pedestrian’s actual clearance of the crosswalk, a faster walking speed may be used.

R306.3 Accessible Walk Indication. An accessible walk indication complying with R308.2 shall have the same duration as the walk interval.

Exception: Where the pedestrian signal rests in walk, the accessible walk indication may be limited to the time of the beginning of the walk interval. If the pedestrian signal is resting in walk and there is sufficient time remaining to provide an accessible walk interval before the beginning of the pedestrian change interval, the accessible walk indication may be recalled by a button press.

R306.4 Roundabouts. Where pedestrian circulation paths are provided at roundabouts, they shall comply with R306.4.

R306.4.1 Edge Detection. The street side edge of the pedestrian circulation path at the roundabout shall be provided with a 24 inch (610 mm) minimum length of surface in the direction of travel without detectable warning surfaces.

R306.4.1.1 Separation. Where a curb is present at the roundabout, a detectable pedestrian circulation path shall have a continuous and detectable vertical edge treatment along the street side of the pedestrian circulation path, from crosswalk to crosswalk. The bottom edge of the vertical edge treatment shall be 15 inches (380 mm) maximum above the pedestrian circulation path.

R306.4.2 Crosswalk Treatments. Each multi-lane segment of the roundabout containing a crosswalk shall provide a crosswalk treatment consisting of one or more of the following: a traffic control signal with a pedestrian signal head; a pedestrian hybrid beacon; a pedestrian actuated rectangular rapid flashing beacon; or a raised crossing.

R306.5 Channelized Turn Lanes. Crosswalks at multi-lane channelized turn lanes shall provide treatments consisting of one or more of the following: a traffic control signal with a pedestrian signal head; a pedestrian hybrid beacon; a pedestrian actuated rectangular rapid flashing beacon; or a raised crossing.

R307 Pedestrian Push Buttons and Passive Pedestrian Detection


R307.2 Activation. Pedestrian push buttons and passive detection devices shall activate the accessible pedestrian signals and, where applicable, the walk interval.
R307.3 Extended Push Button Press. Where an extended push button press is used to provide any additional features, a push button press of less than one second shall actuate only the pedestrian timing and any associated accessible walk indication, and a push button press of one second or more shall actuate the pedestrian timing, any associated accessible walk indication, and any additional features. If additional crossing time is provided by means of an extended pushbutton press, a sign so indicating shall be mounted adjacent to or integral with the pedestrian push button.

R307.4 Location. Pedestrian push buttons shall be located no greater than 5 feet from the side of a curb ramp run or the edge of the farthest associated crosswalk line from the center of the intersection. Pedestrian push buttons shall be located between 1.5 and 10 feet from the edge of the curb or pavement.

R307.4.1 Two Pedestrian Push Buttons on Same Corner. Where two pedestrian push buttons are on the same corner, they shall be 10 feet or more apart. Exception: In alterations, where technically infeasible to provide 10 feet separation between pedestrian push buttons on the same corner, a pedestrian push button information message complying with R308.3.2 shall be provided.

R307.5 Push Button Orientation. The face of the push button shall be parallel to its associated crosswalk.

R307.6 Audible and Vibrotactile Walk Indications for Pedestrian Signal Heads. Pedestrian push buttons or passive detection devices shall activate audible and vibrotactile walk indications complying with R308.

R307.7 Audible and Vibrotactile Indication for Pedestrian Activated Warning Devices Without a Walk Indication. Where a pedestrian push button or a passive detection device is provided for pedestrian activated warning devices, such as rectangular rapid flashing beacons, the pedestrian push button or passive detection device shall activate audible and vibrotactile walk indications complying with R308.

R307.8 Locator Tone. Pedestrian push buttons shall incorporate a locator tone complying with R307.8.

R307.8.1 Duration. Locator tones shall have a duration of 0.15 seconds or less and repeat at one-second intervals except when another audible indication from the same device is active. When another audible indication from the same device is active, the locator tone shall be silenced. Exception: A locator tone may be silenced if a passive detection system activates the locator tone when a pedestrian is within a 12-foot radius of the pedestrian push button.

R307.8.2 Locator Tone in Response to Ambient Sound. Pedestrian push button locator tones shall be intensity responsive to ambient sound and shall be audible 6 to 12 feet from the push button, or to the building line, whichever is less. The push button locator tone shall be louder than ambient sound up to a maximum volume of 5 dBA louder than ambient sound. Automatic volume adjustment in response to ambient traffic sound level shall be a maximum volume of 100 dBA.

R307.8.3 Locator Tone and Audible Beacons. Where audible beaconing is used, the volume of the push button 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.

R307.8.4 Locator Tone and Traffic Control Signal in Flashing Mode. When the traffic control signal is operating in a flashing mode, pedestrian push button locator tones shall remain audible, and the pedestrian push button shall activate a speech message that communicates the operating mode of the traffic control signal. Where traffic control signals or pedestrian hybrid beacons are activated from a flashing or dark mode to a stop-and-go mode by pedestrian actuations, a speech message communicating the operating status of the traffic control signal is not required.

R307.9 Tactile Arrow. Pedestrian push buttons shall have a tactile arrow with high visual contrast that is aligned parallel to the direction of travel on their associated crosswalks.

R308 Accessible Pedestrian Signal Walk Indications

R308.1 General. Accessible pedestrian signal walk indications shall comply with R308.

R308.2 Audible and Vibrotactile Walk Indications. Accessible pedestrian signals shall have an audible and vibrotactile walk indication during the walk interval only. The audible walk indication shall be audible from the beginning of the associated crosswalk. Following the audible and vibrotactile walk indication and during the pedestrian change interval, accessible pedestrian signals shall revert to the pedestrian push button locator tone.

R308.3 Audible Walk Indications. Audible walk indications shall comply with R308.3.

R308.3.1 Percussive Tone. Where an accessible pedestrian signal is provided at a single crossing or where two accessible pedestrian signals are 10 feet or greater from each other at a corner, the audible walk indication shall be a percussive tone and repeat eight to ten ticks per second with multiple frequencies and a dominant component at 880 Hz.

R308.3.2 Speech Walk Message. In alterations, where it is technically infeasible to provide 10 feet separation between pedestrian push buttons on the same corner, the audible walk indication for each signal shall be a speech walk message that complies with R308.3.2.1.

R308.3.2.1 Speech Information Message when Walk Interval is Not Timing. Where speech push button information messages are made available at a pretimed signal or by actuating the accessible pedestrian push button or passive detection device, they shall only be actuated when the walk interval is not timing. 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 precede the intersection identification information.

R308.3.2.2 Speech Walk Message during Pedestrian Phasing Concurrent with Vehicular Phasing. 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.”

R308.3.2.3 Speech Walk Message during Exclusive Pedestrian Phasing. Speech walk messages that are used at intersections having exclusive pedestrian phasing shall be patterned after the model: “Walk sign is on for all crossings.”

R308.4 Volume. Audible walk indications shall be louder than ambient sound up to a maximum volume of 5 dBA louder than ambient sound. Automatic volume adjustment in response to ambient traffic sound level shall be a maximum volume of 100 dBA.

Exception: Where audible beaconing is provided in response to an extended push button press, the beaconing can exceed 5 dBA louder than ambient sound.

R308.5 Vibrotactile Walk Indication. The pedestrian push button shall vibrate during the walk interval.

R309 Transit Stops and Transit Shelters

R309.1 Transit Stops. Transit stops shall comply with R309.1.

R309.1.1 Boarding and Alighting Areas. Boarding and alighting areas at sidewalk or street-level transit stops must serve each accessible vehicle entry and exit and shall comply with R309.1.1 and R309.1.3.

R309.1.1.1 Dimensions. Boarding and alighting areas shall have a clear length of 96 inches (2440 mm) minimum, measured perpendicular to the face of the curb or street edge, and a clear width of 60 inches (1525 mm) minimum, measured parallel to the street.

R309.1.1.2 Slope. The slope of boarding and alighting areas measured parallel to the street shall be the same as the grade of the street. The slope of boarding and alighting areas measured perpendicular to the street shall be 1:48 (2.1%) maximum.

R309.1.2 Boarding Platforms. Boarding platforms at transit stops shall comply with R309.1.2 and R309.1.3.

R309.1.2.1 Platform and Vehicle Floor Coordination. Boarding platforms shall be positioned to coordinate with vehicles in accordance with the applicable requirements in 49 CFR parts 37 and 38.
R309.1.2.2 Slope. The slope of the \textit{boarding platform} measured parallel to the track or street shall be the same as the grade of the track or street. The slope of the \textit{boarding platform} measured perpendicular to the track or street shall be 1:48 (2.1%) maximum.

R309.1.3 Common Requirements. Boarding and alighting areas and \textit{boarding platforms} shall comply with R309.1.3.

R309.1.3.1 Surfaces. The surfaces of boarding and alighting areas and \textit{boarding platforms} shall comply with R309.2.6.

R309.1.3.2 Connection to Existing \textit{Pedestrian Circulation Paths}. In alterations, boarding and alighting areas and \textit{boarding platforms} shall be connected to existing \textit{pedestrian circulation paths} by \textit{pedestrian access routes} complying with R302.

R309.2 Transit Shelters. \textit{Transit shelters} shall comply with R309.2.

R309.2.1 Connection to Boarding and Alighting Areas. \textit{Transit shelters} shall be connected to \textit{access routes} complying with R302 to boarding and alighting areas complying with R309.1.1 or \textit{boarding platforms} complying with R309.1.2.

R309.2.2 Clear Space. \textit{Transit shelters} shall provide a minimum clearance complying with R304.01-03 entirely within the shelter. Where seating is provided within \textit{transit shelters}, the clear space shall be located either at one end of a seat or so as to not overlap the area within 18 inches (455 mm) from the front edge of the seat.

R309.2.3 Environmental Controls. Where provided, environmental controls within \textit{transit shelters} shall be proximity-actuated.

R309.2.4 Protruding Objects. Protruding objects within \textit{transit shelters} shall comply with R402.

R310 On-Street Parking Spaces

R310.1 General. On-street parking spaces shall comply with R310.

R310.2 Parallel On-Street Parking Spaces. Parallel on-street parking spaces shall comply with R310.2.

R310.2.1 Dimensions. Parallel on-street parking spaces shall be 24 feet (7.3 m) long minimum and 13 feet (4.0 m) wide minimum. Parallel on-street parking spaces shall not encroach on the traveled way.

R310.2.2 \textit{Pedestrian Access Route Connection}. Parallel on-street parking spaces shall connect to \textit{pedestrian access routes}. Where curb ramps and blended transitions are used, they shall not reduce the required width or length of the parking space and shall be located at the end of the parking space. Where two or more accessible parallel on-street parking spaces complying with the dimensions specified in R310.2.1 are contiguous on a block face, each accessible parallel on-street parking space shall have an independent connection to the \textit{pedestrian access route}. Curb ramps and blended transitions shall be provided in accordance with R203.6.1.3 and shall comply with R304. Detectable warning surfaces are not required on curb ramps and blended transitions used exclusively to connect accessible on-street parallel parking spaces to \textit{pedestrian access routes}.

R310.2.3 Surfaces. Surfaces of parking spaces shall comply with R302.6 except that changes in level are not permitted.

R310.2.4 Identification. Parallel on-street parking spaces shall be identified by signs displaying the International Symbol of Accessibility complying with R411. Signs shall be 60 inches (1525 mm) minimum above the ground surface measured to the bottom of the sign.

R310.3 Perpendicular Parking Spaces. Perpendicular parking spaces shall comply with R310.3.

R310.3.1 Access Aisles. Perpendicular on-street parking spaces shall have adjacent access aisles 96 inches (2440 mm) wide minimum extending the full length of the parking space. One access aisle shall be permitted to serve two parking spaces where front and rear entry parking are both permitted. Where an access aisle serves only one parking space and parking is restricted to either front entry or rear entry orientation, the access aisle shall be located on the passenger side of the vehicle.

R310.4 Accessible Angled Parking Spaces.

R310.4.1 Width. The width of an angled parking space shall be 132 inches (3350 mm).

R310.4.2 Access Aisles. Each angled on-street parking space shall have an adjacent access aisle 60 inches (1525 mm) wide minimum extending the full length of the parking space on the passenger side.

R310.5 Common Requirements for Perpendicular and Angled Parking Spaces.

R310.5.1 Access Aisle Markings. The access aisle surface shall be marked to discourage parking in the access aisle.

R310.5.2 Access Aisle Location. Access aisles shall be located at the same level as the parking space they serve and shall not encroach on the traveled way.

R310.5.3 \textit{Pedestrian Access Route Connection}. Access aisles shall connect to \textit{pedestrian access routes}. Where curb ramps and blended transitions are used, they shall not reduce the required width or length of accessible parallel on-street parking spaces. Curb ramps and blended transitions shall be provided in accordance with R203.6.1.4 and shall comply with R304. A detectable warning surface is not required on a curb ramp or blended transition used exclusively to connect accessible on-street parking access aisles to \textit{pedestrian access routes}.

R311 Passenger Loading Zones

R311.1 General. Accessible passenger loading zones shall comply with R311.

R311.2 Vehicle Pull-Up Space. Accessible passenger loading zones shall provide a vehicular pull-up space that is 96 inches (2440 mm) wide minimum and 20 feet (6.1 m) long minimum.

R311.3 Access Aisle. Vehicle pull-up spaces shall have adjacent access aisles complying with R311.3 that are 60 inches (1525 mm) wide minimum extending the full length of the vehicle pull-up space. Access aisles shall be at the same level as the vehicle pull-up space they serve and shall not encroach on the traveled way.

R311.3.1 Clearance Adjacent to Passenger Loading Zone. The center 50 percent of the length of the sidewalk, or other surface, adjacent to an accessible passenger loading zone shall be free of obstructions and comply with R304.6.

R311.3.2 Marking. Access aisle surfaces shall be marked to discourage parking in them.

R311.4Surfaces. Surfaces of vehicle pull-up spaces and the access aisles serving them shall comply with R302.6, except that changes in level are not permitted.
R401 General
R401.1 Scope. The supplemental technical requirements in Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in these guidelines.

R402 Protruding Objects and Vertical Clearance
R402.1 General. Protruding objects and vertical clearance shall comply with R402.

R402.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and less than 80 inches (2030 mm) above the walking surface shall not project horizontally more than 4 inches (100 mm) into pedestrian circulation paths. Except: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.

R402.3 Post-Mounted Objects. Where objects are mounted on posts or pylons, they shall comply with R402.3.

Exception: The sloping portions of handrails serving stairs and ramps shall not be required to comply with R402.3.

R402.3.1 Objects Mounted on Single Post or Pylon. Where objects are mounted on a single post or pylon, the objects are more than 27 inches (685 mm) and less than 80 inches (2030 mm) above the walking surface, the objects shall not protrude into the pedestrian circulation path more than 4 inches (100 mm) measured horizontally from the point or more than 4 inches (100 mm) measured horizontally from the outside edge of the base where the base height is 2 1/2 inches (64 mm) minimum.

R402.3.2 Objects Mounted Between Posts or Pylons. Where objects are mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of the object shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the walking surface.

Exception: Objects mounted with the lowest edge greater than 27 inches (685 mm) and less than 80 inches (2030 mm) above the walking surface are permitted if a barrier with its lowest edge at 27 inches (685 mm) maximum above the walking surface is provided between them.

R402.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guards or other barriers to prohibit pedestrian travel shall be provided where the vertical clearance is less than 80 inches (2030 mm) high above the walking surface. The lowest edge of the guard or barrier shall be located 27 inches (685 mm) maximum above the walking surface.

R402.5 Required Clear Width. Protruding objects shall not reduce the clear width required for pedestrian access routes.

R403 Operable Parts
R403.1 General. Operable parts shall comply with R403.

R403.2 Clear Space. A clear space complying with R404 shall be provided at operable parts.

R403.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in R406.

R403.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.

R404 Clear Spaces
R404.1 General. Clear spaces shall comply with R404.

R404.2 Surfaces. Surfaces of clear spaces shall comply with R302.6. The slope of the clear space shall be 1:48 (2.1%) maximum in both directions.

Exception: Where the slope of the clear space would exceed 1:48 (2.1%) in either or both directions due to the grade of an adjacent pedestrian access route conforming to the requirements of R302.4, the slope of the clear space may be consistent with the slope of the pedestrian access route.

R404.3 Size. Clear spaces shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

R404.4 Knee and Toe Clearance. Unless otherwise specified, clear spaces shall be permitted to include knee and toe clearance complying with R405.

R404.5 Position. Clear spaces shall be positioned either for forward approach where the 30-inch side is nearest to the element, or for parallel approach where the 48-inch side is nearest to the element. Clear spaces shall not be located on curb ramp runs or flares.

R404.6 Approach. One full unobstructed side of a clear space shall adjoin a pedestrian access route or adjoin another clear space.

R404.7 Maneuvering Clearance. When a clear space is confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with R404.7.1 and R404.7.2.

R404.7.1 Forward Approach. The clear space and additional maneuvering clearance shall be 36 inches (915 mm) wide minimum where the depth of the confined space exceeds 24 inches (610 mm) measured perpendicular to the element.

R404.7.2 Parallel Approach. The clear space and additional maneuvering clearance shall be 60 inches (1525 mm) wide minimum where the depth of the confined space exceeds 15 inches (380 mm) measured perpendicular to the element.

R405 Knee and Toe Clearance
R405.1 General. Where space beneath an element is included as part of a clear space, the space shall comply with R405.

Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear space.

R405.2 Toe Clearance. Toe clearance shall comply with R405.2.

R405.2.1 General. Space under an element between the ground surface and 9 inches (230 mm) above the ground surface shall be considered toe clearance and shall comply with R405.2.

R405.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

R405.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear space, the clearance shall extend 17 inches (430 mm) minimum under the element.

R405.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches above the ground surface shall not be considered toe clearance.

R405.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

R405.3 Knee Clearance. Knee clearance shall comply with R405.3.

R405.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the ground surface shall be considered knee clearance and shall comply with R405.3.

R405.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the ground surface.

R405.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the ground surface, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the ground surface.

R405.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the ground surface, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

R405.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

R406 Reach Ranges
R406.1 General. Reach ranges shall comply with R406.

R406.2 Reach Range Limits. For forward and parallel approaches, the high reach shall be 48 inches (1220 mm) maximum and the low reach shall be 15 inches (380 mm) minimum above the ground surface.

R406.3 Obstructions. Obstructed reach shall comply with R406.3.

R406.3.1 Forward Reach. Where the clear space is configured solely for a forward approach to an element, obstructions shall not be permitted between the clear space and the element for a forward reach.

R406.3.2 Side Reach. Where a clear space is configured for a parallel approach to an element, an obstruction shall be permitted between the clear space and the element where the depth of the obstruction is 10 inches (255 mm) maximum and the height of the obstruction is 34 inches (865 mm) maximum.

R407 Ramps
ramps or pedestrian access routes following the grade established for the adjacent street consistent with the requirements of R302.4.1.

R407.2 Running Slope. The running slope of each ramp run shall be 1:12 (8.3%) maximum.

R407.3 Cross Slope. The cross slope of ramp runs shall be 1:48 (2.1%) maximum.

R407.4 Clear Width. The clear width of a ramp run shall be 48 inches (1220 mm) minimum. Where handrails are provided, the clear width between handrails shall be 48 inches (1220 mm) minimum. Where handrails are provided, the clear width between handrails shall be permitted to be 36 inches (915 mm) minimum. Where handrails are provided, the clear width between handrails shall be permitted to be 36 inches (915 mm) minimum.

R407.5 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

R407.6 Landings. Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with R407.6.

R407.6.1 Slope. Landing slopes shall be 1:48 (2.1%) maximum parallel and perpendicular to the ramp running slope.

R407.6.2 Width. The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

R407.6.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

R407.6.4 Change in Direction. Ramps that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

R407.7 Surfaces. Surfaces of ramp runs and landings shall comply with R302.6, except that changes in level are not permitted.

R407.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with R409.

R407.9 Handrails. Edge protection complying with R407.9.1 or R407.9.2 shall be provided on each side of ramp runs and each side of ramp landings except those serving an adjoining ramp run, stairway, or other pedestrian circulation path.

R407.9.1 Extended Ramp Surface. The surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with R409.

R407.9.2 Curb or Barrier. A curb that is 4 inches (100 mm) high minimum, or a barrier that prevents the passage of a 4-inch (100 mm) diameter sphere, where any portion of the sphere is within 4 inches (100 mm) of the surface of the ramp run or landing, shall be provided.

R408 Stairs

R408.1 General. Stairs shall comply with R408.

R408.2 Treads and Risers. All steps on a flight of stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (100 mm) high minimum and 7 inches (180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum.

R408.3 Open Risers. Open risers are not permitted.

R408.4 Tread Surface. Stair treads shall comply with R302.6, except that changes in level are not permitted. Exception: Treads shall be permitted to have a slope not steeper than 1:48 (2.1%).

R408.5 Nosings. The radius of curvature at the nosing of the tread shall be 1⁄2 inch (13 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 11⁄2 inches (38 mm) maximum over the tread below.

R408.6 Visual Contrast. The leading edge of each step tread and top landing shall be marked by a stripe. The stripe shall be 1 inch (25 mm) wide minimum and shall contrast visually with the rest of the step tread or circulation path surface either light-on-dark or dark-on-light.

R408.7 Handrails. Stairs shall have handrails complying with R409.

R409 Handrails

R409.1 General. Handrails required at ramps and stairs, and handrails provided on pedestrian circulation paths shall comply with R409. R409 does not apply to curb ramps.

R409.2 Where Required. Handrails shall be provided on both sides of ramps and stairs.

R409.3 Continuity. Handrails shall be continuous within the full length of each ramp run or stair flight. Inside handrails on switchback or dogleg ramps and stairs shall be continuous between ramp runs or stair flights.

R409.4 Height. The top of gripping surfaces of handrails shall be 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces, ramp surfaces, and stair nosings. Handrails shall be at a consistent height above walking surfaces, ramp surfaces, and stair nosings. R409.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 11⁄2 inches (38 mm) minimum.

R409.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 11⁄2 inches (38 mm) minimum below the bottom of the handrail gripping surface. R409.7 Cross Section. Handrail gripping surfaces shall have a cross section complying with R409.7.1 or R409.7.2. Where expansion joints are necessary for large spans of handrails, the expansion joint cross section is permitted to be smaller than the specified cross section diameters for 1 inch (25 mm) maximum in length.

R409.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 11⁄4 inches (32 mm) minimum and 2 inches (51 mm) maximum.

R409.7.2 Non-Circular Cross Section. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6 1⁄4 inches (160 mm) maximum, and a cross-section dimension of 2 1⁄4 inches (57 mm) maximum.

R409.8 Surfaces. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

R409.9 Fittings. Handrails shall not rotate within their fittings. Where expansion joints are necessary for large spans of handrails, the expansion joint is permitted to rotate in its fitting.

R409.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of ramp runs and stair flights in accordance with R409.10. Handrail extensions shall not extend into the roadway or pedestrian circulation path. In alterations, if handrail extensions complying with R409.10 would reduce the clear width of a pedestrian access route, they shall extend as far as possible without reducing the clear width of the pedestrian access route.

Exception: Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg ramps and stairs.

R409.10.1 Top and Bottom Extension at Ramps. Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

R409.10.2 Top Extension at Stairs. At the top of a stair flight, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

R409.10.3 Bottom Extension at Stairs. At the bottom of a stair flight, handrails shall extend at the slope of the stair flight for a horizontal distance at least equal to one tread depth beyond the last riser nosing. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent stair flight.

R410 Visual Characters on Signs

R410.1 General. Visual characters on signs shall comply with R410.

R410.2 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

R410.3 Case. Characters shall be uppercase or lowercase or a combination of both.

R410.4 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

R410.5 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter “O” is 55 percent minimum and 110 percent maximum of the height of the uppercase letter “I”.

R410.6 Character Height. Minimum character height shall comply with Table R410.6. Viewing distance shall be measured.
as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter "I."
TO: Elderly and Disabled Transportation Advisory Committee (E&D TAC)

FROM: Amanda Marino, Transportation Planner

RE: Elderly and Disabled Transportation Advisory Committee (E&D TAC) New Member Appointment

RECOMMENDATION

RTC staff recommends that the E&D TAC recommend that the RTC appoint new member positions to fill vacancies on the E&D TAC.

BACKGROUND

Seats on the Elderly & Disabled Transportation Advisory Committee (E&D TAC) correspond to City and Supervisorial District seats on the Regional Transportation Commission (RTC), service providers, transit users, and agency representatives.

DISCUSSION

Two applications were received for the Elderly & Disabled Transportation Advisory Committee to serve as the Social Service Provider -Disabled (County) representative and Santa Cruz METRO alternate representative. In an effort to accommodate the interested applicant, staff recommends the new position noted as pending in the attached roster (Attachment 1). The applicants Elizabeth Byrd and Rina Solorio Gomez applications’ are included in Attachment 2.

Staff recommends that the E&D TAC recommend that the RTC appoint the new member positions to fill vacancies on the E&D TAC as shown in Attachment 1.

SUMMARY

The Elderly & Disabled Transportation Advisory Committee (E&D TAC) functions best when all committee membership and alternate positions are filled. Two individuals expressed interest in joining the E&D TAC. Staff recommends that the position be filled as shown (see Attachment 1 for
current roster).

Attachments:
1. October 2023 E&D TAC Roster
2. Member Application Forms
# Membership Roster

**October 2023**  
(MemberSHIP Expiration Date)

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<thead>
<tr>
<th>Members</th>
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<tr>
<td>Clay Kempf (2025)</td>
<td>Social Services Provider - Seniors</td>
<td>Patty Talbott (2025)</td>
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<td>Elizabeth Byrd (2025)</td>
<td>Social Services Provider - Seniors (County)</td>
<td>Alicia Morales (<em>Pending</em>)</td>
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<td>Alex Weske (2025)</td>
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<td>Christina Witt (2026)</td>
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<td>Tara Ireland (2024)</td>
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<td>CTSA (Lift Line)</td>
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<td>SCMTD (Metro)</td>
<td>Rina Gomez (<em>Pending</em>)</td>
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<td>Michael Pisano (2026)</td>
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<tr>
<td>Janet Edwards, Vice Chair</td>
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<td>Phil Kipnis</td>
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<tr>
<td>Paul Elerick</td>
<td>2nd District (Friend)</td>
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<tr>
<td>Veronica Elsea, Chair</td>
<td>3rd District (Cummings)</td>
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<td>Patricia Fohrman</td>
<td>4th District (Hernandez)</td>
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<tr>
<td>Ed Hutton</td>
<td>5th District (McPherson)</td>
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Staff: Amanda Marino, Regional Transportation Commission
COMMITTEE APPOINTMENT APPLICATION

Santa Cruz County Regional Transportation Commission (SCCRTC)
Elderly & Disabled Transportation Advisory Committee (E&D TAC)

Meetings are scheduled for the second Tuesday of every other month at 1:30 p.m. in the Santa Cruz County Regional Transportation Commission conference room, located at 1523 Pacific Avenue in downtown Santa Cruz. At least one meeting each year is scheduled for an alternate location. Please refer to the Committee description, bylaws and recruitment process for more information.

If you are interested in serving on this committee, please complete this application, and return it to the Regional Transportation Commission office.

PLEASE TYPE OR PRINT CLEARLY

Name: Elizabeth Byrd
Home address: ___________________________________________________________________
Mailing address (if different): ___________________________________________________________________
Phone: (home) __________ (business/message) __________
E-mail: __________

Length of residence in Santa Cruz County: 30 Years
Position(s) I am applying for: ☐ Any appropriate position
☐ __________________________________________________________

Previous experience on a government commission or committee (please specify)
I am currently employed as a Senior Human Services Analyst with the Adult and Long Term Care Division.

I am also a member of the Sheriff's Advisory Committee.
### Relevant Work or Volunteer Experience

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<th>Position</th>
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<tr>
<td>Human Services Department (HSD)</td>
<td>1400 Eucalyptus Ave</td>
<td>Sr Human Services Analyst</td>
<td>03/23-present</td>
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<tr>
<td>Adult + Long Term Care</td>
<td>Santa Cruz, CA 95061</td>
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<td>HSD Planning &amp; Evaluation Department</td>
<td>1640 Eucalyptus Ave</td>
<td>Protective Services Quality Assurance</td>
<td>02/22-03/23</td>
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<td></td>
<td>Santa Cruz, CA 95061</td>
<td>Specialist</td>
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<tr>
<td>Santa Cruz County Sheriff's Advisory Committee</td>
<td>5200 Scenic Ave</td>
<td>Sheriff's Advisory Committee Member</td>
<td>11/22-present</td>
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<tr>
<td></td>
<td>Santa Cruz, CA 95062</td>
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### Statement of Qualifications:
Please attach a brief statement indicating why you are interested in serving on this committee and why you are qualified for the appointment. If you have served on this committee in the past, please summarize your accomplishments on the committee and indicate which of the committee’s potential future endeavors most interest you.

### Certification:
I certify that the above information is true and correct and I authorize the verification of the information in the application in the event I am a finalist for the appointment.

**Signature** ____________________________ **Date** 06/07/2023

**How did you learn about this opportunity?**

- [ ] newspaper  
- [ ] radio  
- [ ] internet  
- [ ] flyer  
- [ ] friend/family member  
- [✓] other

**Return Application to:** SCCRTC  
Elderly & Disabled Transportation Advisory Committee  
1523 Pacific Avenue  
Santa Cruz, CA 95060  
fax: 460-6178  
email: amarino@scrtc.org

**Questions or Comments:** (831) 460-3200
July 21, 2023

To Whom It May Concern,

I am writing regarding my qualifications and interest in participating on the Elderly and Disabled Transportation Advisory Committee. I have a master’s degree in social work and have worked in a variety of governmental settings serving different marginalized populations since 2003. I am currently a Sr. Human Services Analyst with Santa Cruz County’s Department of Adult and Long-Term Care. In my current role, I work to meet the needs of people in our community with access and functional needs, especially during emergency situations such as natural disasters or other large-scale emergencies in the county. I am also working to move the county’s efforts forward regarding the Master Plan on Aging. Some of this work includes assessing ways in which aging adults are currently being served in our community and ways that the county can improve people’s experience as they are supported to age in place. I believe that this committee will help me to continue to assess the transportation needs of our community. I will bring a natural curiosity and passion to the role, as I firmly believe in the inherent value of all people, desire to support the needs of our community and increase people’s access to transportation and therefore community and cultural events.
COMMITTEE APPOINTMENT APPLICATION

Santa Cruz County Regional Transportation Commission (SCCRTC)
Elderly & Disabled Transportation Advisory Committee (E&D TAC)

Meetings are scheduled for the second Tuesday of every other month at 1:30 p.m. in the Santa Cruz County Regional Transportation Commission conference room, located at 1101 Pacific Avenue, Suite 250 in downtown Santa Cruz. At least one meeting each year is scheduled for an alternate location. Please refer to the Committee description, bylaws and recruitment process for more information.

If you are interested in serving on this committee, please complete this application, and return it to the Regional Transportation Commission office.

PLEASE TYPE OR PRINT CLEARLY

Name: Rina Solorio Gomez
Home address: ___________________________________________  ___________________________________________
Mailing address (if different):  _____________________________________________________________________
Phone: (home) ____________________________________ (business/message) ____________________________
E-mail: __________________________________________________________________________________________

Length of residence in Santa Cruz County: __________________________  42 years

Position(s) I am applying for:  ☑ Any appropriate position
☐  

Previous experience on a government commission or committee (please specify)

Please see attached.
### Relevant Work or Volunteer Experience

<table>
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<th>Organization</th>
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<th>Position</th>
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<td>Admin Clerk</td>
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<td>Asst./Supervisor</td>
<td>2/2019 - 11/2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customer Service Manager</td>
<td>11/2021 - current</td>
</tr>
</tbody>
</table>

### Statement of Qualifications:
Please attach a brief statement indicating why you are interested in serving on this committee and why you are qualified for the appointment. If you have served on this committee in the past, please summarize your accomplishments on the committee and indicate which of the committee’s potential future endeavors most interest you.

### Certification:
I certify that the above information is true and correct and I authorize the verification of the information in the application in the event I am a finalist for the appointment.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6/21/23</td>
</tr>
</tbody>
</table>

### How did you learn about this opportunity?

- [ ] newspaper
- [x] flyer
- [ ] radio
- [x] friend/family member
- [ ] internet
- [x] other coworker

### Return Application to:

SCCRTC  
Elderly & Disabled Transportation Advisory Committee  
1101 Pacific Avenue, Suite 250  
Santa Cruz, CA 95060  
fax: 460-6178  
email: amarino@sccrtc.org

### Questions or Comments:

(831) 460-3200

I:\AE\DTAC\MEMBERS\Application\COMMITTEE APPOINTMENT APPLICATION.doc
June 22, 2023

To: Committee Members.

My name is Rina Solorio Gomez, Customer Service Manager with the METRO. I am interested in becoming a member of the E&D TAC, as it will allow me an opportunity to network with other transportation agencies who play a big role in serving the needs of our elderly and disabled community.

Daily my department books rides through our ADA ParaCruz service, which allows me the opportunity to receive feedback first hand on the challenges our customer’s face that caused them to apply for our service.

On a personal level, I have had family members who have benefited from riding METRO ParaCruz, I know, and understand the challenges faced with transportation needs.

I am bilingual and was born and raised in Watsonville.

Improvements in transportation is important to METRO and I would enjoy being part of future changes to better serve our community.

Thank you,
Rina Solorio Gomez
Santa Cruz METRO: Customer Service Manager
RECOMMENDATIONS

Staff recommends that the Elderly and Disabled Transportation Advisory Committee provide input on the Prioritization Framework for the Climate Adaptation Vulnerability Assessment and Priorities Report (CAVA).

BACKGROUND

The RTC, the County of Santa Cruz Department of Community Development & Infrastructure and the Santa Cruz County Office of Response, Recovery & Resiliency are partnering to develop a Climate Adaptation Vulnerability Assessment and Transportation Priorities Report (CAVA) for unincorporated Santa Cruz County maintained roads and the entirety of the Santa Cruz Branch Rail Line (SCBRL). This project will update and expand upon the vulnerability assessment developed in 2013 by Santa Cruz County with a more detailed analysis using the most up-to-date tools for mapping hazards to the transportation system from climate change impacts, and then prioritize transportation projects for further future actions to enhance resilience based on a set of prioritization metrics.

The emphasis of the vulnerability assessment will be on identifying transportation infrastructure assets in the county that may be particularly vulnerable to climate hazards. These assets will be prioritized based on a set of metrics that assess both how sensitive they may be to damage from climate hazards and how critical they are to the functioning of the transportation network and the communities it serves. The goal of prioritization is to identify the order in which transportation assets should undergo detailed climate assessments first since resource constraints will prevent all assets from being assessed simultaneously. A comprehensive and prioritized project list will better position Santa Cruz County to receive state and federal climate resiliency funding for the next steps of identifying actions needed for climate resiliency and implementation of resilience measures.

Santa Cruz County is already experiencing the impacts of sea level rise, coastal erosion, extreme weather events and flooding, wildfires, and extreme temperatures on the county’s transportation infrastructure, and these impacts are increasing at an alarming rate. In 2017 alone, a series of intense winter storms caused more than $130 million dollars in damage that will take years to repair.
In August 2020, an extreme lightning storm started over 560 wildfires throughout California. This included the CZU Lightning Complex wildfire in the Santa Cruz Mountains, which burned 86,509 acres, destroyed 1,490 structures including 911 homes, and caused $15 million in damage to Santa Cruz County transportation infrastructure such as destroyed guardrails, damaged drainage, and compromised embankments.

In early 2023, an extended series of atmospheric rivers swept over Santa Cruz County over the course of several months, breaching levees, destroying piers, viaducts, and other infrastructure, and causing landslides and extensive flooding. There were tens of millions of dollars of damage to the County’s transportation infrastructure. How we respond and proactively address the impacts of climate change on the transportation network will have a profound impact on County residents and can mitigate some of the challenges.

**DISCUSSION**

Over the next few months, the Project Team is developing the Project Framework for the CAVA study and engaging with stakeholders and members of the public to obtain their input and feedback. The Project Framework will describe the methodology for conducting the CAVA. The Framework will describe what hazards will be evaluated, what transportation assets will be considered, and what metrics will be used to assess level of vulnerability to climate hazards. These metrics will ultimately be used to prioritize the order in which climate vulnerable transportation assets should undergo detailed climate assessments based on their vulnerability to climate hazards and impact on the transportation network and therefore the surrounding communities, and the prioritization order for seeking funding for future adaptation or hardening efforts.

The Project Team seeks input on what hazards, assets, and metrics should be included in the Project Framework in order to determine project priority.

The climate hazards under consideration for the analysis include:

- Coastal flooding (including both storm surge and tidal flooding exacerbated by sea level rise (SLR))
- Coastal erosion (including both cliff retreat and shoreline erosion)
- Riverine/localized flooding driven by precipitation
- Debris flow (driven by both precipitation and wildfire)
- Slope failure causing landslides on top of assets and asset washouts (driven by precipitation)
- Wildfire direct impacts
- Extreme heat

In terms of assets, the focus is on the unincorporated, County-maintained roads and the Santa Cruz Branch Rail Line (SCBRL). The specific asset classes under consideration for analysis in this study are:

- Roadways (including embankments, and bike lanes)
• Road culverts
• Road bridges
• SCBRL railway (including embankments, ballast, ties)
• SCBRL culverts
• SCBRL bridges
• SCBRL trails – existing and future

These generally correspond to where most of the damage has occurred to transportation assets during past climate hazard events.

The Project Team is exploring a variety of different metrics to capture both the likelihood of hazards occurring in different locations and the consequences of these hazards when they do occur. The Project Team seeks input in potential consequence metrics in particular.

Potential hazard metrics include:

• Length of asset exposed to climate hazard – flooding, slope failure, wildfire, coastal erosion, debris flow
• Timing of impact (sooner versus later)
• Timeframe of regular maintenance replacement of asset
• Likelihood of climate hazard
• Past exposure to climate hazard impacts

Potential consequence metrics include:

• Expected $ hazard damage cost over the next several decades
• Expected $ hazard disruption cost to travelers due over the next several decades (due to travel delays, etc.)
• Average annual daily traffic (AADT) or other usage data
• Location within/providing access to disadvantaged communities
• Location on one-way in/out roadway
• Typical detour time and length
• Flagged by stakeholders as being high priority
• Whether critical facility is located along asset (or whether asset is required to access critical facility, e.g. evacuation center)
• Presence of bike facility along asset
• Presence of transit route along asset
• Whether rail segment is located on higher priority portion of the corridor (i.e.,) between Watsonville and the wye in Santa Cruz
• Various susceptibility metrics, such as slope characteristics, asset condition ratings, etc.

SUMMARY
The Climate Adaptation Vulnerability Assessment and Priorities Report (CAVA) is underway. The Project Team seeks input from the Bicycle Advisory Committee on what hazards should be evaluated, what transportation assets should be considered, and what metrics will be used to assess and prioritize transportation
assets for future actions to enhance climate resilience, as well as any broader input on the structure of the Framework.
RECOMMENDATIONS

Staff recommends that the Bicycle Advisory Committee, Elderly and Disabled Transportation Advisory Committee (E&D TAC), and Interagency Technical Advisory Committee (ITAC) provide input on proposed updates for the Measure D five-year programs of projects (5-Year Plans) for regional investment categories and projects and the Strategic Implementation Plan (SIP).

BACKGROUND

In November 2016, Santa Cruz County voters approved Measure D, a ½-cent transactions and use tax (similar to sales tax) for transportation projects and programs. The Measure D Expenditure Plan provides funding by formula for five categories of projects over 30 years:

- Neighborhood projects: 30% of net measure revenues:
  - $5 million for the Highway 17 Wildlife Crossing
  - $10 million for San Lorenzo Valley (SLV)/Highway 9 Corridor
  - Balance (approx. 28%) to cities and County by formula
- Transportation for Seniors and People with Disabilities: 20% total
  - 16% to Santa Cruz METRO and 4% to Lift Line
- Highway Corridors: 25%
- Active transportation/MBSST-Rail Trail: 17%
- Rail Corridor: 8%

Each agency receiving Measure D revenues is required to annually develop, update, hold a public hearing on, and adopt a five-year program of projects. The five-year program of projects (5-Year Plan) identifies how each agency plans to use Measure D funds in the upcoming 5 years. The 5-Year Plans are adjusted annually to reflect updated revenue forecasts, prior expenditures, updated project costs, expenditure rates, and schedules.
The Regional Transportation Commission (RTC) is responsible for developing the 5-Year Plans for Regional Expenditure Plan categories and projects, as described below. Agencies receiving direct formula allocations (cities, the County of Santa Cruz, Santa Cruz METRO and Community Bridges/Lift Line) typically develop and update their 5-Year Plans as part of their annual budgets and/or capital improvement programs. Community members and Committee members are encouraged to provide input on those plans directly to each recipient agency. Approved plans are posted on the Measure D website: www.sccrtc.org/MeasureD.

The Ordinance also includes a requirement that the RTC, in its role as the Measure D Authority, prepare and update at least every 5 years, a long-term Implementation Plan for Measure D Revenues. The RTC adopted the most recent Strategic Implementation Plan (SIP) in February 2020.

**DISCUSSION**

At its November 2023 meeting, the RTC will consider recommendations and public input on how to invest Measure D revenues over the next 5 years (5-Year Plans), as well as updates to the Strategic Implementation Plan (SIP), which includes long-term implementation plans for delivering the Measure D Expenditure Plan. **Staff recommends that the RTC’s advisory committees review and provide input on proposed updates to the 5-year plans and SIP, as summarized below.**

**5-Year Plans**

The 5-Year plans have been updated to reflect proposed investments of Measure D funds FY23/24-FY27/28. Although Measure D provides significant funding to deliver investments identified in the Measure D Expenditure Plan, it is not intended to fully fund all investments. Consistent with the 2020 Measure D Strategic Implementation Plan (SIP), the RTC works to expeditiously deliver regional programs and projects. The RTC strategically utilizes some Measure D revenues on pre-construction phases in order to get projects “shovel-ready” and/or programs funds to serve as a match. This approach positions projects to be more competitive for grants and other funding opportunities, but also means that financing will be needed to meet all of the obligations identified in the 5-year plans, possibly starting FY25/26. Highlights and proposed updates to the 5-year plans (Attachment 1) are summarized below. Fact sheets on major projects and programs are included as Attachment 2.

**Highway Corridors (25% of revenues)**

- Continue implementation of previously approved projects. Includes
funding and financing plans previously approved by the RTC to leverage federal, state, and other grants. Some funds shifted to later years based on updated estimated expenditure timing.

- Highway 1 - Freedom to State Park/Coastal Rail Trail Segment 12 Project: Add $540,000 based on updated project management and support cost estimates.
- Ongoing traveler information/transportation demand management programs: Add funds in FY27/28.

Active Transportation/MBSST-Coastal Rail Trail (17% of revenues)
- Segment 10/11: Add $305,870 to County of Santa Cruz for additional technical analysis during the environmental review phase.
- Segment 12: Add $216,000 based on updated project management and support cost estimates.
- Carry forward previously committed funds for rail trail segments from Davenport to Aptos and in Watsonville, including funds to leverage federal, state, and other grants.
- Trail Maintenance: Fund trail maintenance based on RTC direction at its September 2023 meeting, agreements with local jurisdictions, and updated cost estimates.
- Ongoing Oversight, Coordination, and Technical assistance: Add approximately $275,000 for corridor-wide assistance through FY27/28.
- Corridor Encroachments and Maintenance: Add $1.6 million through FY27/28 for environmental, vegetation, and erosion control work based on updated cost estimates, including for 2023 storm damage, encroachments, and boundary surveys.

Rail (8% of Measure D revenues)
- Rail Infrastructure Preservation: Add $1.7 million in FY27/28 and $600,000 FY22/23-FY26/27 for ongoing rail infrastructure repairs. Some long-term repairs needed in the corridor will be made as part of the Zero Emission Rail Transit & Trail Project.
- Zero Emission Rail Transit & Trail Project: Earlier this year, the RTC secured a $3.5 million Transit and Intercity Rail Capital Program (TIRCP) grant, using Measure D as match, to prepare a Project Concept Report. In August 2023, the RTC programmed an additional $1.63 million needed for this work. (partially funded by Measure D-Active Transportation/Trail)

San Lorenzo Valley/Highway 9 Corridor ($10 million over 30 years)
- $2.4 million for Boulder Creek Complete Streets project on Highway 9 and Highway 236. These funds are being used in combination with a $1.5 million federal earmark (Eshoo) on preconstruction and as match for grant applications. The RTC plans to start preliminary engineering and environmental review work in FY23/24.
Highway 17 Wildlife Crossing ($5 million/30 years)

- Caltrans is closing out the construction phase of this project with the construction contract and there are no changes to the total programmed to construction.
- The RTC previously approved an inter-program loan from the Highway Corridor investment category to expedite construction. The inter-program loan and repayment amounts have been adjusted slightly based on the timing of construction expenditures.

Strategic Implementation Plan (SIP)
The purposes of the Ordinance-required **Strategic Implementation Plan (SIP)** are to define the scope, cost, and delivery schedule of each regional project or program, detail the revenue projections and possible financing tools needed to deliver the Expenditure Plan within the 30 years promised to the voters, and describe the risks, critical issues, and opportunities that the Authority should address to deliver the Expenditure Plan. Based on anticipated capacity in the Highway Corridors investment category, the Commission also amended the Expenditure Plan in February 2020 to add auxiliary lanes along Highway 1 between State Park Drive and Freedom Boulevard as well as Bus-on-Shoulder improvements throughout the highway. Staff is currently updating the SIP and seeking input from the committees. Due to the date of the October ITAC meeting being late in the SIP update schedule, staff already sought input from that committee in September.

The Commission and its partners have made several important decisions and achieved significant accomplishments since the adoption of the 2020 SIP. To maximize delivery of the Expenditure Plan, Measure D funds have been used strategically to help leverage roughly $300 million in state and federal grants for regional projects. Leveraging remains a central theme for the 2023 SIP and it is important that the RTC and partner agencies continue to maximize the buying power of Measure D and use it to leverage additional federal, state, and local funds for projects like the Watsonville-Santa Cruz Corridor combined Highway 1 Freedom-State Park auxiliary lane/bus-on-shoulder and Rail Trail Segment 12 project and future trail sections. With Measure D funds committed as match for existing and planned future grants, the RTC needs to carefully manage Measure D capacity to ensure sufficient cash flow and not risk loss of grants.

Since 2020 SIP adoption, RTC also increased its funding commitments for Highway 1 and Coastal Rail Trail projects and the Commission has entered into several trail maintenance agreements, which commit additional Measure D funds.
RTC has contracted with KNN Public Finance to assess the financial status of Measure D and update financing options. Staff has updated cost estimates on projects and provided estimated expenditure timing, based on current and expected long-term ongoing costs and commitments. The 2023 update will model the probable financing needed to deliver the regional projects.

Due to the ambitious programming to deliver Highway and Coastal Rail Trail projects on an accelerated timetable and to conduct the environmental assessment of nearly all the remaining segments of the Coastal Rail Trail along with future rail service between Pajaro and Santa Cruz, it is also important to expand upon the programming methodology to be used in prioritizing the use of Measure D funds within the Regional categories of investments. Measure D Ordinance and Regional Transportation Plan goals will be considered as individual decisions on programming arise in the next several years.

- **Highway Corridors**: There may be capacity to proceed with additional projects not currently identified in the Expenditure Plan. As a first step, staff recommends conducting a planning study to prioritize additional Highway 1 projects that advance the Measure D goals to improve transit, safety, traffic flow and efficiency, possibly including additional Bus-On-Shoulder improvements.

- **Active Transportation and Rail**: Using Measure D funds to maintain the corridor and trails once constructed, impacts the capacity left to complete construction of the entire Coastal Rail Trail. Based on updated cost estimates for the trail adjacent to the rail line, there is also insufficient capacity in the Measure D - Active Transportation category to effectively leverage grant funding to complete construction of the Coastal Rail Trail as standalone projects. Based on the Commission’s approval in 2022 to proceed with environmental and preliminary design components of the Zero Emission (ZE) Rail Transit & Trail Project, the RTC may be able to leverage grants to complete an Environmental Impact Report for the joint rail transit and trail project without overcommitting the Active Transportation category. Rail category funds have also been programmed towards the ZE Rail Transit & Trail Project. Once environmental work is complete, a new local fund source would need to be secured to complete the project and operate transit service. The expenditure plan for the potential new revenue source could include maintenance of the trail.

The update to the SIP considers these programming needs, describes potential financing tools, and models possible new revenue and debt service. New and updated project fact sheets will be included in the plan.
Recommendations
Staff recommends that the RTC’s Bicycle Advisory Committee, the Elderly & Disabled Transportation Advisory Committee, and Interagency Technical Advisory Committee (ITAC) review and provide input on the proposed updates for the Measure D 5-year programs of projects for FY23/24-27/28 and long-range Strategic Implementation Plan (SIP) update for regional and RTC-oversight projects and programs: Highway Corridor, Active Transportation/Trail Program, Rail Corridor, San Lorenzo Valley/Highway 9 Corridor, and the Highway 17 Wildlife Crossing. The proposed uses of funds are consistent with the approved Measure D Expenditure Plan.

Next Steps
The RTC is scheduled to consider committee input and hold a public hearing on the new 5-year plans for regional projects and programs, as well as the 2023 SIP at its November 2023 meeting. The 5-Year proposed plan updates are based on the latest available information; however, dollar amounts shown are preliminary estimates and will be refined for the final recommendations taken to the RTC board at its November meeting. As project cost estimates and schedules are refined, new grant and leveraging opportunities arise, and/or if Measure D and other funding assumptions change, amendments to the 5-year plan may be proposed throughout the year. Modifications requiring approved funds to be shifted between fiscal years will be handled administratively. Staff will return to the RTC for consideration of any amendments that add new projects or increase Measure D funds for individual projects during public meetings. As regional projects are implemented, staff periodically provides updates and solicits input on the projects from the Bicycle Committee, E&DTAC, and ITAC.

After the close of each fiscal year, Measure D recipient agencies submit reports to ensure Measure D funds were expended consistently with the requirements of the voter-approved Measure D Ordinance and other agreements and guidelines. The reports describe actual expenditures, progress made to improve the transportation system, how maintenance of effort requirements have been met to ensure Measure D revenues are supplementing (not supplanting) other revenues, and the degree that Measure D funds were used to secure additional funding from other sources (leveraging). Fiscal audits of expenditures are reviewed by the Measure D Taxpayer Oversight Committee (TOC). The TOC’s annual reports and recipient agency audits and expenditure reports are posted on the RTC’s Measure D website (https://sccrtc.org/funding-planning/measured/taxpayer-oversight/).
FISCAL IMPACT

On average, Measure D is expected to generate $27-30 million per year over the next 5 years. The 5-year programs of projects show how the RTC anticipates investing funds for regional investment categories in the near term. The RTC budget is amended to reflect anticipated FY23/24 expenditures and carryover balances from prior years. As previously discussed, total anticipated Measure D revenue needs for the Highway and Trail investment categories will exceed projected revenue on a year-to-year cash basis. Staff is also analyzing options to expedite implementation and analysis of rail transit and complete streets projects in San Lorenzo Valley. To support the proposed plans to expeditiously deliver Measure D projects and leverage grants over the next 5 years, some financing, such as bonding, may be needed starting in 2025.

SUMMARY

In 2016 a super-majority of Santa Cruz County voters approved Measure D, a 30-year ½-cent sales tax which provides critical funding to improve local highways, construct new bicycle and pedestrian facilities, repair local roads, maintain and expand transit and paratransit services for seniors and people with disabilities, and maintain other publicly owned transportation facilities. Measure D requires recipient agencies to annually prepare and update a program of projects, identifying how agencies plan to invest Measure D funds over the next 5 years, consistent with the voter-approved Expenditure Plan. Staff recommends that the RTC’s advisory committees provide input on proposed updates to the five-year programs of projects and long-range Strategic Implementation Plan (SIP) for the regional transportation categories -- Highway Corridors, Active Transportation, and the Rail Corridor, as well as San Lorenzo Valley Highway 9 Corridor Improvements, the Highway 17 Wildlife Crossing. The 5-year Plans, programming anticipated Measure D revenues for FY23/24-27/28, focus on continued implementation of previously approved and/or prioritized projects.

Attachments:
1. 5-year plans for regional projects
2. Fact Sheets for regional projects

s:\measured\5yearplan_rtc\futureupdates\measured-5year-sr-committees-2023.docx
### Measure D: 5-Year Program of Projects (FY23/24-27/28)

**Active Transportation/MBBST-Coastal Rail Trail (17% of Measure D Revenues)**

**PROPOSED: Fall 2023**


<table>
<thead>
<tr>
<th>Rail Trail Project/Program</th>
<th>Description</th>
<th>Schedule</th>
<th>Prior Years Spent FY22/23 est. actual</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total Measure D through FY27/28</th>
<th>Future</th>
<th>Proposed Updates - Fall 2023</th>
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<tbody>
<tr>
<td>1 North Coast Segment 5</td>
<td>Trail development and construction, including EIR &amp; design consultants, legal, Environmental Health Services &amp; ROW; RTC project mgmt, oversight, outreach and technical assistance; $125k for Davenport Crosswalk and $1.4 million for Yellowknot Crossing</td>
<td>Pending FLAP timing, ready to start construction FY23/24</td>
<td>$2,888,184</td>
<td>$332,162</td>
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<td>$40,000</td>
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<tr>
<td>2 North Coast Segment 5: trail maintenance and operations</td>
<td>Ongoing maintenance of sections of trail once constructed. Includes restriping, sweeping, vegetation management, mitigations, and periodic repaving. Start after trail open in FY24/25.</td>
<td>$0</td>
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<td>$0</td>
<td>$148,354</td>
<td>$224,294</td>
<td>$332,142</td>
<td>$604,792</td>
<td>asst $175k per escalation</td>
<td>Add funds in FY27/28 and reduce funds in FY24/25 and FY25/26 based on updated schedule and RTC-County of Santa Cruz Segment 5 maintenance agreement. Previously $355k thru FY26/27.</td>
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<td>3 Segment 7: Natural Bridges to Bay (California (Phase 1), Bay/Columbia to Wharf (Ph2), City of Santa Cruz (SC) lead</td>
<td>Allocation to City of Santa Cruz for Segment 7 rail trail</td>
<td>Phase I: 2020, Phase II: 2022-2024</td>
<td>$1,100,000</td>
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<td>$3,250,000</td>
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<td>4 Seg 8: San Lorenzo River trestle widening, City of Santa Cruz</td>
<td>Allocation to City of SC for widening of existing bridge over San Lorenzo River near Boardwalk. Completed June 2019</td>
<td>$500,000</td>
<td>0</td>
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<td>5 Seg 8/9: SC Wharf to 17th Ave., City of SC lead (partnership with County)</td>
<td>Allocation to City of SC: $2M set aside to serve as match for construction grants; $370k for additional analysis of interim trail. Joint project with County. Est. 2025 start construction</td>
<td>$0</td>
<td>$0</td>
<td>$370,000</td>
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<td>$2,370,000</td>
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<td>Shift funds from FY22/23 to FY23/24.</td>
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<tr>
<td>6 RTC Oversight and technical assistance: Segments 7-9</td>
<td>RTC project management, oversight, outreach and technical assistance (consultants, legal, Environmental Health Services &amp; ROW)</td>
<td>Through project completion</td>
<td>$356,958</td>
<td>$86,199</td>
<td>$159,045</td>
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<td>$641,221</td>
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<td>Reduced $42k based on FY22/23 and ongoing estimated actuals. Combines estimated oversight and technical assistance for Segments 7-9.</td>
</tr>
<tr>
<td>7 Trail maintenance and operations in Santa Cruz</td>
<td>Ongoing maintenance. Includes restriping, sweeping, vegetation management, mitigations, and periodic repaving.</td>
<td>ongoing</td>
<td>$20,000</td>
<td>$5,260</td>
<td>$48,732</td>
<td>$58,000</td>
<td>$40,000</td>
<td>$55,000</td>
<td>$63,000</td>
<td>$262,000</td>
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<td>9 Segment 10-11: Segment 10 (17th-47th Ave. Dr. Park Dr), Seg 11 (Monterey to St. Park Dr)</td>
<td>Allocation to County DPW for planning, environmental review, design, and right-of-way construction. County led project. P4/ED started 2020</td>
<td>$1,362,378</td>
<td>$1,104,139</td>
<td>$2,075,298</td>
<td>$470,000</td>
<td>$2,229,000</td>
<td>$10,137,908</td>
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<td>$37,378,684</td>
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<td>Add $509,870 for additional technical analysis. Carryover funds not yet invoiced in FY22/23 to FY23/24.</td>
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<tr>
<td>10 Segment 10-11 Oversight and technical assistance</td>
<td>RTC project mgmt, oversight, outreach and technical assistance (consultants, legal, Environmental Health Services &amp; ROW)</td>
<td>Duration of project delivery</td>
<td>$92,392</td>
<td>$58,650</td>
<td>$342,716</td>
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<td>$40,000</td>
<td>$649,732</td>
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<td>Carryover funds not spent in FY22/23 to FY23/24. Reduce $48.6k based on updated estimates.</td>
</tr>
<tr>
<td>11 Capitola Trestle Railroad Bridge Interim Trail analysis</td>
<td>Analysis of feasibility for building trail on the bridge through Capitola Village and over Soquel Creek. FY21/22</td>
<td>$29,256</td>
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<tr>
<td>12 Capitola Trail: City Hall to Monterey Ave</td>
<td>RTC project management, oversight, outreach and technical assistance (consultants, legal, Environmental Health Services &amp; ROW)</td>
<td>Construction timing TBD</td>
<td>$2,237</td>
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<td>$4,724</td>
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<td>Rail Trail Project/Program</td>
<td>Description</td>
<td>Schedule</td>
<td>Prior Years Spent*</td>
<td>FY21/22 - ext. actual*</td>
<td>FY22/23</td>
<td>FY24/25</td>
<td>FY25/26</td>
<td>FY26/27</td>
<td>FY27/28</td>
<td>Total Measure D through FY27/28</td>
<td>Future</td>
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<tr>
<td>Segment 12: State Park Drive to Rice Bern Boulevard</td>
<td>Design, right-of-way, and matching funds for construction grants. Assumes work associated with bridges over Highway 1 to be implemented with the Hwy 1 Freedom State Park project and paid out of Measure D-Highway.</td>
<td>Start construction FY24/25; dependent on grant funding</td>
<td>$0</td>
<td>$1,199,732</td>
<td>$2,275,308</td>
<td>$581,760</td>
<td>$9,327,433</td>
<td>$1,466,000</td>
<td>$1,466,000</td>
<td>$32,316,238</td>
<td>$472,167</td>
</tr>
<tr>
<td>Segment 18: Lee Road to Walker (Ohlone to slough trail-Phase 1), City of Watsonville trail</td>
<td>Allocation to City of Watsonville for trail construction. Ph. 1 completed 2022, Phase 2 postponed</td>
<td>$150,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1,800,000</td>
<td>$0</td>
<td>$2,950,000</td>
<td>$0</td>
<td>No change.</td>
</tr>
<tr>
<td>Watsonville Trail segments oversight and technical assistance</td>
<td>RTC project management, oversight, outreach and technical assistance (consultants, legal, Environmental Health Services &amp; ROW)</td>
<td>Duration of project delivery</td>
<td>$109,698</td>
<td>$3,020</td>
<td>$6,900</td>
<td>$6,900</td>
<td>$6,900</td>
<td>$6,900</td>
<td>$147,205</td>
<td>TB</td>
<td>Add funds in FY27/28. Reduce FY22/23 based on estimated actual. Overall reduced $77K; some analysis and development being done as part of the Zero Emission Rail Transit and Trail project.</td>
</tr>
<tr>
<td>Zero Emission Rail Transit &amp; Trail</td>
<td>Project concept report, preliminary engineering and environmental analysis of remaining sections of trail as part of the Electric Rail &amp; Trail project. Includes consultant services, project management and public outreach, match for grants.</td>
<td>Concept report starting FY23/24</td>
<td>$0</td>
<td>$0</td>
<td>$175,000</td>
<td>$175,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$350,000</td>
</tr>
<tr>
<td>Santa Cruz County Regional Conservation Investment Strategy Grant match</td>
<td>Match to Wildlife Conservation Board grant for early mitigation planning for transportation projects</td>
<td>2019-2012</td>
<td>$14,775</td>
<td>$2,565</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$17,340</td>
</tr>
<tr>
<td>Ongoing oversight, coordination, and assistance, including on development of future trail sections</td>
<td>RTC staff and consultants work related to overall trail planning, soil investigations, Environmental Health (EH), legal, stakeholder coordination, response to public comments, and development of future projects and grant applications</td>
<td>ongoing</td>
<td>$1,069,606</td>
<td>$172,380</td>
<td>$200,860</td>
<td>$209,806</td>
<td>$219,397</td>
<td>$230,262</td>
<td>$243,779</td>
<td>$2,346,765</td>
<td>Varies</td>
</tr>
<tr>
<td>Corridor enhancements &amp; maintenance</td>
<td>Ongoing corridor maintenance, including vegetation, tree work, trash, graffiti, drainage, encroachments, boundary surveys, storm damage repairs outside of what is required for railroad operations. Includes RTC staff time and contracts.</td>
<td>ongoing</td>
<td>$2,270,374</td>
<td>$890,096</td>
<td>$1,732,016</td>
<td>$1,521,166</td>
<td>$1,621,636</td>
<td>$1,258,306</td>
<td>$1,297,710</td>
<td>$16,592,204</td>
<td>Estimated $1.3M/y + escalation</td>
</tr>
</tbody>
</table>


1. Programmed funds may be shifted between years based on actual expenditures/use rates when sufficient cash capacity exists.

*FY22/23 and future amounts will be adjusted based on audited financials.
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Schedule</th>
<th>Prior Years Spent FY22/23</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total through FY27/28 Measure D</th>
<th>Future Year</th>
<th>Total (Including Future capital)</th>
<th>Proposed Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Highway 1: Auxiliary Lanes and Bus on Shoulder from 40th St. to Sequoia; Chanticleer Bike/Pedestrian Overcrossing</td>
<td>Freeway operational improvement, bus on shoulder improvements, rehab roadway and drainage, improve bicycle/pedestrian access over freeway. Construction started e. 2023</td>
<td>$1,242,132</td>
<td>$819,224</td>
<td>$1,960,545</td>
<td>$781,100</td>
<td>$123,000</td>
<td>$50,000</td>
<td>$25,000</td>
<td>$5,003,000</td>
<td>$25,000</td>
<td>$5,028,000</td>
</tr>
<tr>
<td>2. Highway 1: Auxiliary Lanes &amp; Bus on Shoulder from State Park to Bay-Porter, Reconstruction of Capitola Avenue Overcrossing and Bicycle/Pedestrian Overcrossing at Mar Vista Dr</td>
<td>Freeway operational improvement, bus on shoulder improvements, soundwalls and retaining walls, reconstruct Capitola Ave. overcrossing with sidewalks and bike lanes, new Bike/ped bridge Start construction Fall 2023. Estimated 2.5 years of construction</td>
<td>$5,117,294</td>
<td>$633,979</td>
<td>$7,186,728</td>
<td>$6,620,000</td>
<td>$2,550,000</td>
<td>$175,000</td>
<td>$25,000</td>
<td>$22,508,061</td>
<td>$50,000</td>
<td>$22,558,061</td>
</tr>
<tr>
<td>3. Highway 1: Auxiliary Lanes &amp; Bus on Shoulder from Freedom to State Park and Segment 12 Coastal Rail Trail</td>
<td>Freeway operational improvement, bus on shoulder, soundwalls and retaining walls, bridges over Hwy 1 and widening bridge over Aptos Creek/Sprinkleys Drive, portion of Segment 12 of the Coastal Rail Trail—excluding 2 new bicycle/pedestrian overcrossings over Highway 1 Start construction 2015, pending fund availability</td>
<td>$1,903,484</td>
<td>$4,088,245</td>
<td>$6,924,831</td>
<td>$3,149,009</td>
<td>$23,605,976</td>
<td>$32,390,667</td>
<td>$32,390,667</td>
<td>$109,481,277</td>
<td>$19,508,722</td>
<td>$123,990,000</td>
</tr>
<tr>
<td>4. Santa Cruz County Regional Conservation Investment Strategy - Grant match</td>
<td>Match to Wildlife Conservation Board grant for early mitigation planning for transportation projects. Complete FY22/23</td>
<td>$23,079</td>
<td>$2,421</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$25,500</td>
<td>$0</td>
<td>$25,500</td>
</tr>
<tr>
<td>5. Cruz 511-Traveler Information and Commute Manager</td>
<td>Ongoing system &amp; demand management (TDM), includes Cruz511.org traveler information, <a href="http://www.SantaCruzCounty.org">www.SantaCruzCounty.org</a>, carpool and other TDM programs</td>
<td>Ongoing</td>
<td>$445,784</td>
<td>$200,000</td>
<td>$210,000</td>
<td>$220,500</td>
<td>$231,000</td>
<td>$243,000</td>
<td>$255,150</td>
<td>$1,805,434</td>
<td>Ongoing</td>
</tr>
<tr>
<td>6. Safe on 17</td>
<td>Ongoing system management program, involves increased CHP enforcement on Highway 17</td>
<td>Ongoing</td>
<td>$109,547</td>
<td>$42,746</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$402,093</td>
<td>Ongoing</td>
</tr>
<tr>
<td>7. Freeway Service Patrol</td>
<td>Ongoing system management and congestion reducing program. Roving tow trucks removing incidents and obstructions during peak travel periods on Hwy 1 and Hwy 17</td>
<td>Ongoing</td>
<td>$339,232</td>
<td>$189,532</td>
<td>$100,000</td>
<td>$200,000</td>
<td>$210,000</td>
<td>$220,000</td>
<td>$231,000</td>
<td>$1,749,744</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Completed Projects</td>
<td>Unified Corridor Investment Study—Analysis of Highway 1 corridor projects Completed Jan 2019</td>
<td>$199,808</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$199,808</td>
<td>$199,808</td>
<td>No change</td>
</tr>
</tbody>
</table>

Estimated Annual Measure D Highway Corridors Expenditures: $5,962,589

| Project | Interprogram Loan for Hwy 17 Wildlife Crossing | Interprogram loan to allow Hwy 17 Wildlife Crossing project to proceed without bonding and loan repayments Interprogram Loan FY22/23 | 0 | $1,410,667 | $1,595,000 | $1,410,667 | $1,595,000 | $1,410,667 | $1,595,000 | $2,616,722 | $2,616,722 | $2,616,722 | Est. $357k interest |

Total Expenditures (with loans & repayments): $5,962,589

Notes:
1. Funds may be shifted between years based on actual expenditures/use rates when sufficient cash capacity exists.
2. FY22/23 reflects preliminary estimates to be adjusted based on audited financials.
### Measure D: 5-Year Program of Projects (FY23/24-FY27/28)

**PROPOSED - Fall 2023**


**Category:** Rail Corridor (8% of Measure D Revenues)

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Est. Schedule</th>
<th>Prior Years</th>
<th>FY22/23 Est. Actuals*</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total Measure D</th>
<th>Proposed Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rail Infrastructure Preservation</td>
<td>Railroad bridge inspections and analysis, railroad bridge rehabilitation (including Pajaro River Bridge grant match), and ongoing maintenance and repair of railroad track infrastructure and signage.</td>
<td>Ongoing</td>
<td>$3,696,277</td>
<td>$1,745,811</td>
<td>$1,002,501</td>
<td>$1,310,000</td>
<td>$920,000</td>
<td>$1,800,000</td>
<td>$1,710,000</td>
<td>Add funds in FY27/28. Increase and update FY23/22 and FY22/23 based on actuals; update FY23/24-FY26/27 based on updated estimates. Previously $9.8MM.</td>
</tr>
<tr>
<td>2</td>
<td>Rail Transit - Preliminary Engineering and Environmental Analysis (Zero Emission Rail Transit &amp; Trail Project)</td>
<td>Preparation of operating concept, preliminary engineering, and environmental document for electric rail transit and trail project on the branch line</td>
<td>Concept Report - 2023-2025</td>
<td>50</td>
<td>$106,389</td>
<td>$830,000</td>
<td>$700,000</td>
<td>$2,894,000</td>
<td>$900,000</td>
<td>50</td>
<td>$5,430,389</td>
</tr>
<tr>
<td>3</td>
<td>Santa Cruz County Regional Conservation Investment Strategy</td>
<td>Match to Wildlife Conservation Board grant for early mitigation planning for transportation projects.</td>
<td>FY19/20-Fall 2022</td>
<td>$7,344</td>
<td>$816</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$8,160</td>
</tr>
</tbody>
</table>

#### Completed Projects

| 4 | Completed: Unified Corridor Investment Study (UCS), past lawsuits, and Transit Corridor Alternatives Analysis (TCAA) | Completed UCS, TCAA and lawsuit | 2018-2019 | $1,888,235 | | | | | | $1,888,235 | Previously $1,906,983. Reduced based on FY21/22 audited actuals. |

| 5 | 2017 Storm Damage Repair & Cleanup | Repair and cleanup of damage resulting from the 2017 winter storms including one washout, minor slides and various downed or compromised trees. | Spring 2020-2022 | $1,678,868 | | | | | | $1,678,868 | Previously $1,398,144. Additional expenses billed to FEMA for prior years, not yet reimbursed by FEMA. |

| 5e | FEMA reimbursement for storm damage repairs | This is an estimate. Final reconciliation of storm damage costs paid by Measure D and FEMA reimbursements still pending. | | (-$493,278) | | | | | | | Note: this is an estimate. Difference from Storm Damage Repairs (line 5) represents additional Rail Preservation expenditures (line 1) that were later billed to FEMA. Additional $4.7M has been requested to repay Measure D and RSTPX short-term loan. Funds shown in FY23/24 have not yet been received. |

**Total Measure D Expenditures:**

| | $6,777,434 | $1,853,016 | $646,912 | $2,010,000 | $3,814,000 | $2,700,000 | $1,710,000 | $19,511,364 |

1. Funds may be shifted between years based on actual expenditures/use rates when sufficient cash capacity exists.
2. Actuals and carryover to be adjusted based on audited actuals. Shown here are preliminary estimates.
## Measure D: 5-Year Program of Projects (FY23/24-FY27/28)

**Proposed: Fall 2023**


### Category: Neighborhood Projects: San Lorenzo Valley (SLV)/Highway 9 Corridor ($333,333/year; $10 million over 30 years)

<table>
<thead>
<tr>
<th>Name/Road/Limits</th>
<th>Description</th>
<th>Schedule</th>
<th>FY22/23 Estimated Actuals</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total Measure D</th>
<th>Proposed Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. San Lorenzo Valley (SLV) Safe Routes To Schools -Preconstruction &amp; grant match</td>
<td>59% for SLV Schools Complex Circulation and Access Study and funding designated for potential match of future grant opportunities.</td>
<td>Schools Access Study 2021-2023.</td>
<td>$13,897</td>
<td>$95,000</td>
<td>$0</td>
<td>$0</td>
<td>$1,001,010</td>
<td>$1,000,000</td>
<td>No change to total. Prior updated to reflect estimated FY22/23 and audited FY21/22 actuals. Shift $901K to FY26/27 to align with construction year of Caltrans SHOPP project.</td>
<td></td>
</tr>
<tr>
<td>2. Preliminary scope and engineering documents for near term projects</td>
<td>Develop engineers estimates, prelim. designs, initial screening and implementation documents needed to secure funds for priority projects, may include engineering needed to integrate complete streets components into SHOPP and local projects. Includes $180K to Caltrans for complete streets Project Initiation Document (PID) for the corridor.</td>
<td>Ongoing, Complete Streets PID complete 2022.</td>
<td>$0</td>
<td>$180,000</td>
<td>$60,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$240,000</td>
<td>No change to total. Funds not spent in FY22/23 shifted to FY23/24.</td>
</tr>
<tr>
<td>3. SLV/99 Corridor technical assistance, oversight, and community outreach</td>
<td>Includes legal, engineering review, grant preparation, funding agreements, RTC staff coordination with Caltrans, County, schools, and other stakeholders, public outreach, other planning activities.</td>
<td>Ongoing</td>
<td>$46,505</td>
<td>$80,689</td>
<td>$39,311</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$120,000</td>
<td>No change to total. Prior updated to reflect estimated FY22/23 and FY21/22 audited actuals. Funds not spent shifted to FY23/24.</td>
</tr>
<tr>
<td>4. Boulder Creek Complete Streets</td>
<td>Grant match for complete streets improvements in Boulder Creek, including sidewalks, enhanced crosswalks, curb extensions, pedestrian refuge islands, and other safety and traffic calming features.</td>
<td>Begin pre-construction Summer 2023</td>
<td>$0</td>
<td>$0</td>
<td>$350,000</td>
<td>$390,000</td>
<td>$400,000</td>
<td>$1,260,000</td>
<td>$0</td>
<td>$2,400,000</td>
</tr>
</tbody>
</table>

### Completed Projects

<table>
<thead>
<tr>
<th>Name/Road/Limits</th>
<th>Description</th>
<th>Schedule</th>
<th>Estimated 5-Year Measure D Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Hwy 9 Pedestrian Crosswalks and Enhancements</td>
<td>Stripe new crosswalks and add RRRBs, ladder striping, etc to several existing crosswalks</td>
<td>Completed Spring 2021</td>
<td>$62,402 $343,064 $449,311 $390,000 $400,000 $2,161,010 $3,835,385</td>
</tr>
<tr>
<td>6. Hwy 9 SLV Complete Streets Corridor Plan</td>
<td>Community-based comprehensive corridor plan, identifying priority transportation projects.</td>
<td>Completed 6/19</td>
<td>$62,402 $343,064 $449,311 $390,000 $400,000 $2,161,010 $3,835,385</td>
</tr>
<tr>
<td>7. Farmer St. Road Repair (alternate ped/bike route to Hwy 9)</td>
<td>Resurfacing Farmer Street, a pedestrian bypass to access SLV Schools Campus</td>
<td>Completed Fall 2019</td>
<td>$62,402 $343,064 $449,311 $390,000 $400,000 $2,161,010 $3,835,385</td>
</tr>
</tbody>
</table>

1. Funds may be shifted between years based on actual expenditures/use rates when sufficient cash capacity exists.
2. Prior Year actuals and carryover to current fiscal year to be adjusted based on audited actuals. Shown here are preliminary estimates.
### Measure D: 5-Year Program of Projects (FY23/24-FY27/28)

**Proposed Fall 2023**  
*Previously updated 8/16/19, 8/20/20, 10/7/21, 11/3/22.*

**Category:** Highway 17 Wildlife Corridor ($5 million over 30 years)

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Schedule</th>
<th>Prior Years</th>
<th>FY22/23*</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Future Debt Service**</th>
<th>Total Measure D</th>
<th>Proposed Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway 17 Wildlife Crossing near Laurel Curve: Construction**</td>
<td>2021-2023</td>
<td>$0</td>
<td>$2,580,469</td>
<td>$1,470,531</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$4,051,000</td>
<td>Shift funds not spent FY22/23 to FY23/24. Project expected to be closed out by end of 2023. No change to total.</td>
</tr>
<tr>
<td>Highway 17 Wildlife Crossing near Laurel Curve: Construction Financing</td>
<td>NA</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Debt Service payments $166,667/year</td>
<td>$957,078</td>
<td>Update based on timing of expenditures.</td>
</tr>
<tr>
<td>Highway 17 Wildlife Crossing near Laurel Curve: Oversight and public outreach</td>
<td>FY19-20-FY23/24</td>
<td>$5,121</td>
<td>$3,869</td>
<td>$5,002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$13,990</td>
<td>Shift some unspent funds from FY22/23 to FY23/24 and reduce total. Previously $15k</td>
</tr>
</tbody>
</table>

**Estimated Annual Measure D Expenditures**

<table>
<thead>
<tr>
<th>Description</th>
<th>FY22/23*</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total Measure D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interprogram loan from Measure D - Highway Corridors</td>
<td>$0</td>
<td>$1,525,724</td>
<td>$1,308,864</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>$5,121</td>
<td>$2,584,338</td>
<td>$1,475,531</td>
<td>$166,667</td>
<td>$166,667</td>
<td>$166,667</td>
<td>$166,667</td>
</tr>
</tbody>
</table>

*Estimated expenditures, to be updated based on audited actuals.

**Since the full $5M committed in the Measure D Expenditure Plan for this project will not be available until end of the 30 year measure, consistent with the Measure D Strategic Implementation Plan, the RTC authorized loans from the Highway Corridors investment category. Land Trust committed $3M for construction costs.

***Pre-construction and support costs funded through Caltrans SHOPP. Actual cost and financing will depend on final construction costs and timing.*
On November 8, 2016 67.78% of Santa Cruz County voters approved Measure D, a 1/2 cent sales tax measure to improve, operate and maintain Santa Cruz County’s transportation network.

Projects will provide safer routes to schools for local students; maintain mobility and independence for seniors and those with disabilities; invest in bicycle and pedestrian pathways and bridges on an unprecedented scale; repave roadways, repair potholes and improve safety on local streets; ease congestion on major roadways; and invest in transportation projects that reduce the pollution that causes global warming.

**Measure D**

**Optimizes funding:**
- By leveraging local dollars, our cities, the County, the RTC, METRO and Liftline will be able to compete for federal and state grants that require matching funds.

**Committed to voters:**
- Members of the public are encouraged to review and comment on annual reports, including 5-year plans identifying specific projects prepared by each agency.
- Annual audits of the expenditure of all funds generated by the measure are conducted by an independent auditor and publicly available.
- A Measure D Independent Oversight Committee reviews the independent annual audits and issues a report regarding compliance with the Expenditure Plan.
- Local jurisdictions are required to use the new funds to supplement, not replace, existing revenues used for transportation. Annual audits will include analysis of this Maintenance of Effort.

**Summary of Transportation Projects**

<table>
<thead>
<tr>
<th>Estimated 30-year funding allocations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Projects - 30%</td>
</tr>
<tr>
<td>Local Funds for Cities and County: Direct percentage for local roadway pavement repair and operational improvements, school and neighborhood traffic safety projects, bicycle and pedestrian projects</td>
</tr>
<tr>
<td>San Lorenzo Valley Hwy 9 Corridor Improvements: $10 million to improve safety for SLV pedestrians, bicyclists, and motorists</td>
</tr>
<tr>
<td>Highway 17 Wildlife Crossing: $5 million to help build a wildlife crossing under Highway 17 at Laurel Curve</td>
</tr>
<tr>
<td>Highway Corridors - 25%</td>
</tr>
<tr>
<td>Highway 1 Corridor: Extend merge lanes that separate entering and exiting traffic from through lanes to improve traffic flow and safety at the 41st Ave-Soquel Dr, Bay/Porter Park, State Park-Park, and State Park-Rio del Mar-Freedom Boulevard exits</td>
</tr>
<tr>
<td>Bicycle and pedestrian over-crossings: Car-free highway overcrossings at Chanticleer Ave, Mar Vista Dr, and railroad bridges over Highway 1 In Aptos</td>
</tr>
<tr>
<td>Traveler Information and Transportation Demand Management: Cruz511 traveler information, Carpool/Vanpool Programs</td>
</tr>
<tr>
<td>Highway Safety and Congestion Reduction Programs: Freeway Service Patrol and Safe on 17 Enforcement</td>
</tr>
<tr>
<td>Transit for Seniors and People with Disabilities Direct Allocation to Service Providers - 20%</td>
</tr>
<tr>
<td>Santa Cruz METRO (16%): $80 million to help stabilize fixed-route bus and ParaCruz service levels</td>
</tr>
<tr>
<td>Community Bridges Lift Line Paratransit Service (4%): $20 million to increase Lifeline’s ability to provide service by 30%</td>
</tr>
<tr>
<td>Active Transportation - 17%</td>
</tr>
<tr>
<td>Monterey Bay Sanctuary Scenic Trail (Coastal Rail Trail): Bike and pedestrian trail construction; maintenance, management and drainage of rail and trail corridor; install conduit for internet and electrical services</td>
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<td>Rail Corridor - 8%</td>
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<tr>
<td>Infrastructure Preservation and Analysis of Options: Analysis (including environmental and economic analysis) of both rail transit and non-rail options for the corridor; rail line maintenance and repairs</td>
</tr>
</tbody>
</table>

For more information on the implementation of Measure D, visit: sccrtc.org/move
831-460-3200
Coastal Rail Trail
Monterey Bay Sanctuary Scenic Trail Network

Project Description
The Monterey Bay Sanctuary Scenic Trail Network (MBSST) is a Regional Transportation Commission (RTC) proposed 50-mile bicycle and pedestrian trail project. The spine of the trail network will be the 32-mile Coastal Rail Trail from Davenport to Watsonville, to be built within or adjacent to the RTC-owned rail right-of-way. The remaining miles will be connecting paths, sidewalks, bike lanes, other roadway improvements or unpaved coastal spur trails.

The Coastal Rail Trail promises to be a highly valuable asset to the Santa Cruz County community for transportation, recreation, education, health, eco-tourism, coastal access, economic vitality, and other visitor-serving purposes. It will connect to neighborhoods, schools, parks, transit hubs, commercial and other activity centers. Approximately 18 miles of projects are currently under development or constructed, and 16.5 miles are fully funded. Project delivery includes completing design, engineering and environmental permitting, as well as receiving public input.

Approximately $135M to date has been secured from state/federal grants and private donations. Additionally, Measure D, the voter-approved transportation sales tax, will allocate approximately $175M for the trail over 30 years.

Following extensive public outreach, the RTC prepared and adopted an award-winning Master Plan. All local jurisdictions through which the trail will traverse have also adopted the Master Plan as a guide for implementation. The RTC and its partner agencies continue to develop and construct the Coastal Rail Trail.

Project Highlights
- Half the county population, 92 parks and 44 schools are located within 1 mile of the rail line.
- Approximately 18 miles of trail are either under development or constructed. Construction of the first project began in 2019.
- To date, approximately $135M has been secured from state/federal grants and private donations, and $52M in Measure D Regional-Active Transportation and Measure D- Neighborhood funds.
- Measure D will allocate approximately $175M for the trail over 30 years.
- 13 miles of projects are advancing from the planning to project development phase as part of the Electric Passenger Rail Transit project.
Coastal Rail Trail
Monterey Bay Sanctuary Scenic Trail Network

Status of Funded Rail Trail Projects

North Coast: Davenport to Wilder Ranch (Segment 5)
- **Project Description:** 7.5 miles along the north coast of Santa Cruz County adjacent to Wilder Ranch and Cotoni Dairies State Parks Trail. Phase I: Wilder Ranch to Panther/Yellowbank Beach. Phase II: Panther/Yellowbank Beach to Davenport including new parking lots in Davenport and at Panther/Yellowbank Beach, improved access to parking lot at Bonny Doon Beach, and a pedestrian crossing in Davenport; Phase III: construction of a pedestrian overpass over Hwy 1 connecting the Coastal Rail Trail on the coastal side to Cotoni Coast Dairies National Monument on the inland side of Hwy 1.
- **Project Status:** Preconstruction activities for Phases I & II are scheduled to be completed in 2023. Construction is scheduled for 2024. Phase III is scheduled to complete environmental review in 2024, design in 2025, and begin construction in 2027. The project is fully funded.

City of Santa Cruz: Natural Bridges Drive to Pacific Avenue/Santa Cruz Wharf (Segment 7)
- **Project Description:** 2.1 miles of the Coastal Rail Trail through neighborhoods on the Westside of the City of Santa Cruz and providing access to businesses and activity centers.
- **Project Status:** Phase I (Natural Bridges Drive to California Avenue) was completed in December 2020. Phase II (California Avenue to Pacific Avenue at the Wharf) began construction in July 2022 and is scheduled to be completed in winter 2023.

City of Santa Cruz/County of Santa Cruz: Boardwalk to 17th Avenue (Segments 8 & 9)
- **Project Description:** 2.2 miles of Coastal Rail Trail.
- **Project Status:** Phase I (widening of the San Lorenzo River Walkway at the Boardwalk) was completed in May 2019. Phase II preliminary design and engineering were completed in 2023. Final design is scheduled for completion in 2024 and the project is scheduled to go to construction in 2026. The project is fully funded.

County of Santa Cruz/County of Capitola: 17th Avenue to State Park Drive (Segments 10 & 11)
- **Project Description:** 4.7 miles of Coastal Rail Trail. Both trail with rail and interim trail on railbed will be considered.
- **Project Status:** Environmental is scheduled to be completed in 2024. Final design is scheduled to be completed in 2024. Construction is scheduled for 2026. The project is fully funded.

County of Santa Cruz: State Park Drive to Rio Del Mar Boulevard (Segment 12)
- **Project Description:** 1.25 miles of Coastal Rail Trail. Both trail with rail and interim trail on railbed will be considered. This section is being advanced as part of the Highway 1 Auxiliary Lanes and Bus-on-Shoulder project from State Park Drive to Freedom Boulevard.
- **Project Status:** Environmental, right-of-way, and design work are scheduled to be completed in 2023, and pending funding availability, could go to construction in 2025.

City of Watsonville: Lee Road to Walker Street (Segment 18)
- **Project Description:** 1.2 miles of Coastal Rail Trail.
- **Project Status:** Phase I (Ohlone Parkway to the Watsonville Slough Trail Network trailhead) was completed in summer 2021. Phase II & III of Segment 18 are combined with development of the RTC’s Electric Passenger Rail Transit Project.
Project Description

The project will construct northbound and southbound auxiliary lanes and bus-on-shoulder improvements between the 41st Avenue and Soquel Avenue/Drive interchanges, and construct a new bicycle and pedestrian overcrossing at Chanticleer Avenue. Historically, this section of Highway 1 has been the busiest in the county, serving over 100,000 vehicles a day, providing access to the primary regional commercial/retail activity centers on 41st Avenue and regional medical facilities located on Soquel Drive. The auxiliary lanes will connect the on-ramps with the next off-ramp, thereby extending the weaving and merging distance between the ramps, improving traffic operations, and reducing cut-through traffic diverting to local streets and neighborhoods.

The bicycle/pedestrian overcrossing at Chanticleer Avenue provides an alternative route for bicyclists and pedestrians currently using the Soquel or 41st interchanges to cross over Highway 1. The overcrossing will be lighted, 12- to 14-feet wide, and will incorporate aesthetic treatments consistent with the visual character of the corridor and the adjacent community.

Unified Corridor Investment Study

Recognizing the need to address both existing transportation problems and future needs of Santa Cruz County, a Unified Corridor Investment Study (UCS) was undertaken to consider transportation options between Santa Cruz and Watsonville along three of the most important north to south transportation routes in the County, including the Highway 1 corridor. The study provides a rigorous analysis of how various groups of projects or scenarios advance the transportation goals of Santa Cruz County.

Project Highlights

- Improves traffic operations on Highway 1
- Improves bicycle and pedestrian connectivity to regional destinations and transit by providing a dedicated crossing for active transportation users at Chanticleer Avenue
- Adds infrastructure for buses to travel in the auxiliary lanes between interchanges and on the outside shoulder through interchanges
- Measure D funds are being used to accelerate the project development process
- Construction expected to begin in early 2023

Project Delivery Strategy

The RTC is leading the delivery of this project. Measure D-Highway Corridor funds and other RTC discretionary funds were used to complete the work necessary to ready the project for construction, and as a match for SB1 construction grants. This project has environmental clearance and has received funds from Cycle 2 of the SB1 Solutions to Congested Corridors Program and Local Partnership Program competitive funds.
Highway Corridor:
Highway 1 Aux Lanes, BOS (41st Avenue to Soquel Drive), and Chanticleer Bicycle/Pedestrian Overcrossing

Project Funding

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*Includes STIP, SB1 (SCCP and LPP programs) and HIP funds.

Project Status/Schedule

The Unified Corridor Investment Study was completed in 2019. The Environmental Impact Report was certified in 2019. The final design phase is complete. The project is expected to go to construction in early 2023 and complete construction in 2024.
Project Description
The project will construct northbound and southbound auxiliary lanes and bus-on-shoulder improvements between the Bay Avenue/Porter Street and State Park Drive Interchanges and replace the existing Capitola Avenue local roadway overcrossing. This section of Highway 1 is one of the busiest in the county, providing access to the City of Capitola, Soquel and Aptos villages, and Cabrillo College. The auxiliary lanes will connect the on-ramps with the next off-ramp, thereby extending the weaving and merging distance between the ramps, improving traffic operations, and reducing cut-through traffic diverting to local streets and neighborhoods.

The new Capitola Avenue overcrossing will include enhanced bicycle and pedestrian facilities to improve connectivity for bicyclists and pedestrians between Soquel Drive to the north and the future Coastal Rail Trail to the south. The overcrossing, soundwalls, and retaining walls will incorporate aesthetic treatments consistent with the visual character of the corridor and the adjacent community.

The project also includes a new bicycle and pedestrian overcrossing (POC) at Mar Vista Drive to provide a safe link between schools, the beach, residential neighborhoods and retail centers on each side of Highway 1. This POC was one of three bicycle and pedestrian overcrossings identified in the Highway 1 Corridor Investment

Project Highlights
- Improves traffic and safety operations on Highway 1
- Reduces cut-through traffic diverting to local streets and neighborhoods by adding auxiliary lanes between Bay Avenue/Porter Street and State Park Drive
- Improves bicycle and pedestrian connectivity to regional destinations and transit by providing enhanced bicycle and pedestrian facilities for active transportation users at Capitola Avenue
- Adds infrastructure for buses to travel in the auxiliary lanes between interchanges and on the outside shoulder through interchanges
- Improves bicycle and pedestrian connectivity to regional destinations and transit by providing a dedicated crossing for active transportation users
- Connects neighborhoods, schools, parks/beaches and commercial centers

Project Delivery Strategy
The RTC is leading the delivery of this project. Measure D-Highway Corridor funds and other RTC discretionary funds are being used to complete the work necessary to ready the project for construction. RTC was successful in securing Cycle 2 SB1 Solutions to Congested Corridors and Local Partnership Program competitive funds in 2020, which fully funds construction of this project.
Highway Corridor: Highway 1 Aux Lanes, BOS (Bay Avenue/Porter Street to State Park Drive), and Mar Vista Bicycle/Pedestrian Overcrossing

Project Funding

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*Includes STIP and SB1 (SCCP and LPP programs) funds.

Project Status/Schedule

Environmental review was completed in 2021. Final design was completed in 2022. The project is expected to go to construction in 2023.
Highway Corridors: Highway 1 Aux Lanes and BOS (State Park Drive to Freedom Boulevard), and Coastal Rail Trail Segment 12

Project Description
The project will construct multimodal improvements to enhance transit frequency and on-time performance, and safety and mobility for vehicles, transit, bicycles, and pedestrians. The project includes northbound and southbound auxiliary lanes and bus-on-shoulder improvements between the State Park Drive and Freedom Boulevard interchanges, replaces the two existing railroad bridges between the State Park Drive and Rio del Mar interchanges, and widens the Aptos Creek bridge. This section of Highway 1 provides access to Aptos Village, Rio del Mar, Aptos High School, and Aptos Hills/Coralitos. The auxiliary lanes will connect the on-ramps with the next off-ramp, thereby extending the weaving and merging distance between the ramps, improving traffic operations, and reducing cut-through traffic diverting to local streets and neighborhoods.

The existing railroad bridges will be replaced with longer span bridges to accommodate the addition of auxiliary lanes on Highway 1. The Highway 1 bridge over Aptos Creek and Spreckles Drive will be widened as part of the project. The new bridges, soundwalls, and retaining walls will incorporate aesthetic treatments consistent with the visual character of the corridor and the adjacent community.

This project also includes construction of Segment 12 of the Coastal Rail Trail, a bicycle and pedestrian trail along an approximately 1.25-mile segment of the Santa Cruz Branch Rail Line right-of-way from State Park Drive to Rio Del Mar Boulevard.

Project Highlights
- Improves traffic and safety operations on Highway 1
- Adds infrastructure for buses to travel in the auxiliary lanes between interchanges and on the outside shoulder through interchanges
- Reduces cut-through traffic diverting to local streets and neighborhoods by adding auxiliary lanes between State Park Drive and Freedom Boulevard
- Provides a dedicated bicycle and pedestrian trail, improving safety and connectivity to schools, commercial centers, and transit facilities
- Improves active transportation connectivity by constructing 4 dedicated bicycle/pedestrian overcrossings

Project Delivery Strategy
The RTC is leading the delivery of this project. Measure D-Highway Corridor and Active Transportation funds and other RTC discretionary funds will be used to complete preconstruction work and as a match for future grants. The project will evaluate a Trail Next to the Railroad Track Alignment ("Ultimate Trail Configuration") and a Trail on the Railroad Track Alignment ("Interim Trail") as an optional first phase. RTC is targeting Cycle 3 of the SBI Solutions to Congested Corridors Program, Trade Corridor Enhancement Program, and Local Partnership Program funds.
Project Funding

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<th>Estimated Total Cost</th>
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*Mega Grant

Project Status/Schedule

The environmental phase of this project is expected to be completed in 2023. The project is scheduled to be construction-ready in 2025, pending availability of funds for construction.
Project Description
The 32-mile Santa Cruz Branch Rail Line is a continuous transportation corridor offering tremendous potential for new mobility options for residents and visitors alike.

In October 2012, the RTC completed acquisition of this 135-year-old transportation resource bringing it into public ownership with the objective of increasing transportation options and opportunities. The rail corridor spans the county from Davenport to Watsonville, runs parallel to the Highway 1 corridor, and connects to regional and state rail lines.

This important transportation corridor is within one mile of more than 80 parks, 25 schools, approximately half of the county's population, and provides access to the Monterey Bay National Marine Sanctuary at several key locations.

The Corridor is being used for:
- Bicycle & pedestrian path (Monterey Bay Sanctuary Scenic Trail Network (MBSST)/ Coastal Rail Trail)
- Freight rail service
- Seasonal and recreational passenger rail service

The RTC is also evaluating potential uses:
- Public transit

Rail Projects
- **Rail Structure Upgrades & Repairs** - Using a combination of Measure D sales tax and state funds, the RTC has reconstructed and made repairs to several bridges and other structures. The RTC also repaired damages caused by the storms of 2017 and 2022/2023, and is continually maintaining sections of the corridor.

- **Preventative Maintenance Program** - The RTC is responsible for maintaining the portion of the ROW outside of the St. Paul and Pacific Railroad easement. The RTC has a Preventative Maintenance Program that includes ongoing inspections and repairs to the corridor, vegetation and trash removal, and drainage maintenance. Items resulting from regularly recurring inspections and community inquiries are being tracked using ArcGIS, a mapping and analytics platform.

- **Freight Rail Service** - Freight rail service is currently provided by St. Paul & Pacific Railroad to a number of companies for commodities such as construction materials, agricultural products, beverages, and biofuels. Freight rail helps to reduce traffic and greenhouse gases as one rail carload generally removes four truck trips from roadways.

- **Transit Options** - In December 2022, the RTC authorized and programmed funds for preliminary engineering and environmental documentation for Zero Emission Passenger Rail & Trail between Pajaro Junction and Santa Cruz. CalSTA awarded the project a $3.45M Transit and Intercity Rail Capital Program grant in April 2023 to fully fund the Concept Report to build from the Transit Corridor Alternatives Analysis and clearly define the project for further evaluation. Future project phases will include preliminary engineering, environmental analyses, and environmental documentation.

- **Recreational Service** - Big Trees Railroad currently operates seasonal and special event recreational rail service on the Santa Cruz Branch Rail Line.
**Program Description**

The Santa Cruz County Regional Transportation Commission (RTC) acquired the Santa Cruz Branch Line (SCBRL) in 2012 for $14.2M to expand transportation options and alternatives to driving, and plan for the future mobility needs of Santa Cruz County residents and visitors. The 135-year-old rail corridor spans 32-miles from Davenport to Watsonville and connects to regional and state rail lines.

The short-line railroad operator, St. Paul & Pacific Railroad, currently provides freight rail service to a number of local construction, agricultural, beverage, and biofuel companies through an Administration, Coordination, and License Agreement with the RTC. Freight rail service helps to reduce traffic and greenhouse gases as one rail car load generally removes four truck trips from roadways and freeways. Big Trees & Pacific Railroad currently operates seasonal and special event recreational rail service on a portion of the Santa Cruz Branch Rail Line.

The 32-mile Santa Cruz Branch Rail line has 37 bridges, 100 public and private grade crossings, and approximately 92 drainage cross culverts. The infrastructure preservation needs of the branch line include bridge repairs or replacements, drainage improvements such as repairs or replacements to cross culverts, coastal erosion repair, slope stabilization, retaining walls, grade crossing improvements and repairs, storm-related repairs, and railbed repairs. Additionally, the RTC uses Measure D funds to conduct periodic inspections of bridges, culverts, and retaining walls to identify needed repairs and to comply with Federal Railroad Administration (FRA) requirements.

In 2017 and again in 2022/2023, severe winter storms damaged the line at several locations. The RTC has completed several storm damage repairs and debris removal projects, and has programmed repairs for the remaining damaged sites.

**Program Highlights**

Rail Preservation Efforts:
- Inspections and repairs of railroad bridges on an ongoing basis
- Storm damage repairs and clean up resulting from the 2017 and 2022/2023 winter storms, the majority of which will be funded by state and federal disaster assistance relief funds
- Bridge evaluation repairs including the Pajaro River Bridge Rehabilitation
- Capital Maintenance efforts to comply with FRA requirements, including repair and rehabilitation of railroad track infrastructure, grade crossings, signals, and signage as needed
- Railbed repairs including repairs to coastal erosion near Manresa State Beach

**Total Programming**

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*Includes RSTPX, short line railroad improvement program, and FEMA funds.
Neighborhood Projects:
Highway 9 San Lorenzo Valley Corridor Improvements

Project Description
Highway 9 serves as the “Main Street” for the San Lorenzo Valley (SLV) towns of Felton, Ben Lomond, Brookdale, and Boulder Creek, and is an interregional arterial connecting Silicon Valley and Santa Cruz. It is the backbone for the movement of people and goods through the SLV and is the only direct route linking the four SLV towns.

There are significant transportation concerns throughout the SLV. This mountainous area has high collision rates, narrow curving roadways frequently impacted by steep terrain, significant gaps in bicycle and pedestrian facilities, a lack of walkways to many of the bus stops, traffic backups at a number of choke points, as well as pavement, drainage, and other assets in disrepair.

Measure D designates $10 million for transportation projects in the Highway 9 corridor that will improve travel for residents of the SLV, beyond basic maintenance and safety projects led by Caltrans. A first step in identifying priority projects was the development of a comprehensive Highway 9 San Lorenzo Valley Complete Streets Corridor Plan (SLV Plan). Building on past public input and planning activities, the SLV Plan identifies, evaluates, and prioritizes transportation projects on Highway 9 and connecting county roads through the SLV that can be implemented in the short- and mid-term to address challenges along the corridor. The plan focuses on safety for pedestrians, bicyclists, and motorists; multi-modal access to schools, businesses, and bus stops; traffic operations, pavement conditions, drainage, and other needs in this travel corridor.

The SLV Plan was accepted by the RTC in 2019, and RTC staff is now focused on delivering priority projects in partnership with Caltrans, County DPW, SLVUSD, and METRO.

Total Programming

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*Includes HSIP Grant (Fed), Caltrans Planning Grant, and Match (TDA, RTC Reserve Fund & RPA) funds.
Neighborhood Projects: Highway 9 San Lorenzo Valley Corridor Improvements

Priority Projects
The SLV Plan identifies over 30 priority projects for the corridor, including the following:

- Pedestrian and bicycle paths to the SLV schools campus and modifications to improve traffic flow along the schools’ entrances
- Modifications to Felton, Brookdale, Ben Lomond, and Boulder Creek town centers to create safer pedestrian walking and crossing facilities, reduce speeding, and improve access to businesses
- Pedestrian safety and visibility improvements; and shoulder widening for bicycles

The plan is being used to secure grants, leverage state funds (ShOPPP), and facilitate subsequent design, environmental review, and construction of these and other priority projects.

Project Delivery Strategy
The RTC, Caltrans, County of Santa Cruz, SLVUSD, and METRO are working together to deliver components of the various complete streets projects defined by the community in the SLV Plan. Caltrans constructed the crosswalk improvements that were funded by the Measure D-leveraged Highway Safety Improvement Program (HSIP) funds in 2020.

The RTC is collaborating on Caltrans funded safety and repaving projects. Both of these projects are currently in the Project Approval & Environmental Documentation (PA&ED) phase, with construction expected to be complete in 2027 and 2029, respectively. These projects incorporate many complete streets and other safety improvements as identified by the community in the SLV Plan for Felton and the SLV Schools. These improvements include sidewalks, bike lanes, crosswalk safety improvements, center turn lanes, extended turn pockets, and pedestrian refuge islands, as well as other safety elements.

The State Route 9 Complete Streets Project Initiation Document (PID) was funded by Measure D and covers Caltrans required scoping, estimating, and phasing assessments for the remaining projects in the SLV Plan. Completed in 2022, the RTC is now using Measure D funds to leverage state and federal grants to fund construction of additional improvements.

The RTC secured $1.5 million in federal funding for Boulder Creek Complete Streets Improvements, as defined in the SLV Plan, and is beginning preliminary design and environmental review. The RTC also worked with Caltrans and the SLV School District in 2023 to complete the SLV Schools Access Study, a preliminary engineering study to improve circulation to and past the elementary, middle, and high schools for all modes of transportation on Highway 9 north of Felton. This study was funded by a combination of Measure D-leveraged grants and funding from the SLV Unified School District. The RTC is currently seeking grant funding for the final design, environmental review, and construction phases.
Boulder Creek Complete Streets Improvements

Project Description
Highway 9 serves as the “Main Street” for the San Lorenzo Valley (SLV) towns of Felton, Ben Lomond, Brookdale, and Boulder Creek, and is an interregional arterial connecting Silicon Valley and Santa Cruz. It is the backbone for the movement of people and goods through the SLV and is the only direct route linking the four SLV towns. There are significant transportation concerns throughout the SLV. This mountainous area has high collision rates, narrow curving roadways frequently impacted by steep terrain, significant gaps in bicycle and pedestrian facilities, a lack of walkways to many of the bus stops, traffic backups at a number of choke points, as well as pavement, drainage, and other assets in disrepair.

The Highway 9 Boulder Creek Complete Streets project proposes to construct pedestrian, bicycle, and transit improvements on Highway 9 and Highway 236 in the unincorporated County of Santa Cruz area known as Boulder Creek, California. Includes improving existing sidewalks, extending the sidewalk network through the commercial area, curb extensions/bulb-outs at crosswalks, bike lanes, transit stop improvements, center median islands, and other traffic calming measures.

Project Highlights
- Filling gaps in the sidewalk network, and extending the sidewalk network through the commercial area
- New curb extensions/bulb-outs at crosswalks, center median islands, and other traffic calming measures
- Bike lanes/shoulders
- Transit stop improvements
- Measure D funds are being used to accelerate the project development process
- Construction expected to begin in 2027

Project Delivery Strategy
The RTC is the sponsor and Caltrans is leading the delivery of this project. Measure D-Highway 9/SLV Complete Streets funds and other RTC discretionary funds are proposed as a local match for competitive state and federal grant applications. This project completed the Project Initiation Document (PID) phase in 2022 and will begin the environmental phase upon award of competitive grant program funds.
Boulder Creek
Complete Streets Improvements

Project Funding

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*Other Funds: Federal funds will be used to leverage Measure D sales tax, State Highway Operation and Protection Program (SHOPP), Boulder Creek Business Association, County, safety and active transportation grants.

Project Status/Schedule

The Project Initiation Document (PID) was completed in 2022. The environmental phase is scheduled to begin in early 2023, with construction scheduled for 2027 pending availability of funds.

Existing Facilities

- Elementary school
- Public library
- Transit stop
- Community park

Proposed Improvements

- New pedestrian lighting or signage
- New vehicle safety signage
- New stop signs
- New or improved sidewalk
- New or improved crosswalk
- Curb extensions
- New bicycle facility
- New center median island
Neighborhood Projects: Highway 17 Wildlife Crossing

Project Description
Caltrans, the Santa Cruz County Regional Transportation Commission, the Land Trust of Santa Cruz County, and resource agencies partnered to construct a wildlife undercrossing on Highway 17 near Laurel Road in Santa Cruz County.

The Santa Cruz Mountains are home to a variety of wildlife species including endangered and threatened species. The area of Highway 17 at Laurel Road has been identified as a critical linkage for two core wildlife habitat areas on either side of the highway.

Highway 17 is the major freeway connection between the San Francisco Bay Area and the Monterey Bay Region through the Santa Cruz Mountains. More than 65,000 vehicles travel the highway each day (24 million vehicles a year). The dense traffic, concrete median barriers, and lack of culvert undercrossings or bridges make Highway 17 a major barrier for wildlife moving through the Santa Cruz Mountains. Many wildlife (including mountain lions, bobcats, and deer) have been hit trying to cross Highway 17 near Laurel Road.

Highway 17 at Laurel Road is built over a large natural drainage, an ideal place to install a bridge to allow animals to travel beneath the highway. At the project location, 460 acres of mostly undeveloped land on both sides of the highway have been preserved in a conservation easement by the Land Trust of Santa Cruz County.

Project Highlights
▶ Provides safe passage for wildlife to cross under Highway 17 near Laurel Road
▶ Bridges two core wildlife habitat areas on each side of Highway 17
▶ Traffic volumes of over 60,000 vehicles per day, combined with a concrete median barrier and a lack of adequate culvert or bridge undercrossings contribute to animal-vehicle collisions along Highway 17.
▶ Collaborative project between the Regional Transportation Commission, Land Trust of Santa Cruz County, and Caltrans

Project Delivery Strategy
Caltrans lead the project delivery. The pre-construction phases were funded with Caltrans State Highway Operation and Protection Program funds. The RTC used Measure D funds to leverage additional SHOPP and Land Trust funds for construction. The RTC used an interprogram loan of Measure D Highway Corridor funds to expedite construction of the Wildlife Crossing.
Neighborhood Projects: Highway 17 Wildlife Crossing

Total Programming

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*Includes loan payments (principal and interest)
**Includes Land Trust and SHOOPP funds.

Project Status/Schedule

Construction started in February 2022. Most of the construction was completed at the end of 2022, with final striping 2023.

Funding Partners

Santa Cruz County Regional Transportation Commission | (831) 460-3200 | www.sccrtc.org
TO: Elderly and Disabled Transportation Advisory Committees

FROM: Rachel Moriconi, Transportation Planner

RE: Measure D: Community Bridges/Lift Line Five-Year Plan

RECOMMENDATIONS

Staff recommends that the Elderly and Disabled Transportation Advisory Committee (E&D TAC) review and recommend that the Regional Transportation Commission (RTC) approve Community Bridges Lift-Line’s proposed Five-Year Plan (Fiscal Years 2023/24 to 2027/28) for its direct allocation of Measure D: Transit for Seniors and People Living with Disabilities investment category funds (Attachment 1).

BACKGROUND

Measure D, the transportation ballot measure passed by more than a 2/3 majority of Santa Cruz County voters on November 8, 2016, provides funding for five categories of projects: neighborhood projects (30% of net measure revenues), highway corridors (25%), transportation for seniors and people with disabilities (20%), active transportation (17%), and preservation and analysis of the rail corridor (8%). The twenty percent (20%) of net Measure D revenues for the Transit for Seniors and People Living with Disabilities category are suballocated, with four percent (4%) of net Measure D revenues are allocated to the Consolidated Transportation Services Agency (CTSA) for Santa Cruz County for paratransit services and 16% of net Measure D revenues allocated to the Santa Cruz Metropolitan Transit District. Community Bridges-Lift Line serves as the CTSA for Santa Cruz County.

Each agency receiving Measure D revenues is required to annually develop, update, and hold a public hearing to adopt a five-year program of projects, identifying how they will deliver Measure D projects in the upcoming five years. After the close of each fiscal year, agencies must submit an annual report describing actual expenditures, progress made to improve the transportation system, how maintenance of effort requirements have been met to ensure Measure D revenues are supplementing (not supplanting) other revenues, and the degree that Measure D funds were used to secure additional funding from other sources (leveraging other funds). The 5-year plans are adjusted annually based on updated project priorities, schedule, cost, and revenue information, as well as information on any grants and other funds agencies are able to secure for the projects.

Community Bridges-Lift Line is the only agency receiving a direct allocation of Measure D fund that is not a public agency; as such, review and approval of Community Bridges Lift Line Measure D five-year plan is overseen by the Regional Transportation Commission (RTC) and included in the RTC’s public review process.
DISCUSSION

Including unspent balances from prior years, approximately $1.1 million per year in Measure D formula funds are expected to be available to Community Bridges-Lift Line for the five-year period ending in Fiscal Year 2027/28 (FY27/28). Community Bridges-Lift Line’s proposal for its formula share of Measure D revenues is attached (Attachments 1-2).

Lift Line proposed uses of Measure D revenues address priorities identified in the Unmet Needs List.

RTC staff recommends that the Elderly and Disabled Transportation Advisory Committee review and recommend that the RTC approve the Community Bridges-Lift Line 5-Year Program of Projects for FY23/24-27/28. The RTC board is scheduled to review Community Bridges-Lift Line Measure D five-year plan at its November 2023 meeting.

SUMMARY

Measure D requires recipient agencies to annually prepare and update a five-year program of projects, identifying how agencies plan to spend Measure D funds. Staff recommends that the Elderly and Disabled Transportation Advisory Committee (E&D TAC) review and provide input on the Community Bridges Lift-Line proposed Five-Year Plan for its formula share of Measure D revenues.

Attachments:
1. Community Bridges Lift Line Paratransit Service 5-year program of projects
2. Community Bridges Lift Line Major Projects

s:\measured\lsrandtransitallocations\2023plans\liftline\measd-5yr-sr.liftline-2023-sr.docx
## Measure D: 5-Year Program of Projects (FY 23/24-27/28)

**Agency:** Community Bridges - Lift Line  
**Category:** Transportation for E&D

### Estimated Annual Measure D Allocations

<table>
<thead>
<tr>
<th>Project Name/location</th>
<th>Description (include project purpose and complete streets components if applicable)</th>
<th>Total Measure D</th>
<th>Prior and 22/23 estimate</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver 1 (1 FTE)</td>
<td>Additional driver to provide expanded hours of paratransit service</td>
<td>$1,191,129</td>
<td>$824,546</td>
<td>$68,361</td>
<td>$70,754</td>
<td>$73,230</td>
<td>$75,793</td>
<td>$78,446</td>
<td>$366,584</td>
</tr>
<tr>
<td>Driver 2 (1 FTE)</td>
<td>Additional driver to provide expanded hours of paratransit service</td>
<td>$1,191,129</td>
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</tr>
<tr>
<td>Driver 3 (1 FTE)</td>
<td>Additional driver to provide expanded hours of paratransit service</td>
<td>$400,403</td>
<td>$68,000</td>
<td>$34,181</td>
<td>$70,754</td>
<td>$73,230</td>
<td>$75,793</td>
<td>$78,446</td>
<td>$332,403</td>
</tr>
<tr>
<td>Driver Trainer (1 FTE)</td>
<td>To support safety and service training for expanded paratransit operations</td>
<td>$637,964</td>
<td>$307,174</td>
<td>$61,686</td>
<td>$63,845</td>
<td>$66,080</td>
<td>$68,393</td>
<td>$70,786</td>
<td>$330,790</td>
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<tr>
<td>Executive Assistant/Dispatcher (1 FTE)</td>
<td>To support expanded paratransit services</td>
<td>$626,984</td>
<td>$296,798</td>
<td>$61,573</td>
<td>$63,728</td>
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<td>$70,657</td>
<td>$330,185</td>
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<tr>
<td>Vehicle Operating (see note below*)</td>
<td>Costs associated with operating the vehicles</td>
<td>$980,488</td>
<td>$   0</td>
<td>$182,843</td>
<td>$189,242</td>
<td>$195,866</td>
<td>$202,721</td>
<td>$209,816</td>
<td>$980,488</td>
</tr>
<tr>
<td>Outreach/Publicity</td>
<td>Materials and videos to promote paratransit ride availability</td>
<td>$257,366</td>
<td>$65,241</td>
<td>$30,078</td>
<td>$37,597</td>
<td>$39,477</td>
<td>$41,451</td>
<td>$43,523</td>
<td>$192,125</td>
</tr>
<tr>
<td>Consultants / Project Managers</td>
<td>Facility project management-architects, environ review, design</td>
<td>$323,653</td>
<td>$253,526</td>
<td>$14,026</td>
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</tr>
<tr>
<td>Indirect Overhead**</td>
<td>Indirect Costs on non Capital Expenditures</td>
<td>$506,447</td>
<td>$   0</td>
<td>$88,837</td>
<td>$99,056</td>
<td>$102,535</td>
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<tr>
<td>Operations Facility</td>
<td>Reserve for projected Acquisition, construction and/or renovation expenses</td>
<td>$4,627,020</td>
<td>$2,441,241</td>
<td>$720,606</td>
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</tr>
<tr>
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<td>$413,006</td>
<td>$173,006</td>
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### Amount of Measure D Funds Programmed (includes carryover)

<table>
<thead>
<tr>
<th>Project Name/location</th>
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### Estimated Annual Measure D Expenditures

<table>
<thead>
<tr>
<th>Estimated Annual Measure D Expenditures</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total</th>
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<td>$5,254,077</td>
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### Annual Interest Earnings on Measure D Revenues

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<tr>
<th>Annual Interest Earnings on Measure D Revenues</th>
<th>FY23/24</th>
<th>FY24/25</th>
<th>FY25/26</th>
<th>FY26/27</th>
<th>FY27/28</th>
<th>Total</th>
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<tr>
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<td>$504.32</td>
<td>$205.28</td>
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<td>Carry over to next fiscal year</td>
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<td>$173,822</td>
<td>$223,605</td>
<td>$277,071</td>
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</tbody>
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* Operating costs include driver support and vehicle operations such as vehicle maintenance and repair, fuel, vehicle insurance, communications expenses, as well as taxes and licenses related to paratransit services. It also includes a prorated allocation of costs such as general liability insurance, staff training and other indirect costs. Per a request from the Measure D Oversight Committee starting in FY 2022-2023 operating expenses will be categorized in the audit.

** Indirect costs based on a Federally approve Indirect Cost Rate (ICR). Includes costs such as Grant Management, Payroll, Audits, AP/AR, Contracts, HR
### Measure D: 5-Year Plan (FY23/24-FY27/28)

**Project name:** Community Bridges - Lift Line Vehicle and Equipment Acquisition  
**Location:** N/A  
**Description:** Lift Line Paratransit Vehicles & Equipment  
**Purpose/Need/Benefits:** Fund reserves that can be used for vehicle procurement projects, including fleet vehicles that cannot be funded through 5310, replace aging and or worn shop equipment, improvements and or upgrades to maintenance/operations facility. Provide project matching funds to leverage state funding.  
1) 23/24 TDA Equipment Vehicle Match for Emergency and Maintenance  
2) 21/22-23/24 Ecolane dispatching and scheduling and fleet operations software.  
3) 23/24-27/28 Additional project matching funds for potential vehicle purchases to continue building out electric vehicle fleet and required vehicle related equipment and infrastructure.  

<table>
<thead>
<tr>
<th>Schedule (estimated)</th>
<th>Total Cost by Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 23/24</td>
<td>FY21-22-23/24</td>
</tr>
<tr>
<td>$80,000</td>
<td>$116,563</td>
</tr>
</tbody>
</table>

**Measure D Funds**  
Emergency Response  
- $30,000  
- $86,563  
- $395,000  
**Total Matching Funds**  
- $240,000  
- $531,563  

*Future Equipment in FY 23/24-27/28 is estimated based on past projects*
Measure D: 5-Year Plan (FY23/24-FY27/28)

**Community Bridges - Lift Line Operations Facility**

545 Ohlone Pkwy, Watsonville, CA 95076

Lift Line Administrative offices, maintenance facility, fleet parking

Purchase of property and renovation of an operations facility housing the entire CTSA Lift Line operations in one location. In June of 2019 Lift Line purchased a suitable $3M property at 545 Ohlone Pkwy, Watsonville CA, with an estimated additional $1.8M of renovations and other expenses. Measure D facility reserve funds were used for a $500K down payment and closing costs, financing $2.5M. In June of 2020, 2021 & 2022 Measure D funds were used to make $200K principal payments on a 5-year $1M owner carry note, and are being utilized in the renovation costs and other associated expenses. In Feb. 2023 a $400K payment paid off the owner carry note in full, leaving the remainder on the $1.5M bank financed note. A major project for FY 23/24 is a grading, paving & EV infrastructure project with a cost of 600K, of which Measure D funding will be utilized for the majority. In future years a solar project will be put into place to provide power for EV charging stations as well as installation of EV infrastructure and electrical grid on the new yard.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Envir. Review</td>
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<td>$202,903</td>
<td>$3,099,532</td>
<td>$3,842,718</td>
<td>$272,250</td>
</tr>
</tbody>
</table>

| Measure D Funds | $124,297 | $202,903 | $599,532 | $3,700,287 | $4,627,020 |
| Fund - Capital Campaign/ Donations | $142,431 | $272,250 | $414,681 |
| Fund - Commercial Loan/Owner Financing | $2,500,000 | $2,500,000 |

**Other Info:**

Personnel/Consultants: $76,810
Legal: 7,500
Bidding Expense: 6,500

**Pre-Development:**

Architecture Design: 202,903
Survey / Engineering: 43,200
Permits, Inspections and Fees: 16,524

**Acquisition:**

Purchase of Property: 3,099,532

**Construction/Renovation:**

Construction / Renovation: 3,842,718
Permits, Inspections and Fees: 64,573
Equipment / Furnishings: 75,000
Contingency / Utility Fees: 106,440

Total Preliminary Cost: $7,541,701
RECOMMENDATION

RTC staff recommends that the E&D TAC receive a presentation on the Reimagine Santa Cruz METRO service changes.

BACKGROUND

Santa Cruz METRO is undertaking a comprehensive review of the transit route network in Santa Cruz County to make it more convenient, reliable, and sustainable. On December 16, 2022, the Santa Cruz METRO Board awarded a contract to Jarrett Walker & Associates, LLC to analyze METRO’s existing fixed-route network, complete a Bus Network Reimagining Plan for both near term and long-term service improvements, and conduct a robust public outreach process.

Key goals of the Reimagine METRO effort include:
- Increasing the amount of service provided, assuming a return to pre-COVID bus operator levels by the end of 2023.
- Making transit more reliable and relevant to the community’s needs.
- Adapting to post-COVID travel patterns.
- Creating a network that is useful and attractive for many people’s trips.

Based on an initial assessment of METRO’s existing fixed-route bus network presented to the Board in March 2023, the project team identified important reasons to redesign parts of METRO’s existing fixed-route network. Issues that rose to the forefront include service being infrequent, reduced several times in recent years, slow, and unreliable.

The project timeline includes:
- **March 2023**: Phase 1 Public Outreach and Existing Conditions
  [View the Public Forum Presentation](#)
- **May 2023**: Early Wins defined
**DISCUSSION**

The METRO Board of Directors unanimously approved the Phase 1 service changes at its meeting on Friday, Sept. 22 that will begin in METRO’s Winter Schedule starting December 2023. The changes include:

- **More service** (a 10% increase over today and 25% more than spring 2023)
- **Higher frequency** service in areas with high transit demand
- Simpler, **more direct routes**, especially in Watsonville
- Better transfers with shorter wait times and **no additional fare**
- Some changes to route numbers and names
- Some changes to bus stop locations and which streets have bus service

A draft Phase 1 system map can be viewed [here](#). Specific service changes include:

- A significant increase in night and weekend service:
  - NEW Routes 1, 2, and 3 would each operate:
    - Every 30 minutes until 9 PM
    - Every 60 minutes until midnight
- Higher frequency between Watsonville and Santa Cruz:
  - Until 9 PM, in both directions:
    - A bus every 15 minutes between Santa Cruz and Watsonville.
    - A bus every 10-20 minutes at Cabrillo College
    - A bus every 30 minutes (or better) on all of Soquel Drive
- The return of an express route between Watsonville and Santa Cruz during peak commute times
- A NEW route in Watsonville serving the County’s new Health and Human Services facility
- Continued 15-minute service on Routes 18 and 19
- A NEW route connecting the UCSC campus to Live Oak and Capitola Mall

Later this year, the METRO Board of Directors will review a second round of
bus service changes that could go into effect starting in April 2024. These changes include:

- Increased, 15-minute frequency on three cross-county corridors serving Watsonville and Mid-County
- Service extension from the east side of Santa Cruz through downtown to the University of California Santa Cruz (UCSC) campus, creating a frequent, one-seat ride from Cabrillo College or the Capitola Mall all the way to UCSC
- A new, frequent route connecting Watsonville to Cabrillo College via Freedom Blvd. and Airport Rd.
- All-day service on a Watsonville to Santa Cruz express route

**Staff recommends that the E&D TAC receive a presentation from Santa Cruz METRO staff on the Reimagine METRO service changes and provide input.**

**SUMMARY**

In December 2022, Santa Cruz METRO initiated Reimagine METRO which is a 15-month planning and public outreach effort to re-envision where buses go and how often they run. The changes included in Reimagine METRO come into service in three phases starting with phase 1 in December 2023 utilizing current operating resources. Phase 2 is over the course of 2024 and is based on additional funding and operators. METRO is also planning for a phase 3 once phase 2 is completed and further resources become available. Visit the [Reimagine METRO website](#) to learn more and provide comments.