Assessing Paved Trails for Compliance with Standards and Best Practices

Session Presenters:

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  • BLA Landscape Architecture (Cal Poly San Luis Obispo)
Presentation Outline

1. Introduction
2. Overview of Current Guidelines
3. Grey Areas
4. Applying the Guidelines
5. References
1. Introduction

Trail Design Guidelines Seek to:

• Improve safety
• Improved user functionality and enjoyment
• Ease maintenance and management
• Limit liability
2. Overview of Current Guidelines

U.S. Department of Transportation
• National MUTCD --> CA MUTCD

California Department of Transportation (Caltrans)
• CA Manual of Uniform Traffic Control Devices CA MUTCD)
• CA Highway Design Manual (HDM)

American Association of State Highway and Transportation Officials (AASHTO)
• Guide for the Development of Bicycle Facilities
2. Overview of Current Guidelines

Federal Highway Administration (FHWA)
• Designing Sidewalks and Trails for Access

U.S. Access Board (ADAAG)
• Draft Final Guidelines for Outdoor Developed Areas
• Proposed Public Right-of-Way Accessibility Guidelines (PROWAG)

U.S. Department of Justice
• ADA Standards for Accessible Design
Manual of Uniform Traffic Control Devices (Caltrans)

• Projects w/in Caltrans ROW or using Caltrans funding
• Items addressed:
  – Signs (application, placement)
  – Pavement markings (word messages, symbols, arrows, reflectorization, patterns and colors on shared-use paths, demarcating obstacles, dimensions)
  – Traffic signals and crossing beacons (application, placement)
Highway Design Manual (Caltrans)

- Apply to “transportation facilities”
- Items addressed: width, clearances, grade, separation from highways, design speed, sight distance, horizontal and vertical curves
Guide for the Development of Bicycle Facilities (AASHTO)

- Voluntary
- Items addressed: Separation from roadways, width, clearance, design speed, grade, sight distance, intersections, signing, marking, drainage)
Designing Sidewalks and Trails for Access (FHWA, 1999)

• Accessibility guidelines and practices, and construction and maintenance techniques have evolved since this report.
• More current information is available in other reports and guidance.
• Section: 5. Trail Design for Access
Draft Final Accessibility Guidelines for Outdoor Developed Areas (2009)

- Federal land management agencies and non-federal entities that construct or alter facilities on Federal lands on behalf of the Federal government
- Provisions for trails address surface; clear tread width; passing spaces; obstacles; openings; slopes; resting intervals; protruding objects; and gates and barriers
  - **Clear tread width:** 36” min
  - **Passing space:** 5’ x 5’ every 1000’
  - **Tread Obstacles:** 2” max. protrusion
  - **Openings:** < ½”
Slope: Trails vs. Shared-use Paths in ADAAG Guidelines

Trails

• Outdoor recreation trails must reflect environmental considerations of terrain, maintenance, erosion, and surface as well as constructability and use.
• Slopes up to 12% are permitted, but steep slopes are limited in length.

Shared-use Paths  [still In development]

• Multi-use routes that depart from roadway alignments should be constructed to be accessible (5% currently proposed)
• Full ADAAG compliance helps projects remain eligible for state/federal transportation funds
ADA Standards for Accessible Design (2010)

- State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities

- Items Addressed: slope, cross slope, clearances, clear width

- As of March 15, 2012, compliance with the 2010 Standards became required for new construction and alterations.
Proposed Public Right-of-Way Accessibility Guidelines (PROWAG)

- Pedestrian facilities constructed or altered in the public right-of-way by state and local government

- Where pedestrian access routes are contained within a street or highway right-of-way, the grade of the pedestrian access route is permitted to equal the general grade established for the adjacent street or highway
Conditional Exceptions

• “maximum extent feasible”
• Terrain
• Compliance would fundamentally alter the function or purpose of the facility or setting
• Compliance is precluded by the:
  ➢ Endangered Species Act;
  ➢ National Environmental Policy Act;
  ➢ National Historic Preservation Act;
  ➢ Wilderness Act; or
  ➢ Other Federal, State, or local laws.
• Where full compliance is not feasible, document it and leave an obvious paper trail
3. Grey Areas

What don’t the guidelines fully address?
• Separation of trail users
• Traffic control/safety
• Wayfinding for trails
• Enforcement
• Access control (bollards)
4. Applying the Guidelines and Addressing the Grey Areas

• American River Trail
• Napa Valley Vine Trail
• Santa Monica Beach Path

Source: http://vinetrail.org/
American River Parkway Trail Assessment
Sacramento, CA

• 23-mile trail corridor from Downtown Sacramento to Sacramento County Limit

• Trail assessment of:
  – Curve radii
  – Signage (location, rules of the path)
  – Striping (type, location, rules of the path)
  – Bollards (type and location)
American River Parkway Trail Assessment
Inventory Process

Basemaps created utilizing Google Earth and GIS Imagery and data
American River Parkway Trail Assessment
Inventory Process

• Toured corridor via bicycle
• Photographed and documented:
  – Intersection controls and crossing treatments
  – Trail curve-radii
  – Wayfinding signage
  – User traffic control signage

Pedestrians
- Use left side of trail facing on-coming bicyclists
- When usable walk on left shoulder
American River Parkway Trail Assessment Analysis

- The assessment compared the existing features against current trail standards
  - Caltrans’ CA MUTCD and HDM
  - AASHTO’s Guide for the Development of Bicycle Facilities
  - Rails to Trails Conservancy’s Trails for the 21st Century
- Grey Areas
  - Rules of the path
  - Bollards

Figure 3-5: Path Crossing Roadway Design Example
American River Parkway Trail Assessment

Recommendations

• Provided intersection-specific recommendations
American River Parkway Trail Assessment

Recommendations

- Identified areas where curve radii did not conform
Napa Valley Vine Trail Alignment Study

- **Study Area**
  - 4.5-mile corridor along Devlin Road in Napa County Airport Industrial Area

- **Scope**
  - Identify the most feasible/least constrained side of the street for a path, based on general review of conditions
Napa Valley Vine Trail Alignment Study
Napa Valley Vine Trail: Road Crossings
Santa Monica Bike and Pedestrian Beach Path
Ground Graphics and Wayfinding Plans

• Approx. 3.5-mile path
  – Owned by LA County
  – Operated/maintained by City of Santa Monica

• Trail assessment of:
  – Signage (type, working, location, rules of the path, wayfinding)
  – Striping (type, location, rules of the path, ground graphics)
Santa Monica Bike and Pedestrian Beach Path Ground Graphics and Wayfinding Plans Inventory Process

• Created base sheets with high res aerials in AutoCAD
• Added City’s sign inventory
• Field-reviewed path on foot
• Photographed and documented:
  – Intersection controls and crossing treatments
  – Wayfinding signage
  – Pavement markings
Santa Monica Bike and Pedestrian Beach Path
Ground Graphics and Wayfinding Plans
Analysis

- Challenge to create signing and striping that’s understood by diverse group of path users (use less words and more symbols)
- MUTCD wasn’t always applicable. Mixed and matched different symbols to be used on path
Santa Monica Bike and Pedestrian Beach Path
Ground Graphics and Wayfinding Plans
Recommendations
Santa Monica Bike and Pedestrian Beach Path
Ground Graphics and Wayfinding Plans
Recommendations
Santa Monica Bike and Pedestrian Beach Path
Ground Graphics and Wayfinding Plans
Recommendations

- Rules of the path
- Wayfinding

### Key

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### Diagrams
- BICYCLE RIDER WITH ARROW
- SHARE PATH
- PEDESTRIAN WITH ARROW
Santa Monica Bike and Pedestrian Beach Path Ground Graphics and Wayfinding Plans Recommendations

- Crossing treatments
- Speed reduction
5. References

ADA Draft Final Accessibility Guidelines for Outdoor Developed Areas (including trails, trailheads, and viewing areas). Effective 3/15/12: http://www.access-board.gov/outdoor/draft-final.htm

ADA Shared-Use Path Guidelines [In Development]: http://www.access-board.gov/sup.htm


Draft Final Accessibility Guidelines for Outdoor Developed Areas:
http://www.access-board.gov/outdoor/draft-final.htm

ADA Standards for Accessible Design (2010):
http://www.ada.gov/2010ADASubstandards_index.htm
5. References

Proposed Public Right-of-Way Accessibility Guidelines (PROWAG):
   http://www.access-board.gov/prowac/nprm.htm
AASHTO Guide for the Development of Bicycle Facilities:
California Highway Design Manual:
   http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm
California Manual of Uniform Traffic Control Devices:
   http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/
FHWA Designing Sidewalks and Trails for Access:
   http://www.fhwa.dot.gov/environment/sidewalks/
5. Additional Resources

• American Trails http://www.americantrails.org/
• Rails-to-Trails Conservancy http://www.railstotrails.org/index.html
Questions?

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