Design & Construction Standards & Considerations

for

Shared Use Paths

and

Rails With Trails

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National Park Service
Rivers, Trails & Conservation Assistance Program

"Shared Use Path"
also known as:

- Greenway Trail
- Multi-use Trail
- Class I Bike Path
- Bikeway
- Rail-trail
- Linear Park
- "Trail"...

"Shared Use Path"

- Accommodates different uses
  - Bicycle/pedestrian
  - 2-way travel and passing
- Separated from roadways & vehicle traffic
- Flat, graded surface and/or improved treadway
- Non-motorized Transportation
- Recreation

Trail design / construction standards:

- **AASHTO "Shared Use Path"**

  Amer Assn of State Highway & Transportation Officials

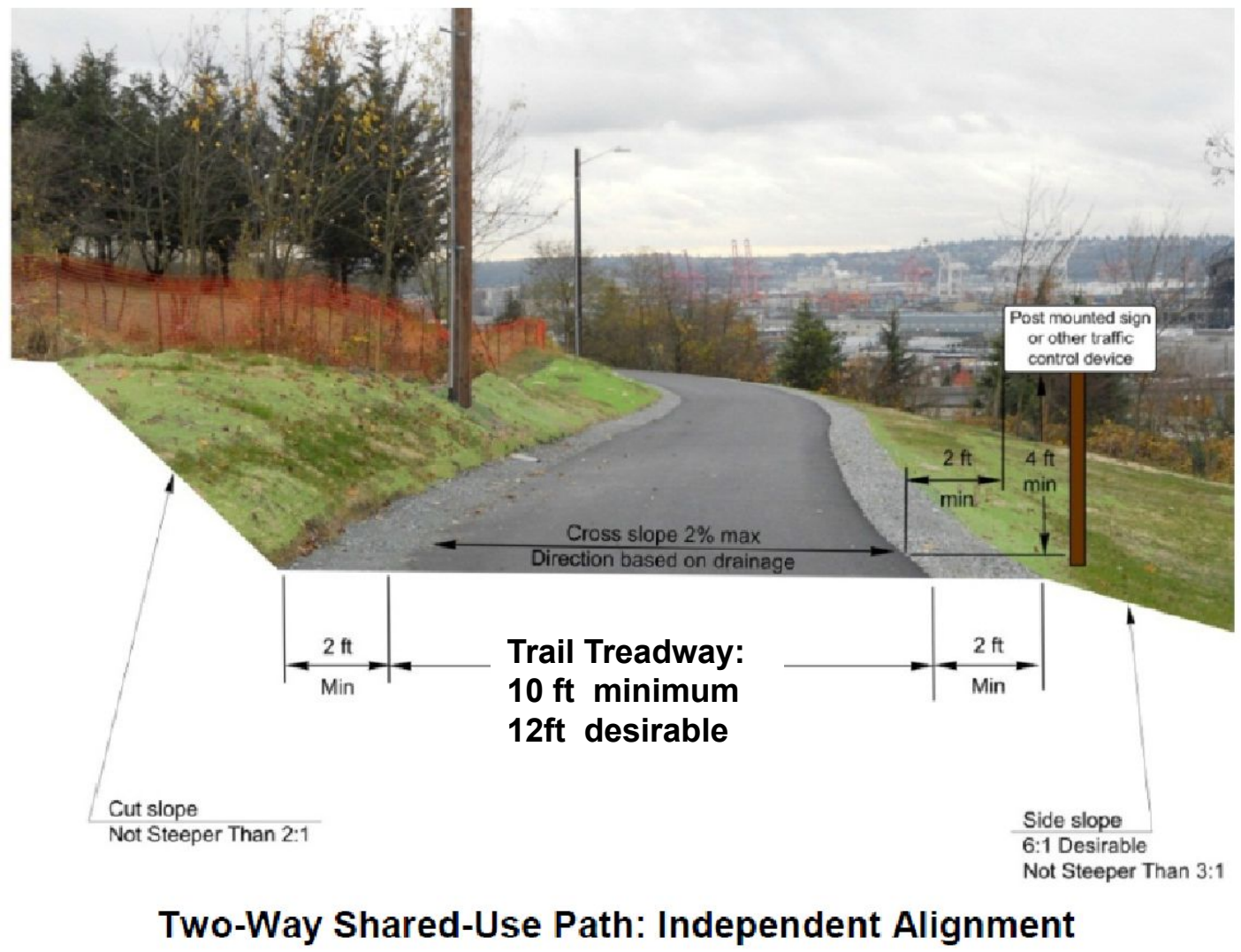
  - **Required for State & Fed Funding**
    - **Transportation Alternatives (TAP)**
  - **10 ft wide treadway (min)**
  - **12-14 ft in high-use & urban areas**
  - **2 ft shoulders/ recovery zone**
    - **3ft preferred**
  - **Design Speed**
    - **15 mph on unpaved; 20 mph+ paved**

Trail design / construction standards:

- **Americans with Disabilities Act (ADA)**
  - **Surface "firm & stable"**
  - **Surface "slip resistant"**
  - **Max 5% running slope**
  - **Max 2% cross slope**
  - **Min 36" width (60" passing)**
- **Met by AASHTO**
- **Most RR corridors**

Photo: MAPC

What the standards look like



Rail-to-Trail Types:

- **Rail-to-Trail conversion**
  - Most Rail Trails (2400 nationwide)
  - Wallkill Valley, O&W, Ashokan RT…
  - Conversion of single track
- **Rail WITH Trail**
  - Trail runs *alongside* RR
  - About 400 nationwide
  - Generally 2-track; one track converted to trail
- **Rail PLUS Trail**
  - Single track; trail added on

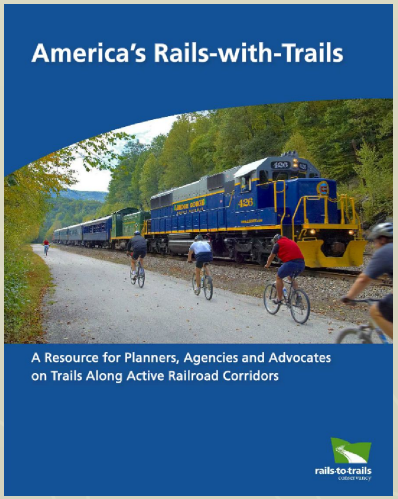
Rail-to-Trail Conversion:

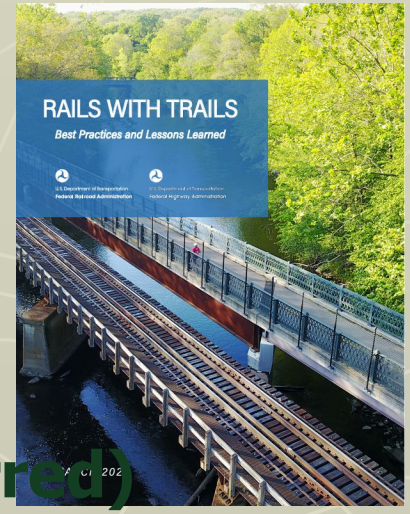
- **Use existing RR construction**
  - Corridor ownership
  - Sub-base, base, possibly surface
  - Drainage, bridges, abutments
  - Width, grades meet AASHTO & ADA

- **Cost of conversion**
  - Typical costs/mile
  - Complications

Rail WITH Trail:

- **Originally double track**
  - One track converted to trail
  - Cost comparable to rail-to-trail
- **No specific standards**
  - Best practices/ lessons learned
  - AASHTO & ADA
- **Studies**
  - FHWA, Rails-to-Trails Conservancy
- **Setback from RR**
  - 10 ft min from center of rail (15+ preferred)
  - Provided by double-track corridor width
  - Fencing/ barrier may be required

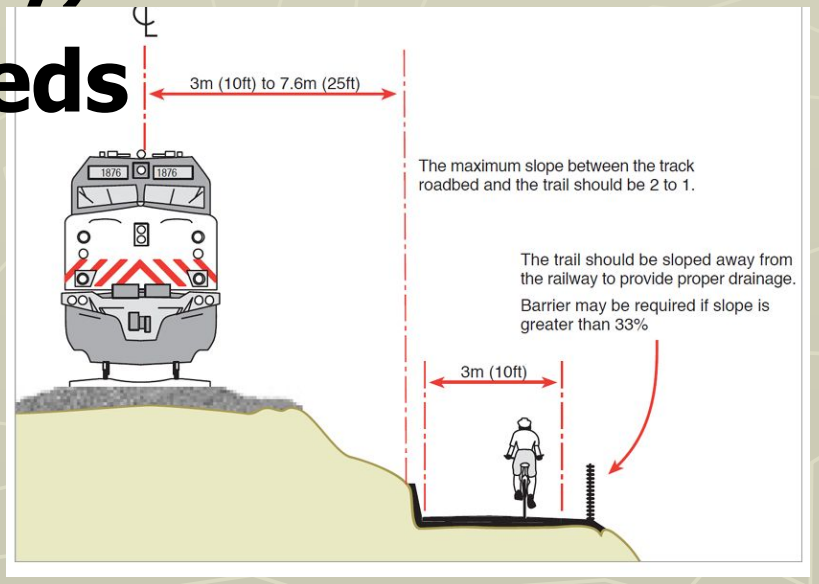




Rail WITH Trail setback

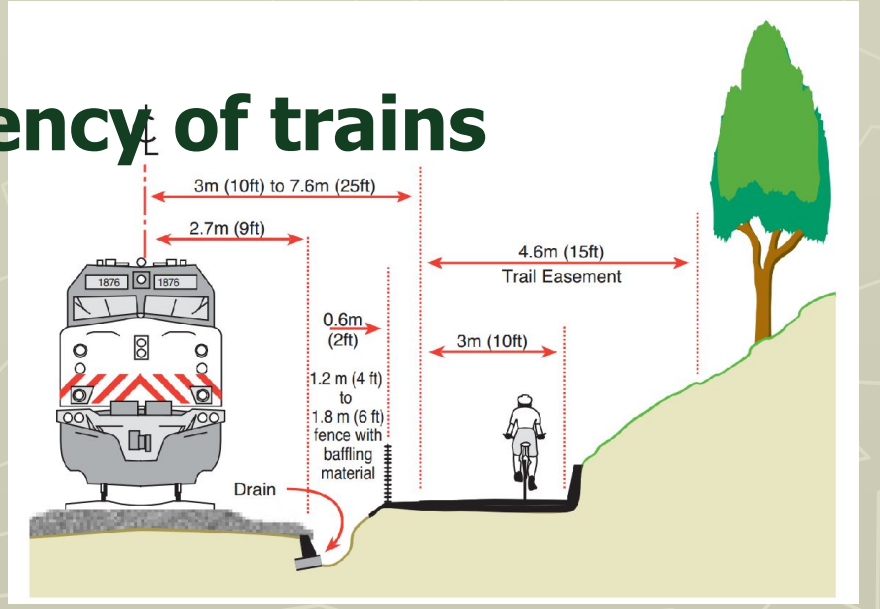
Evaluated by:

- Train type, speed, frequency
- Method of separation
- Physical & environmental constraints (topography)
- Rail maintenance needs
- Sight distances
- Past problems



Trail separation from RR:

- 87% of rails-with-trails
- Physical separation
  - Fencing, ditches, berms, vegetation
- If fencing:
  - Setback distance
  - Type, speed, frequency of trains
  - Safety/ liability



Rail WITH Trail in NY:

- **Town of Ballston Veterans Trail**
  - 3.5 mi, Saratoga County, NY
- **Orange Heritage Trail**
  - Orange County, NY
  - 1/4-mile section of 12-mile trail
- **Maybrook Trailway**
  - 25 mi, Brewster to Hopewell Junction
  - Part of Empire State Trail
- **Previously double-tracked**
- **One track converted to trail**

Photo: Town of Ballston

Photo: Boyd Loving in: America's Rails-With-Trails

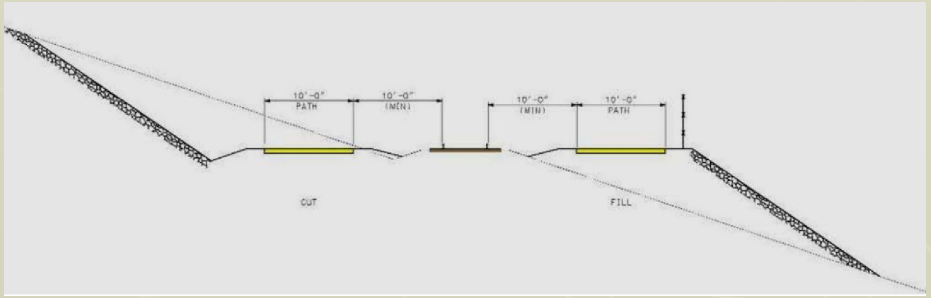
Photo: The Wesson Group, Engineers

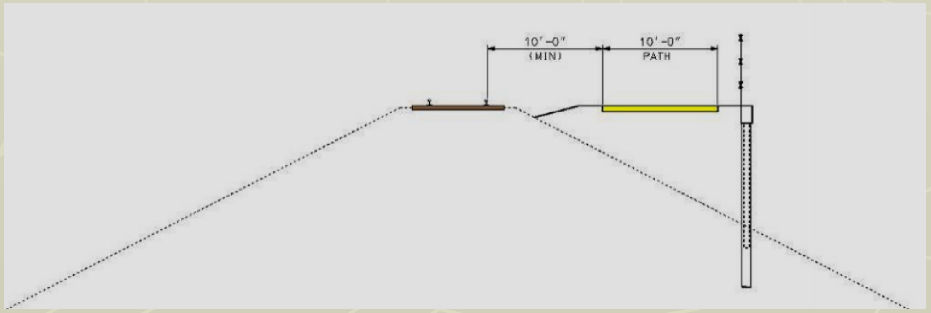
Rail PLUS Trail issues:

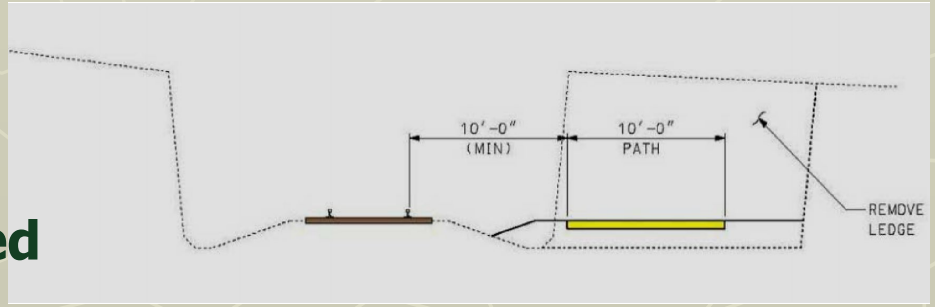
- **Single-tracked railroad**
  - **Narrow width atop high fill**
  - **Rock cuts, bridges**
- **Existing construction is inadequate**
  - **Must expand or duplicate**
- **New engineering & construction**
  - **Design & build to meet AASHTO, ADA**
  - **Drainage, wetlands compliance, expanded environmental impact, etc.**

Rail PLUS Trail: cut & fill

- **Normal cut or fill**
  - No issues of boundary/ steep slope/ wetlands
  - Cut or fill along slope
- **Extreme fill**
  - Constraints affect the fill slope
  - Retaining wall/ pilings
- **Rock/ ledge cut**
  - Narrow clearance & steep grades
  - Some ledge removal needed







Key differences:

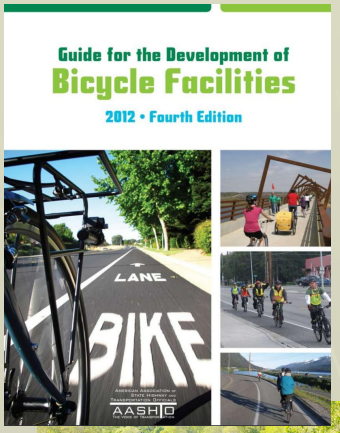
- **Rail to Trail**
  - Economical conversion
  - Most shared-use paths
- **Rail WITH Trail**
  - Double-tracked
  - One track is converted
- **Rail PLUS Trail**
  - No economical conversion
  - New trail construction
  - CMRR proposal

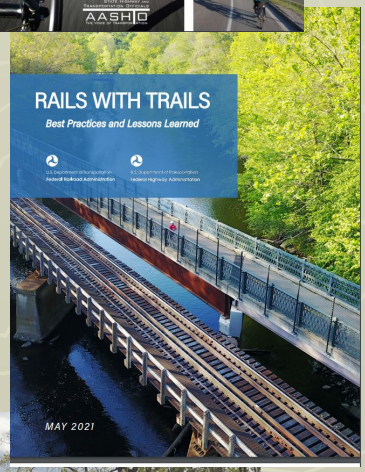
Rail PLUS Trail:
2 projects with costs combined

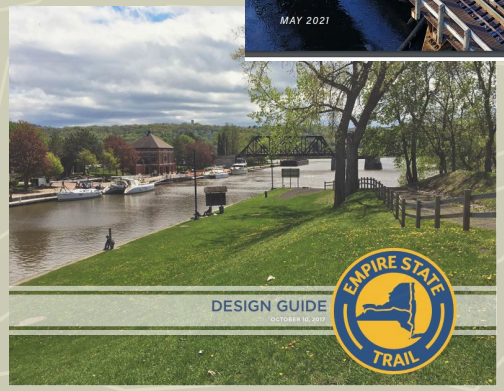
- **Trail built from scratch**
  - Sub-base, base, surfacing, drainage
  - Rock cuts, fill, retaining walls, bridges
  - Wetlands regulation
- **Cost to design & build**
  - Land acquisition
  - (a new road)
- **Or … divert to nearby roadways**
  - Issues of safety & consistency

References

- AASHTO guide for the Development of Bicycle Facilities, 2012
- Rails With Trails: Best Practices and Lessons Learned, FHWA, 2021
- America's Rails-with-Trails Report, RTC, 2013
- Empire State Trail Design Guide, 2017
- NYS Standards for Trails in State Parks, 2010







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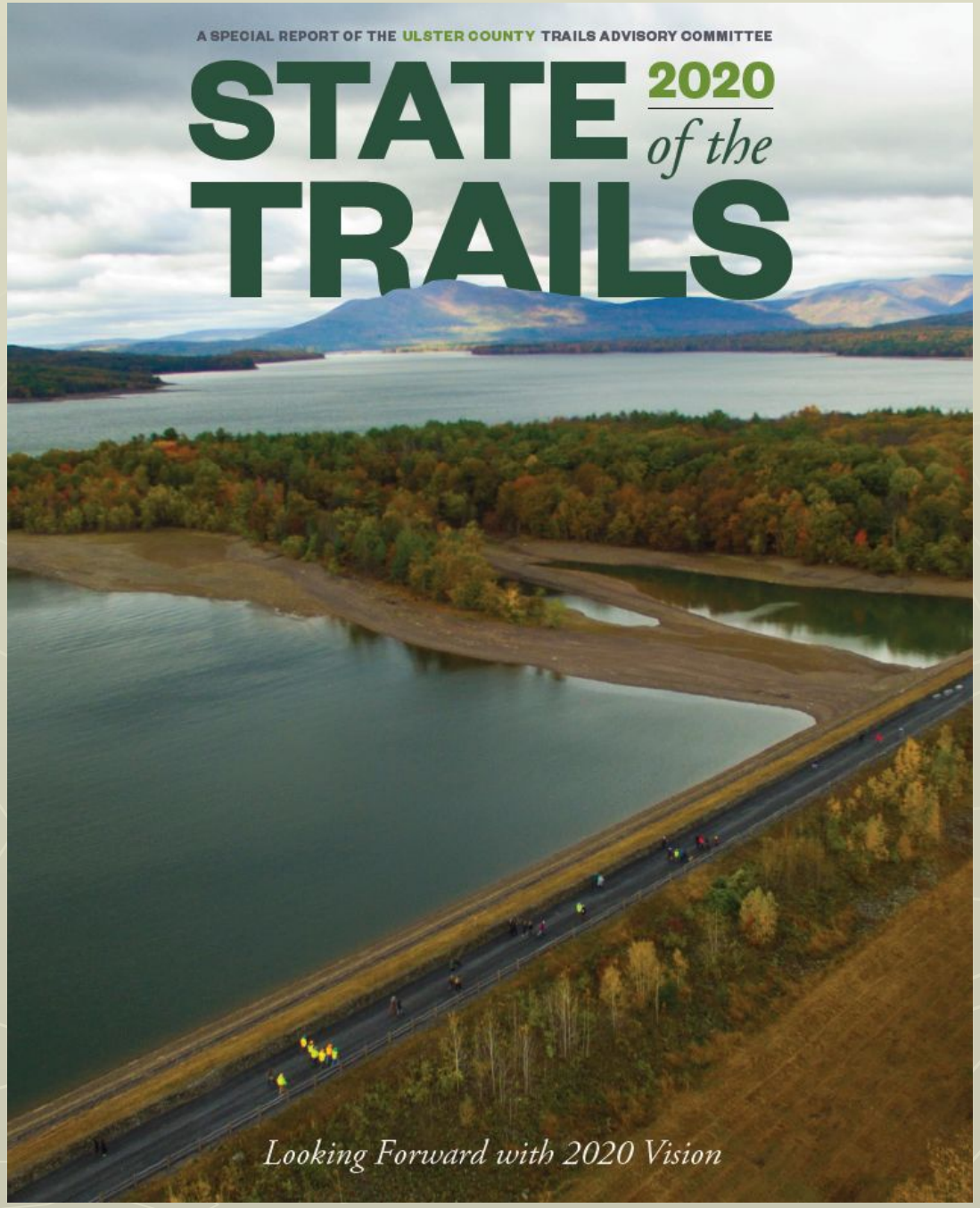
with

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