

Black Hill Trail Renovation Safety Barriers and Project Update

ENVIRONMENTAL ENGINEERING SECTION

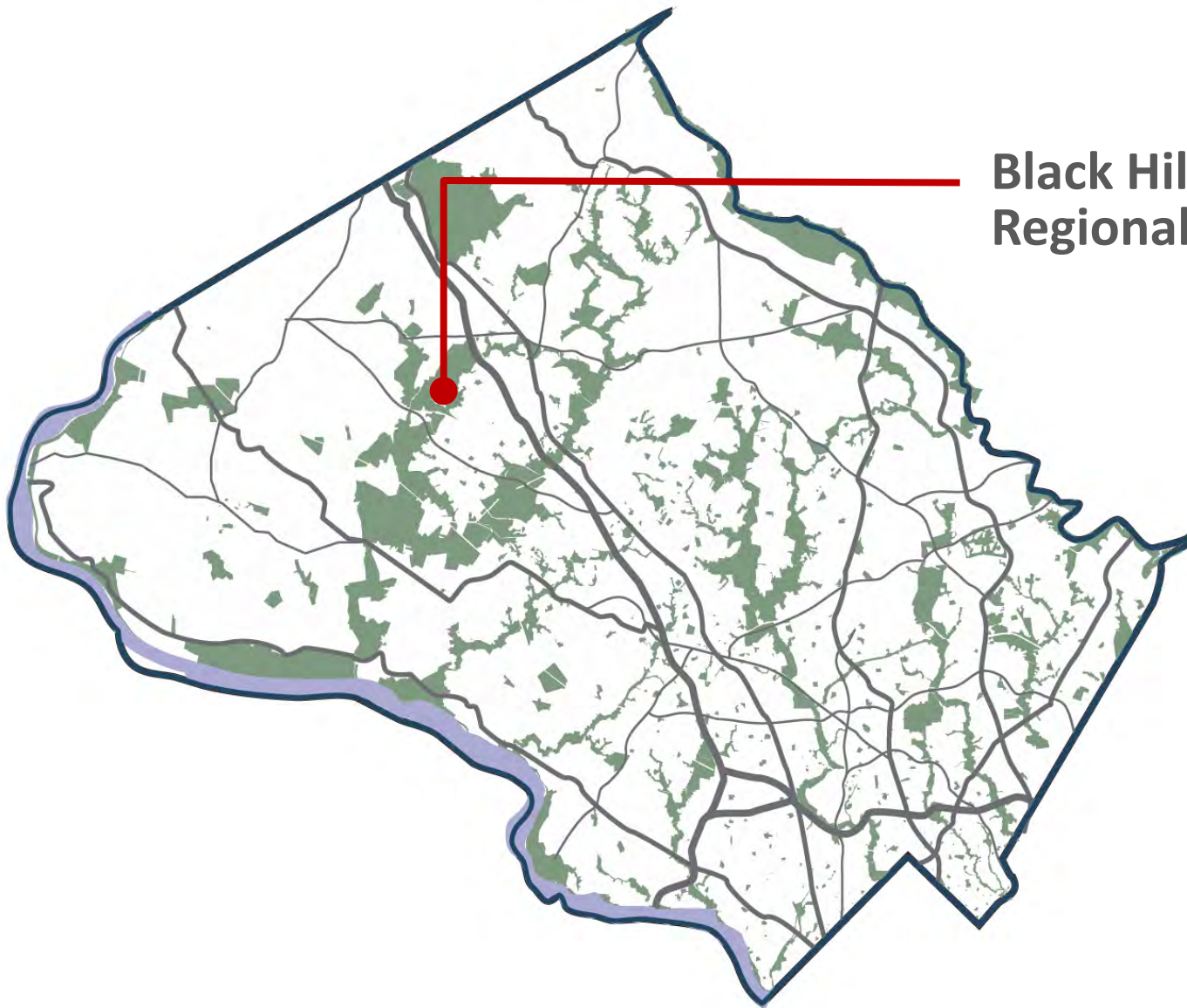


PARK DEVELOPMENT DIVISION

M-NCPPC, Department of Parks, Montgomery County, MD
Community Meeting for the Selection of Safety Fencing
January 18, 2012

Andy Frank, Environmental Engineering Section Supervisor
Butch Payton, Project Manager





**Black Hill
Regional Park**



Montgomery County, Maryland



Project Background & Construction Status

2010 - Detailed Design Completed

2011 - Construction Began

- Construction divided into phases in effort to complete segment between Spinning Wheel Drive and Neerwinder Street

Phase 1

- Paving completed Fall 2011
- Fence installation pending

Phase 2

- Neerwinder Street to Wisteria Drive construction began January 2012
- Completion expected in Fall 2012

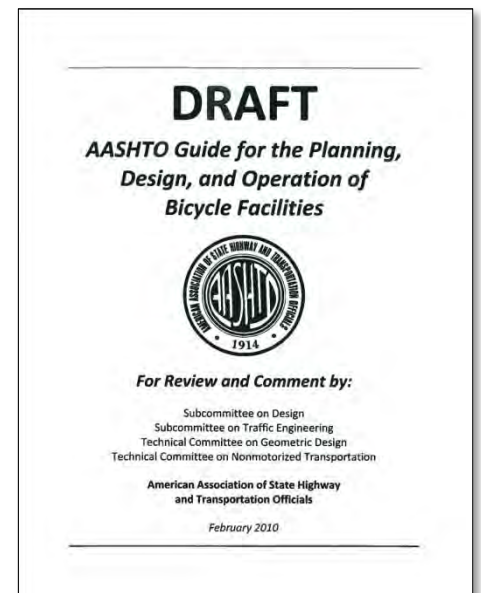
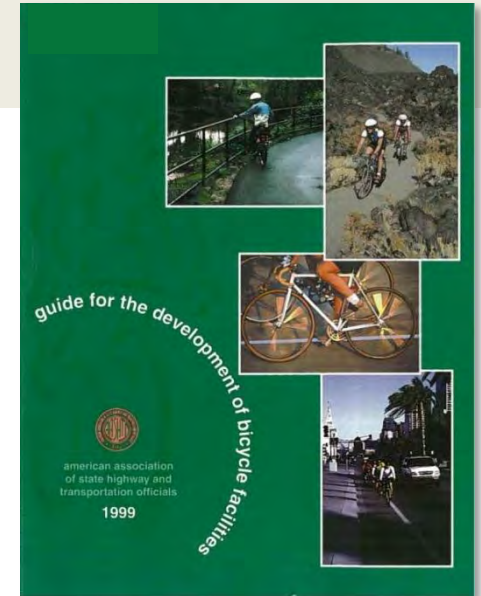


Determining Need for Safety Barriers

- International Building Code Requires Barriers where there are vertical drops greater than 30" (i.e. bridges, retaining walls, boardwalks)
- American Association of State Highway and Transportation Officials (AASHTO) provides guidance for locating barriers for trails along slopes
- Ultimate fence locations must be determined once construction is complete due to variance in existing conditions
- Parks recognizes need to balance guidelines with natural setting

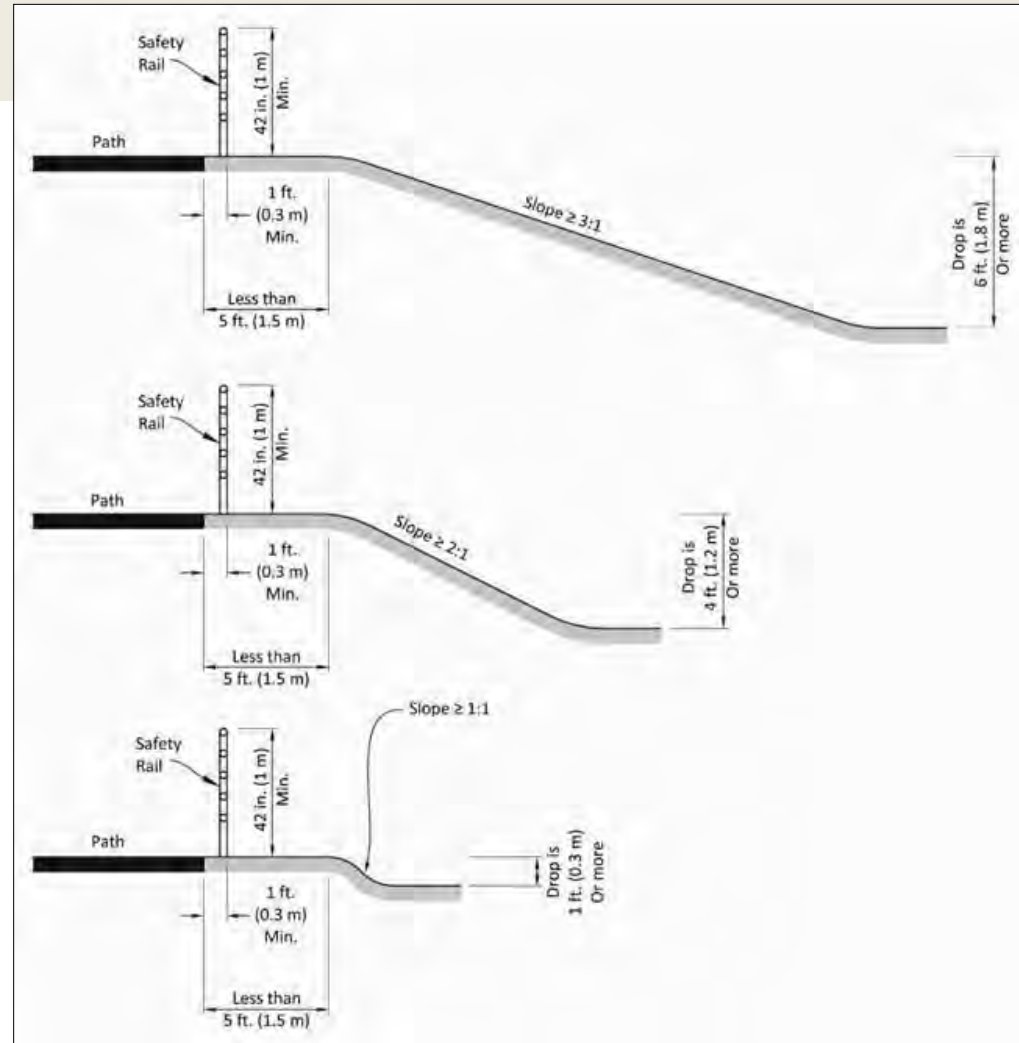
top: 1999 AASHTO Guidelines

bottom: February 2010 AASHTO Draft Update



Determining Need for Safety Barriers

- “Depending on the height of the embankment and condition at the bottom, a physical barrier, such as dense shrubbery, railing, or fencing may be needed. **This is an area where engineering judgment must be applied, as it is necessary to compare the risk for an errant bicyclist that swerves off the path to the risk of the rail itself.** Where a recovery area (i.e., distance between the edge of the path pavement and the top of the slope) is less than 5 feet (1.5 m), physical barriers or rails are recommended in the following situations.”



Chapter 5: Design of Shared Use Paths DRAFT February 2010.
AASHTO Guide for the Planning, Design, and Operation of
Bicycle Facilities



Determining Need for Safety Barriers

Examples of Renovated Trail Requiring Fencing

- Locations where the concern for safety exceeds the desire to minimize fencing



Temporary Construction Materials

- Temporary silt fencing and trenchless super silt fencing
- Temporary pedestrian barrier
- Temporary tree protection



Black Hill Trail Renovation



— New Trail Alignment



— New Boardwalk



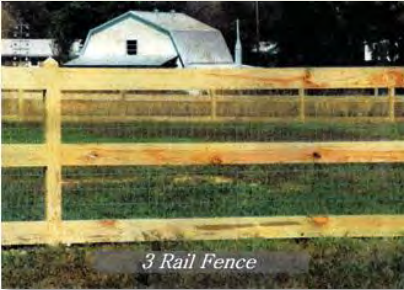
— Proposed Fencing

540
1,080
Feet
1,080
Feet



Selecting a Fence Product

- **Option 1**
3-Rail Wood Board Fence



- **Option 2**
Black Ornamental Steel Fence



- **Option 3**
Black Chain-link Fencing



- **Option 4**
Rustic 3-Rail Wood Fence



Fence Comparison Chart/On-Line Poll

Fence Options Comparison Chart for Locations at Black Hill Regional Park

Option	Type	Capital Cost	Installation Difficulty	Maintenance Level	Life Cycle Replacement	Structural Integrity
1	3-Rail Wood Board Fence	low	middle-high	middle-high	15-20 yrs.	middle
2	Black Ornamental Steel Fence	high	low	low	20-30 yrs.	high
3	Black Chain Link Fence	low	low	low	20-30 yrs.	high
4	Rustic 3-Rail Wood Fence	low	middle-high	high	10-15 yrs.	low-middle

- Parks provided images of fence options and identified characteristics for comparison
- Parks created on-line poll to obtain preferences of residents and park users

Which one of the four (4) fence options do you prefer?





Option #1: 3-Rail Wood Board Fence

Option #2: Black Ornamental Steel Fence

Option #3: Black Chainlink Fencing

Option #4: Rustic 3-Rail Wood Fence

Submit

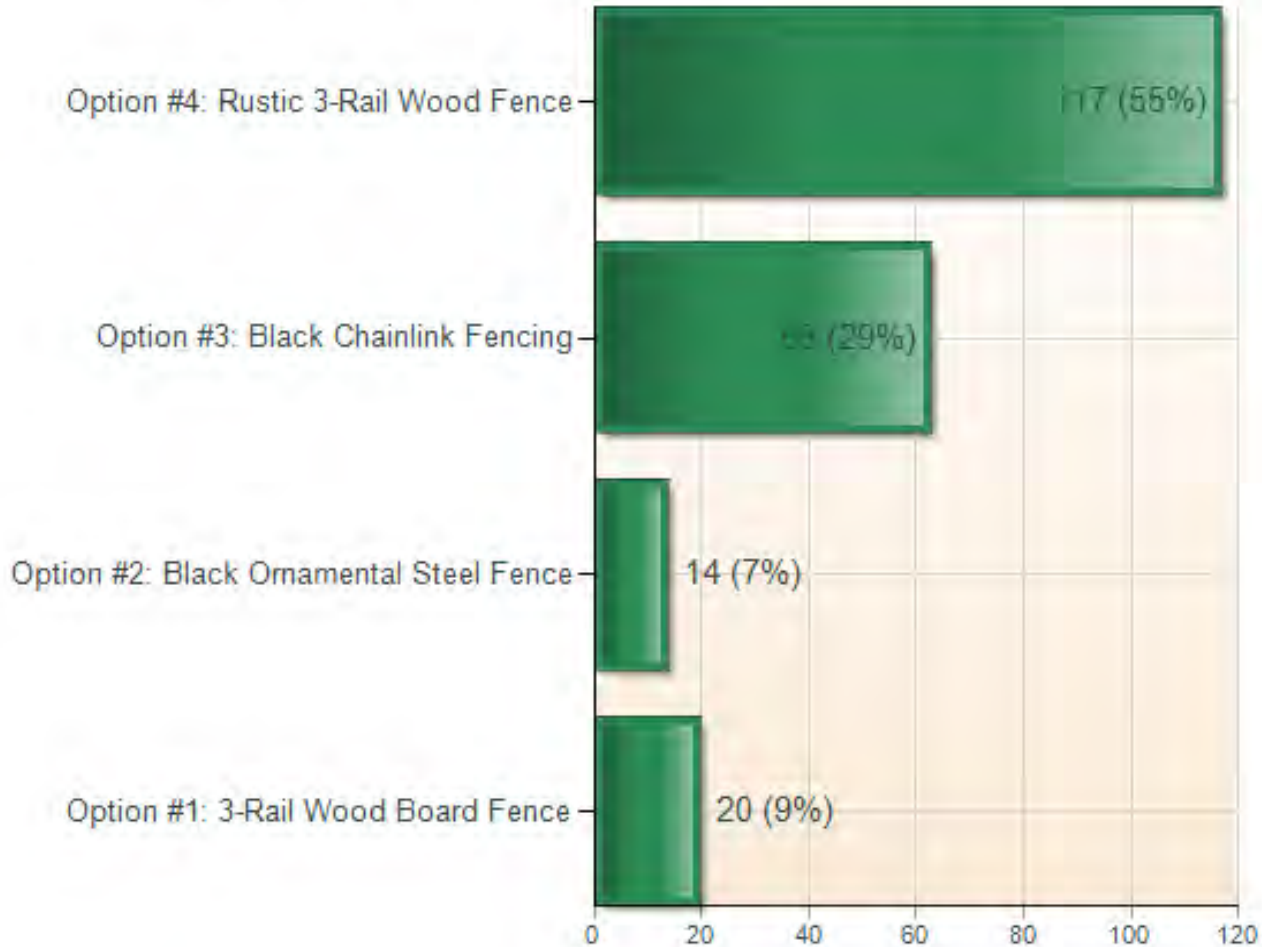



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Zoomerang® Online Polls



January 12, 2012 Online Poll Results

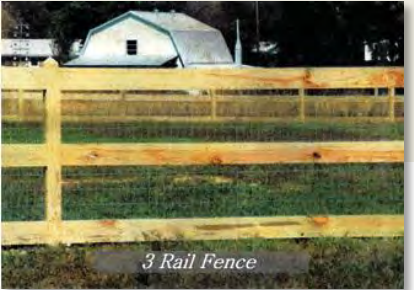
Which one of the four (4) fence options do you prefer?



Selecting a Fence Product

Decision Factors

- Parks selected options that will suit purpose
- Public sentiment



DISCUSSION AND QUESTIONS

