

Beverley Park Slope Stabilization Study

ITEMS OF DISCUSSION

- Introduction
- Study Findings to Date
- Alternatives/Ideas
- Discussion
- Next Steps

April 14, 2014

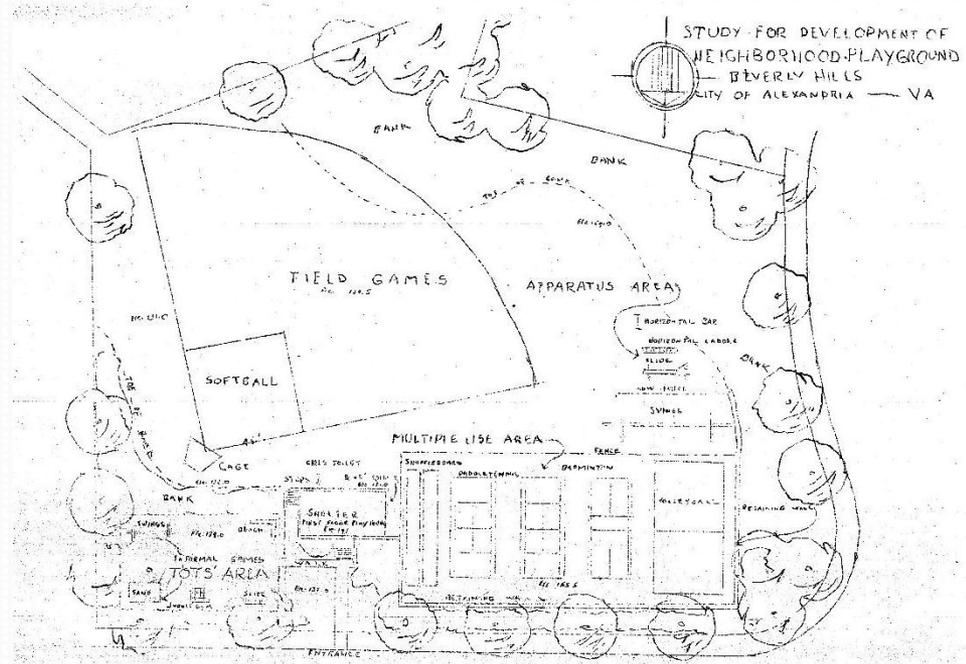
Beverley Park



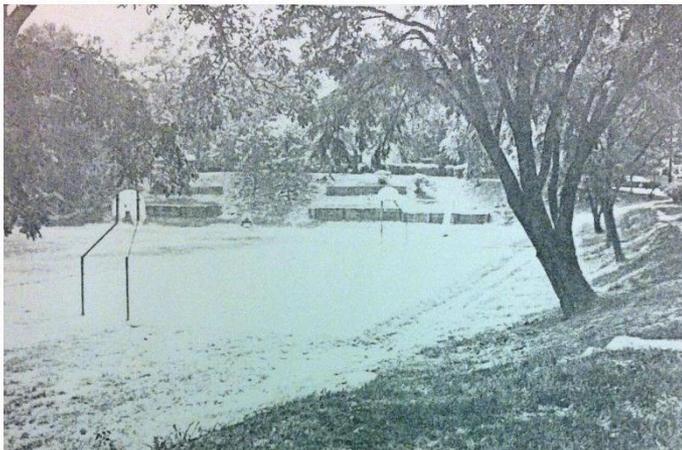
Park History



1940, Park Planning Program



1944, National Recreation Association, Alexandria Long-Term Recreation Plan



22	Overlook & South Overlook Drives	1.0	Small softball Backstop Basketball Backboard
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1963, Park Inventory, Alexandria Master Plan



Park History

“An undeveloped city opened property in Beverley Hills, known as the “gravel” pit of approximately 1.75 acres, is the only available property within this neighborhood for active recreation. The development of this property involves considerable engineering if the maximum use of the property is to be realized. Unfortunately, there is considerable differences in elevation which will involve a large amount grading. The area is further handicapped by its size but it is felt that in spite of these conditions steps should be taken to develop it for playground purposes...”

Exerpt, Long Term Recreation Plan for the City of Alexandria, National Recreation Association, 1944.

Individualized Site Rituals

- Christmas Tree Lighting
- Toys
- Beautification Programs
- Open Lawn Use
- Wheel Day
- Natural/Passive Open Space



Beverley Park

Infrastructure Conditions

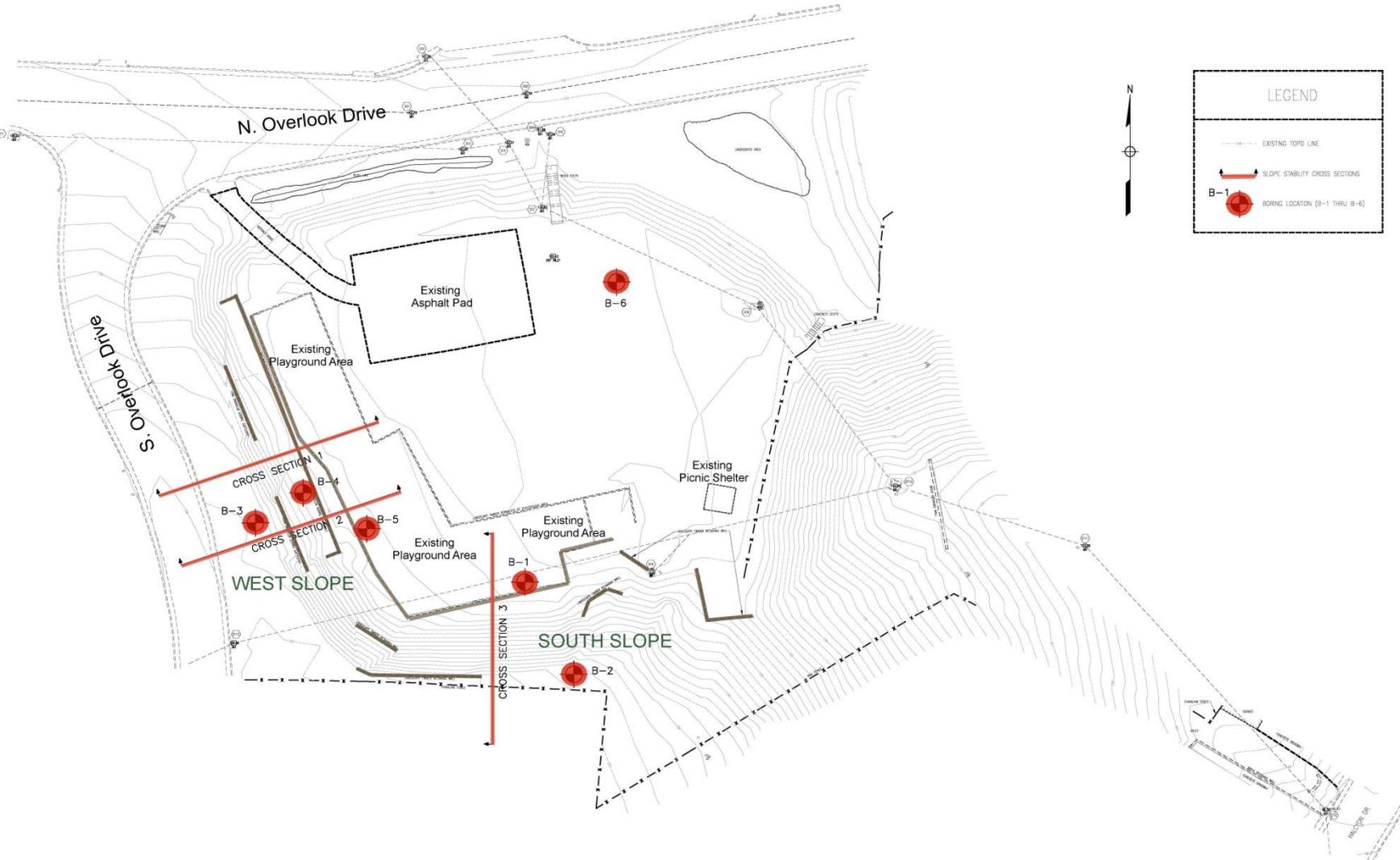
- Playground
- Retaining Wall(s)
- Tree Canopy
- Drainage/Slope Erosion
- Shelter
- Accessibility



Slope Stabilization Study

- Evaluate Existing Conditions
 - Geotechnical Investigation
 - Engineering Analysis
 - Arboricultural Analysis
- Provide Recommendations and Options

Geotechnical Investigation



Findings: Geotechnical Investigation

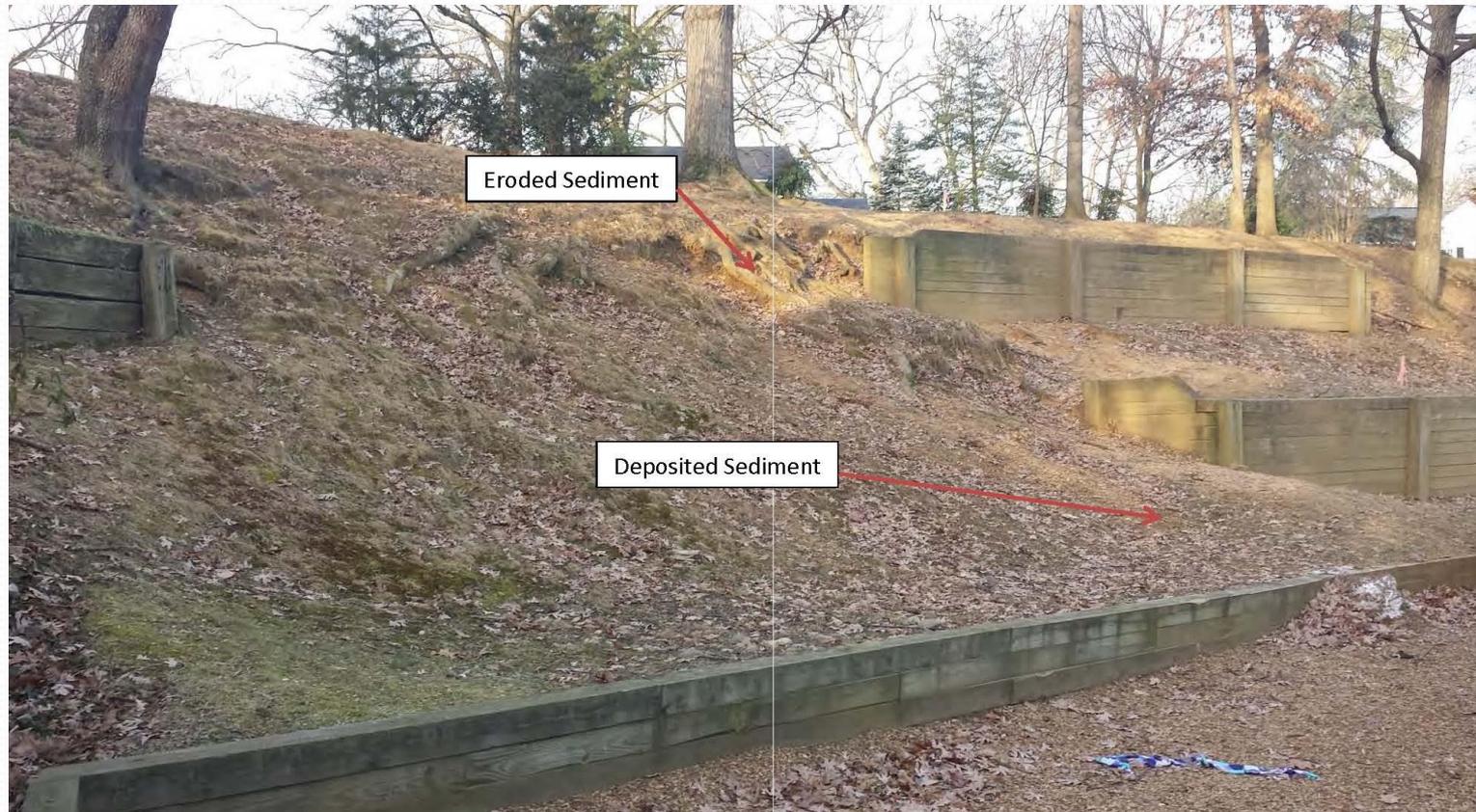
- West and south perimeter slopes
- Core sampling at top/middle/bottom of slopes
- Dense sand and clay soil profiles
- Slope stability modelling indicates stable soils
- Future work unlikely to need special techniques

Findings: Geotechnical Investigation



South Slope

Findings: Geotechnical Investigation



West Slope

Engineering Analysis



West Slope Retaining walls

Findings: Engineering Analysis

- Retaining walls constructed in 1960's-1980's
- Near the end of their useful life
- Exacerbating soil erosion by concentrating water flow
- Remove existing walls



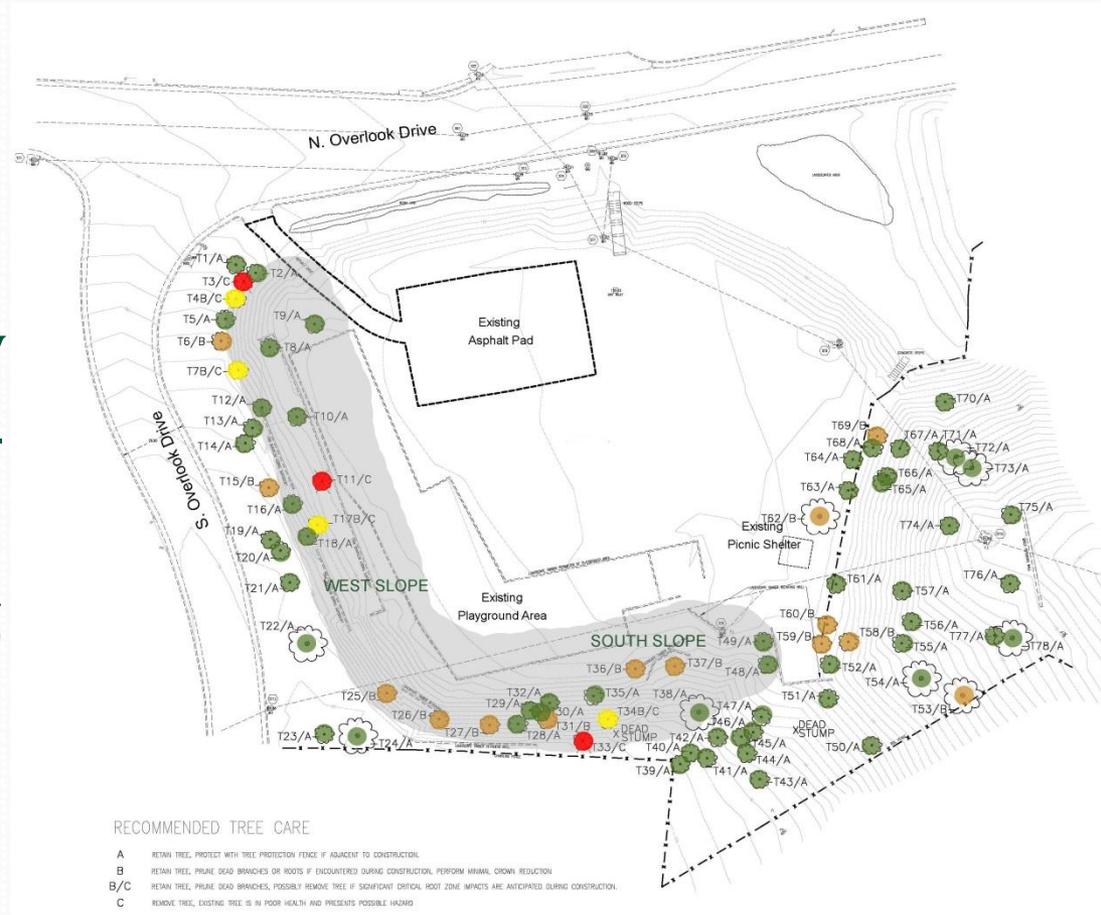
Arboricultural Analysis

- Evaluate condition of 78 trees over 4 inches in caliper
- Best trees are at the top of the slopes
- Trees include native and non-native species



Findings: Arboricultural Analysis

- 3 Trees in need of immediate removal
- Many are unlikely to survive wall reconstruction
- Approximately 25 Trees may be impacted by construction



Design Challenges

- Execute work once
- Expend funds efficiently
- Localize construction impacts
- Sustain a long-term operational solution

Slope Stabilization Alternatives

Retaining Wall & Grass Slope

West Slope: 8.5' height retaining wall w/ 3' height handrail
South Slope: Grassed slope with 2H:1V grade, reinforced with erosion control blanket

Tree Removal	Removal of approximately 9 trees. Trees on the south slope to continue decline
Tree/Vegetative restoration	New tree plantings likely to be constrained by wall, erosion control fabric, and steeper slope
Open Space Impact	Playground location stays relatively the same
Drainage	Considerable drainage design for wall and playground
Relative Cost	Higher cost
Constructability	Equipment for wall installation
Long term Sustainability	Potential for vandalism, long term wall maintenance and repairs may be costly

Slope Stabilization Alternatives

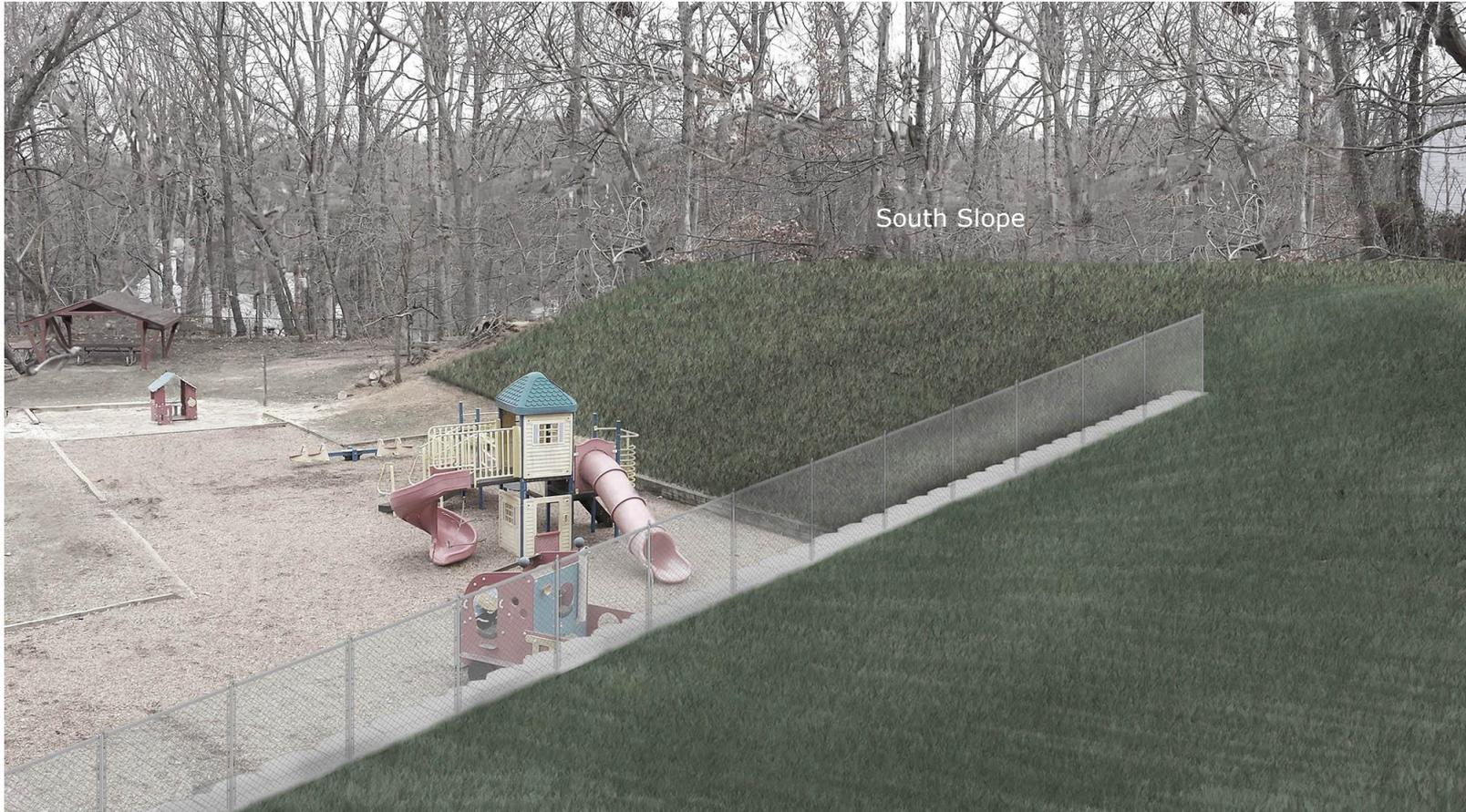
Retaining Wall & Grass Slope



West Slope: 8.5' height retaining wall w/ 3' height handrail

Slope Stabilization Recommendations

Retaining Wall & Grass Slope



South Slope: Grassed slope with 2H:1V reinforced with erosion control blanket

Slope Stabilization Alternatives

Grass/Natural Slope -No Wall

West Slope: Grassed/Natural Slope, 4H:1V slope
South Slope: Grassed/Natural Slope, 4H:1V slope

Tree Removal	Removal of approximately 25 trees
Tree/Vegetative restoration	New tree plantings feasible
Open Space Impact	Playground moves to another location. Slope is useable once vegetation is established.
Drainage	Reduced concentrated runoff and erosion
Relative Cost	Lower cost
Constructability	Large amount of hauling and traffic control
Long term Sustainability	Indefinite life, slopes can be maintained at an optimum level

Slope Stabilization Alternatives

Grass/Natural Slope -No Wall



West Slope: Grassed/Natural Slope, 4H:1V slope

Slope Stabilization Alternatives

Grass/Natural Slope -No Wall



South Slope: Grassed/Natural Slope, 4H:1V slope

Questions and Discussion

- Which alternative do you prefer?
- What should be the process for future public outreach?
- What is the preferred construction timing?

Think About...

- Constructability/Phasing/Impacts
- Relative Costs
- Long Term Solutions

Next Steps

- Develop park and playground concept plan based on preferred slope stabilization
- Continue community engagement process
- Incorporate community feedback into Final Concept Plan
- Develop construction and permitting plans, phasing plans if needed
- Obtain regulatory plan approvals

