Cornell Master Plan

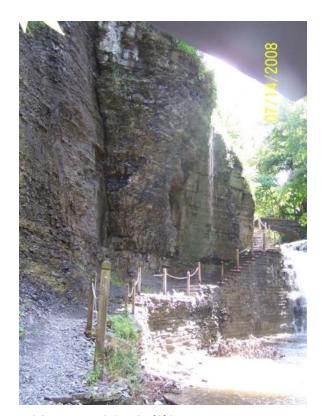
Open Space System



CMP - The Gorges

- Protect Natural Areas BMPs for development & restoration
- Restore historic gorge trails
- Develop Gorge Management Plans
 - Defined character areas





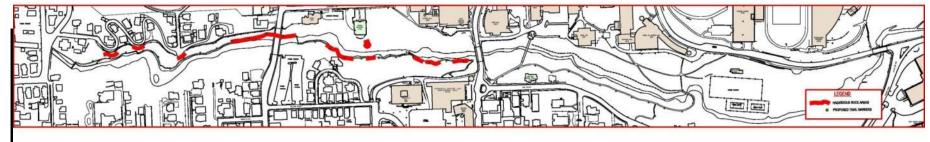
Slope Stability



Hazardous Trees



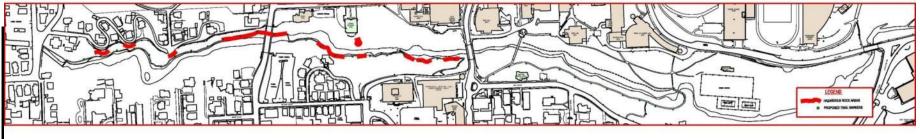
Trail Reconstruction



Rehabilitation Plan

- Capital Projects
 - Hazard tree removal
 - Priority stair, wall and railing repair
- Annual Maintenance





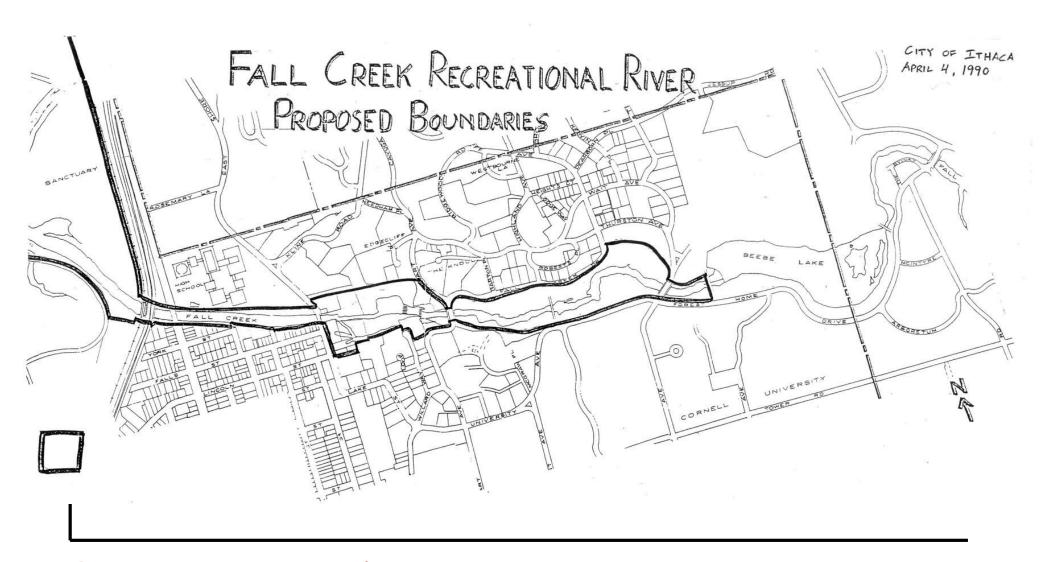
Rehabilitation Plan

- Capital Projects
- Annual Maintenance
 - Inspection & conditions update
 - Rock fault monitoring
 - Hazard Tree removal & emergency repairs





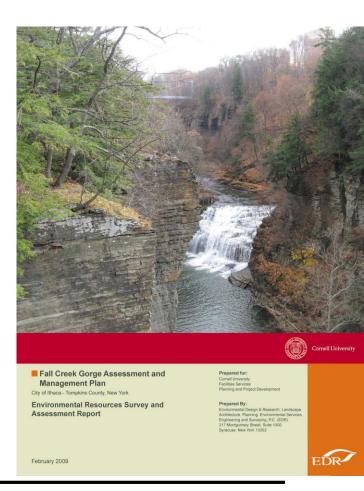
Fall Creek Gorge Management Plan



Fall Creek Gorge Management Plan

- Environmental Resources Survey & Assessment
- 2. Develop Management Recommendations
- 3. Support for adjacent projects

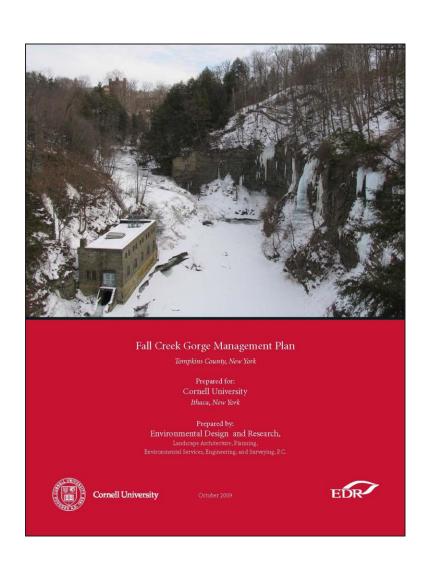




Fall Creek Gorge Management Plan

Contents

- 1. Purpose
- 2. Planning Process
- 3. Goals & Objectives
- 4. Consequences of No Action
- Management Recommendations



Management Plan

- Environmental Resources Survey & Assessment
- 2. Develop Management Recommendations
 - Cornell & City planning charrettes



Goals & Objectives

- To sustain the quality and richness of Fall Creek's diverse ecological and water resources.
- Develop & implement sustainable practices
- Expand educational & stewardship programs
- Enhance collaboration between Cornell, the City, County, and many agencies & organizations interested in Fall Creek



Goals & Objectives

- 2. To provide opportunities for recreation, commuting and enjoyment of the natural, cultural and historic resources.
- Develop safe trail access with minimal ecological disturbance
- Provide year round rim sidewalk / trail
- Reconnect gorge trails to regional trail network
- Improve signage and programming
- Expand collaboration



Consequences of No Action

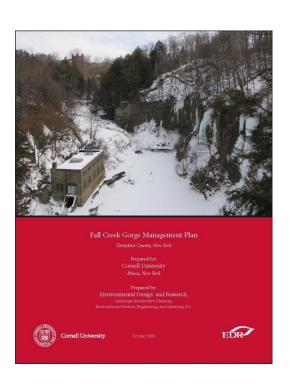
- 1. Public Safety trail use, rock fall, swimming
- 2. Soil erosion, habitat and water quality degradation
- 3. Increased dominance by invasive species
- 4. Less than optimal circulation around gorge
- 5. Lost opportunities for recreation
- 6. Unrealized opportunities for education

Management Recommendations

Recommendations Matrix

- Sustainable Trail Management
- Erosion Control
- Drainage Systems
- Invasive Species
- Vegetation & Wildlife
- Programs, Initiatives & Policies
- Signage
- Gorge & Rim Enhancements

Trail & Recommendations Map



Implement a Sustainable Trail Management Program

- Adopt USFS National Trail Management Class System: Class 2 (low use) to 5 (intensive use),
- Adopt IMBA's 5 elements of sustainable trail solutions (grade & slope guidelines);
- Maintain / improve gorge trails per Table 1;
- Complete campus commuter trail system.

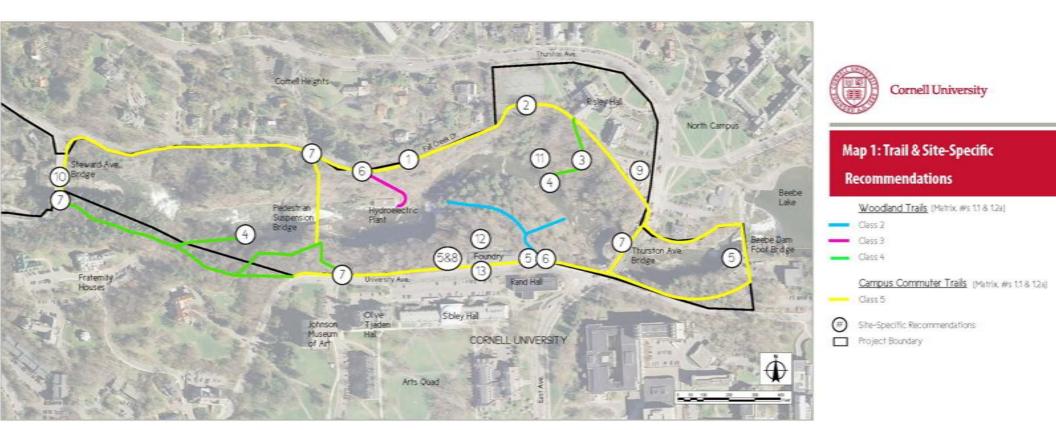


Table 1: Gorge T	Trail Guidelines			
	Campus Commuter Trails*		Woodland Trails*	
Trail Classification	Class 5**	Class 4**	Class 3**	Class 2**
Trail Attributes	Fully developed	Highly developed	Developed/improved	Simple/minor development
Use	Intensive use (Mainly Commuter, minor and educational recreational use)	Very heavy use (Mainly recreational, some commuter and educational use)	Moderate to heavy use (Restricted, utility use only)	Low to moderate use levels (Restricted, some educational use)
Accessibility	Typically meets ADA requirements (no obstacles, grade <8% typ., resting intervals every 200', and if >10% only for 30' max. with resting intervals every 30'), max. 5% cross slope)	May be accessible for portions of trail (few or no obstacles, grade <12% where possible, 5% cross slope)	Not accessible for all abilities (obstacles infrequent)	Not accessible for all abilities (obstacles occasionally present)
Access Schedule	Open year round	Open Spring to Fall	Restricted use	Closed
Tread surface	Concrete, asphalt, stone dust, or stabilized earth polymer paths, steel bridge, concrete, and wood planked stairs	Stone dust, packed earth, or stabilized earth polymer paths, wood planked, steel or stone stairs, steel bridge	Packed earth, wood planked or steel stairs	Packed earth, former stone stairs
Trail width	Min. 5'	3-5'	3-5'	2-4'
Edges (vegetation)/ clear zone	Clearing- 2' min. both sides beyond trail width, 10' vertical	Clearing- 2' min. both sides beyond trail width, 8' vertical min.	Clearing- 1' min. both sides beyond trail width, 8' vertical min.	Clearing- trail width only, 6' vertical min.
Guard rails	Use Cornell Plantations' standards	Use Cornell Plantations' standards	Use Cornell Plantations' standards	None
Tree Hazards	Follow Plantations Hazard Tree Abatement Program's three year assessment process	Follow Plantations Hazard Tree Abatement Program's three year assessment process	Follow Plantations Hazard Tree Abatement Program's three year assessment process	Follow Plantations Hazard Tree Abatement Program's three year assessment process
Overlooks	(See Map 1, # 5 and Matrix Rec. # 1.9)	Water's edge terminus trail areas for each segment of trail that ends near water's edge (See Map 1, # 4 and Matrix Rec. # 1.6a)	None	None

Table 1: Gorge T	Table 1: Gorge Trail Guidelines Cont.													
	Campus Commuter Trails*		Woodland Trails*											
Signage	Entrance interpretive signs, point of interest signs, and safety signs (See Matrix Rec. #s 7.1, 7.3 and Map 1, #7, and 7.4)	Entrance interpretive signs, point of interest signs, and safety signs (See Matrix Rec. #s 7.1, 7.3 and Map 1, #7, and 7.4)	Closed trail area signs (See Map 1, # 6, and Matrix Rec. # 7.2)	Closed trail area signs (See Map 1, # 6, and Matrix Rec. # 7.2)										
Lighting	Use Cornell standards for street lighting	Every 125'	Minimal, as necessary for safe access	None										
Water Edge condition	N/A	Water's edge terminus trail areas (See Map 1, # 4 and Matrix Rec. # 1.6a)	N/A											
Emergency Access & Assistance	Vehicular Access, Blue Light Phones (See Matrix Rec. # 1.5)	ATV Access, Blue Light Phones (See Matrix Rec. # 1.5)	Foot access only	Foot access only										
Maintenance Access	Vehicular	ATV Access	Foot access only with hand tools	Foot access only with hand tools										
Maintenance Schedule	Three times a year, plus winter snow removal	Three times a year (includes drainage crossing inspections during spring thaw, and heavy runoff periods)	Twice a year (includes drainage crossing inspections during spring thaw, and heavy runoff periods)	Once a year										
Routine Maintenance	Checking for problem spots, debris removal, tightening signs, light cleaning, snow removal	Racking, checking for problem spots, debris removal, tightening signs, light cleaning	Racking, checking for problem spots, debris removal, tightening signs, light cleaning	Racking, checking for problem spots, debris removal, tightening signs										
Remedial Maintenance	Twice a year repair problem spots and enhance Volunteer trail inspector program (See Matrix, Rec. # 6.5)	Twice a year repair problem spots and enhance Volunteer trail inspector program (See Matrix, Rec. # 6.5)	Once a year repair problem spots	Repair problem spots when necessary										

^{*} See Map 1 for Class 2-5 locations.

**Adapted from the National Trail Management Class System developed by the U.S. National Forest Service.



Site-Specific Recommendations:

- 1. Complete Campus Commuter Trail Along Fall Creek Drive East of the Pedestrian Suspension Bridge (Matrix # 1.3a)
- 2. Complete Campus Commuter Trail Between Fall Creek Drive and Risley Hall (Matrix # 1.3b)
- 3. Manage and Upgrade Trail to Appropriate Classification (Matrix # 1.2b)
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- 11 Implement a Temporary Art Exhibit Program (Matrix # 8.5)
- 12. Improve Foundry Peripheral Aesthetics (Matrix # 8.6)
- 13. Convert Foundry into a Visitor Center (Matrix #8.7)

Gorge Management Plan

2. Implement a Signage Program

- Entrance Signs at trailheads & bridges
- Point of Interest Signs at trail features
- Safety Signs where rules or safety needed
- Closed Trail Signs by Foundry and Hydro Plant



3. Construct Water's Edge Trail Terminus Area

- Below Risley Hall
- Below Phi Gamma Delta



4. Implement an Invasive Species Control Plan

- Invasive Species Task Force
- Prevent new invasive species
- Coordinate early detection & response
- Mitigate affected areas with control techniques (biological, chemical, mechanical)
- Restore degraded habitats with natives species
- Education & Public Outreach



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Fall Creek Gorge Management Plan Recommendations Matrix					INE		CO:		NOTES	IMPLEMENTATION TEAM
Recommendations Matrix The following recommendations are designed to assure that the management goals and objectives are achieved. High priority recommendations address ongoing issues dealing with long-term h ealth and viability of the Gorge's natural resources and human safety. Low priority recommendations deal with enhancement of human enjoyment of the Gorge's resources.						ow (under \$10,000)	Medium (\$10-50,000)	(+ 000		
	RECOMMENDATION	APPLICABLE GORGE AREAS	Continuous	1-2 years	2-5 years 5-10 years	Low (unde	Medium (9	High (\$50,000 +)		
SUST	AINABLE TRAIL MANAGEMENT HIGH PRIORITY ACTIONS	PROGRAM								
1.1	Implement a Sustainable Trail Management Program	All trails							Use the IMBA's five elements of a sustainable trail and the U.S. Forest Services National Management Classification System to assess the current conditions of each trail. Develop an evaluation form to assist in the process, which includes GPS locations at every 100' or problem areas, photographs to document conditions, and criteria outlined in Section 7 and Table 1 in the report. Evaluate trails during remedial maintenance and/or with assistance from a Volunteer trail inspector program (See Matrix # 6.4). Repeat evaluation every five years. Coordinate efforts with Rec. #1.2.	Cornell Plantations, Cornell Grounds Dept., private consultant
1.2a	Maintain and Improve All Trails	Trail sections TBD							Maintain and improve all Gorge trails to match the recommended Table 1 guidelines adapted from the U.S. Forest Service's National Management Class System and the IMBA's Sustainable Trail Solutions. Improvements include, but are not limited to upgrading the existing Class 2 trail from Risley Hall to the creek to a Class 4 trail. (See Map 1, #3) Maintaining, rehabilitating, restoring and replacing existing trails do not require a permit, per NYSDEC's Recreational Rivers regulations (6 NYCRR Part 666). Coordinate efforts with Rec. #1.1.	Cornell Plantations, Cornell Grounds Dept., private consultant
1.2b	Manage & Upgrade Trail to Appropriate Classification	See Map 1, #3							Upgrade the existing Class 2 trail from Risley Hall to the area at the base of Fall Creek to a Class 4 trail. (See Map 1, #3) Maintaining, rehabilitating, restoring and replacing existing trails do not require a permit, per NYSDEC's Recreational Rivers regulations (6 NYCRR Part 666).	Cornell Plantations, Cornell Grounds Dept., private consultant
1.3a	Complete Campus Commuter Trail Along Fall Creek Drive East of the Pedestrian Suspension Bridge	See Map 1, #1							Complete the campus commuter trail system by developing a shared roadway (Class 5 trail) to accommodate pedestrians along Fall Creek Drive east of the Pedestrian Suspension Bridge to south of the tennis courts (See Map 1, #1). New trail construction requires a permit, per NYSDEC's Recreational Rivers regulations (6 NYCRR Part 666).	Cornell Plantations, Cornell Grounds Dept., private consultant
1.3b	Complete Campus Commuter Trail Between Fall Creek Drive and Risley Hall	See Map 1, #2							Complete the campus commuter trail system by developing a pedestrian path (Class 5 trail) and bridge from Fall Creek Drive to Risley Hall south of the tennis courts (See Map 1, #2). New trail construction requires a permit, per NYSDEC's Recreational Rivers regulations (6 NYCRR Part 666).	Cornell Plantations, Cornell Grounds Dept., private consultant

Fall Creek Gorge Management Plan Recommendations Matrix				IMEL	INE		COS		NOTES	IMPLEMENTATION TEAM		
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	RECOMMENDATION	APPLICABLE GORGE AREAS	Continuous	1-2 years	2-5 years 5-10 years	Low (un	Medium	High (\$5				
DRAI	DRAINAGE SYSTEMS											
	HIGH PRIORITY ACTIONS	_				_				<u></u>		
3.1	Identify and Map Existing Drainage System	All Areas within Fall Creek Gorge							Identify and locate the source and outfall of all drainage lines within the Study Area. Decipher between active and abandoned drainage lines.	Cornell Plantations, Cornell Planning Design and Construction, private consultant		
3.2	Remove Abandoned Drainage Features	All Areas within Fall Creek Gorge							Remove abandoned drainage features such as exposed drainage pipes and stormwater outfalls.	Cornell Plantations, Cornell Planning Design and Construction, private consultant		
3.3	Retrofit Existing Outfalls	All Areas within Fall Creek Gorge			Ī				Repair and update existing active stormwater outfalls to prevent further erosion.	Cornell Plantations, Cornell Planning Design and Construction, private consultant		
INVA	SIVE SPECIES	•	_			_						
	HIGH PRIORITY ACTIONS											
4.1	Develop a Comprehensive Invasive Species Control Plan	All Areas within Fall Creek Gorge							Develop a program that can control invasive species within the Study Area. The objective would be to 1, restore areas that are currently threatened by invasive species, 2. Minimize and mitigate areas that are currently threatened but not at alarming rates, and 3. prevent further dispersal to unaffected areas within the Study Area. All appropriate control measures such as girdling of trees and/or chemical applications should be considered.	Cornell Plantations, Cornell Grounds Dept., New York Invasive Species Research Institute, Cornell College of Agriculture and Life Sciences and private consultant		
4.2	Create an Invasive Species Task Force	All Areas within Fall Creek Gorge							Create a Task Force to oversee the execution of the Invasive Species Control Plan, decide upon and supervise initiatives set forth by the plan. Successful implementation of the Invasive Species Control Plan will help maintain a healthy and balanced functioning ecosystem within the Study Area, thus ensuring public safety by restoring degraded areas and protecting thriving sites.	Cornell Plantations, Cornell Grounds Dept., City of Ithaca, New York Invasive Species Research Institute, Cornell College of Agriculture and Life Sciences and private consultant		

Fall Creek Gorge Management Plan Recommendations Matrix				MEL	INE		CC RAI	ST NGE	_	NOTES	IMPLEMENTATION TEAM	
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CAMP	RECOMMENDATION APPLICABLE GORGE AREAS CAMPUS AND COMMUNITY VOLUNTEER PROGRAMS, INITIATIVES & POLICIES HIGH PRIORITY ACTIONS											
6.1	Change the Campus Code of Conduct to Include a "No Swimming" Policy	N/A						20.00		Change the Campus Code of Conduct to include a "No Swimming Policy" similar to the City of Ithaca Municipal Code 250-3.	Cornell Plantations, Office of the Assemblies	
6.2	Change the Campus Code of Conduct to Include a "Must Stay on Trails" Policy	N/A							C	Change the Campus Code of Conduct to include a policy that trail users must stay on trail.	Cornell Plantations, Office of the Assemblies	
6.3	Change the Campus Code of Conduct to Include Site Development Guidelines for Projects Adjacent to the Gorge	N/A								Change the Campus Code of Conduct to include site development guidelines for projects adjacent to the gorge.	Cornell Plantations, Office of the Assemblies, Cornell Trustees, private consultant	
6.4	Increase Funding for Gorge Management and Maintenance	N/A							t	Increase funding opportunities for gorge management and maintenance. Work with Cornell grant writers to seek additional funding opportunities or request funding for a grant writer consultant. When securing funding for signage, additional funding should be alloted to replace or repair vandalized signs.	Cornell Plantations	
6.5	Efforts to Include a Volunteer	All Trail Areas within Fall Creek Gorge Study Area							f	Recruit and train volunteer leaders representing Cornell and community groups to lead volunteer groups for trail inspections, improving trail conditions, addressing safety issues and other needed management and maintenance tasks.	Cornell Plantations, Friends of the Gorge, Ithaca School District	
6.6	Enhance Gorge Safety Education Programs	N/A								Continue gorge safety presentation during freshmen orientation and develop additional programs for student groups, sororities, fraternities and neighbors.	Cornell Plantations, Friends of the Gorge, Interfraternity Council, Panhellenic Association, City of Ithaca	

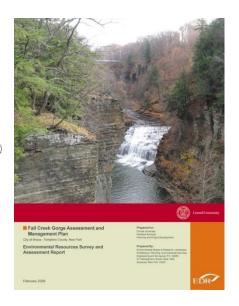
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	RECOMMENDATION	APPLICABLE GORGE AREAS	Continuous	1-2 years 2-5 years	5-10 years	Low (under	Medium	High (\$				
CAMP	CAMPUS AND COMMUNITY VOLUNTEER PROGRAMS, INITIATIVES & POLICIES LOW PRIORITY ACTIONS											
6.11	Increase Student Involvement in Gorge Environmental Education Programs								Implement environmental education programs within the Study Area that increase the amount of student involvement in understanding ecological functions and environmental issues affecting the Study Area. Involving students in some of the recommendations set forth in this plan will also translate into budgetary savings.	Cornell Plantations, Cornell College of Agriculture and Life Sciences, private consultant		
6.12	Provide Guided Informational Walks	TBD along trails							Provide guided informational walks in conjunction with significant Cornell events, such as alumni weekend, parents weekend or orientation. Topics could cover natural, historical, or social features of the gorge.	Cornell Plantations, Friends of the Gorge		
SIGNA	AGE PROGRAM HIGH PRIORITY ACTIONS											
7.1	Design and Install Safety Signs	TBD along trails							Design and install safety signs as needed. Safety guidelines should replace existing "warning natural area" signs where applicable along the trail and water's edge. Examples of specific sign ideas include no swimming, stay on trail, carry in/carry out trash rules. (Informational and directional signs less than 1 sq. ft. area and less than 10 feet high which are necessary to the continuance of any existing use are allowed without permit, per NYSDEC's Recreational Rivers regulations (6 NYCRR Part 666). Such signs larger than 1 sq. ft. or 10 ft. or higher require a permit.) Consider utilizing a Cornell class project, summer intern, or work study program for graphic assistance to design the signs. (Department examples include: Landscape Architecture, Art, Design and Environmental Analysis, or City and Regional Planning)	Cornell Plantations, Cornell academic department or private consultant		
7.2	Design and Install Closed Trail Signs	See Map 1, # 6							Design and install a new closed trail sign for the trail east of the foundry. Provide information on the location of the nearest open trail. (Informational and directional signs less than 1 sq. ft. area and less than 10 feet high which are necessary to the continuance of any existing use are allowed without permit, per NYSDEC's Recreational Rivers regulations (6 NYCRR Part 666). Such signs larger than 1 sq. ft. or 10 ft. or higher require a permit.) Consider utilizing a Cornell class project, summer intern, or work study program for graphic assistance to design the signs. (Department examples include: Landscape Architecture, Art, Design and Environmental Analysis, or City and Regional Planning)	Cornell Plantations, Cornell academic department or private consultant		

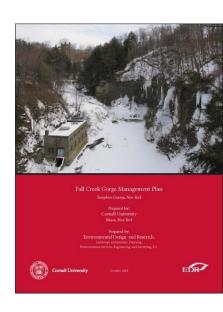
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	RECOMMENDATION	APPLICABLE GORGE AREAS	Continuous	1-2 years	2-5 years	5-10 years	Low (ur	Medium	High (\$			
GOR	GORGE & RIM ENHANCEMENTS LOW PRIORITY ACTIONS											
8.2	Reduce Light Spillage into Gorge	See Table 1								Replace exterior lights creating significant light spillage into gorge on adjacent buildings and street lights to the gorge. Two specific buildings to address are the Foundry and Sibley Hall. Use dark sky compliant exterior, high efficiency lights.	Campus Planning Office, Maintenance Management	
8.3	Reestablish Temporary Construction Staging Area to a Green Space Area	See Map 1, # 9								Reestablish temporary construction staging area to a green space area. Consider utilizing a landscape architecture class project, summer intern, or work study program for design assistance.	Cornell Plantations, Campus Planning Office	
8.4	Improve Stewart Ave. Bridge Pedestrian Amenities	See Map 1, # 10								Work with the City of Ithaca to increase Stewart Avenue bridge rail height and provide an observation area with point of interest signage similar to Thurston Ave. bridge.	City of Ithaca, Campus Planning Office, Cornell Plantations	
8.5	Implement a Temporary Art Exhibit Program	See Map 1, # 11								Implement a temporary art exhibit program in coordination with the Art Department.	Cornell Plantations, Art Department	
8.6	Improve Foundry Peripheral Aesthetics	See Map 1, # 12								Coordinate clean-up efforts around the Foundry building with the Art Department.	Cornell Plantations, Art Department	
8.7	Convert Foundry into a Visitor Center	See Map 1, # 13								If the Foundry becomes available for a different use, consider converting the Foundry into a visitor center.	Cornell Plantations, Campus Planning Office	

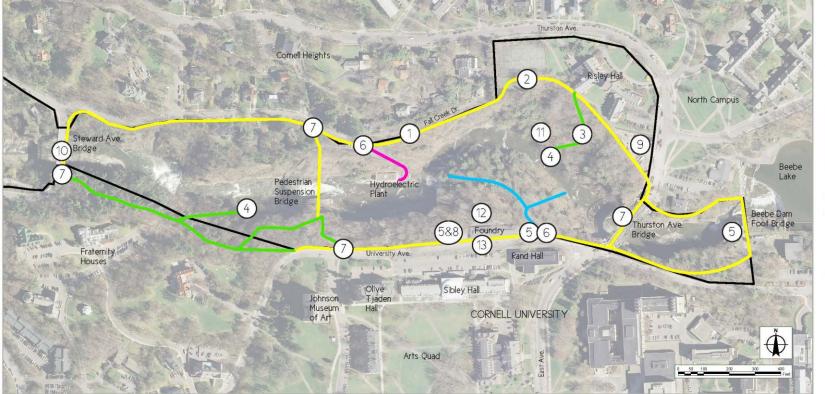
Questions / Discussion

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Map 1: Trail & Site-Specific

Recommendations

Woodland Trails (Matrix. #s 1.1 & 1.2a)

Class 2

Class 3

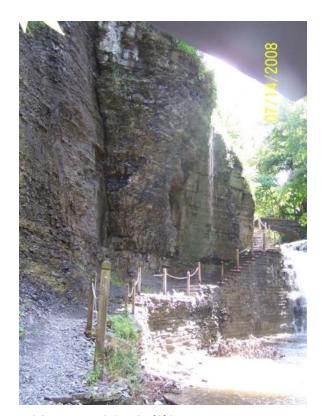
Class 4

Campus Commuter Trails (Matrix. #s 1.1 & 1.2a)

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Site-Specific Recommendations

Project Boundary



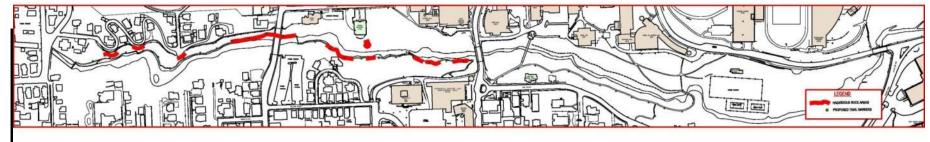
Slope Stability



Hazardous Trees



Trail Reconstruction



Cornell Plantations Natural Areas















Cornell Plantations Natural Areas





