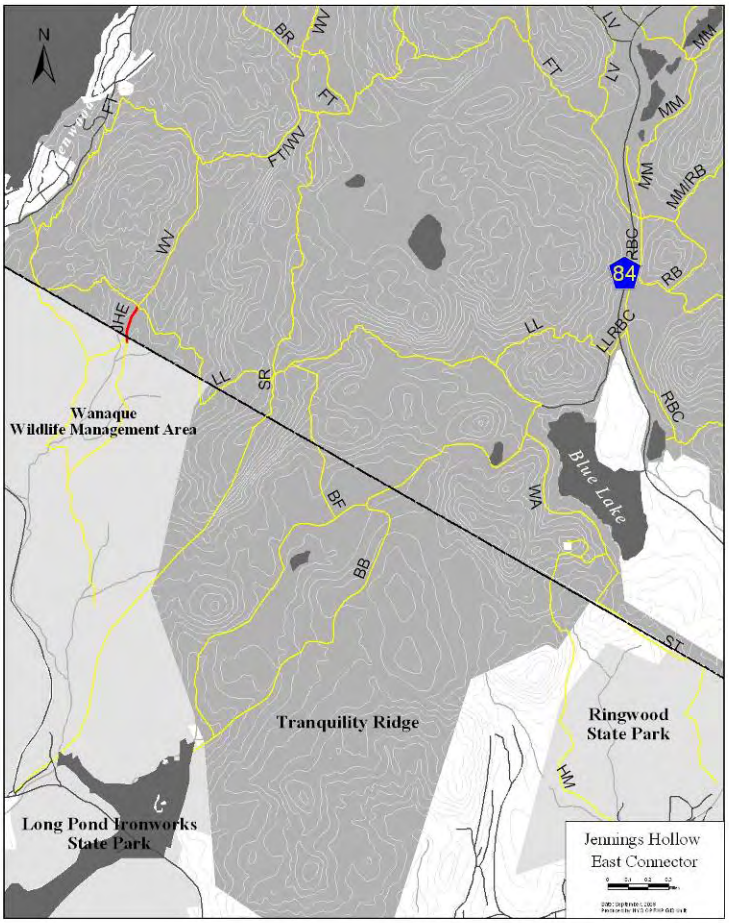
B. Proposed Connections

1. **<u>New Jersey Trail Connections</u>** - Connections to outside systems are a goal of the Trails Plan. In coordination with the land managers in New Jersey, several trails have been identified and assessed. Further coordination is needed for the implementation of these connections. Preliminary discussions have yielded positive steps toward a linked trail system. These connections were not identified in the Interim Trails Plan. The Uses noted are the proposed uses for the trail.

JHE - Jennings Hollow East Connector (A6, A7)

Length: 0.25 miles
Uses: Hiking



Description:

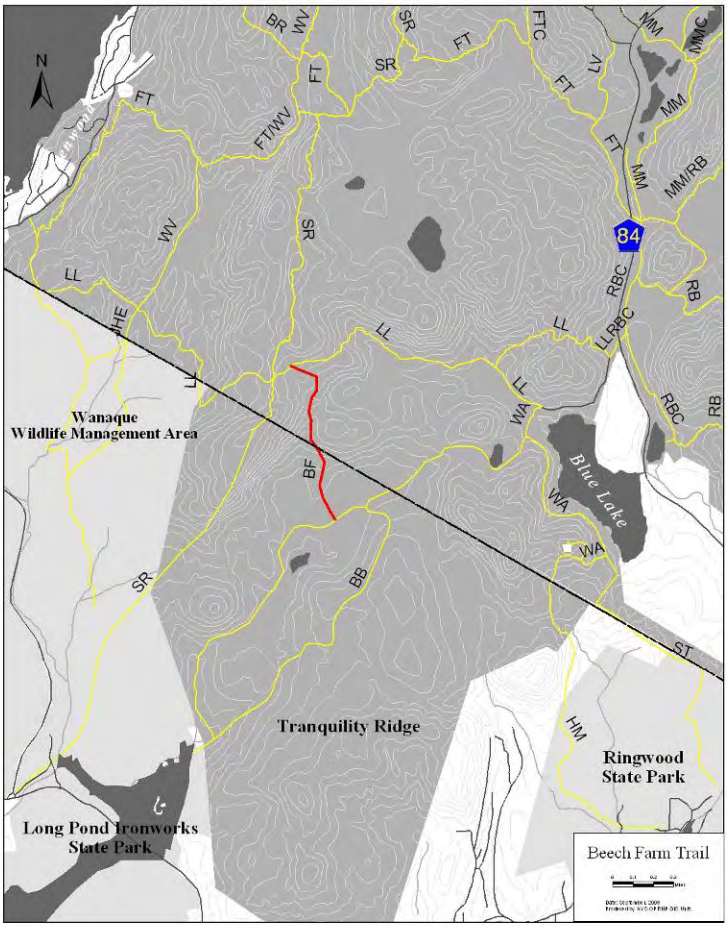
The Jennings Hollow East Connector Trail follows an old wood road to meet up with the existing Jennings Hollow Loop Trail in Wanaque Wildlife Management Area in New Jersey. Hiking would be the only use permitted on this trail as it is the only compatible use in New Jersey.

Assessment:

This trail is in acceptable condition. The trail is elevated and dry.

BF - Beech Farm Trail (B7)

Length: 1 mile
Uses: Hiking



Description:

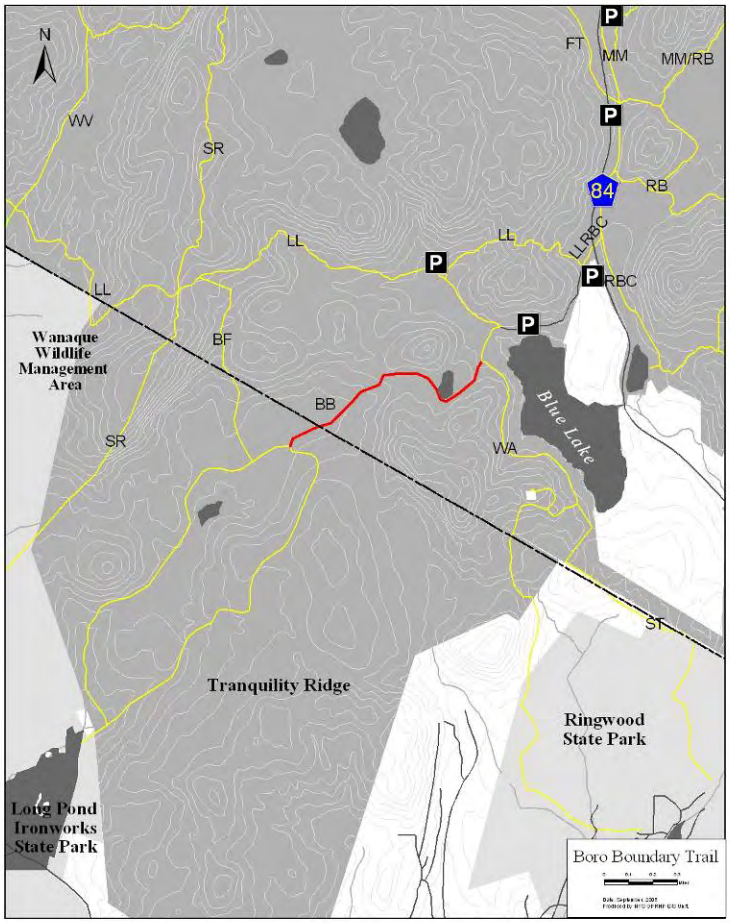
This trail follows an existing wood road from the Lake to Lake trail into New Jersey. The trail descends from the eastern face of Big Beech Mountain into the Tranquility Ridge area at the former Beech farm site. This trail would provide several cross border trail loop opportunities in the Tranquility Ridge and Ringwood / Sterling Forest® State Park areas. Hiking would be the only use permitted on this trail as it is the only compatible use in New Jersey.

Assessment:

The trail is approximately 10' wide and will require water bars and trenching to direct storm water runoff from the trail. Brush and fallen trees will need to be removed along the length of this trail.

BB - Boro Boundary Trail (B7, C7)

Length: 1.2 miles
Uses: Hiking



Description:

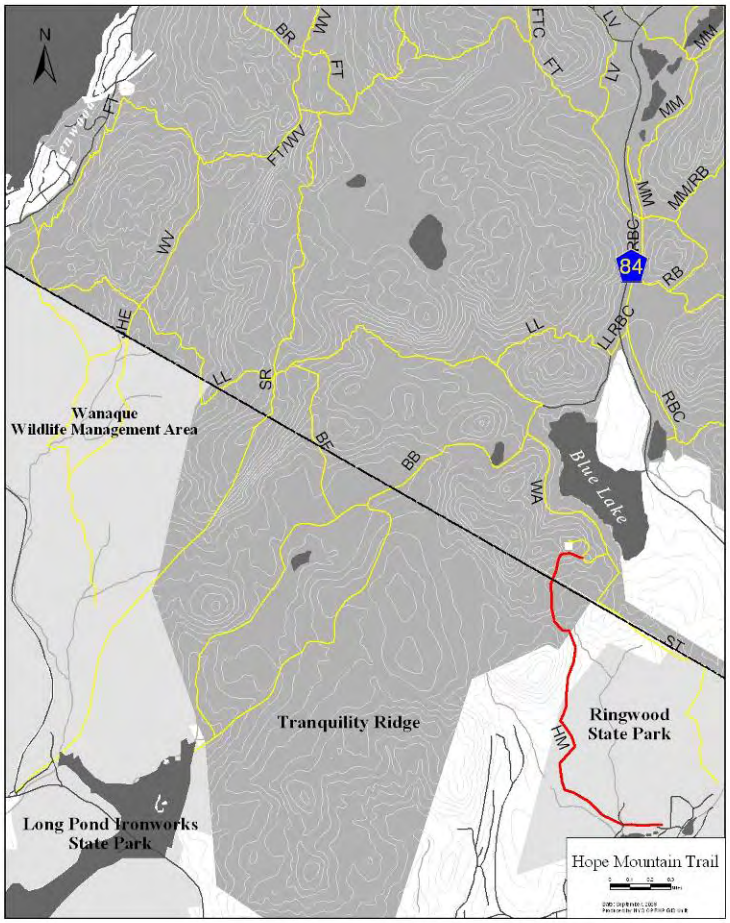
The Boro Boundary Trail follows an old wood road into Tranquility Ridge, a county park which is managed by PIPC. This trail would connect into trails proposed by Martin Deeks for historic interpretation of the mining industry and eventually connect into Long Pond Ironworks State Park. This trail follows an existing road network. The trail would begin at the Blue Lake boat launch and continue south to the NY/NJ border where it would continue on the "Boro Boundary Rd" and have its' terminus at the Hasenclever Iron trail in the Tranquility Ridge County Park.

Assessment:

There are two drainage issues in NY, which can be corrected with a culvert. There are at least 2 drainage issues just to the south of the state border in NJ that will require culverts and fill.

HM - Hope Mountain Connector (C7, C8)

Length: 2 miles
Uses: Hiking



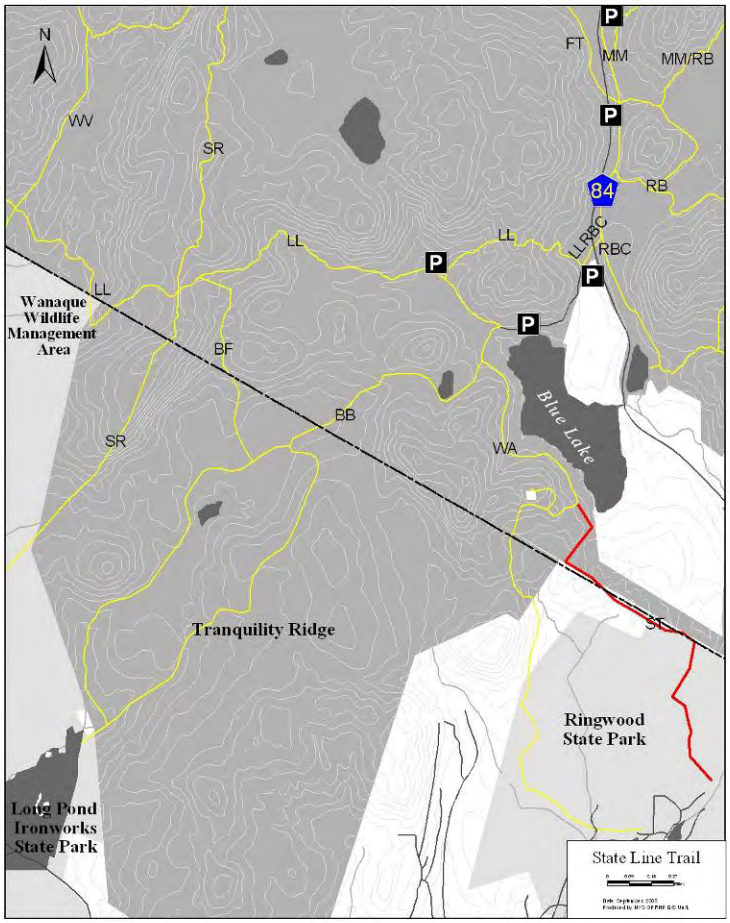
Description:

The Hope Mountain Connector Trail starts near the terminus of the Water Tower Trail and intersects with the newly constructed Hasenclever Iron Trail, which is in the vicinity of Ringwood Manor. The Hasenclever Iron Trail is part of the historical interpretation trails of the mining industry. This trail connects into Ringwood State Park. The trail is a footpath which becomes a wood road.

Assessment:

This trail is in acceptable condition.

ST - State Line Trail (C7, D7, D8)
Length: 1.5 miles
Uses: Hiking, Biking



Description:

This route cuts off near the end of the Water Tower Trail. It follows a Right of Way (ROW) to the right and then the trail descends slightly along a grass covered roadway. Just prior to reaching the NY/NJ Stateline, the trail turns to the left onto an old woods road and parallels the state line. Less than ¼ mile down the wood road ends and no trail currently exists. The trail can be placed where the terrain is best suited. Once across the state line, the trail follows wood roads with minor water issues and meets with the White Trail (north of Ringwood Manor) approximately ¼ mile south of the state line. NJ sections of this trail are within Ringwood State Park's boundaries.

This trail would provide a multi-use connection into Ringwood State Park.

Assessment:

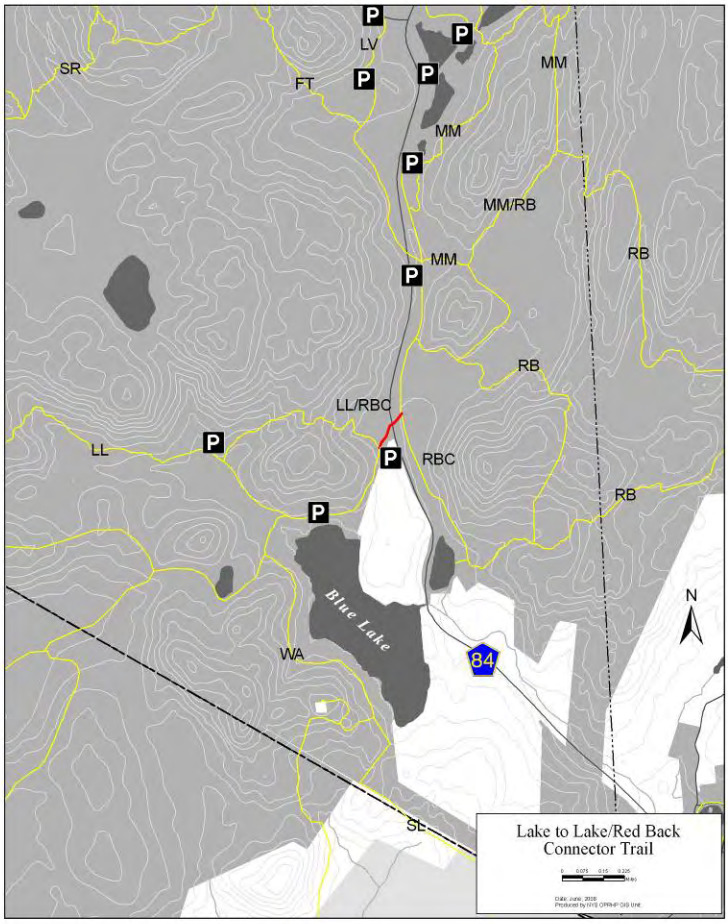
On the NY side there are no significant maintenance issues. Routine maintenance will include annual grass cutting, and occasional brush clearing.

2. **<u>In-Park Trail Connections</u> –** In order to provide loop opportunities to the fullest extent possible, new connections were needed. These connector trails were identified to provide linkages where ones didn't currently exist. The Uses noted are the proposed uses for the trails. In addition to the two proposed connector trails, County Route 84 has been identified as a potential opportunity for an additional connection through the park.

LLRB - Lake to Lake/Red Back Connector Trail (C7, D6)

Length: 0.15

Uses: Hiking, Biking, Equestrian



Description:

This trail was not in the Interim Trails Plan. This trail will be a multiuse connection between the Lake to Lake and Red Back trails that will provide for multiple loop opportunities.

This trail will begin just north of the entrance to Blue Lake on County Route 84. The trail leaves the west side of the Red Back Connector trail, climbs an embankment and crosses County Route 84. Once across the paved roadway, the trail enters the woods on the west side on an old roadway. The trail follows this roadway for approximately 20 feet before turning to the left and

paralleling the Blue Lake entrance road. The trail then turns right onto a second wood road and shortly comes to the Lake to Lake Trail.

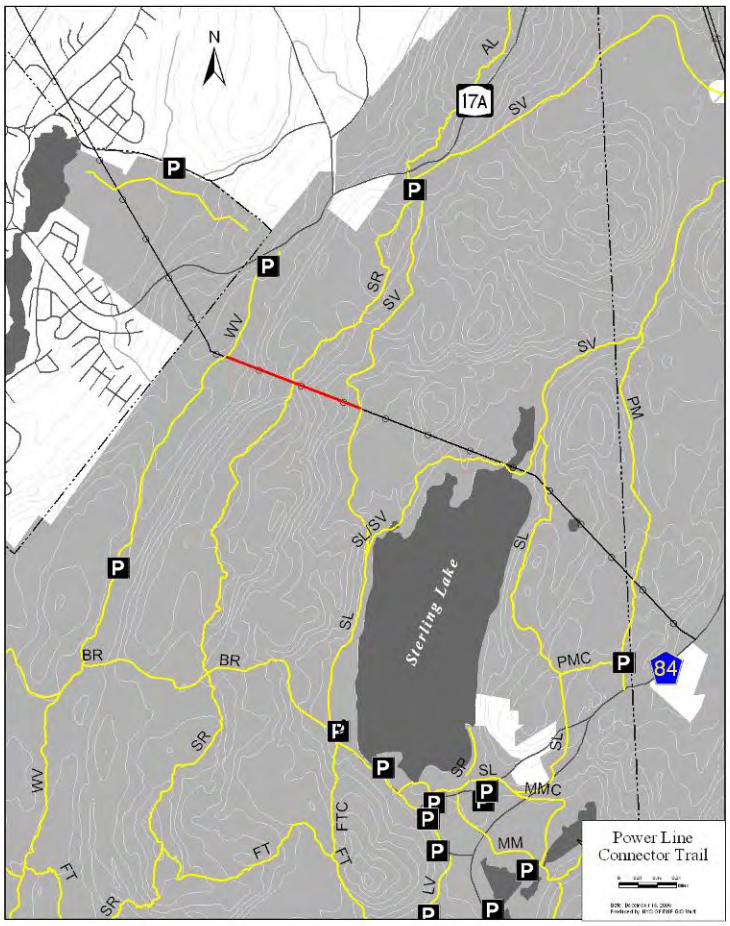
Assessment:

This trail will require clearing and grubbing.

PL - Power Line Connector Trail (C4)

Length: 0.5 miles

Uses: Hiking, Biking, Equestrian



Description:

This trail was not in the Interim Trails Plan. This trail is a proposed shared use connection between the West Valley Trail and the Sterling Valley Trail, providing for multiple loop opportunities. The trail follows through a power line corridor.

Assessment:

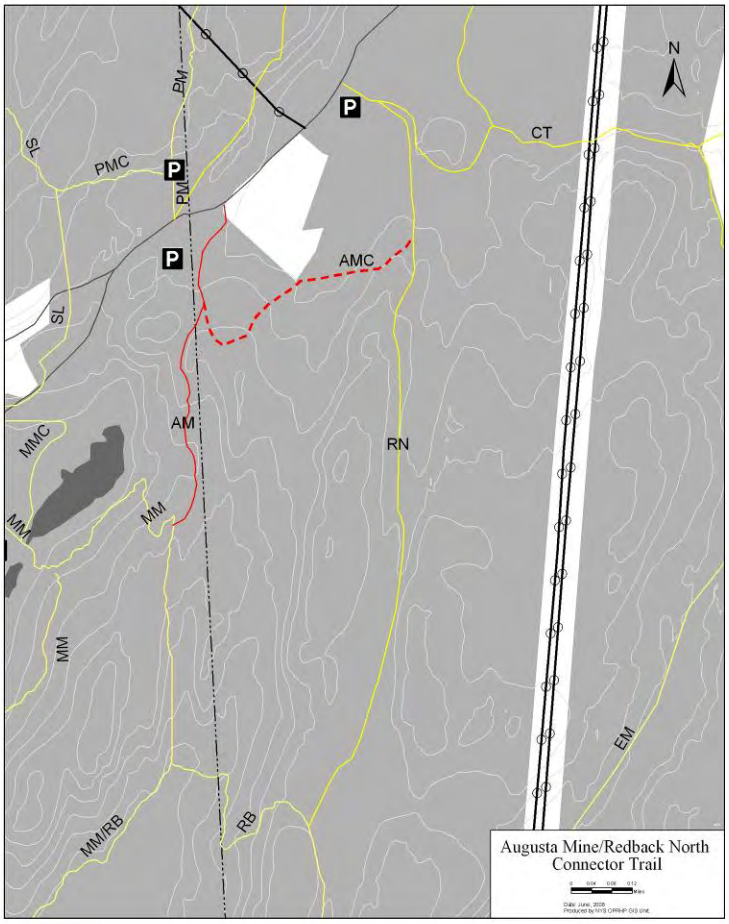
Trail is in acceptable condition with a few exceptions. On the east side of the trail, near the ridge, repair work needs to be done due to damage caused by power line clearing work. Minor grubbing and brush mowing is required. On the west side, there are two streams and a wet area. These will require water management techniques.

C. Post 2006 Acquisition Trails

1. Sterling Forge: One of the largest remaining in-holdings in Sterling Forest® State Park, the Sterling Forge acquisition provides critical habitat to endangered species and the opportunity for important trail connections on the eastern side of the Park. The following trails are proposed trails on the parcel most of which follow existing wood roads. The Uses noted are the proposed uses for the trail.

AM - Augusta Mine Trail (D5, D6)

Length: 0.7 miles
Uses: Hiking, Biking, Equestrian



Description:

This trail is in good condition with no water issues. The trail follows an existing wood road through gently rolling terrain and is suitable for multiple use purposes. The northern end of this trail comes out next to a fenced Parks maintenance facility on Long Meadow Road.

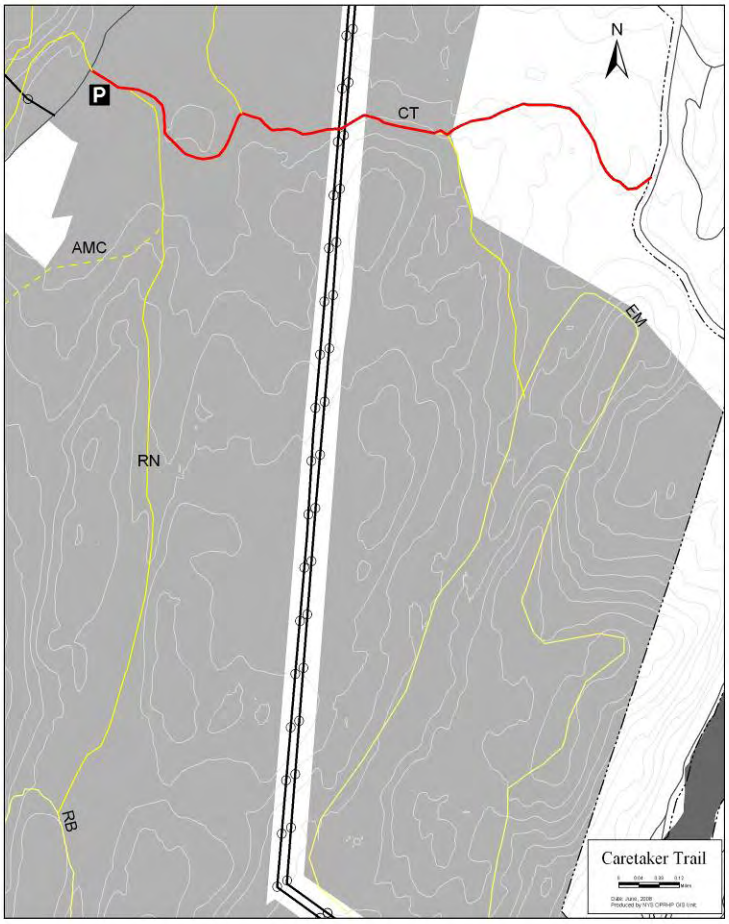
Assessment:

Trail is in acceptable condition.

A suggested rerouting of the trail would eliminate the access point near the maintenance facility, close the northern section of trail and provide a loop connection due east to the Red Back North Trail. This reroute would turn off of the current Augusta Mine Trail just north of the mine. Following a grass covered skid road, the trail begins up hill to the east and then turns north once reaching the top of the hill. The trail continues north on a former skid road. The trail descends a hill and crosses a wet area and a small stream and then begins to climb. The trail reaches a small plateau and then turns to the east and begins a steep climb (This climb can be re-routed to the north to a more moderate climb if necessary). At the top of which, the trail turns back to the north and descends slightly to meet the Redback North Trail. Some switchbacks may be necessary to climb the steeper sections and a possible culvert for the wet area.

CT - Caretakers Trail (D5, E5)

Length: 1.5 miles
Uses: Hiking, Biking



Description:

Trail is in good condition. Trail follows existing wood road with minimal drainage issues. The trail takes the left fork at the intersection with Red Back

North Trail and continues in an easterly direction following the grass covered roadway. The trail is mostly level in this area with slight climbing. The trail meets the power line corridor and continues directly across to reenter the forest. Beyond the power line the trail climbs slightly and then descends towards the park boundary. The eastern most 2,500 feet of this trail are currently on property owned by Tuxedo Reserve that has been discussed as a possible gift to the Park. In this area, there is one abandoned car and some car parts along the trail that should be removed. It would be possible to make a connection with both the Eagle Mountain Loop trail and with the parking area near the power substation on County Route 84, just south of Four Corners Pond. This trail would be opened when the additional land is acquired.

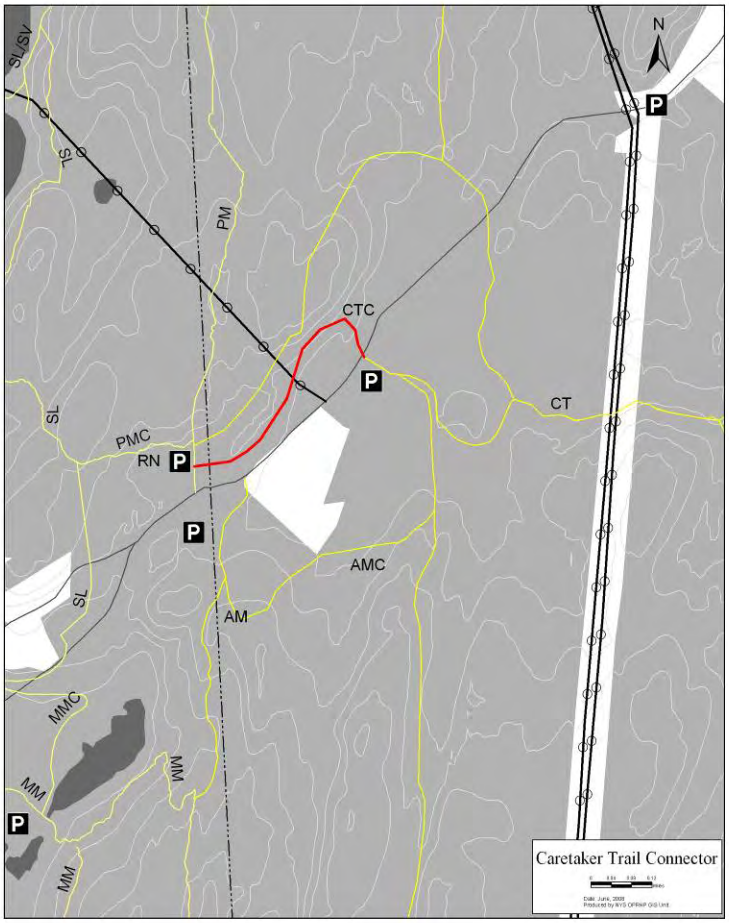
Assessment:

Most notable are areas just to the west of the power line crossing where stream water is channeled onto the road. At the power line crossing, spring water from the hillside makes this area damp. At ¼ mile to the east of the power line, there is an area where water drains during times of heavy rain. Water bars and fill are required to correct the situation.

CC - Caretaker – Pine Meadow Connector Trail (D5)

Length: 0.5 miles

Uses: Hiking, Biking, Equestrian, Cross-country skiing



Description:

A connection can be made between the parking lot at the Caretaker house on the east side of Long Meadow Road and the Pine Meadow Trail on the west side of Long Meadow Road. This will significantly expand trail use opportunities. Parking is good at the Caretaker residence for both cars and equestrian trailers.

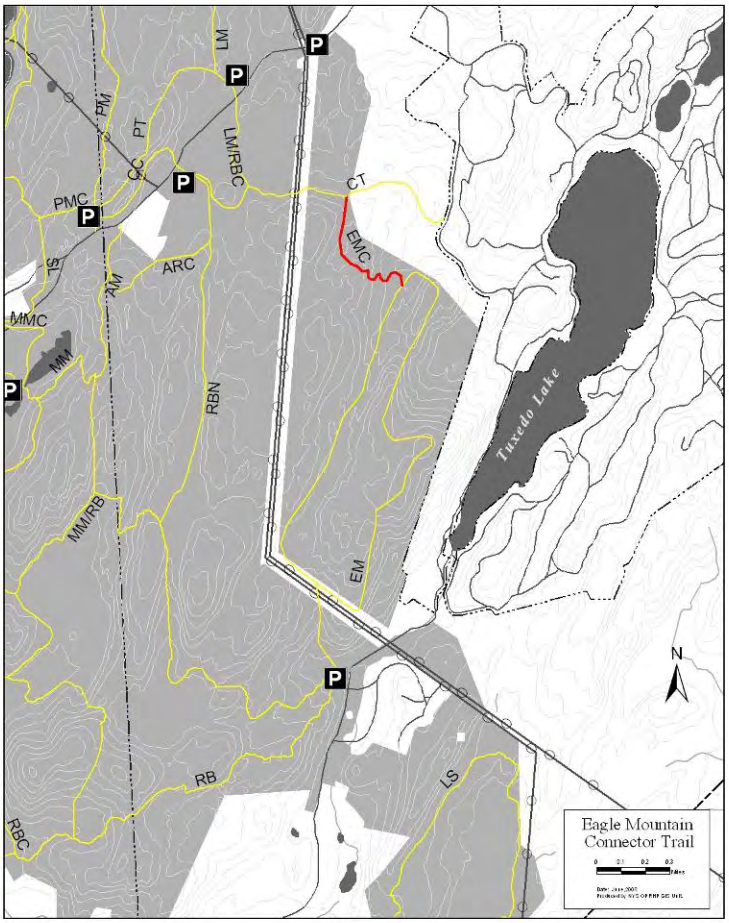
The trail crosses County Route 84, Long Meadow Road, 20 yards south of the driveway where sight distance for crossing the highway is excellent. Trail will angle up from the shoulder on a gentle slope for about 50 yards to where it reaches a well defined wood road in excellent condition that connects to the south directly to the Pine Meadow Parking Lot. This connector would be suitable for all uses.

Assessment:

Trail is in good condition.

EMC - Eagle Mountain Connector Trail (E5)

Length: 0.5 miles
Uses: Hiking, Biking



Description:

This proposed trail would connect the Caretakers Trail (just before reaching the Park boundary) to the Eagle Mountain loop trail. Just prior to the boundary the trail leaves the road to the right and climbs in a south easterly direction. Upon reaching the highest point of that ridge, the trail descends slightly and crosses a low area and a stream (dry at the time of this writing). After crossing the stream the trail climbs to the top of the next ridge and crosses a level area at the top before starting to descend. The trail works its way down the ridge using switch backs to get through the many ledges that make up the eastern face of this ridge. As the trail nears the bottom of the ridge it follows a skidder road and crosses a stream. Once beyond the stream it climbs slightly to make a connection with the Eagle Mountain loop trail.

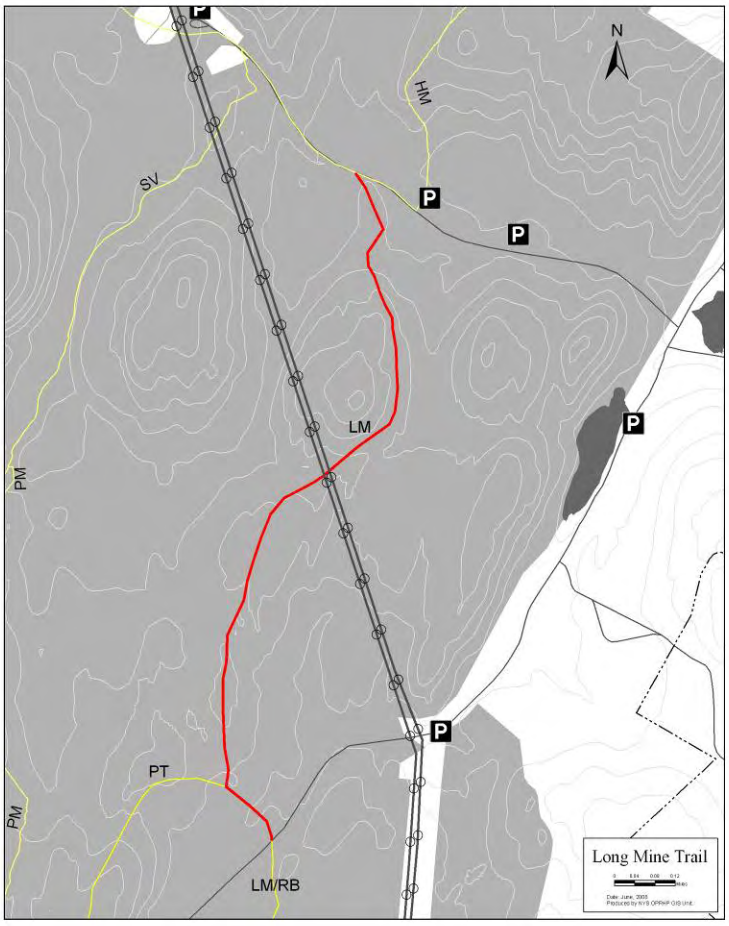
Assessment:

The trail has minor water runoff issues that can be corrected with ditching and water bars/culverts where necessary. The portion where the trail leaves the road will need to be cleared of brush and fallen trees. Some fill may be needed

in low lying areas. Both stream crossings will require culverts (12" diameter) to improve the crossings.

LM - Long Mine Trail (E4, E5)

Length: 1.6 miles
Uses: Hiking, Biking



Description:

This trail is an historic roadway used to access one of the earliest mines in Sterling Forest®. Long Mine parallels the trail at approximately ¼ mile from County Route 84. The trail has a relatively hard roadbed of native soils with subsurface tailings from the mine mixed in sections close to the mine. There is ponding of surface water run off on the road due west of the parking area. This area is dry most of the year. Drainage improvement work is required to mitigate this situation. There is excellent educational potential for interpreting the past mining operations.

This trail would serve as a primary connection between the Paterson Trail and the Hogback Mountain trail.

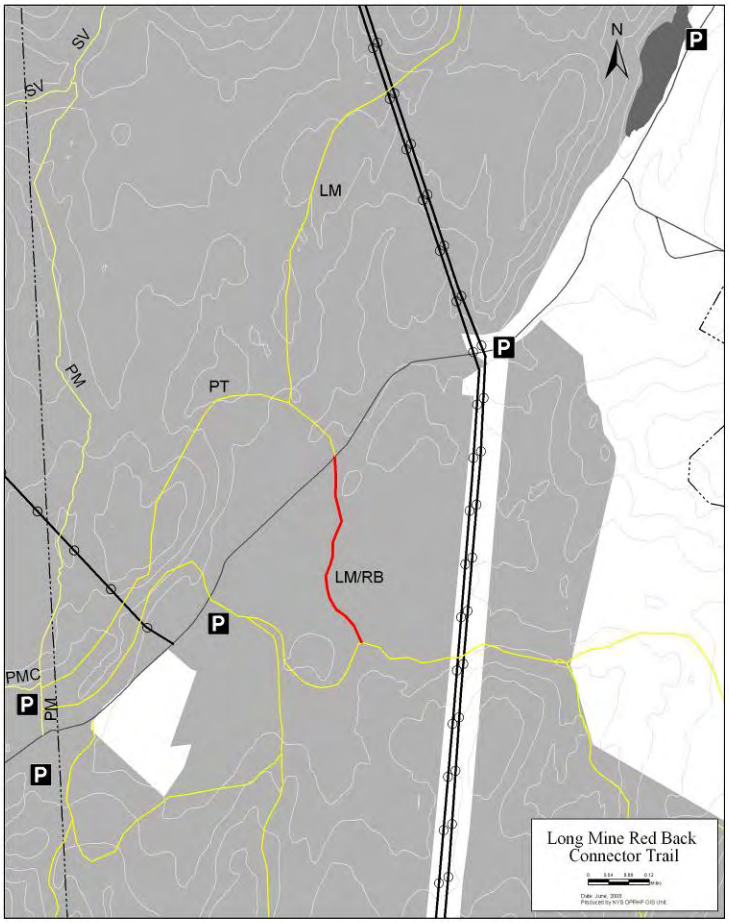
Assessment:

The trail surface is solid with little or no erosion problems. Some drainage work is required prior to Long Mine just out of the parking area and

immediately south of the power line where softer soils are encountered. Mine opening safety issues need to be addressed.

LMRB - Long Mine – Red Back Connector Trail (E5)

Length: 0.4 miles
Uses: Hiking, Biking



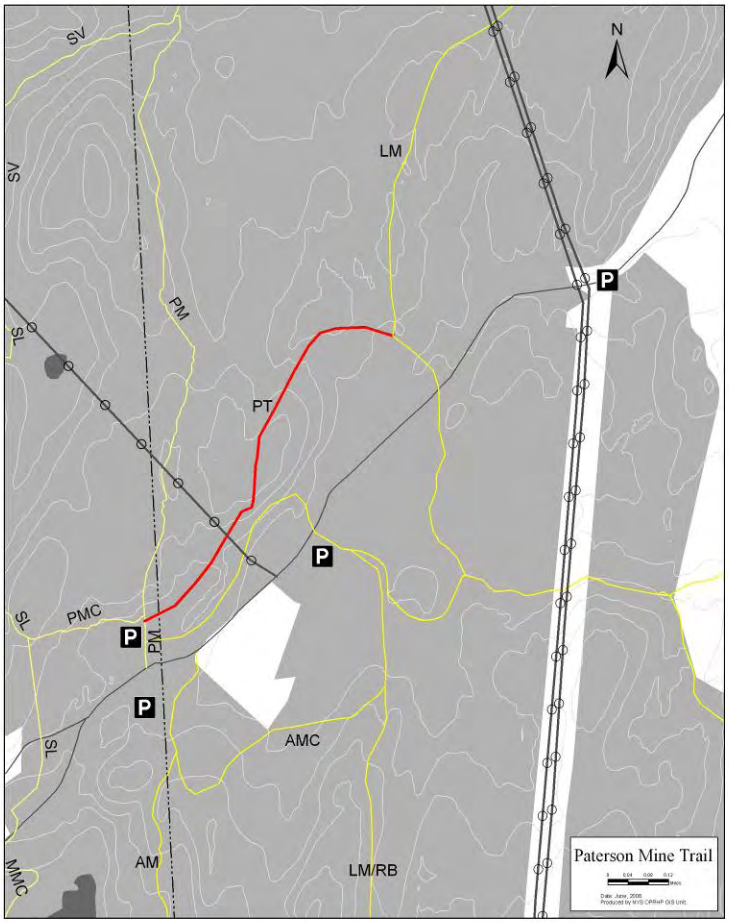
Description:

This trail is in good condition with no water issues. The trail follows an existing wood road through gently rolling terrain and is suitable for multiple use purposes. This trail makes possible a connection between the Long Mine Trail and the proposed Caretaker Trail on County Route 84 to Brook Road and Red Back Trails.

Assessment:

Trail is in acceptable condition.

PT - Paterson Mine Trail (D5, E5)
Length: 0.8 miles
Uses: Hiking, Biking



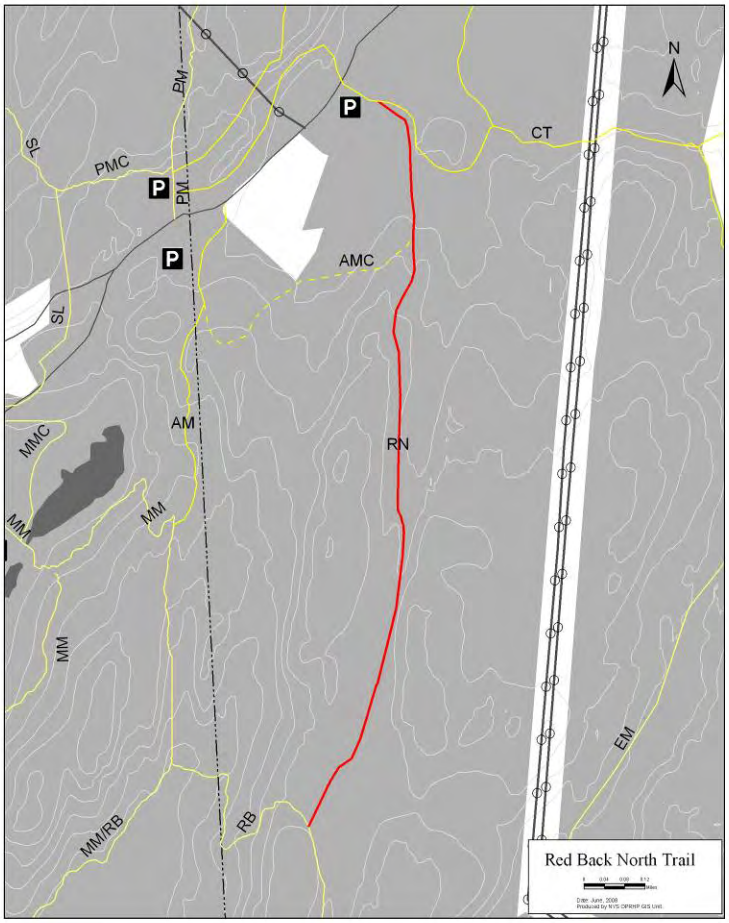
Description:

This trail would utilize the Mountain Mine Road that begins at the Pine Meadow Parking area and goes north behind the Scott Mine and related hoist house on a hard surface / well drained trail dating back 200 years. Approximately ¼ mile north of the parking area the trail user will see the Paterson Mine. The trail runs parallel to the cut in the hillside, and then crosses the mine itself. It continues to the top of the hill before leveling off. The trail is well defined and well drained. Continuing over the top, the trail descends toward the Mountain Mine on the north slope of the same hill. One quarter mile further the trail intersects the Long Mine trail.

Assessment:

Minor clearing of low hanging branches will enhance an already nice hike. Paterson Mine should be fenced in.

RBN - Red Back North Trail (D6, E5, E6)
Length: 1.5 miles
Uses: Hiking, Biking, Equestrian, Cross-country skiing



Description:

This trail follows a woods road for its entire length, picking up where the current Red Back Loop trail turns west to meet the McKeags Meadow Trail and continuing on to the former Caretakers' home on County Route 84.

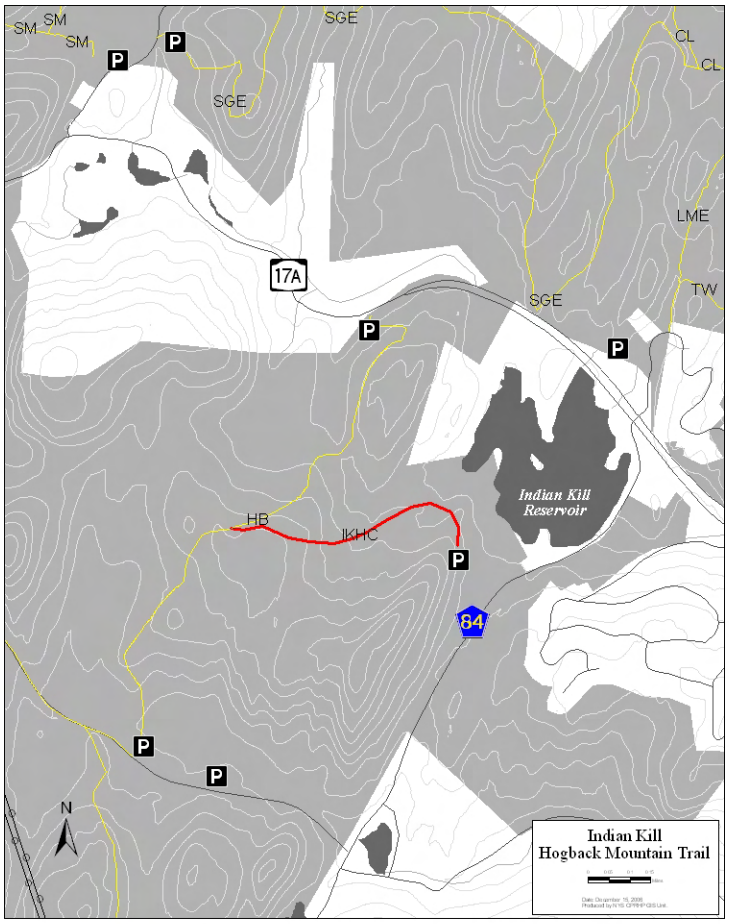
Assessment:

For the most part, this trail is in very good condition. One exception is a stream crossing just south of the former park boundary that will require culverts and fill to repair. The section to the south of this stream crossing requires some clearing and grubbing. In addition there is a seasonal wet area on a short section of the trail near the northern entrance that will need to be addressed. There exists the possibility to reroute this section around a large rocky section on higher ground. The Caretaker House Parking area is suitable for equestrian use.

2. Cintichem: This 100 acre acquisition is a former industrial site. All buildings have been removed and the area will be conveyed as vacant land. The owner completed all aspects of site remediation. This parcel is located on Orange County Route 84 less than a mile from State Route 17 and has ample frontage on the Indian Kill Reservoir. Its proximity to major transportation corridors makes it a good candidate for trailhead access with a large parking area.

IKHC - Indian Kill – Hogback Connector Trail (E4, F4)

Length: 0.65 miles
Uses: Hiking, Biking



Description:

This trail would connect the parking area at the former Cintichem site near the Indian Kill Reservoir with the Hogback trail. It would be suitable for hiking and biking. It primarily follows old wood roads and skidder trails with a short portion closer to the Cintichem site that will need to be constructed. It would take advantage of the ample room for parking at the Cintichem site.

The trail traverses the north slope of Hogback Mountain passing through mixed hardwood forest. There are two small streams to cross that appear to

flow only during times of heavy rain. The trail meets the Hogback Trail at its highest point just before it starts its descent towards Ironwood Road.

Assessment:

Water issues need to be assessed further and short section to be constructed.

D. Interpretation

Sterling Forest® State Park has many significant natural and cultural resources to interpret. The Park's Educator provides weekly, guided education hikes. Interpretation of the natural or cultural history, and more often both are included on these hikes. These hikes are sometimes combined with lectures and/or classroom activities.

A main attraction at The US Senator Lautenberg Visitor Center in Sterling Forest® is a 12' x 20', three dimensional relief map of the park. Specific trails can be illuminated on this map in the color of the trail marking with the push of a button. In addition to individual trails, suggested hiking routes are presented in categories of easy, short, medium, and long hikes. These range in length of two tenths of a mile to approximately ten miles. These routes can consist of sections of several trails forming a loop. A series of handouts have been created that include interpretive information for specific hikes as well as a trail map.

The two most popular hikes from the Visitor Center are the Sterling Lake Loop and the Fire Tower Ramble (Fire Tower Trail). Both of these four mile hikes lead visitors past numerous remnants of the iron industry. The Lakeville Ironworks Trail opened in September 2008 and can be used as an educational alternate route on either of the above hikes adding only slightly to their length or taken separately from the Visitor Center on a hike about one mile in length. This interpretive trail, tells the story of the mining and ore processing operations that began in 1736 and ended in 1923.

Also in progress is the creation of the Golden Winged Warbler interpretive trail (Warbler Trail) that will bisect the Indian Hill loop trail. Nearly five acres of former farm fields that were becoming less and less suitable as habitat for the Golden Winged Warbler were restored to open fields in April 2006. Grant money obtained by Ithaca College for this project includes funding for several interpretive signs along this trail.

E. Support Facilities

Due to the large size of the park and access from many public roads, there are multiple entry points to the trail system. Currently, 46 parking lots provide 523 parking spaces (Map 4). This map also shows five new proposed parking areas (#47-51). The capacity of the parking lots ranges from 2 to 60 spaces. The capacity of the large lots serving the Visitor Center and the Greenwood Lake day use area is 110 spaces total. The capacities of the other lots are less than 20 spaces each. Table 1

lists the parking areas identified in the Master Plan as well as five new parking areas. Most of the lots are open on a year-round basis. Seasonally accessed parking lots are identified by an 'S' after the number. These are parking areas that are either not plowed or only open for certain periods of time. Interior hunting parking areas are lots located in interior areas that are available during the hunting season. Only a few lots provide comfort facilities. Five parking lots have a maximum capacity for 18 horse trailers (identified in italics). Some parking areas are located completely within the highway right of way (ROW).

Table 1. Parking inventory.

Label	Location/Description	Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trailhead	On Right of Way (ROW)
1	Indian Hill Trail Head Parking	14	No	No longer seasonal parking area			
2	Wildcat Trail Head on Hall Drive opposite Furnace	5	No	No longer seasonal parking area		Yes	
3	Old Route 210 - Seasonal parking beyond ejector station	6	No	No longer seasonal parking area		Yes	
4	Hogback north trail head	2	No			Yes	
5	Wildcat Trail Head & Commuter Parking	40	No				
6	Hogback south trail head	4	No			Yes	
7	Ironwood Circle area used as Hunter Parking for areas to the west	6	No			Yes	
8	Sterling Ridge / Allis / Sterling Valley Trail Head – off of Rt. 17A	16	No			Yes	
9S	West Valley Trail Head external on 17A	6	No				
10	Pine Meadow Parking	10	No	Alternate access road now used to access parking		Yes	
11	Visitor Center Parking	50	No			Yes	
12S	Lakeville foundations & Trail Head Parking	6	No			Yes	
13S	*Laurel Meadows Air Evacuation & Trail Head Parking*	*16*	*No*		*10*	*Yes*	
14	Fire Tower & Lake to Lake Trail Head off East Shore Rd.	12	No			Yes	

Label	Location/Description	Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trailhead	On Right of Way (ROW)
15	Gate & Fire Tower Trail Head Parking - ENTIRELY ON CO.84 Right of way (ROW)	6	No			Yes	Yes
16S	*Opposite Buttonwood Dr. on Southgate Rd.*	*10*	*No*		*3*	*Yes*	
17	*Lake to Lake Trail Head Parking off Co. 84*	*12*	*No*	*No longer seasonal parking area*	*2*	*Yes*	*Yes*
18	*Long Swamp Trail Head on Eagle Valley Rd.*	*6*	*No*		*1*		*Yes*
19	Eagle Lake on former Eagle Valley Rd.	8	No				
20	W. Lake / Old Forge Spring	4	No				Yes
21	Visitor Center Overflow Parking	30	No			Yes	
22	Grey House opposite furnace	16	No			Yes	
23	End of West Sterling Lake Rd. base of fire tower road.	6	No			Yes	
24S	Former fishing area in 1971@ South end Sterling Lake	12	No			Yes	
25	Laurel Meadow Ponds Co. 84 parking - ENTIRELY ON CO.84 Right of way (ROW)	4	No				Yes
26S	*Interior Parking on Fire Tower Roadway*	*16*	*No*		*2*	*Yes*	
27	Roadside parking McKeags Meadow Trail Head	4	No	No longer seasonal parking area		Yes	Yes
28	Blue Lake fisherman parking	6	No			Yes	
29S	Lake to Lake interior parking	16	Yes				

Label	Location/Description	Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trailhead	On Right of Way (ROW)
30	O & R Substation on Co. 84 - ENTIRELY ON CO.84 ROW	6	Yes	No longer seasonal parking area			Yes
31	Four Corners Pond roadside parking on old Sterling Lake Rd. - ENTIRELY ON CO.84 ROW	8	No				Yes
32	Ironwood Rd. existing graveled wide area in road, used for Hunter Parking	5	Yes	No longer seasonal parking area		Yes	
33S	Interior-Long Meadow Ext. north of Clinton Woods	8	Yes				
34S	Orange Tpk. Gas Line entrance headed east off road	3	No				
35S	Town Line Parking on East Mombasha Rd.- used by Hunters	4	No				
36	AT / wide spot on East Mombasha Rd.	8	No				
37S	Bramertown Rd. seasonal parking south of Little Dam Lake	4	Yes				
38S	Cable & seasonal parking Bramertown Rd. west end	5	No				
39S	Doris Duke interior parking (closed)	10	No				
40S	Parking near Gardens upper lot on Benjamin Meadow	6	Yes				
41S	Doris Duke at Carpenter Shop on Benjamin Meadow	12	No				
42S	*Sears Hunter parking*	*10*	*No*	*Not plowed*	*15 (if developed)*		
43S	West Valley Trail internal off of Rt. 17A	10	Yes	Not plowed			

Label	Location/Description	Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trailhead	On Right of Way (ROW)
44S	East Shore Rd roadside parking opposite beach - Used in Fall by Hunters	7	Yes			yes	
45S	Greenwood Lake Beach	60	No				
46S	Bailey Rock internal parking off of East Shore Rd. - Used in Fall by Hunters	8	Yes				
47	Long Mine Parking	10	No	New		Yes	
48	*Caretaker House Parking*	*40*	*No*	*New*	*8*	*Yes*	
49	*Cintichem - (Suggested if we want to open a trail that would connect to Hogback Trail using existing wood roads.)*	*200*	*No*	*New*	*40*	*Yes*	
50	Handicap Fishing Parking - West Sterling Lake Road 1/2 mile north of gate where pavement ends	4	No	New			
51S	Candle Road area	6-8	Yes	New			

F. Special Events

A special use permit is required for group events utilizing the trail system or accessing areas that are not accessible to the general public. Each permit application is evaluated to determine potential impacts and compatibility with the natural, cultural, and recreational resources.

IV.
Trail System Alternatives

The Sterling Forest® State Park trail system is currently guided by the Interim Trails Plan as identified in the Master Plan. The Interim Trails Plan identified potential trail opportunities for hiking, biking, equestrian and cross-country skiing. Currently there are almost 55 miles of open designated trails. The designated hiking trails and marked wood roads are open to foot traffic and in limited cases, biking and cross-country skiing. The Interim Trails Plan and approved modifications provide for over 70 miles of single and shared use trails. The goal of the Master Plan was to provide a framework in which to develop a comprehensive trails plan.

The comprehensive trails plan provides a vision, integrated trail system, and standards/guidelines. The goal is to provide a variety of experiences to a variety of trail users. Operation and maintenance recommendations are also provided.

The proposed design of the trail system for Sterling Forest® State Park provides a variety of experiences for a variety of user groups. There are opportunities for hiking, mountain biking, horseback riding and cross-country skiing. Recommended actions have been identified for connections with adjacent public lands such as the park land in New Jersey.

Changes to the existing system will come primarily in the form of reroutes or relocations to trails or wood roads and changes in trail use designation. The trail assessment subcommittee examined each trail and made recommendations for improving the trails. Each trail has been evaluated to determine which portions of the trail, if any, should be rerouted (minor change to the alignment) or relocated (significant location change) as well as to assess the overall trail condition. These changes are identified in the preferred alternative. In addition, there are Post 2006 Acquisition lands that were reviewed for proposed trails.

A. Status Quo – Interim Trail Plan with modifications

Map 5 identifies the Interim Trails Plan that was included within the Master Plan. The system utilized the existing trails and wood roads. The wood roads were constructed for the convenience and imperatives of forestry management and were not designed and constructed in accordance with recognized recreational trail siting and design standards.

The trails and wood roads were mapped through the use of global positioning system (GPS). Based on the inventory and staff knowledge of the trails and wood roads and objectives identified in the Sterling Forest® State Park Master Plan, an interim trails plan was developed. The interim plan provided for the utilization of recognized trail standards to convert, and where desirable, modify the wood roads and/or replace the wood road with a well-designed trail system. This would include, but is not limited to, reducing the width, constructing water bars, or realigning the trail route from the wood road.

In limited cases, the relocation and/or replacement of a given wood road route may be considered, provided it is a properly sited and designed trail that reduces environmental impacts and improves overall character. Relocations would first be considered within the proposed trail route. This would require a detailed field assessment. Also the opportunity to assess the possibility of developing multi-use or shared trails to expand the types of recreational experiences may be assessed.

The Status Quo Alternative is the existing trail system as identified in the Interim Trails Plan as well as other modifications that have since been approved. These are identified on Map 6 as new trails.

- The McKeags Meadow Trail re-route around the pond has been completed.
- The Bare Rock reroute and the opening of the Warbler Trail has not yet occurred.
- The Sapphire Trail was constructed as a single-track hiking trail by the NY-NJ Trail Conference.

B. Alternative A

Alternative A reflects the recommendations of the various trail user groups.

a. Hiking (Map 7)

- Allis: A re-route is proposed between the gas line and the power line north of Rt. 17A. Approximately 90% of the reroute follows existing unmarked trails. Leaving the gas line to the north, the trail follows a level area with evidence of ATV use and crosses a woods road. The trail begins to climb through shrub brush and reaches an open view point to the south with very good views of the north end of Greenwood Lake. At this point, the trail begins to follow a well used unmarked trail (which it follows for the remainder of the reroute). The trail goes through a stand of pines at its highest point and then begins a descent towards the power line. The trail reroute meets the current alignment of the trail at the power line. This reroute will require minor grubbing and clearing of scrub brush and fallen trees.
- Fire Tower: Close an existing portion of the trail between the fire tower and the West Valley trail and relocate the trail to the route of the old White Trail, which connects the Sterling Ridge trail to the West Valley trail, just south of the flooded area. This reroute requires a bridge over Jennings Creek. Additionally, from the junction of West Valley trail traveling west toward Greenwood Lake, rerouting the trail to the elevated ground above the roads would mitigate the water problems and provide improved views of Greenwood Lake and beyond. A properly graded trail with adequate drainage and hardened surfaces would provide a safe, maintainable and much more pleasing route to hike.

- Lake to Lake:
    1. Relocate trail to higher ground immediately to the north, which would provide a dry trail and outstanding views.
    2. Allow for two routes running east-west, the above proposed and the existing route, with minor reroutes to avoid wet areas and surface hardening to withstand the impacts associated with multiuse trails.
- Sterling Gardens East (proposed): This trail is recommended to fill a gap in the trail system in the northern section of the park. This proposed trail would start out going west on Clinton Road from the junction with Orange Turnpike and then follow various woods roads and an unmarked trail along a ridge line south approaching Rt. 17A. Using wood roads, it would continue north to a wedge of Doris Duke land on the south side of Bramertown Road and then, using another wood road and an unmarked trail, on to the seasonal parking area on Benjamin Meadow Road. It has the potential to become a connector trail for several other trails by crossing Benjamin Meadow Road, entering the Doris Duke area, to connect to Sterling Mountain and Allis trails, Appalachian, Indian Hill, Furnace, and Wildcat Mountain trails.
- Sterling Gardens West (proposed): This area is roughly bordered on the south by Rt. 17A, the mountain ridge east of Lakes Road on the west, the Appalachian Trail on the north and route 91 on the east and is bisected by the Allis Trail. Access to the area would be from the seasonal parking on Benjamin Meadows Road on the eastern side and the somewhat limited parking on Lakes Road for the Appalachian Trail on the western side. It is recommended that a trail be built in the north-west section of the park, which can connect parking and other trails in the north section of the park across to the Allis Trail. This area needs additional exploration. The Interim Trails Plan designated Sterling Mountain/Doris Duke trail has generally been considered of little interest and has badly eroded sections. Exploring off road traces may be necessary to access points of interest. Trails connecting at the seasonal parking on Benjamin Meadow Road to the above proposed Sterling Gardens East Trail will allow for complete loop hikes using these and the AT.
- Sterling Lake Loop: Reroute a small section of the trail at the north end of the lake. It is recommended that the trail be relocated to the south to a point above the shoreline of Sterling Lake and then continue along the shore on existing traces of trails for about 0.5 miles through the forested area above the lake, passing a beaver lodge, across a wooded

peninsula, and rejoining the Sterling Lake Loop at the "beach" at the north end of the lake. This new route provides superb views of the lake. There is also an old path cut through part of the new routing, reducing considerably the need for trail construction.

- New Jersey Connections (Connections 2 – 6 are described in Chapter III, Section B. 1):
    1. Jennings Hollow West – this trail is entirely in NJ.
    2. Jennings Hollow East – extension of West Valley Trail.
    3. Beech Farm Trail
    4. Boro Boundary Trail - connects into the Hasenclever Iron Mines Trail, envisioned by the late Martin Deeks.
    5. Hope Mountain Connector
    6. State Line Trail

b. Biking (Map 8)

The following criteria were utilized in the analysis of trails that would be suitable for bike use:

1. Type of trail – is the trail single track, double track, logging road, or paved road?
2. Type of trail system it is a part of – is the trail a loop, stacked loop, point to point (out and back), or connector?
3. Sustainability – is the trail sloped or level, erosion, soil type, trail design flaws?
4. Aesthetics – is the trail attractive, points of interest, varied terrain, technically challenging, length?
5. Ride worthiness – is the trail rideable in both directions, appropriate sight lines, rideable in most conditions?
6. Options – are there potential reroutes, can existing trail be re-engineered if necessary (hardening of tread way)?

An ideal mountain bike trail system should contain some or all of the following:

1. mix of single track and double track
2. continuous dirt surface without interruption by paved sections
3. varied terrain with flat, rolling, climbing, and descending sections
4. varied surface conditions (rocks, dirt, leaves, hard and soft soil)
5. multiple choices of routes and direction
6. enough total mileage to ride for 2-4 hours without repeating sections

Alternative A Trails:

1. Sterling Lake Loop
2. Sterling Valley Loop
3. West Valley
4. Bare Rock

5. Portion of the Fire Tower Trail to connect Bare Rock to Lake to Lake
6. Lake to Lake
7. Water Tower Trail – used to connect into New Jersey, Ringwood State Park
8. McKeags Meadow - Red Back - Eagle Mountain
9. Hogback Mountain
10. Long Meadow Extension – Townsend trails, which form a loop
11. Connectors not identified by the user group but included as part of the trail system are the Power Line Connector Trail, which connects West Valley to Sterling Valley, and the Lake to Lake - Red Back Connector Trail.

An assessment of the trails proposed for bike use determined that most of the trails are in good condition for bicycle travel, with a few exceptions:

1. The area of severe erosion on the Sterling Valley Trail (previously identified in the trail assessment) has continued to deteriorate the trail, and presents an unsafe and unrideable condition. This area will need to be re-routed before the trail can be considered safe for riding. Several possible routes have been explored within the overall assessment process.
2. On the Sterling Lake Loop, the two sections of single track (foot path) that descend to Iron Forge Rd, and continue toward Long Meadow Rd. have short sections that contain loose rocks. These areas would benefit from minor trail grooming and arrangement of rocks that would allow a wheel to roll over them.
3. On the Hogback Mountain Trail (proposed), the bridge just in from Ironwood Road needs replacement. This would only be necessary if the route was needed for vehicular access. If this is not the case, then the bridge could be dismantled, and an alternate stream crossing could be considered.

c. Equestrian (Map 9)

Equestrian trail opportunities were assessed for length, width, surface, and attractiveness as a trail. An ideal system of equestrian trails possesses a variety of trail amenities and lengths.

- Include the McKeags Meadow/Red Back Trail as identified in the Master Plan.
- Allow equestrian use on the Lake to Lake Trail and the Sterling Valley Trail with the Pine Meadow Trail utilized as a connector trail to access the Sterling Valley Trail.

- Provide multi-use experiences, similar to Minnewaska and Rockefeller State Parks.

d. Cross-Country Skiing (Map10)
   - In addition to the trails recommended in the Master Plan, allow cross-country skiing on the Long Meadow Extension Trail and the west side of the Sterling Lake Trail. Both trails are relatively flat and possess road-like qualities.

C. Alternative B – The Preferred Alternative

Alternative B represents a further assessment of the user groups' proposals taking into consideration the overall goals of the Park and Trails Plan, compatibility with natural and cultural resources and existing conditions. Based on the analysis of existing conditions, the following list of trails and activities were determined to be suitable for the trails. The analysis considered the steepness of slope, surface material, environmental sensitive areas, density of trails and safety. All trails meet required trail standards or require minor upgrades to meet trail standards for their proposed use. These upgrades are described in the implementation section of the Plan, Chapter V, Section G.

The following identifies the differences from the status quo alternative and alternative A, which were combined to form the preferred alternative (B).

Uses that differ from the Master Plan/Interim Trails Plan are noted in *italics*.

a. Hiking (Map 11)
   In the preferred alternative, all trails would be open to hiking.
   The following provides a comparison between Alternative A and Alternative B:
   i. Allis: The proposed reroute is recommended.
   ii. Clayhole: The proposed section of main track on the east to complete the loop is recommended.
   iii. Eagle Mountain: It is recommended that the access route from South Gate Road to the trail loop be reassessed. There may be a more appropriate connection route in this area.
   iv. Fire Tower: The proposed connector trail route needs further assessment due to possible high water during wet periods. The northern section of trail will remain open; it is the only fire road access into that area as well.
   v. Hogback Mountain: Since the trail is required as a fire road, it is recommended that the bridge be removed and replaced by a new bridge or box culvert.
   vi. Lake to Lake: The proposed reroute of the Lake to Lake trail as noted in Alternative A was not included due to its proximity to sensitive environmental areas. There are endangered species concerns in the area. An alternate location for a single track hiking trail is proposed and would be called the Cross Ridge Trail (see

Section e.i. below). The original Lake to Lake woods road trail would be maintained for biking, equestrian and cross-country skiing.

vii. Power Line Connector: It is proposed that this connection route between the West Valley and Sterling Valley Trails needs further assessment. A more appropriate route may exist between the two trails that does not cross the Sterling Ridge Trail.

viii. Red Back: The Second Option proposed (Red Back Connector) is preferred. As this will take some time to develop, the First Option (rerouting around the beaver inundated area) will be followed as an interim step. Once the Red Back Connector trail has been developed, the interim trail section will be reevaluated to determine whether to close or remain open for certain uses. (From this point on in the document, the "Red Back Trail" reference will include the Red Back Trail Connector.)

ix. Sterling Gardens East: The proposal was modified due to the steep and rocky topography. The trail was also in close proximity to a housing development. (see Section e. iv. below)

x. Sterling Gardens West: This proposed trail generally follows the route of the Sterling Mountain Trail. As noted in the assessment, this trail is very steep and rocky with highly eroded portions. This area needs further evaluation to identify an appropriate hiking loop within the proximity/corridor of the current route. This loop will require additional review prior to development.

xi. Sterling Lake re-route: The proposal was not included because it would create a trail along the shoreline of the lake. It is Park's general policy not to create trails along shorelines. Additionally, the shoreline trail is not multiple use, while the current alignment of that portion of the trail is proposed to be. Viewpoints to lake will be connected by spur trails.

xii. New Jersey Trail Connections - OPRHP has been in preliminary discussions with New Jersey Parks about the feasibility of the trail connections into New Jersey from Sterling Forest® State Park. At the present time, it appears that all connections proposed are feasible and would allow compatible uses.

xiii. Lake to Lake/Red Back Connector: This connector trail is recommended.

b. Biking (Map 12)

The following trails would be open to mountain bike riding: *Eagle Mountain Trail*, portions of the *Fire Tower Trail*, Hogback Trail, *Lake to Lake Trail*, Lakeville Trail, Long Meadow Extension Trail, *McKeags Meadow Trail*, *Red Back Trail*, portions of the Sterling Lake Trail, Sterling Valley Trail, *Water Tower* and the *West Valley Trail, and Lake to Lake/Red Back Connector*. The proposed connection *(Power Line Connector)* between West Valley and Sterling Valley Trails would include biking as a use.

The following provides a comparison between Alternative A and Alternative B:

i. The proposed connection route (Power Line Connector) between the West Valley and Sterling Valley Trails needs further assessment. A more appropriate connector route will be identified. By linking the West Valley and Sterling Lake trails, multiple use loop opportunities are created.
ii. Mountain biking would not be permitted on the east side of the Sterling Lake Loop as the trail has some steep and rocky conditions along this section that restrict use to hiking only.
iii. Mountain biking would not be permitted on the Bare Rock trail. The north-south biking route in this section would be the West Valley Trail connecting south to the Fire Tower and Lake to Lake Trails.
iv. Mountain biking would be permitted on the existing Pine Meadow Trail providing another point of access to the trail system.
v. Mountain biking would not be permitted on the existing Townsend Trail, as proposed in alternative A. The park developed reroute, which was necessary due to trail erosion, is unsuitable for bikes.

c. Equestrian (Map 13)

The following trails would be open to equestrian use: portions of the *Fire Tower Trail, Lake to Lake Trail, Long Swamp Trail,* McKeags Meadow Trail *(add portion),* Red Back Trail *(add portion), portions of the Sterling Lake Trail, Sterling Valley Trail,* and *West Valley Trail.* The proposed connection *(Power Line Connector)* between West Valley and Sterling Valley Trails would include equestrian use.

The following provides a comparison between Alternative A and Alternative B:

i. The proposed connection route (Power Line Connector) between the West Valley and Sterling Valley Trails needs further assessment. A more appropriate connector route will be identified. By linking the West Valley and Sterling Lake trails, multiple use loop opportunities are created.
ii. Horseback riding is proposed as a use on a portion of the existing Fire Tower Trail and the existing West Valley Trail.
iii. Horseback riding is proposed as a use on the west side of the existing Sterling Lake Trail and portion of the existing Fire Tower Trail.
iv. Horseback riding is proposed as a use on the existing Long Swamp Trail. This trail is a short loop that is easily accessible to the local community. There is space for one trailer to park.
v. Equestrian support facilities are proposed at the following trailheads:
    1. McKeags Meadow
    2. Red Back
    3. Caretaker/Red Back North (on former Sterling Forge lands)

d. Cross-Country Skiing (Map 14)
The following trails are recommended for cross-country skiing: portions of the Fire Tower Trail, *Lake to Lake Trail, Lakeville Trail, Long Meadow Extension Trail*, Long Swamp Trail, McKeags Meadow Trail, Pine Meadow Trail, Sterling Valley Trail, and a portion of the West Valley Trail. Assessments by the cross-country skiing user group determined that those trails are suitable for the activity. However, all trails are open to cross-country skiing.
The following provides a comparison between Alternative A and Alternative B:
   i. Cross-country skiing is added as a use to the existing Hogback Trail.
   ii. Only a few cross-country skiing opportunities are formally recommended in the trails plan. The terrain of the park provides a variety of trail experiences. Since the trails will not be groomed, the user community did not feel loops were needed.
   iii. Although the Alternative identified some trails, all trails will be opened but not maintained. Grooming of trails may occur in the future.

e. Proposed Trails (included on Map 11)
This section includes trails that were not identified in the Interim Trails Plan (not including those that were approved as modifications to the Plan) and trails that were proposed in Alternative A.
   i. Lake to Lake single track hiking trail (proposed Cross Ridge Trail) – For single track hiking only. The proposed Cross Ridge Trail will be developed for hiking only. This single track trail has been proposed to provide an east-west corridor for hiking only in the southern section of the Park. The existing woods road trail would be maintained for multiple-uses including biking, equestrian and cross-country skiing to provide larger loop connections. Traveling from west to east, the new trail begins at the same parking area near the Village of Greenwood Lake. The trail quickly ascends a ridgeline offering limited views of Greenwood Lake before heading eastward towards the interior of the park where it generally parallels the New Jersey border while crossing both the West Valley and Sterling Ridge Trail. The trail traverses several ridgelines offering a few minor viewpoints at gaps in the tree cover. The trail also terminates at the parking area at Blue Lake. The proposed route was designed to provide a hiking only trail while also protecting sensitive environmental resources. Much of the trail west of the Sterling Ridge Trail (SRT) will be new construction in areas lacking wood roads or other existing travel ways for trail placement. To the east of the SRT, significant portions of trail are aligned on existing paths in good to excellent condition for foot traffic. The original Lake to Lake Trail will be managed and maintained to accommodate the other trail use types. It will require some water management measures in wet areas.

ii. Lakeville Ironworks Trail – For hiking only. This half mile long interpretive trail loops off the south side of the Sterling Lake Trail. As hikers meander past mine openings, a furnace, and other historic structures, interpretive signs with text, diagrams, and photos describe how they were used to process ore into iron. The trail surface is primarily a mix of soil darkened in places by the use of charcoal in the mining process, and discarded stone "tailings" from the mines. The undulating trail rises no more than 80 feet in elevation and is generally easy to walk. There is one section that will require culvert installation or other means to control erosion of the trail surface. A mine opening was recently secured with a metal gate. Note: this trail was opened in September 2008 by a joint effort of the Highlands Environmental Research Institute (HEnRI), the Palisades Interstate Park Commission (PIPC) and the NYS OPRHP.

iii. Sears Hunter Trail (eastern section) - For hiking, biking and equestrian use. This section of trail will be developed as noted in the assessment and brought up to trail standards.

iv. Sterling Gardens East – For hiking only. As mentioned in section a, the trail route proposal was modified. Route description: From the parking area on Benjamin Meadow road, the trail ascends a wooded, boulder strewn slope in a northeasterly direction and then bends easterly to the saddle of a ridge top where it turns abruptly to the south. Here the trail traverses a recently burned mountaintop through fairly level terrain with standing dead timber and ground cover of mosses, grasses, and blueberry. As the trail traces the ridge top, there is an open view to the south-southwest before the trail turns east briefly then north. After traveling 200 meters north, the trail reaches a rocky opening which affords an expansive view east towards Harriman State Park. Next the trail gently descends into mature oak forest and follows a wooded plateau for 0.5 km before descending into a ravine. Here the trail joins an old narrow wood road and heads south briefly before turning northeast to cross a small stream and then ascend the next ridgeline heading northeast on an old logging road. The trail continues northeast through mixed deciduous forest for approximately 300 meters before turning southeast through the wooded top country of a second ridgeline. No views are available in this stretch. Next the trail heads east for approximately 100 meters then switch-backs into a second ravine. Soon after reaching the ravine bottom, the trail ascends in a north easterly direction up the next ridge making several switchbacks through a young hemlock forest before summiting at a rocky ridgeline, where the trail turns south-southeast. As the trail traverses exposed bedrock on the ridge top, there are a few canopy gaps providing views to the east. Next the trail descends in a southeasterly direction, at times co-aligning with existing wood roads until reaching a stream bottom. After crossing

the stream in an easterly direction the trail bends southeasterly once more and gradually descends to the parking area on a cul de sac formed by a blocked off section of old Route 17A. The modified route will require additional review prior to development. Over much of its course, this trail utilizes existing unnamed hiking trails and old wood roads that are in good condition. The section traversing the former burn (0.25 mile east of Benjamin Meadow Road parking) may require the removal of dangerous dead trees along the trail. A low wet stretch where the trail crosses an unnamed tributary to the Indian Kill (first ravine mentioned in description) would benefit from approx. 15 meters of puncheon. Some erosion control (e.g., water bars) may be required on the wood road just east of this stream.

v. Sterling Gardens West – The trail will remain as the Sterling Mountain Trail but will require further evaluation before development of the trail. The Park will accept proposals to develop an appropriate hiking trail in this area. This will also require additional environmental review.

D. Post 2006 Acquisition Trails

This section includes proposed trails that are located on the Sterling Forge and Cintichem Acquisition properties and are shown on Map 15. These trails were not included in the Interim Trails Plan nor Alternative A due to the timing of the acquisitions. Review of the trails provided the following determinations with the preferred alternative shown on Map 16:

i. Augusta Mine Trail – For hiking, biking and equestrian use. The proposed reroute is recommended with required maintenance work due to steep slopes and water issues.

ii. Caretakers Trail – For hiking and biking. The eastern portion (2,500 feet) will not be included in the Plan as the Tuxedo Reserve property is not under Parks ownership at this time. Maintenance work will be required to deal with water issues. This trail will allow connection to the Eagle Mountain Trail.

iii. Caretaker – Pine Meadow Connector Trail – For hiking, biking, equestrian and cross-country skiing. This proposed trail is recommended as an excellent connector trail. Some maintenance work required to connect to wood road.

iv. Eagle Mountain Connector Trail – For hiking and biking. This proposed trail is recommended.

v. Long Mine Trail – For hiking and biking. Mine opening safety issues need to be addressed. Maintenance work will be required to deal with water issues.

vi. Long Mine – Red Back Connector Trail – this trail will not be included in the Trails Plan due to lack of a safe crossing area on County Route 84 to the Long Mine Trail parking area.

vii. Paterson Mine Trail – This route needs further ecological evaluation and assessment before being included in the Plan.

viii. Red Back North Trail – For hiking, biking, equestrian and cross-country skiing. Maintenance work will be required to deal with the stream crossing and the wet area and to clear the overgrown section of the trail.

ix. Indian Kill – Hogback Connector Trail – For hiking and biking. This proposed trail is recommended.

There will be limited access to the Cedar Pond area due to its environmental sensitivity. The trail system will be designed to protect significant environmental habitats such as rattlesnake dens and rare plants. The character of the park and trail system will be maintained since the density of the trail system will not change significantly and parallel trails will not be developed. The use of spur trails to access viewpoints along Sterling Lake instead of a shoreline trail helps protect the environmental integrity of the shoreline.

The preferred alternative provides external trail connections with trail systems in Ringwood State Park, Tranquility Ridge and the Wanaque Wildlife Management Area in New Jersey. The proposed uses of the connecting trails are consistent with the allowed uses of the trails in New Jersey.

The existing parking areas will be maintained. A number of parking areas will be expanded and improved to provide safe access and egress, accommodate equestrian trailers, and provide comfort facilities and informational signage. Three proposed parking areas will be developed as they are part of new acquisition properties with connecting trails; one parking area will be developed to accommodate hunters and one for handicapped parking. The primary staging areas for equestrian use will be at the Caretaker House Parking Area and the Laurel Meadows Air Evacuation & Trail Head parking lot. Additional equestrian support facilities such as mounting platforms will be considered at selected parking areas.

Interpretive material for guided and self-guided environmental and cultural tours utilizing the trail system will be developed. The origin for most interpretive programs will be the Visitor Center.

V.
FINAL TRAILS PLAN

A. Trail System

1. Trails

The trail system consists of approximately 90 miles of existing and proposed trails (Map 16) that provide a variety of trail experiences for hikers, bikers, equestrian users, cross country skiers, and snowshoers. The following tables provide a breakdown by mileage and use for the current status (Table 2), the approved Interim Trails Plan with modifications (Table 3), the addition of designated trail per use in the Trails Plan (Table 4) and finally the mileage by use of the Trails Plan (Table 5). These are followed by a detailed breakdown of the trail uses by trail (Table 6).

Table 2. The current status of the trail system consists of:

Trail Use	**Mileage**
Hiking – Single Track	18
Hiking – Family	37
Biking	4
Equestrian	0
Cross-Country Skiing	12
Total trail mileage*	55

* Various trails accommodate several uses.

Table 3. The Interim Trails Plan with approved modifications (including Bare Rock and McKeags Meadow re-routes and the addition of Warbler and Sapphire Trails) consists of:

Trail Use	**Mileage**
Hiking – Single Track	20
Hiking – Family	51
Biking	11
Equestrian	7
Cross-Country Skiing	16
Total trail mileage*	71

* Various trails accommodate several uses.

(Note: not all of the approved changes have been implemented)

Table 4. The Trails Plan will add the following mileages per use to the approved Interim Trails Plan system with approved modifications as noted in the above table:

Trail	**Added Mileage**
Hiking – Single Track	3 (includes Allis re-route/1mile of Cross Ridge Trail is on other trails)
Hiking – Family	16 (7 on new acquisition land)
Biking	34 (7 on new acquisition land)
Equestrian	24 (3 on new acquisition land)
Cross-Country Skiing	10 (2 on new acquisition land)
Total mileage added*	19

* Various trails accommodate several uses.

Table 5. The total mileage per use of the Trails Plan consists of:

Trail	**Mileage**
Hiking – Single Track	23
Hiking – Family	67
Biking	45
Equestrian	31
Cross-Country Skiing	26
Total trail mileage*	90

* Various trails accommodate several uses.

**Snowshoers utilize hiking trails.

Table 6. This table provides a detailed breakdown of the trail uses by trail.

Trail	**Miles**	**Type of Use**	**Notes***
Allis	3.7	Hiking – single track	
Bare Rock	4.7	Hiking – single track/ family	
Clayhole	1.9	Hiking – family	
Cross Ridge	3.4	Hiking – single track	
Eagle Lake	0.4	Hiking – family	
Eagle Mountain	4.6	Hiking – family/Biking	
Fire Tower	4.6	Hiking – family	Portion for Biking, Equestrian, Cross-country skiing
Furnace Loop	1.4	Hiking – family	
Hogback Mountain	1.5	Hiking – family/ Biking/ Cross-country skiing	
Indian Hill	3.1	Hiking – single track	
Lake to Lake	4	Hiking – family/ Biking/ Equestrian/ Cross-country skiing	

Lakeville	0.75	Hiking – family/ Biking	Portion for Cross-country skiing
Lakeville Ironworks	0.5	Hiking – family	History Interpretation Trail
Long Meadow Extension	1.9	Hiking – family/ Biking/ Cross-country skiing	
Long Swamp	3	Hiking – family/ Equestrian/ Cross-country skiing	
McKeags Meadow	3.1	Hiking – family/ Biking/ Equestrian/ Cross-country skiing	
Pine Meadow	1.4	Hiking – family/ Biking/ Equestrian/ Cross-country skiing	
Red Back	6.7	Hiking – family/ Biking/ Equestrian	Portion for Cross-country skiing
Sapphire	2.75	Hiking – single track	
Sears Hunter	1.4	Hiking – family/ Biking/ Equestrian	
South Point	0.4	Hiking – family	
Sterling Gardens East	3.3	Hiking - family	
Sterling Lake	4	Hiking – family	Portion for Biking/ Equestrian/ Cross-country skiing
Sterling Mountain	3.3	Hiking – family	
Sterling Ridge	5.75	Hiking – single track	
Sterling Valley	5.8	Hiking – family/ Biking/ Equestrian/ Cross-country skiing	
Townsend	1.6	Hiking – family	
Warbler	.5	Hiking – family	Nature interpretation trail
Water Tower	1.0	Hiking – family/ Biking	
West Valley	4.5	Hiking – family/ Biking/ Equestrian	Portion for Cross-country skiing
Wildcat Mountain	2.3	Hiking – single track	
NJ Connections	**Miles**	**Type of Use**	**Notes**
Jennings Hollow East	0.25	Hiking - family	
Beech Farm	1.0	Hiking - family	
Boro Boundary	1.0	Hiking - family	
Hope Mountain	2.0	Hiking - family	

State Line	1.5	Hiking – family, Biking	
In-Park Connection	**Miles**	**Type of Use**	**Notes**
Lake to Lake/Red Back	0.15	Hiking – family/ Biking/ Equestrian	
Power Line Connector	0.5	Hiking – family/ Biking/ Equestrian	
Post 2006 Acquisitions	**Miles**	**Type of Use**	**Notes**
Augusta Mine	0.7	Hiking – family/ Biking/ Equestrian	
Caretakers	1.5	Hiking – family/ Biking	
Caretaker – Pine Meadow Connector	0.5	Hiking – family/ Biking/ Equestrian/ Cross-country skiing	
Eagle Mountain Connector	0.5	Hiking – family/ Biking	
Long Mine	1.6	Hiking – family/ Biking	
Red Back North	1.5	Hiking – family/ Biking/ Equestrian/ Cross-country skiing	
Indian Kill - Hogback	0.65	Hiking – family/ Biking	

* Cross-country skiing would be allowed on all trails. However, those identified are recommended.

Note: As mentioned in Alternative B – The Preferred Alternative, two of the Post 2006 Acquisition trails are not included in the Trails Plan. The Long Mine - Red Back Connector Trail does not have a safe crossing option for County Route 84. The Paterson Mine Trail requires further ecological evaluation and assessment.

The Trails Plan provides for both single use and shared use trails. The terrain, location, connections and compatibility with the natural and cultural resources determined the type of uses for shared trails. As a result, there are multiple combinations of the types of trail uses on the shared use trails as shown in Table 7 (Note: the category of **E**xisting Trails includes all modifications that were approved with the Interim Trails Plan and thereafter but may not necessarily have been constructed yet.)

Table 7:

Codes: **E**xisting (includes approved Interim modifications) **P**roposed **D**elete **R**elocate (section)

		Activity							Program		
		Hiking									
Trail	**Miles**	**Low Intensity/ Remote**	**Family**	**Equestrian**	**Cross Country Skiing ***	**Biking**	**Mountain Biking**	**Snow-shoe**	**Self Guided Interpretive**	**Self Guided Cultural**	**Accessible**
Allis	3.7	E/R						P			
Bare Rock	4.7	E(portion)	E(portion)					P			
Clayhole	1.9		E/P(portion)					P			
Cross Ridge	3.4	P						P			
Eagle Lake	0.4		E					P			TBD
Eagle Mountain	4.6		E			P	P	P			
Fire Tower	4.6		E	P (portion)	E (portion)	E (portion)	E (portion)	P			
Furnace Loop	1.4		E					P			
Hogback Mountain	1.5		E		P	E	E	P			
Indian Hill	3.1	E						P			
Lake to Lake	4		E	P	E/P(portion)	P	P	P			
Lakeville	0.75		E		P (portion)	E	E	P			
Lakeville Ironworks	0.5		P					P		P	
Long Meadow Ext.	1.9		E		P	E	E	P			
Long Swamp	3		E	P	E			P			
McKeags Meadow	3.1		E	E/P(portion)	E	P	P	P			
Pine Meadow	1.4		E	P	E	P	P	P			TBD
Red Back	6.7		E	E/P(portion)	E(portion)	P	P	P			
Sapphire	2.75	E						P			
Sears Hunter	1.4		E/P(portion)	P		P	P	P			
South Point	0.4		E					P			
Sterling Gardens E	3.3		P					P			
Sterling Lake	4		E	P(portion)	E(portion)	E(portion)	E(portion)	P			
Sterling Mountain	3.3		E					P			
Sterling Ridge	5.75	E						P			
Sterling Valley	5.8		E	P	E	E	E	P			
Townsend	1.6		E					P			
Warbler	.5		E					P	E		
Water Tower	1.0		E			P	P	P			
West Valley	4.5		E	P	E (portion)	P	P	P			
Wildcat Mountain	2.3	E						P			

Table 7 (cont'd)

		Activity							Program		
		Hiking									
Trail	**Miles**	**Low Intensity/ Remote**	**Family**	**Equestrian**	**Cross Country Skiing ***	**Biking**	**Mountain Biking**	**Snow-shoe**	**Self Guided Interpretive**	**Self Guided Cultural**	**Accessible**
NJ Connections											
Jennings Hollows East	0.25		P					P			
Beech Farm	1.0		P					P			
Boro Boundary	1.0		P					P			
Hope Mountain	2.0		P					P			
State Line	1.5		P			P	P	P			
In-Park Connection											
Lake to Lake/Red Back	0.15		P	P		P	P	P			
Power Line	0.5		P	P		P	P	P			
Post 2006 Acquisition											
Augusta Mine	0.7		P	P		P	P	P			
Caretakers	1.5		P			P	P	P			
Caretaker-Pine Meadow	0.5		P	P	P	P	P	P			
Eagle Mountain Connector	0.5		P			P	P	P			
Long Mine	1.6		P			P	P	P			
Red Back North	1.5		P	P	P	P	P	P			
Indian Kill – Hogback	0.65		P			P	P	P			
* Cross-country skiing would be allowed on all trails. However, those identified are recommended.											

2. Connections

a) High Use Areas

The Visitor Center will be the primary focal point for the trail system. All the trail user groups have access to trails that connect to the Visitor Center. The Visitor Center provides the opportunity for the trail users to gain an understanding of the park and its resources. Environmental and cultural programs that utilize the trail system originate from this location. Parking and support facilities are available.

The Caretaker House Parking area (#48) and the Laurel Meadows Air Evacuation & Trail Head Parking lot (#13S) will be the primary staging areas for equestrian users. The sites will be designed to provide parking facilities for vehicles towing horse trailers along with other support facilities tailored to equestrian users. Four other parking areas will have between one and three spaces each to accommodate vehicles with horse trailers in tow.

b) External Systems

The trail system has connections to trail systems outside the park boundaries. The Appalachian National Scenic Trail (AT) traverses the northern portion of the park. The Allis Trail/Highlands Trail and Indian Hill Trail provide connections to the AT. The Wildcat Mountain Trail provides a link between Sterling Forest and Harriman State Parks.

The Water Tower Trail intersects the Lake to Lake Trail and parallels Blue Lake and provides connection with Ringwood Manor State Park in New Jersey by the proposed Hope Mountain Connector and State Line Trails.

Two connections are proposed to connect the Lake to Lake trail to Tranquility Ridge in New Jersey. The Boro Boundary trail is proposed to start at the Blue Lake boat launch and travel southwest and join the New Jersey trail system just south of the border. Just east of the intersection of the Sterling Ridge Trail with the Lake to Lake Trail, the Beech Farm Trail leads into the Tranquility Ridge trail system as well. This trail would terminate near the northern end of the Monksville Reservoir. This route has the potential as an interpretive trail describing the history of mining.

Further west along the Lake to Lake Trail, there are limited opportunities for trail connections to the Wanaque Wildlife Management Area. The management area currently has informal trails primarily used by hunters. There are two trails that originate on the Lake to Lake Trail in Sterling Forest® State Park that lead into Wanaque. These trails are identified in the trails plan as the Jennings Hollow West and East trail proposals. The Jennings Hollow West Trail proposal is not described in the Trails Plan because it is entirely in New Jersey. The Jennings Hollow East Connector trail is proposed as a short connector trail into the Wanaque Wildlife Management Area. Other potential trail opportunities that would connect with Long Pond Ironworks State Park need to be

explored with the New Jersey land managers. Hiking is the only consistent use between Sterling Forest® State Park and Wanaque.

The Sterling Ridge Trail extends into Tranquility Ridge in Passaic County, New Jersey which is managed by PIPC. The trail terminates at the Monksville Reservoir. This is a hiking trail.

c) Mass Transportation

The park has two hiking trail connections to mass transportation. The southern trailhead of the Wildcat Mountain Trail is located at a Park and Ride Lot that is serviced by Short Line buses. The northern trailhead of the Sapphire Trail is located across the road from the Harriman Station of the Metro-North Railroad. It is recommended to pursue discussions with Metro North to connect this trail to the train platform.

Two additional connections to mass transit were proposed during the public comment period (see Appendix C – Comments Q and X). Each proposal presents challenges to development of a trail but as noted with assistance these options could be progressed.

B. Support Facilities

Table 8 and Map 18 identify the existing and proposed year round and seasonal parking facilities that provide access to the trail system. The location of these facilities throughout the park encourages the distribution of trail users which results in an enhanced trail experience. As noted in Table 8, several parking lots will be improved and/or expanded and comfort facilities provided. These include the Visitor Center lot, the lot at the intersection of Route 17A and Sterling Valley Trail, the Blue Lake lot, Indian Hill lot and the lot opposite Buttonwood Drive on Southgate Road, Caretaker Parking area and Long Mine parking area.

Parking areas that have capacity for horse trailers are identified in italics.

Table 8: Parking Facilities

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
1	Indian Hill Trail Head Parking	14	No	No longer seasonal parking area			Regrading needed occasionally				
2	Wildcat Trail Head on Hall Drive opposite Furnace	5	No	No longer seasonal parking area		Yes					
3	Old Route 210 - Seasonal parking beyond ejector station	6	No	No longer seasonal parking area		Yes					
4	Hogback north trail head	2	No			Yes	Fill and grading.	14			
5	Wildcat Trail Head & Commuter Parking	40	No								
6	Hogback south trail head	4	No			Yes					Potential equestrian parking area; currently no link to equestrian use trails
7	Ironwood Circle area used as Hunter Parking for areas to the west	6	No			Yes	Needs paving				

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
8	Sterling Ridge/ Allis/ Sterling Valley Trail Head – off of Rt. 17A	16	No			Yes	Grade and fill	16	Restroom Facilities		Potential equestrian parking area but sight distance on Route 17A is limited.
9S	West Valley Trail Head external on 17A	6	No				Fill and grading	8	Install longer culvert and pave entrance	8	
10	Pine Meadow Parking	10	No	Alternate access road now used to access parking		Yes	Access altered to improve site distance- now opposite Tuxedo Recycling.	grade and fill		12	
11	Visitor Center Parking	50	No			Yes			Expansion with fill, grading, paving, striping, landscaping and lighting.	120	
12S	Lakeville foundations & Trail Head Parking	6	No			Yes					
13S	*Laurel Meadows Air Evacuation & Trail Head Parking*	*16*	*No*		*10*	*Yes*	*Widen section specific for horse trailers adjacent to heliport.*		*Grading, fill and restrooms needed along with tethering device for horses.*	*50*	
14	Fire Tower & Lake to Lake Trail Head off East Shore Rd.	12	No			Yes					

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
15	Gate & Fire Tower Trail Head Parking - ENTIRELY ON CO.84 Right of way	6	No			Yes					
16S	*Opposite Buttonwood Dr. on Southgate Rd.*	*10*	*No*		*3*	*Yes*			*Grading and fill will greatly enhance use by cars and double the capacity.*	*20*	8
17	*Lake to Lake Trail Head Parking off Co. 84*	*12*	*No*	*No longer seasonal parking area*	*2*	*Yes*					
18	*Long Swamp Trail Head on Eagle Valley Rd.*	*6*	*No*		*1*						
19	Eagle Lake on former Eagle Valley Rd.	8	No								
20	W. Lake / Old Forge Spring	4	No								
21	Visitor Center Overflow Parking	30	No			Yes			Note: this area would be incorporated into expanded parking lot at VC (#11)		
22	Grey House opposite furnace	16	No	No longer recommended as a parking area as it is where the Lakeville Trail interprets historic house		Yes					

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
23	End of West Sterling Lake Rd. base of fire tower road	6	No	No longer recommended as a parking area		Yes	Existing ground soft item 4 required to bring capacity to 6 or 8.			8	
24S	Former fishing area in 1971at South end Sterling Lake	12	No	No longer recommended as a parking area.		Yes	Trim back brush and limbs and remove parapet stone				
25	Laurel Meadow Ponds Co. 84 parking - ENTIRELY ON CO.84 Right of way (ROW)	4	No								
26S	*Interior Parking on Fire Tower Roadway*	*16*	*No*		*2*	*Yes*					
27	Roadside parking McKeags Meadow Trail Head	4	No	No longer seasonal parking area		Yes					

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
28	Blue Lake fisherman parking	6	No			Yes	Parking currently limited must parallel dirt road - consider widening a section.	8	Remove some trees, grade and fill as necessary to build lot in proximity of launches where turning circle for trailers is included. Restroom Facilities	20	
29S	Lake to Lake interior parking	16	Yes				Grade existing surfaces	18	Add item 4 and to access road so more cars will want to make the trip; improve drainage at interior parking lot; add a seasonal port-o-john.	24	
30	O & R Substation on Co. 84 - ENTIRELY ON CO.84 ROW	6	Yes	No longer seasonal parking area							
31	Four Corners Pond roadside parking on old Sterling Lake Rd. - ENTIRELY ON CO.84 ROW	8	No								

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
32	Ironwood Rd. existing graveled wide area in road, used for Hunter Parking	5	Yes	No longer seasonal parking area		Yes	Parking could double with fill and grading.	10			
33S	Interior- Long Meadow Ext. north of Clinton Woods	8	Yes								
34S	Orange Tpk. Gas Line entrance headed east off road	3	No								
35S	Town Line Parking on East Mombasha Rd.- used by Hunters	4	No								
36	AT / wide spot on East Mombasha Rd.	8	No								
37S	Bramertown Rd. seasonal parking south of Little Dam Lake	4	Yes								
38S	Cable & seasonal parking Bramertown Rd. west end	5	No								

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
39S	Doris Duke interior parking (closed)	10	No								
40S	Parking near Gardens upper lot on Benjamin Meadow	6	Yes								
41S	Doris Duke at Carpenter Shop on Benjamin Meadow	12	No				If building removed and regraded	30			
42S	*Sears Hunter parking*	*10*	*No*	*Not plowed*	*15 (if developed)*				*Note: This site has potential for significant expansion however we do not foresee demand for it.*	*Potential for 100*	*Potential equestrian parking area but not appropriate crossing at Route 17A (too busy/ too fast)*
43S	West Valley Trail internal off of Rt. 17A	10	Yes	*Not plowed*			Grading access road, parking and removal of old logs	20			
44S	East Shore Rd roadside parking opposite beach - Used in Fall by Hunters	7	Yes			yes					
45S	Greenwood Lake Beach	60	No								
46S	Bailey Rock internal parking off of East Shore Rd. - Used in Fall by Hunters	8	Yes				Improve access road and parking with grading and fill	10		14	

Map Label	Location/ Description	Existing Car Capacity	Interior Hunting Area	Changes from the Master Plan to the Trails Plan	Equestrian Capacity (vehicle and trailer)	Bike Trail head	Recommended Minor Improvements	Car Capacity with minor improvements	Recommended Major Improvements	Car Capacity with major improvements	Equestrian Capacity with Improvements
47	Long Mine Parking	10	No	New		Yes	Grading and fill	14			
48	*Caretaker House Parking*	*40*	*No*	*New*	*8*	*Yes*	*Clear brush*	*50*	*Fill and grade to expand size by 30-50%. Add Restroom Facilities.*	*75*	*14*
49	*Cintichem*	*200*	*No*	*New*	*40*	*Yes*			*Partition lot; add restroom facilities; tethering and watering facilities for horses.*		*Potential equestrian parking area; currently no link to equestrian use trails*
50	Handicap Fishing Parking - West Sterling Lake Road 1/2 mile north of gate where pavement ends	4	No	New					Add Restroom Facilities (Would be used by hikers as well as fishermen)		
51S	Candle Road	3-5	Yes	New			Minor clearing and grading	6-8			

C. Special Events

A special use permit is required for group events utilizing the trail system or to access areas that are not open to the general public. Each permit application is evaluated to determine potential impacts and compatibility with the natural, cultural, and recreational resources.

D. Standards

1. Trailheads, Kiosks, Signage

A kiosk or similar structure providing information about the park and the trail system will be located at each trailhead. All trails will be named and marked with colored rectangular blazes. Blazes are 2" x 3" pieces of aluminum, covered with Scotch reflective color material. They will be located on trees or other structures at a height that will reduce the level of vandalism but is still readily visible.

2. Design

Trail development and maintenance will be guided by design standards as follows in Table 9.

Table 9: **TRAIL DEVELOPMENT GUIDELINES FOR STERLING FOREST® STATE PARK***

Trail Type	Vertical Clearance	Corridor Clearance	Tread-way Width	Surfacing Materials	Trail Length	Sight Distance	Slope	Turning Radius	Users/ Mile
Biking (Recreational – Family oriented, easy riding relatively smooth surface.)	8-10 feet	5-6 ft. (1 lane) 8-10 ft. (2 lane)	2-3 ft. (1 lane) 6-8 ft. (2 lane)	Touring/family – Smooth pavement, asphalt, concrete, crushed stone, clay or stabilized earth.	Min. – 5 mi. loop (1.5-2 hour) 15-25 mi. of linear or loop trails (day trip)	Min. of 50 ft. up to 100 ft. on downhill curves or road crossings.	0-5% Max: 5-10% sustained 15% shorter than 50 yd. Out slope of 2-4%	8-14 feet depending upon speed.	40
Mountain Biking	8-10 feet	1.5 – 6 ft. (1 lane)	Novice-36 in. Intermediate-30 in. Expert-12-18 in.	Firm natural surface with some obstacles such as roots, grade dips or rocks.	Min. – 5 mi. loop (1.5-2 hour) 15-25 mi. of linear or loop trails (day trip)	Min. of 100 ft. up to 150 ft. on downhill curves or road crossings	Over all grade not to exceed 10%. Climbing turns not to exceed 7-12%. Out slope of 3-5%	Novice/ Intermediate - min of 8 ft Expert – 6 ft min.	10
Cross-country Skiing (Variety of experience based on weather conditions)	8-10 ft. above snow depth. (10-12 ft in summer)	8 ft (1 lane) 10-12 ft. (2 lane)	4-6 ft. (1 lane) 7-8 ft. (2 lane) 8-10 ft. (up hill)	Snow with underlying bare soil, rocks or wood chips. Out sloped underlying material. Can be groomed or ungroomed	0.5-3 mi. loops up to 4-8 mi. (2-4 hour trip)	Down hill runs, stream or road crossings 50 ft. Otherwise not critical	0-5% Max – 10% sustained 15-25% shorter than 50 yd. 25-40% shorter than 50 yd., experts only Out slope – 0-2%	Avoid sharp turns. Never locate a turn at the base of a downhill run. Min. – 50 ft. Preferred – 100 ft.	5-30
Hiking (Remote to High Use areas, Low to High Intensity)	8-10 ft	4 –8 ft	4-6 ft	Bare soil, rocks, stone dust, or wood chips. May have hardened surface (concrete, asphalt or boardwalks) in high use areas	0.25 – 5 mi. (1/2 day) 5-15 mi. (full day)	Not critical barrier on reverse curves may be used	0-5% Max – 15% sustained 40%+ shorter than 50 yd. Out slope – 4% max	N/A	0-30
Hiking (Remote areas-Low intensity, wilderness type of experience)	8 ft.	4-6 ft.	18 –36** in.	Bare soil, rocks, gravel, wood hardened surface for wet areas	Min – 5 mi. 15 – 25 mi.	Not critical	1-5% Max - 15% sustained 40-50% shorter than 50 yd.	N/A	1-5

Trail Type	Vertical Clearance	Corridor Clearance	Tread-way Width	Surfacing Materials	Trail Length	Sight Distance	Slope	Turning Radius	Users/ Mile
Equestrian	10-12 ft.	5-6 ft. (1 lane)	18-30 in. (1 lane)	Soils having a large percentage of rocks, clay and/or organic matter. Void of rocks football sized or larger. Little treadway development required if soils are appropriate. In problem areas, water control measures may be installed. Brush and saplings should be cut flush or below ground level. Remove dead or leaning trees.	Min – 5 mi. (1-1.5 hour) 15-25 mi. of looped trails (full day)	Not critical unless 2 way traffic. 50-100 ft. 100-200 ft. at motorized road crossings.	0-10% Max – 10% sustained 20% shorter than 50 yd. Outslope 4% max.	Not critical but avoid sharp turns on steep slopes or using switch-backs (30 in. if they are necessary).	5-15

** All standards are intended to be in compliance with the Americans with Disabilities Act 1990.*
*** 36 inches is the minimum acceptable tread width for ADA standards.*

These design standards were taken from the New York State Statewide Comprehensive Outdoor Recreation Plan (SCORP, 2003).

The development of new trails or the re-alignment of trails by trail user groups will require the review and approval of the park manager prior to any work.

It may be necessary to close trails that once existed but are not part of the designated trail system. When this is the case, trails will be restored to a natural state via sensitive transplanting, reseeding, possible temporary deer fencing or other methods, and a monitoring program implemented. All plantings will be with native, non-invasive species. Vegetation should be allowed to grow on the abandoned trail where it intersects with a designated trail. Brush, rocks and other natural material should be placed on the abandoned trail for a distance so the linear characteristic of the trail can not be readily identifiable. These abandoned trails should not be identified on trail maps.

3. Maintenance

Maintenance of the trails will be conducted in partnership with the various trail user groups. Trail maintenance standards will utilize acceptable practices and methods in the maintenance of trails to the particular uses of the trails. Maintenance activities include:

- Maintain drainage structures
- Water management: such as installation of water bars, minor rock rearrangement to divert water off of a trail.
- Surface treatment
- Clearing and grubbing to maintain height and width clearances
- Maintaining bridges and other structures
- Maintaining signage

These activities should be coordinated with the park manager. Activities that go beyond normal maintenance will require the approval of the park manager. Park staff will maintain the parking lots, staging areas and support facilities. Maintenance functions are further described in the implementation chapter.

The following manuals may be used as resource guides for trail maintenance:

- *Trail Planning, Design, & Development Guidelines.* 2006. State of Minnesota, Department of Natural Resources.
- *Trail Maintenance Manual, 7th Edition Revised*. 2007. New York-New Jersey Trail Conference, Inc. http://www.nynjtc.org/volunteers/vresource.html.
- *Trail Construction and Maintenance Notebook*. 2007 Edition. Forest Service, US Department of Agriculture. http://www.fhwa.dot.gov/environment/fspubs/07232806/index.htm.
- *Lightly on the Land: The SCA Trail-Building and Maintenance Manual*. 2006. Robert C. Birkby, The Student Conservation Association.
- *Trail Solutions: IMBA's Guide to Building Sweet Singletrack*. 2004. International Mountain Bicycling Association.

4. Accessibility

New trails and existing trails that require maintenance/repair should be designed or modified to improve accessibility for persons with disabilities. Proposed accessibility guidelines for trails have been developed by the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas.

The proposed accessibility guidelines are for newly constructed and altered trails connected to accessible trails or designated trailheads. There are some departures from the technical provisions that are permitted. The following is an abbreviated listing of the proposed trail guidelines without the exceptions:

- Surface – The trail surface shall be firm and stable.
- Clear Tread Width – The clear tread width of the trail shall be 36 inches minimum.
- Openings – Openings in trail surface shall be of a size that does not permit passage of a ½ inch diameter sphere. Elongated openings shall be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel.
- Protruding Objects – Protruding objects on trails shall have 80 inches minimum clear head room.
- Tread Obstacles – Where tread obstacles exist, they shall not exceed 2 inches high maximum.
- Passing Space – Where the clear tread width of the trail is less than 60 inches, passing spaces shall be provided at intervals of 1000 feet maximum. Passing spaces shall be either 60 inches minimum by 60 inches minimum space, or an intersection of two walking surfaces which provide a T-shaped space provided that the arms and stem of the T-shaped extend at least 48 inches beyond the intersection.
- Slopes – Slopes shall comply with the following:
    - Cross Slopes – The cross slope shall not exceed 1:20 maximum.
    - Running Slope – Running slope of trail segments shall comply with one or more of the provisions of this section. No more than 30 percent of the total trail length shall exceed a running slope of 1:12.
    - Running slope shall be 1:20 or less for any distance.
    - Running slope shall be 1:12 maximum for 200 feet maximum. Resting intervals shall be provided at distances no greater than 200 feet apart.
    - Running slope shall be 1:10 maximum for 30 feet maximum. Resting intervals shall be provided at distances no greater than 30 feet apart.
    - Running slope shall be 1:8 maximum for 10 feet maximum. Resting intervals shall be provided at distances no greater than 10 feet apart.
- Resting Intervals – Resting intervals shall be 60 inches minimum in length, shall have a width at least as wide as the widest portion of the trail segment leading to the resting interval, and have a slope not exceeding 1:20 in any direction.

- Edge Protection – Where edge protection is provided along a trail, the edge protection shall have a height of 3 inches minimum.
- Signs – Newly constructed and altered trails and trail segments that are accessible shall be designated with a symbol at the trail head and all designated access points. Signs identifying accessible trail segments shall include the total distance of the accessible segment and the location of the first point of departure from the technical provisions.

In addition, there will be information displayed at the trailhead that will provide basic information about the trails. This will allow the trail user the opportunity to determine if the trail is appropriate for their abilities. This information will be available for all trails regardless of whether they meet the accessible guidelines.

E. Enforcement

Park staff, and in particular the State Park Police and Park Rangers, will conduct the primary enforcement of proper use of the trails. However, park staff will rely on the user groups to be self-watching and alert park officials of any concerns.

F. Permits

A special use permit is required for group events utilizing the trail system or accessing areas that are not accessible to the general public. Each permit application is evaluated to determine potential impacts and compatibility with the natural, cultural, and recreational resources. A permit is also required to access the Cedar Pond Area.

G. Implementation

To facilitate the opening of closed trails and/or the addition of new uses to the existing trails, an implementation process has been developed. Sections of trail that require maintenance, rehabilitation or relocation are identified in the inventory and analysis chapter (Chapter III). The implementation steps necessary are outlined in this section. Improvements and reroutes should be completed prior to expanding multiple use opportunities. In some cases, further environmental review, beyond the scope of the Trail Plan, may be required before work on the trail can be conducted. This would include trails that require a reroute but no reroute has been identified. A review and approval process has been developed for rerouting, relocating and developing new trails (Chapter VI).

A process for approving annual maintenance has been developed as well as a monitoring program (Chapter VI). Most maintenance of the trail system will be done in conjunction with a new Trails Working Group comprised of user groups, representatives of multiple levels of government and interested individuals (Chapter V.H. Coordination). The organization of this Group will be initiated by Park staff.

NYS Office of Parks, Recreation and Historic Preservation and the Trails Working Group will utilize a Memorandum of Agreement (MoA) to lay out guidelines and roles for the development and maintenance of the trails as listed in this Trails Plan. The sample MoA is shown as Appendix B. Once this Group and MoA are established, a Work Plan will be devised for prioritizing trails and steps created to implement this Trails Plan.

A Mine Safety and Signage Plan will be available to provide guidelines on securing and signing of mine openings that are located along existing or proposed trails. Metal gates, fencing and signage will alert trail users to the dangers of the mine openings and deter them from exploring hazardous areas.

New and existing trails that require maintenance/repair will be designed or modified to maximize the opportunity to improve accessibility for persons with disabilities. The existing trail system will be assessed to determine whether the trails meet accessibility guidelines and actions that need to be taken to make the trails accessible, if appropriate and possible. Informational material will be provided at trailhead kiosks and in trail brochures identifying the characteristics (i.e. slope, terrain, etc.) of the trails.

1. **Interim Trails/Trail System**

Allis Trail (AL)
Length: 4.1 miles, blue blazes
Uses: Hiking
Implementation Steps:
Minor grubbing and clearing required for proposed reroute. Routine trail maintenance performed, as necessary. This trail is maintained by the NY-NJ Trail Conference.

Bare Rock Trail (BR)
Length: 4.7 miles, orange blazes, portion unmarked
Uses: Hiking
Implementation Steps:
Routine trail maintenance performed, as necessary, on the eastern section. Construction of the western portion was approved as a modification to the Interim Trails Plan. Unmarked western portion will be constructed to hiking trail standards with minimal clearing.

Clayhole Trail (CL)
Length: 1.9 miles, unmarked
Uses: Hiking
Implementation Steps:
Routine trail maintenance performed, as necessary, on western section. Water management measures to be implemented in areas of trail approaching Long Meadow Extension as noted in Inventory and Analysis section. Route of eastern section of trail to be the main track

as proposed. Minor track abandoned and restored; preferred track marked.

Cross Ridge Trail (CR)
Length: 3.4 miles
Uses: Hiking
Implementation Steps:
Construct single track hiking trail west of Sterling Ridge Trail and install blazing for whole trail length.

Eagle Lake Trail (EL)
Length: 0.4 miles, yellow blazes
Uses: Hiking
Implementation Steps:
Routine trail maintenance performed, as necessary. Evaluate blazing to determine adequacy.

Eagle Mountain Trail (EM)
Length: 4.6 miles, unmarked
Uses: Hiking (add biking)
Implementation Steps:
Determine finalized trail location, develop section and mark whole route. Routine trail maintenance performed, as necessary.
Reassess access route from South Gate Road to the loop.

Fire Tower Trail (FT)
Length: 4.6 miles, red blazes
Uses: Hiking, Biking (portion), Cross-country skiing (portion) (add Equestrian)
Implementation Steps:
The co-aligned portion with the Sterling Ridge trail needs to be investigated further to determine if a reroute is required or water diversion will improve wet trail conditions.
Further assessment is needed along the section where the Trail meets the West Valley Trail and flooding is occurring.
Due to possible high water in wet seasons, further assessment is needed regarding the proposed scenic reroute and possible construction of a bridge over Jennings Creek.
Routine maintenance on sections proposed to be shared use.
Permit construction of a bridge over a small stream on section of trail between the Lake to Lake Trail and the West Valley Trail. Restore current crossing by removing rocks placed to assist hikers.

Furnace Loop Trail (FL)
Length: 1.4 miles, red blazes
Uses: Hiking
Implementation Steps:
Routine trail maintenance performed, as necessary.

Hogback Mountain Trail (HB)
Length: 1.5 miles, unmarked
Uses: Hiking, Biking (add Cross-country skiing)
Implementation Steps:
Water management measures to be implemented in areas identified by assessment.
The bridge needs to be replaced. Since the trail is required as a fire road, a new bridge or box culvert needs be designed and constructed to allow vehicle traffic. Location of the new crossing is still to be determined.

Indian Hill Trail (IH)
Length: 3.1 miles, yellow blazes
Uses: Hiking
Implementation Steps:
Routine trail maintenance performed, as necessary. This trail is maintained by the NY-NJ Trail Conference.

Lake to Lake Trail (LL)
Length: 4.0 miles, white blazes
Uses: Hiking, Cross-country skiing (portion) (add Biking, Equestrian and Cross-country skiing (whole trail))
Implementation Steps:
Water management measures to be implemented in areas identified by assessment.
Reroutes need to be explored in areas where water management will not improve the treadway. These areas are noted in the assessment. Improvements and reroutes will be completed prior to expanding multiple use opportunities.
There is a major stream crossing at Jennings Creek. A pedestrian bridge has been built here. Crossings for other uses need to be determined.

Lakeville Trail (LV)
Length: 0.75 miles, white
Uses: Hiking, Biking (add Cross-country skiing (portion))
Implementation Steps:
Routine trail maintenance performed, as necessary.

Lakeville Ironworks Trail (LI)
Length: 0.5 miles, yellow blazes
Uses: Hiking
Implementation Steps:
The columns surrounding Sterling Furnace need to be removed; a hand railing needs to be installed near the Lake Mine entrance. Culvert installation or other water management measures need to be done.

Long Meadow Extension Trail (LME)
Length: 1.9 miles, green blazes
Uses: Hiking, Biking (add Cross-country skiing)
Implementation Steps:
Routine trail maintenance performed, as necessary.

Long Swamp Trail (LS)
Length: 3.0 miles, orange blazes
Uses: Hiking, Cross-country skiing (add Equestrian)
Implementation Steps:
Trail reroute along southern portion of trail to avoid standing water. Consider construction of a bridge. Take steps to secure and/or interpret mines.

McKeags Meadow Trail (MM)
Length: 3.1 miles, yellow blazes
Uses: Hiking, Equestrian (add portion), Cross-country skiing (add Biking)
Implementation Steps:
Re-routing of southern section of trail required due to beaver activity. Wooden bridges need improvement as well as transition sections from trail to bridge.

Pine Meadow Trail (PM)
Length: 1.4 miles, orange blazes
Uses: Hiking, Cross-country skiing (add Biking, Equestrian)
Implementation Steps:
Blazing needs to be reviewed to determine if the length of the trail has sufficient markings. Water management measures to be implemented in areas identified by assessment. Take steps to secure and/or interpret mines. Further assessment is required to determine if the trail can be recommended for use by persons with disabilities.

Red Back Trail (RB)
Length: 6.7 miles (includes 0.6 miles of McKeags Meadow Trail), rose blazes
Uses: Hiking, Equestrian (add portion), Cross-country skiing (portion) (add Biking)
Implementation Steps:

In the interim period, prior to the development of the trail along the rail bed, a reroute around the beaver inundated area will be utilized for hiking, biking and equestrians. Rock rearrangement in stream crossing is necessary to meet equestrian crossing standards. Mitigate impacts of beaver on trail per guidance. Clear vegetation to appropriate vertical clearance standard for equestrian use.

Develop trail along abandoned rail bed. Bridges are required prior to opening (Equestrian users have offered to fund this project). Once the trail along the Redback Connector Trail is developed, original route will be evaluated to determine if any changes to use will be made or trail section closed.

Sapphire Trail (SA)
Length: 2.75, blue blazes
Uses: Hiking
Implementation Steps:

Improve treadway in certain areas, add stepping stones at wet areas, add markers and signage at AT trail intersections, install kiosk at beginning of trail. Discuss with Metro North issue of trail to train platform connection. This trail is maintained by the NY-NJ Trail Conference.

Sears Hunter Trail (SH)
Length: 1.4 miles
Uses: Hiking (add Biking, Equestrian)
Implementation Steps:

Implementation of this trail requires coordination with DOT. Develop eastern section of trail from Old Tuxedo Road to Route 17A including stone work, cutting out the uphill embankment to improve trail width, slope stabilization as needed and at least two stream crossings.

South Point Trail (SP)
Length: 0.4 miles, orange blazes
Uses: Hiking
Implementation Steps:

Routine trail maintenance performed as necessary.

Sterling Gardens East (SGE)
Length: 3.3 miles, unmarked
Uses: Hiking
Implementation Steps:

Development of trail will include tree removal, some water management measures and erosion control. Install blazing.

Sterling Lake Trail (SL)
Length: 4.0 miles, blue blazes
Uses: Hiking, Biking (portion), Cross-country skiing (portion) (add Equestrian (portion))
Implementation Steps:

Implement actions to discourage use of side trails. Routine trail maintenance performed as necessary. Install additional signage requesting riders to remain on trails with horses along northern section of trail near beach area. Develop spur trails to viewpoints along the lake.

Sterling Mountain Trail (SM)
Length: 3.3 miles, unmarked
Uses: Hiking
Implementation Steps:

Park will accept proposals to develop appropriate hiking trail in this area. Trail will require additional environmental review prior to development.

Sterling Ridge Trail (Highlands Trail) (SR)
Length: 5.75 miles, blue blazes
Uses: Hiking
Implementation Steps:

Routine trail maintenance performed, as necessary. This trail is maintained by the NY-NJ Trail Conference.

Sterling Valley Trail (SV)
Length: 5.8 miles, yellow blazes
Uses: Hiking, Biking, Cross-country skiing (add Equestrian)
Implementation Steps:

Determine acceptable reroutes for portions of the trail that are noted as unsustainable. Other abandoned wood roads in the vicinity of the trail may be deemed acceptable alternatives. Water management measures on areas of trail should be used.

Townsend Trail (TW)
Length: 1.6 miles, orange blazes
Uses: Hiking
Implementation Steps:
Water management measures to be implemented in area where stream runs along trail bed.

Warbler Trail (WT)
Length: 0.5 miles
Uses: Hiking
Implementation Steps:
Southern 500 feet of trail near pond requires clearing, drainage and trail surface improvements. Mark final route. Install interpretive signage at appropriate vista points.

Water Tower Trail (WA)
Length: 1 mile
Uses: Hiking (add Biking)
Implementation Steps:
Trail is maintained by United Water Co.

West Valley Trail (WV)
Length: 4.5 miles, green blazes
Uses: Hiking, Cross-country skiing (portion) (add Biking, Equestrian)
Implementation:
Implement water management measures, where necessary. Reroutes will be necessary where water management is not practical.

Wildcat Mountain Trail (WM)
Length: 2.3 miles, white blazes
Uses: Hiking
Implementation Steps:
Routine trail maintenance performed, as necessary. This trail is maintained by the NY-NJ Trail Conference.

2. New Jersey Trail Connections

Jennings Hollow East Connector Trail (JHE)
Length: 0.25 miles
Uses: Hiking
Implementation Steps:
Coordinate with NJ DEP to designate the trail.

Beech Farm Trail (BF)
Length: 1.0 miles
Uses: Hiking
Implementation Steps:
Installation of water bars and some trenching. Clear brush from trail. Coordinate with NJ DEP to designate the trail.

Boro Boundary Trail (BB)
Length: 1.0 miles
Uses: Hiking
Implementation Steps:
Drainage issues need to be addressed. Coordinate with NJ DEP to designate the trail.

Hope Mountain Connector Trail (HM)
Length: 2.0 miles
Uses: Hiking
Implementation Steps:
Coordinate with NJ DEP to designate the trail.

State Line Trail (ST)
Length: 1.5 miles
Uses: Hiking, Biking
Implementation Steps:
Mark and develop short section of trail just north of NY/NJ State Line. Coordinate with NJ DEP to designate the trail.

3. In-Park Trail Connections

Lake to Lake/Red Back Connector Trail (LLRBC)
Length: 0.15 miles
Uses: Hiking, Biking, Equestrian
Implementation Steps:
Mark and clear preferred route.

Power Line Connector Trail (PL)
Length: 0.5 miles
Uses: Hiking, Biking, Equestrian
Implementation Steps:
This connector route requires further assessment to identify a more appropriate connection between the West Valley and Sterling Valley Trails.

4. Post 2006 Acquisition Trails

Augusta Mine Trail (AM)
Length: 0.7 miles
Uses: Hiking, Biking, Equestrian
Implementation Steps:
Develop re-routed section (Augusta Mine Connector) including possible switchbacks for steeper sections and possible culvert for wet area.

Caretakers Trail (CT)
Length: 1.5 miles
Uses: Hiking, Biking
Implementation Steps:
Water management measures to be implemented in areas identified by assessment.

Caretaker – Pine Meadow Connector Trail (CC)
Length: 0.5 miles
Uses: Hiking, Biking, Equestrian, Cross-country skiing
Implementation Steps:
Develop trail section from roadway to wood road.

Eagle Mountain Connector Trail (EMC)
Length: 0.5 miles
Uses: Hiking, Biking
Implementation Steps:
Develop proposed route. Water management measures to be implemented in areas identified and minor clearing of brush and trees.

Long Mine Trail (LM)
Length: 1.6 miles
Uses: Hiking, Biking
Implementation Steps:
Board walk to be constructed over wet area near parking. Mine signage to be installed.

Red Back North Trail (RBN)
Length: 1.5 miles
Uses: Hiking, Biking, Equestrian, Cross-country skiing
Implementation Steps:
Install culverts and fill to repair the stream crossing; clear and grub the area south of the stream crossing. Install culverts and fill along wet area south of Caretaker parking area.

Indian Kill – Hogback Connector Trail (IKHC)
Length: 0.65 miles
Uses: Hiking, Biking
Implementation Steps:
Water management measures to be implemented in areas identified.
Construct section of trail near parking area.

H. Coordination

It is recommended that a Trails Working Group be formed to assist the park with the operation and maintenance of the trails. The group should be comprised of the various trail user groups, including hiking, biking, equestrian, cross-country skiing and snowshoeing, federal, state, and local government representatives and interested individuals. The group should meet periodically with park staff. This will provide a coordinated approach in managing and improving the trails.

As funds are made available, improvements will be made by Parks/PIPC. Trail groups may also provide funding or resources to make improvements to the trail system. Prioritization of trail building activities will occur on an annual basis.

I. Interpretation

The environmental and cultural interpretation program for Sterling Forest® State Park will promote conservation of resources by furthering environmental, historical and cultural awareness in visitors. It will serve diverse audiences and utilize an interactive approach. The interpretive preprogram will be based at the Visitor Center facility. Supporting aspects of the program are the trails and historic and natural resources of the park. Trails provide access to the Park's interior for both environmental and cultural education. The Park's Visitor Center staff of educators, rangers and visiting experts will regularly provide guided walks and special programs for families, schools, organizations, and individuals. In addition, there will be self-guided opportunities. The goal of these programs, which range from introductory to expert, shall be to orient the public to the park's natural and cultural resources, and to increase park stewardship.

1. Environmental

The park contains a variety of ecological communities and habitats including mature forests, wetland complexes, lakes, early successional habitat and rare and endangered species. It is connected to similar natural areas to the north in New York and to the south in New Jersey. Due to the significance of the natural resources, approximately 95% of the park is designated a Park Preserve Area and as a Bird Conservation Area. The trail system will provide the opportunity to interpret many of the habitats and the associated fauna and flora while protecting the more sensitive areas such as rattle snake dens and Little Cedar Pond.

2. Cultural

Cultural interpretive programs will focus on the mining and iron-working history of the region including the life of the people living and working here from the early 18th through the early 20th century. Significant historic districts to be interpreted include the First Sterling Ironworks/Lakeville Complex, the Sterling Iron Forging Complex, and the Southfields Furnace Complex. Other complexes can be considered for interpretation as they are discovered. Interpretive programming should also incorporate the iron-related facilities (such as mines) that fall outside the historic districts as well as non-iron related structures. This includes aboriginal camp and rock shelter sites.

Trails provide a means to access these cultural sites. Several trails have been identified in the Trails Plan that will provide for interpretation of various natural and cultural elements of the Park. Trail connections to the Hasenclever Iron Mines Trail and Long Pond Ironworks in New Jersey will expand interpretation opportunities. Interpretive brochures, signage, and the self guided Sterling Ironworks Trail will provide mechanisms for awareness. Park trail brochures will be further expanded and updated to provide additional interpretation of the Park. Brochures will be developed that will provide information on ecological communities, significant species, invasive species and other environmental topics.

VI.
EVALUATION, ASSESSMENT, AND MONITORING

The following guidelines will be utilized in the review and approval process for new trails or the re-alignment of existing trails and implementation of a monitoring system.

A. New Trails and Re-alignment of Existing Trails

There is a specific procedure for the reroute and development of trails and the annual maintenance of trails. Figure 1 outlines procedures to follow for the reroute of existing trails and the development of new trails. The scope and associated impacts of the proposed project will determine the extent of the review process. Larger proposals that may have an impact on environmental or cultural resources will require the review of the Agency's Resource Management Group (RMG). A SEQR determination will be made to determine if an Environmental Assessment would be required.

Annual maintenance encompasses routine functions, such as minor drainage control, trimming, and treadway maintenance. In most cases, this is reviewed and approved at the Park level (Figure 2).

For many trails, State Parks partners with trail organization(s) for development and/or maintenance. It is important that clear lines of communication are maintained among all involved parties. This will ensure that the work that is performed has gone through the review process and is under the direction of the park manager.

Figure 1.

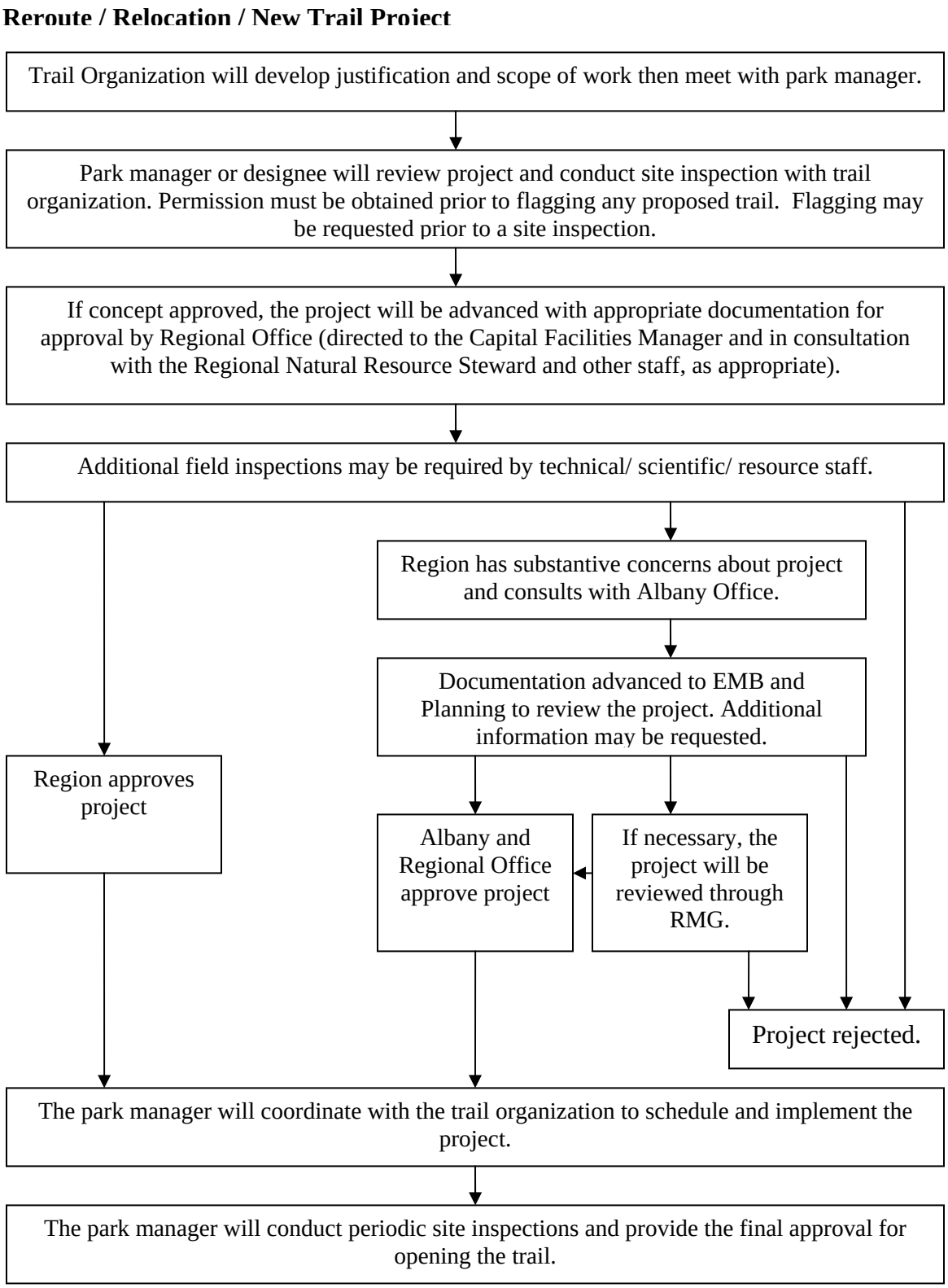
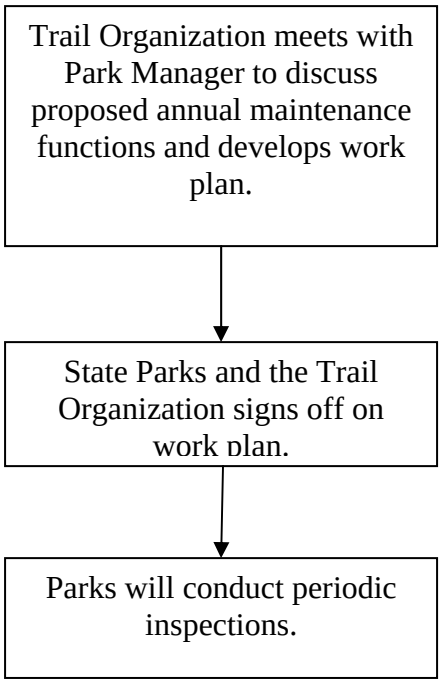

Reroute / Relocation / New Trail Project
Trail Organization will develop justification and scope of work then meet with park manager.
Park manager or designee will review project and conduct site inspection with trail organization. Permission must be obtained prior to flagging any proposed trail. Flagging may be requested prior to a site inspection.
If concept approved, the project will be advanced with appropriate documentation for approval by Regional Office (directed to the Capital Facilities Manager and in consultation with the Regional Natural Resource Steward and other staff, as appropriate).
Additional field inspections may be required by technical/ scientific/ resource staff.
Region has substantive concerns about project and consults with Albany Office.
Documentation advanced to EMB and Planning to review the project. Additional information may be requested.
Region approves project
Albany and Regional Office approve project
If necessary, the project will be reviewed through RMG.
Project rejected.
The park manager will coordinate with the trail organization to schedule and implement the project.
The park manager will conduct periodic site inspections and provide the final approval for opening the trail.

Figure 2.

Trail Maintenance



B. Monitoring Program

A monitoring program will include an annual inspection of all the trails and periodic inspections of the trails throughout the year. An on-going site monitor program will be developed with the Trails Working Group along with a reporting mechanism. Park staff will meet periodically with the Trails Working Group to identify any areas of concern, maintenance needs and coordinate efforts. The Managing Visitor Use model or a similar program will be utilized to monitor trail conditions.

VII.
ENVIRONMENTAL REVIEW

The Master Plan for the Park, including the Interim Trails Plan, was the subject of an environmental review process under SEQR. An environmental impact statement was prepared and findings issued. The master plan identified the trails plan as one of several actions that would require supplemental review. This assessment relies on information contained in the Final Master Plan/EIS for the park as well as the new information and details on the trails that are the result of the planning process.

The proposed Trails plan is the result of a thorough planning process involving representatives of a variety of trail user groups. The Interim Trails Plan, which formed the basis for this plan, included approximately 70 miles of trails. This includes 5 miles of trail which was reviewed and approved by the Agency after the master plan was adopted. The Trails Plan is an approximately 90 mile trail system. The plan calls for an additional 6 miles of newly constructed trail (3 miles of single track hiking, 2 miles of family-hiking and 1 mile of multi-use) and the closure and relocation of 0.5 miles of trail. In addition, 13 miles of trail will be added to the system using old wood roads and existing unofficial trails, including 7 miles on newly acquired property. In addition, the Trails Plan proposed that 43 miles of the existing trail system be designated for additional uses, including biking, equestrian and/or cross country skiing.

The Implementation portion of the plan describes the process for how proposed trail work will be designed, reviewed and approved. In addition, the steps needed to implement the recommendations of the Plan are identified for each individual trail. Any identified improvements and/or reroutes will be completed prior to expanding the proposed multi-use opportunities. Much of the work needed to implement the plan is rehabilitation and restoration of existing trails. However, there will be some new or rerouted trail segments. These new segments will be overseen by PIPC regional and Park staff under the guidance of this plan. Chapter VI – Evaluation, Assessment and Monitoring – describes the review and approval process for new trails or the re-alignment of existing trails. This process includes guidelines for when additional environmental review will be required.

Chapter VI also describes the proposed Monitoring Program that will include an annual inspection of all the trails and periodic inspections of the trails throughout the year. An on-going site monitoring program will also be developed with the Trails Working Group along with a reporting mechanism. This process will be used to report trail conditions and assure that potential problems such as standing water or eroded edges can be corrected before the problem results in adverse impacts to park resources.

As part of the analysis of impacts, a scientific literature review of research was conducted on trail impacts on natural resources; “Summary of Potential Environmental Impacts of Trail Construction and Use on Natural Resources within NY State Parks” (Stein, 2007) was prepared. This review summarized a variety of studies and their findings regarding potential environmental impacts. In addition, a report was prepared

that summarized the findings and management recommendations of the NY Natural Heritage Program's multi year survey of the rare plants, animals and significant ecological communities in Sterling Forest State Park: "Trail Use and Natural Resources at Sterling Forest State Park" (Stein, 2007). Both of these reports were considered in the environmental review of the Trail Plan and serve as excellent references in trail planning and implementation.

Alternatives

Chapter IV - Trail System Alternatives - describes the alternatives considered during the development of the plan: The no action alternative maintains the status quo as detailed in the Interim Trail Plan. This system, as identified in the Master Plan, utilized the existing trails and wood roads. The evaluation conducted as part of developing this current Trail Plan shows that some trails need improvements and/or reroutes. In addition, there is a need to provide a better system of trails for the various users as well as additional protection and interpretation of the Park's important natural resources. As a result the status quo alternative was not deemed acceptable. Another alternative considered was a trail system developed by combining all the trail recommendations of each of the trail user groups. While most of these proposals were good trail recommendations, this did not result in a comprehensive trail system which addressed all the goals of the trail plan.

The preferred alternative is a combination of the recommendations of all the user groups taking into consideration the overall goals of the Park and Trails Plan and compatibility with natural and cultural resources and existing conditions. Overall, approximately 19 miles of newly designated trail will be added to the system. This includes 7 miles of trail located on lands acquired after 2006. It also includes over 5 miles of proposed trails to connect to existing trail systems in New Jersey. Most of the remaining 6 miles of newly designated trails consists of new single track and family hiking trails. Research identified in the scientific literature review noted that trail erosion is often associated with increased use. This potential threat has been recognized and the Plan contains a monitoring program as well as procedures to assure that erosion and sediment control measures are incorporated into all trail improvement and relocation projects.

Environmental Impacts and Mitigation

The Environmental Impacts and Mitigation chapter in the Final Master Plan/EIS has been used as a basis for the analysis of impacts and mitigation for this Trails Plan. The analysis below supplements information in that EIS and specifically describes the potential impacts of implementing the Trails Plan as well as proposed mitigation of any potential adverse impacts.

Land

The Plan will result in some physical change to the land, particularly where new trails will be constructed or segments of trails relocated. Construction of new trail sections may require some rock removal, vegetation removal and leveling. Disturbance will be limited primarily to the required width of the trail corridor. Many of the new/relocated trails are single track hiking trails. The narrower trail corridor for a single track trail will minimize ground disturbance. Some of the new trails will be located along existing old wood roads.

As noted in Chapter V - the Trails Plan, trail builders will follow the policy and guidelines for trail building that have been established by recognized trail organizations and governmental agencies. By following these established guidelines, work will be completed in a manner that maximizes the protection of the natural resources of the park.

There is little change in number of parking areas. The plan proposes that several existing parking areas be improved with minor filling and/or regrading. Little disturbance will be required to improve these areas for parking. Some more significant improvements are proposed for a few of the parking areas. The proposed work at these includes expansion by grading and filling, drainage work, construction of comfort facilities and facilities for equestrians such as tethering and watering facilities.

Any required staging areas for larger projects will be identified as part of the detailed planning for the new trail or segment. Plans for all new trails or major relocations will be reviewed and approved by engineering staff of the Palisades Interstate Park Commission. Parks staff will insure that work is consistent with the overall plans for the project.

Wetlands/Water

As would be expected in a Park with the extensive natural resources of Sterling Forest® State Park, many of the trails run parallel to or cross streams and are located close to wetlands or lakes. Many trails also have drainage problems including standing water or seasonal wet areas. Trail condition assessments conducted as part of the trail planning process identified several areas that require water abatement measures. Routine water abatement techniques such as water bars or rock rearrangement will remedy many of these problems. This work will be undertaken using the established guidelines found in the Trail Maintenance manuals referenced in the Plan. Areas that require more than routine measures will be identified through the Approval Process identified in Chapter VI and will be planned in conjunction with the Palisades Region Design and Construction staff. This includes construction of bridges and/or boardwalks.

Some projects, such as bridges or work next to wetlands, may require consultation and permits from the NYS Department of Environmental Conservation (DEC) and/or the US Army Corps of Engineers (COE). The regional staff will review all of these types of proposals and consult with DEC and/or the COE as appropriate.

All new trail work will be designed to control stormwater and minimize erosion. All plans will be reviewed and approved by regional staff to assure that storm water management and sediment and erosion control measures are incorporated into the design and construction. Following construction, the trails will be monitored to ensure that drainage and erosion control measures are working effectively.

By using established trail maintenance/construction methods, implementing a planning process that includes Regional review, using appropriate sediment and erosion control measures, and conducting supplemental environmental review where needed; implementation of the Trails Plan will not adversely impact the water resources of the Park.

Ecology/Natural Resources

Sterling Forest® State Park contains significant natural resources. 95% of the park is designated as a Park Preserve Area and as a Bird Conservation Area. The park's Master Plan contains a significant amount of information on these important natural resources of the park including information from the biological survey conducted by the NY Natural Heritage Program (NHP) of the entire park in 2000 (Evans et al., 2000) with a supplemental survey in 2004.

In addition, as part of the trail planning process, the Agency conducted a scientific literature review and prepared the "Summary of Potential Environmental Impacts of Trail Construction and Recreational Use on Natural Resources within New York State Parks" (Stein, 2007). The report identified several potential threats from recreational use to ecosystems within New York State Parks including: habitat fragmentation, trampling and soil compaction, erosion, introduction of non-native/invasive plants, wildlife stresses, pollution (including litter and animal waste), and off-trail use and illegal use (e.g. ATV). The report presented findings from a scientific literature review of each of these threats and their potential impacts on natural resources. This was a review of general ecological concepts and thus may not be applicable to all geographic areas, recreational activities, and resource types. The report also contained "General Guidelines for Trail Placement, Monitoring and Management." These guidelines will help during the implementation and monitoring phase of the trails plan and help assure environmental impacts associated with trail development and use will be minimal.

Additionally, a more specific report was prepared for Sterling Forest® State Park, "Trail Use and Natural Resources at Sterling Forest® State Park" (Stein, 2007). This report compiled the information on the natural resources in the park contained in the NHP surveys and other references. It not only provided rare species and significant community information but also provided guidance for resource protection, trail location, use and management within the Park. These recommendations and suggestions were based upon the identified natural resources in the park. It also recognized that the surveys and inventories were not comprehensive in all circumstances. Therefore, additional surveys and research may be necessary not only to document occurrences of

species but also to better understand the potential threats to those resources when in close proximity to recreational activities.

The NHP report provided two overarching recommendations regarding the protection of the important identified natural resources with regards to the recreational activities in the park. The first recommendation was to monitor areas that receive heavier recreational use to determine impacts on the natural communities. Monitoring should include location, number, seasonality, and type of recreational use. Monitoring could be coupled with a trail education program that emphasizes the importance of remaining on marked trails due to the sensitive nature of natural communities in the park. The second recommendation suggested keeping trail construction in the park to a minimum and that trails should avoid sensitive areas. Additional trails should be kept to a minimum as the existing trail network already provides access to most of the park. New trails should not be constructed in sensitive areas (such as those that contain rare plants or communities) which are particularly vulnerable to a variety of threats. These threats include trampling, erosion, or disturbance of rattlesnake dens or basking areas. Mitigation of impacts is also suggested such as including placement of boardwalks in highly trafficked areas.

This information and recommendations in these reports were used to develop both the Master Plan and the Trails Plan. Information from the NHP surveys on rare, threatened, and endangered species and significant natural communities within the park and the management recommendations were used in the trail planning process to assure that recommended trail locations and uses did not adversely affect any rare or endangered species or habitats.

In addition, the new, proposed trail routes were individually surveyed by State Parks biologists to assure that the location of new trails would not affect any of the important natural resources of the Park.

SIGNIFICANT ECOLOGICAL COMMUNITIES

Seven significant ecological community types were documented in the Park. A large occurrence of Appalachian oak-hickory forest forms the matrix. Imbedded within this matrix are two occurrences each of chestnut oak forest, pitch pine-oak-heath rocky summit, highbush blueberry bog thicket and hemlock northern hardwood forest. There is one occurrence each of in land Atlantic white cedar swamp and dwarf shrub bog.

Because of the significant amount of natural area, almost every trail follows through some type of significant ecological community. Special care will be taken in those community types that are most sensitive to trail use - the pitch pine-oak-heath rocky summit and the high bush blueberry bog thicket. Consistent with the Master Plan, public access to the Cedar Pond area, which contains both occurrences of the Atlantic white cedar swamp and dwarf shrub bog communities, is limited. Access continues to be by permit only.

High Bush Blueberry Bog Thicket

The park contains several occurrences of this community type. The total area of this community type within the Park is 147 acres. As many as 9 tree species, 19 shrub and vine species, 34 herb species, 5 non-vascular species, and 7 vertebrate species have been identified within this community type in Sterling Forest® State Park.

The current statewide trend for this community is probably stable for occurrences on public land, or declining slightly elsewhere due to moderate threats related to development pressure or alteration to the natural hydrology. Several trails pass near or adjacent to this community type. These trails occur within adjacent forest types but generally do not bisect or enter the bog thickets. There is, however, a potential for soil erosion and deposition into these wetlands along trails that skirt the edges of the bog thicket communities. Increased use of these trails by adding additional uses (e.g. biking) has the potential to impact these wetland communities. Assuming that some areas will receive more recreational use, portions of the community that are adjacent to hiking trails should be monitored for possible impacts due to increased trail use. Appropriate design and construction methods as identified in the plan will also assure that these areas are protected.

Pitch Pine-Oak-Heath Rocky Summit

This community has a somewhat limited statewide distribution (correlated to slightly acidic to low pH bedrock geology). Rare species such as the Timber Rattlesnake (*Crotalus horridus*) are associated with this community type. This community has probably declined substantially from historical numbers and nearly all of the currently documented occurrences are threatened by fire suppression, recreational overuse, and development. Occurrences of pitch pine-oak-heath rocky summit communities are outstanding in Sterling Forest® State Park. The park contains two separate occurrences, one in the vicinity of Indian Hill and one on Sterling Mountain. The total area of this community type within the Park is 171 acres. As many as 16 tree species, 11 shrub and vine species, 19 herb species, and 5 non-vascular species have been identified in this community type. These rocky summits are relatively undisturbed by humans. Natural processes, like wildfires and wind damage, have helped maintain these open summit systems (Evans et al., 2001). Currently there are only hiking trails in these areas and no new trails are proposed for these areas.

The pitch pine-oak-heath rocky summits are threatened primarily by possible trampling by recreational users. In the Indian Hill area, there is a threat that the highly invasive multi flora rose, that has already established itself at the area, may spread. Thus, there is a need to monitor impacts of the all recreational trails that bisect this community. There is also a need to institute a trail education program for hikers that emphasizes the fragile nature of these areas and the importance of remaining on marked trails. In those areas that receive heavy recreational use the installation of boardwalks may be considered.

Freshwater Wetlands and Vernal Pools

The NHP report also identified and provided management recommendations for vernal ponds and wetlands in the Park. Vernal pools are intermittently ponded, small, shallow depressions usually located within an upland forest. They are typically flooded in spring or after a heavy rainfall but are usually dry during summer. Many vernal pools are filled again in autumn. The substrate is dense leaf litter over hydric soils. Vernal pools typically occupy a confined basin (i.e., a standing water body without a flowing outlet), but may have an intermittent stream flowing out of them during high water. Many animals depend on vernal pools, especially for breeding. Most of these animals spend a majority of their life in nearby wetlands but migrate to breed or feed in productive vernal pools. Characteristic animals of vernal pools include species of amphibians, reptiles, crustaceans, mollusks, annelids, and insects.

Management recommendations for vernal pools can be found in the following: 1) Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States (Calhoun and Klemens, 2002), and 2) Forestry Habitat Management Guidelines for Vernal Pool Wildlife (Calhoun and deMaynadier, 2004).

NHP recommendations included establishing and maintaining a natural buffer of at least 100 feet around lakes and wetlands in the park. The current high quality of many of the wetlands and the species that use them is, in part, a reflection of the quality of the surrounding landscape. Efforts should be made to maintain the continuous canopy of the surrounding landscape including the natural forested buffer around all wetlands and water bodies. Several trails pass by this community type. The Agency's goal is to protect all wetlands and vernal pools by providing buffers commensurate with the viability needs of the wetland/vernal pool species. The recommendations noted above will be considered in the planning for all new trails and trail relocations. It is also recognized that some existing trails already pass close to some wetlands and vernal pools. As the Trails Plan is implemented and plans for trail reroutes identified, buffers will be considered and added wherever possible. Monitoring for impacts will help identify areas that may need additional mitigation.

VEGETATION/PLANTS

The Park contains many rare plants. The NHP identified 30 rare plant populations representing 16 different species throughout Sterling Forest® State Park. The NHP also identified potential threats and management recommendations for several of the listed plant and animal species in the park that may be impacted by recreational trails.

Spotted Pondweed (*Potamogeton pulcher*) and the Terrestrial Starwort (*Callitriche terrestris*) are listed as threatened plant species in New York State. Trails close to occurrences of this species include: the Fire Tower (FT) and Sterling Valley (SV) trails. There are approximately ten known populations and nearly 25 historical locations for the Spotted Pondweed. As an aquatic plant, it may be subject to changes in water chemistry,

and invasive species. More than 10 Terrestrial Starwort plants were found growing along the Fire Tower Trail, an old logging road. This occurrence is ranked as marginal to poor. Since these plants are alongside the road it increases their likelihood of trampling. There are 80 plants widely scattered along the Sterling Valley Trail. This trail is used by rangers and other authorized vehicles. This trail is currently designated for hiking, biking and cross-country skiing. The Plan calls for adding equestrian use on the trail. Portions of the trail also require rerouting. Because of this population's trailside location it is susceptible to trampling. Until the trail is improved, existing trail use, as well as the existing population of this plant, will be monitored. Any indications of impacts will be addressed through consultation with Agency staff and NHP staff. In addition, plans for trail reroutes and improvements will take into consideration protection measures for the plants, in particular, moving trails farther away from plants. There is also a need to provide information on rare plants in the overall education materials provided to visitors and park staff.

Invasives - Trails can facilitate the spread of invasive plants, such as barberry, garlic mustard and honeysuckle. OPRHP and PIPC will work closely with the trail organizations and their volunteers to monitor the extent and spread of invasive plants along the trails system as well as identify appropriate control measures where needed. In addition, horse owners will be educated regarding the need to remove horse waste. Often seeds found in the manure of horses are from invasive or non-native plants. Removing horse waste from trails will help prevent the spread of invasives into the Park.

FAUNA

The Park also contains many rare animals. The NHP identified four rare vertebrate species and two rare invertebrates in the park. In particular, the timber rattlesnake is found throughout the Park and sometimes encountered along trails.

The timber rattlesnake (*Crotalus horridus*), a NY State Threatened species, has a broad distribution in Sterling Forest® State Park, where it occurs in a wide range of habitats and at all elevations in the park. This species aggregates in winter at hibernacula or "dens" and then disperses in warmer months, often traveling a mile or more to forage solitarily in forested habitat. Shedding (which may occur once or twice per active season) and pregnant timber rattlesnakes typically occupy open rocky habitats where solar radiation allows them to maintain higher body temperatures. In some locales, gestating females will gather in open rocky habitat from mid-late summer, forming a "birthing rookery".

While potential exists to encounter a timber rattlesnake on many of the park's trails, such encounters are infrequent due to this species generally solitary habits, cryptic coloration, and secretive behavior. However, the probability for encounter increases dramatically when trails intersect or come in close proximity to the following: 1. established snake travel routes and dispersal corridors; 2. overwintering sites and nearby transient habitats; 3. birthing rookeries; and 4. skin-shedding sites. Consequently, this trails plan aims to mitigate potential park visitor/rattlesnake interactions by siting trails

away from these predictable rattlesnake use areas. Trail placement decisions are informed by ongoing field studies of timber rattlesnake spatial ecology and habitat use within the park. Consideration will be given to closing certain trails for a short time in the spring and fall when the snakes move from their dens out to forage. State Park biologists will make the determination as to which sections of trails may need this short term closure and the park will provide information in a variety of venues to notify park users of any closures.

Nuisance response efforts aimed at moving rattlesnakes out of areas where they may be harmed may be useful in some locations where homes are located within the summer foraging habitat.

In addition to the Timber Rattlesnake, the Park contains a wide variety of amphibians and reptiles. A statewide effort has been made by the DEC to collect data on the locations of common and rare amphibians and reptiles (herps). This project, called the New York Amphibian and Reptile Atlas, was conducted from 1990-1999. The Atlas project relied on volunteers to submit records of reptiles and amphibians. The data from the atlas has been used along with the NHP data to help identify where trails have potential impacts on amphibians and reptiles.

General management recommendations for amphibians and reptiles that were provided in "Habitat Management Guidelines for Amphibians and Reptiles in the Northeastern U.S." (Mitchell et al., 2006) will serve as guidance that will be used as the Trails Plan is implemented. These include protecting sensitive habitat features such as seasonal wetlands, seeps, coves, and rock outcroppings, maintaining contiguous habitat gradients (unfragmented transition zones between adjacent habitat types), taking into consideration seasonal migration and natural dispersal patterns between complementary habitats difficult or impossible, and directing recreational use away from sensitive habitat features such as hibernacula, wetlands, turtle nesting sites, seeps, ravines, and coves.

The Eastern Small-footed Myotis (*Myotis leibii*i) is listed in New York State as a Special Concern species and a Species of Greatest Conservation need. This species has been found in abandoned mines (Tip-Top, Mountain, Summit and Morehead), some of which lie along trails. These colonies can be threatened by visitation during hibernation. The mines should not be closed as it would prevent their use as hibernacula. Special grates should be installed where appropriate that will protect park visitors and also provide access for the bats to the mines. The Agency will work with NYS DEC to identify the appropriate closure grates for the mines in the Park.

Beaver (*Castor canadensis*) are a common species which are also widespread in Sterling Forest® State Park, inhabiting many of the Park's major drainages and wetland systems. While important agents for wetland creation within the park, the beaver's propensity for impounding streams may also lead to flooding in undesired areas, such as along wood roads and trails. Consequently, it is the goal of State Parks to maintain beavers as a productive part of the natural ecosystem, while seeking ways to minimize their negative effects to facilities and patron safety. Where beaver activity has created a

conflict with trail use, procedures have been identified by the Agency to assure protection of both the trails and the beaver.

The Park also contains a wide diversity of birds. In 2001, as part of the Master Plan process, the Park was designated a Bird Conservation Area (BCA) because of its being a migratory concentration site, a diverse species concentration site, an individual species concentration site, a species at risk site, and a bird research site (ECL §11-2001, 3.e-h). Species that contribute to the diversity of birds within the BCA include Broad-winged Hawk, Acadian Flycatcher, Least Flycatcher, Yellow-throated Vireo, Brown Creeper, Winter Wren, Hermit Thrush, Worm-eating Warbler, Blue-winged Warbler, Black-throated Blue Warbler, Pine Warbler, Ovenbird, Louisiana Waterthrush, Hooded Warbler, Canada Warbler, Scarlet Tanager, Rose-breasted Grosbeak, Orchard Oriole, and Purple Finch.

Both the Sterling Forest® BCA Management Guidance Summary and the Park Master Plan and Environmental Impact Statement provide recommendations for trails and trail maintenance in relation to the protection of birds and bird habitats within the Park. These recommendations will be considered in the implementation of the Trails Plans described in Chapter V and VI.

Scenic/Aesthetic Resources

The project will not have any adverse affect on any of the scenic/aesthetic resources of the Park or the surrounding area. Implementation of the Trails Plan will improve the aesthetics of the Park by restoring and improving trails and designing new trails that will blend with the natural surroundings. The new trails and trail relocations will be planned to provide trail users access to many of the most scenic vistas of the Park. Added interpretive and informational signage will enhance the trail experience.

Historic and Archeological Resources

The park contains many historic structures, including furnaces and mines from the iron industry which date from the 18th and 19th centuries. Some of these structures are already incorporated into the interpretive materials available at the Park such as "The Iron Works at Sterling Lake Walking Tour." This brochure provides a pictorial guide and walking tour of the remains of Lakeville's iron processing operations. These structures are also the focus of interpretive hikes led by Park staff. It is proposed that these types of interpretive activities will continue to be expanded in areas such as Southfield Furnace in the Indian Hill area.

Consideration of historic and cultural resources has been part of the planning for all new trails or trail relocations. OPRHP's Historic Preservation Field Services Bureau (FSB) has been part of the review process that has been outlined for all new trail projects. In addition, there are several old open mine shafts near various trail routes. These will be fenced and secured to protect park visitors and trail users. All of this work will also be done in consultation with FSB staff to assure the protection of the historic and

archeological resources. NYS DEC will also be consulted to determine if any of the mines to be closed contain bat hibernacula. If bats are present, appropriate bat friendly closures will be used.

Open Space and Recreation Resources

The project will have beneficial impacts on the recreational opportunities in the park by providing an improved system of trails that is available to a variety of trail users with a wide range of abilities. Accessible trail segments and parking areas have been incorporated into the plan. In addition, by providing a process for implementing trail improvements, it is expected that the improved trails will be sustainable over a long period of time, ensuring that the trail system will be available to users over the long term. Improved signage and interpretive materials will benefit all users by making it easier to locate trailheads and trail segments that are appropriate for their skill level.

Supplemental Environmental Review

As identified in the Implementation section of Chapter V, several trail segments require additional planning, consultation and design. In a few cases, further environmental review, beyond the scope of the Trails Plan, may be required before work on the trail can be conducted. This could include trails that require a reroute but no reroute has been identified. A review and approval process has been developed for rerouting, relocating and developing new trails (Chapter VI).

Each of these elements will be reviewed as part of the evaluation process outlined in Chapter VI and a determination made as part of this process as to which trails will require supplemental environmental review by PIPC and OPRHP. New trail segments or significant trail relocation proposals with significant issues may require supplemental environmental review and review by the Agency's Resource Management Group.

VIII.
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Appendix A

STERLING FOREST® STATE PARK
COMPREHENSIVE TRAILS PLAN

STUDY GROUP

Debra Corr (Mid-Hudson Horse Trails Assoc.)
Bob Bryant (NYS Horse Council)
Carolyn Moran (Orange County Horse Council)
Richard Anderson (Constitution Marsh)
Carmen Heitczman (Orange County Federation of Sportsmen)
Neil Woodworth (ADK)
Ed Goodell (NY-NJ Trail Conference)
Bob Berlin (Sterling Pines resident /hiking enthusiast/ trail maintenance volunteer)
Kathleen Moser (Nature Conservancy)
Jim Hall (PIPC – Jersey Section)
John Gebhards (Orange County Land Trust)
Mary Yrizarry (Sterling Forest Partnership)
Seig Aurich (King's College)
Seth McKee (Scenic Hudson)
Arthur White (Bike Trail Consultant)
Martin Deeks (Historic Preservation Specialist - Ringwood State Park)

Appendix B

Memorandum of Agreement

Between
Trails Organization #1
And
Trails Organization #2
And
Trails Organization #...
And
The New York State Office of Parks, Recreation and Historic Preservation

By this agreement, #1, #2, …. and the New York State Office of Parks, Recreation and Historic Preservation confirm and acknowledge the following:

1. The _____Trail, a linear trail located within _____ State Park, is under the jurisdiction of the New York State Office of Parks, Recreation and Historic Preservation (hereinafter referred to as "PARKS"), an agency of the Executive Department of New York State government.
2. The #1, #2, and …., nonprofit trail organizations have a joint interest in the _____ Trail and in coordinating their efforts as a single group, hereinafter known as the Friends of xxxx Trail (the "FRIENDS").
3. The FRIENDS and PARKS have mutual and complimentary interests in the development and maintenance of the trails and associated facilities and program within _____ State Park.
4. The FRIENDS acknowledge that the liaison for PARKS with the FRIENDS for all programmatic and business relations shall be the Regional Director or his/her designee (hereinafter referred to as the Park Manager), who shall be invited to attend all meetings of the FRIENDS, its Board of Directors and committees. The Park Manager not serve as an ex-officio member of the Board of Directors of the FRIENDS. PARKS acknowledges that the representative of the FRIENDS for all official programmatic and business relations shall be the President of the FRIENDS or the President's designee.
5. The FRIENDS, in furtherance of its purpose to support and supplement development, maintenance, preservation and public education programs at the Park, shall keep PARKS fully informed as to its activities and plans and shall do so through the Park Manager either directly or as provided for in the By-Laws of the FRIENDS.
6. Develop and maintenance activities proposed by the FRIENDS must be reviewed and approved by PARKS prior to implementation.
7. Prior to commencing any pre-approved work, each member of the FRIENDS shall sign a volunteer service form through the Park Manager, a sample of which is attached to this Agreement as Exhibit A. Such form shall be kept confidential. PARKS and the FRIENDS acknowledge that by filing a volunteer service form, the FRIENDS will receive New York State Worker's Compensation benefits for any injuries sustained during the course of

volunteer work. Filing a volunteer service form also extends the protections offered pursuant to the Public Officers Law in the event they are sued with regard to their negligence during the course of their volunteer work.

8. In the event that there is an access fee to the Park, FRIENDS shall have access to the Park at no charge upon the authorization of the Park Manager, and only in connection with pre-approved volunteer work at the Park.
9. The term of this Memorandum of Understanding shall be five years. Either party may terminate this agreement at any time prior to the expiration of the five year term upon ninety(90) days' written notice to the other party. This agreement shall terminate automatically in the event of the dissolution of the FRIENDS or if the FRIENDS become incorporated within as a 501 (c) 3 organization at which time a new Agreement will be required.
10. This agreement may not be amended, modified or otherwise changed unless done so in writing and signed by both parties.

Appendix C

COMMENTS AND RESPONSES

The following contains the responses to the comments received by OPRHP on the Draft Comprehensive Trails Plan and Environmental Assessment for Sterling Forest State Park. The Draft Plan was issued on November 12, 2008. The public comment period ended on December 5, 2008. All comments were reviewed. All substantive comments have been summarized below. Responses to these comments are provided and were considered in the revisions found in this document.

OPRHP appreciates the time and effort that persons interested in the future of Sterling Forest State Park have invested in their review and comments on the Draft Plan. A list of the persons and organizations that provided comments is contained at the end of this Appendix.

Response to Comments

Clarifications/Editorial:

Comments: A number of comments that were received requested clarifications regarding trail locations and labeling.
Response: These comments were based on a prior draft map utilized by the plan's Study Group, not on the maps in the Draft Trails Plan. All of these clarifications were addressed on the later maps in the Trails Plan.

Comment: On page 104 E, please change the term "self-enforcing" to "self-watching" regarding user groups.
Response: The plan has been updated.

Trail Use:

Comment: Concern was expressed that public land is being used for private interest in that some of the trails are designated for hiking use only. The request was made to have single track mountain bicycle trails designated in the Trails Plan as single-use trails or have mountain biking added as a use to the hiking only trails. Specifically noted was the Sterling Ridge Trail. A list of scientific research studies was included. The results of these studies indicate that the impacts of hiking and biking on single track are similar.
Response: Except for the minor addition in new trail (Allis re-route and sections of the Cross Ridge Trail), the Agency will not be expanding the proposed trail system at this time. Opportunities for single track mountain biking within the proposed trail system may be considered in the future by redesigning existing trails and/or considering expanded use on selected single track trails. The Sterling Ridge Trail is an historic hiking trail and the Agency plans to leave that as hiking only.

Comment: There should be a bicycling linkage from Sterling Forest State Park into Harriman State Park, with a suggestion that the Wildcat Mountain Trail would be a perfect trail for this connection. In addition, adding biking use to the Townsend Trail would provide a loop opportunity.
Response: The majority of the Wildcat Mountain Trail is located in Harriman State Park and mountain biking is currently not allowed on the trails in Harriman. At such time when a trails plan is developed for Harriman SP, the Agency will further evaluate this option of creating a biking connection along this route. There is a future possible connection from the north end of the Wildcat Mountain Trail into Harriman SP which would include a connection to mass transit. This is discussed further below.

Comment: Classifications of trail difficulty are needed to spread the users out throughout the park. A stacked loop system of trails is preferable to reduce conflicts of users and reduce impacts of multiple abilities of users on the same trails.
Response: The Agency is developing a trail signing handbook in an effort to provide standardized and uniform signage throughout the state park system. It will be proposed to include descriptive information on trailhead signs regarding key characteristics of trails for users to assess their own abilities and whether or not to use a specific trail. The plan does provide for a multitude of trail experiences throughout the park, including numerous loop opportunities, which should help alleviate any expected user conflicts.

Trail Routes:

Comment: Further exploration is needed to determine an appropriate route for the Sterling Mountain Trail.
Response: As noted in the plan, the Park will consider an appropriate trail in this area as a future action. This will require additional environmental review prior to development.

Comment: A request was made to eliminate the Powerline Connector Trail located along a utility corridor. It was noted that following utility lines is unpleasant, often quite steep, difficult and prone to erosion. In addition, this multi-use trail would cross over the Sterling Ridge Trail (a single-use hiking trail), a situation that would better be avoided. An alternate route was proposed to make the multi-use connection between the West Valley and Sterling Valley Trails. It would connect from West Valley just north of the utility line and run in a northeasterly direction to connect to Sterling Valley Trail near parking lot #8 and which would not cross the Sterling Ridge Trail.
Response: Concerns were raised about the east-west rock ledge that is located in this area and the need to accommodate horses on this section of trail. The Agency will further assess the location of a trail connection between West Valley and Sterling Valley Trails in this vicinity. The Powerline Connector Trail will remain in the plan and on the trails map. However, the text has been revised to reflect that further assessment is needed to identify a more appropriate connector route.

Comment: The northern connection from the Fire Tower Trail to the West Valley Trail should be eliminated and replaced with a short connector to the south where the stream is not as wide.

Response: The proposed short connector trail to the south is already identified in the plan. The plan describes it as needing further assessment due to possible high water levels during wet periods. The northern connection is the only fire road access into that area and must remain open. Thus it remains in the plan.

Comment: Re-route the Sterling Lake Loop Trail to follow the contours of the lake on the east side beneath the cliffs. This re-route would offer magnificent views of Sterling Lake. The current routing takes the trail behind houses at Sterling Pines in a `rocky, single-track, steep and remarkably less pretty' area.
Response: The current trail route was chosen due to a possible fire hazard risk of the dead hemlock trees in the area near homes and the steep slopes near the lake. The Agency will reconsider re-routing this section of the Sterling Lake Trail in the future if these concerns can be addressed. The Agency will also consider shoreline protection measures with a possible re-route.

Proposed connections/access:

Comments: The following proposed trails were presented in an effort to develop a north-south hiking-only route in the eastern region of the park.
1. A new trail was proposed to run from the southwest side of County Route 84 (across from parking lot #19) and proceed northwesterly to then cross CR 84 and proceed north to connect to the Red Back Loop.
2. A new trail was proposed to connect parking lot #16 (Eagle Mountain trailhead) to the northeast corner of the Red Back Trail, which would provide a hiking-only alternative to one leg of the Red Back Trail and would then connect up with proposed trail #3 below. As an alternative, it was proposed to change the Eagle Mountain Loop to a hiking-only trail and in addition, to eliminate the western half of the Eagle Mountain Trail since both ends connect to other trails.
3. A new trail was proposed to connect the northeast corner of the Red Back Trail (#2 above) following a woods/mining road north to the `vacant park owned house' along CR 84.
4. A new trail was proposed to connect parking lot #10 due northeast to Ironwood Drive (parking lot #6).
5. A new trail was proposed to connect parking lot #6 at Ironwood Drive due east to cross CR 84 and then northeast to parking lot #3 at Clinton Road. It was noted that a significant impediment would be the crossing of the four lane State Route 17A.
6. A new trail was proposed to connect from the southern end of above #1 (across from parking lot #19) south to the Cooper Union Trail in Ringwood State Park in New Jersey.
Response: After a lengthy planning process with great amounts of input from a Study Group and the proposed development of an extensive trail system throughout the park, the Agency believes there to be sufficient trails to meet the recreational needs of the public and is planning for no additional trails along this proposed route at this time. These comments were based on a prior draft map utilized by the plan's Study Group, not on the maps in the Draft Trails Plan. Therefore, it should be noted that two of the proposed trails were already incorporated into the Trails Plan albeit not exactly identical routes. A breakdown by proposed trail is provided below.
1. As noted, no additional trails are warranted in this area.

2. As noted, no additional trails are warranted in this area. However, the Agency has decided to reassess the access route to the Eagle Mountain Trail in this vicinity. The plan has been updated to reflect this.
3. This proposed trail was already included in the plan (Red Back North).
4. The majority of this proposed trail was already included in the plan (Long Mine Trail). The southern section of this proposed route corresponds to the proposed Paterson Mine Trail which is noted in the plan as needing further ecological assessment.
5. As noted, no additional trail is warranted in this area. Note that the Indian Kill Hogback Connector Trail provides a hiking and biking link from Hogback Mountain to the former Cintichem property parking lot at Indian Kill Reservoir along CR 84.
6. As noted, no additional trail is warranted in this area.

There were three additional trails proposed in the eastern region of the park that the Agency deems appropriate for further consideration.
Comment: A new hiking trail was proposed as an alternate route to the above proposed #5 trail. This trail would make a connection from parking lot #6 due east to parking lot #5. This route would require crossing non-public land, CR 84 and SR 17A. Parking lot #5 is a bus stop and commuter and hiking parking area.
Response: One of the goals of this plan is to develop and maintain linkages to trail systems outside the park and includes the strategy of developing trail linkages to access mass transportation. As this proposed trail could potentially create a connection to mass transit, the Agency would be willing to consider developing this trail corridor should the opportunity arise to establish a trail through the private land.

Comment: A trail was proposed to link the western most point of the Long Swamp Trail due northeast and then loop across west along a narrow parkland corridor skirting some residential areas to the Red Back Trail near parking lot #16. It was left open whether this would be a hiking-only or hiking and biking trail.
Response: The Agency deems this connection as feasible for additional access into the larger trail system from the Long Swamp Trail. Concerns have been raised regarding some steep sections of terrain along this narrow corridor. Obtaining access across private lands where the terrain is not quite so steep would require the assistance of the Trails Working Group. If such access was obtained, the Agency would be willing to progress this trail option. Appropriate use would be determined during this process.

Comment: A new trail was proposed to run from near the north end of the Wildcat Mountain Trail, proceeding southward to Southfields, to cross State Route 17 and connect with the Nurian Trail in Harriman State Park. Public transportation is available at an existing bus stop on SR 17. A further highly desirable consequence would be to increase the currently scant usage of the Southfields pedestrian bridge over the NYS Thruway, and via that connection, also provide additional loop and through-hiking opportunities.
Response: One of the goals of this plan is to develop and maintain linkages to trail systems outside the park and includes the strategy of developing trail linkages to access mass transportation and local communities. This proposed trail would provide both a connection to mass transit as well as another state park's trail system. Challenges regarding this proposal include development of a trail along Orange Turnpike, crossing private land, crossing SR 17 and

traversing village blocks with traffic. Obtaining access across private lands would require the assistance of the Trails Working Group. If such access was obtained, the Agency would be willing to progress this trail option.

Comment: A hiking-only trail connection was proposed to link the southwest corner of the Clayhole Loop Trail to the proposed Sterling Gardens East Trail. This connection provides an alternative to the multi-use Long Meadow Extension as a connection and provides for hiking-only access to the Sterling Gardens East Trail from one of the parking areas on Bramertown Road.
Response: This comment was based on a prior draft map utilized by the plan's Study Group, not on the maps in the Draft Trails Plan. The final alignment shown in the Draft Trails Plan of the Sterling Gardens East Trail included this connection providing access to the trail along the Clayhole Loop Trail from parking lot #38 on Bramertown Road.

Comment: A new hiking trail was proposed to connect Sterling Forest with Tranquility Ridge and Ringwood State Park. It would generally conform with a trail previously proposed that utilizes Beech/Boro Boundary Roads, connecting the Hasenclever Iron Trail and the Cross Ridge Trail.
Response: This comment was based on a prior draft map utilized by the plan's Study Group, not on the maps in the Draft Trails Plan. The Boro Boundary Trail follows an existing road network including the Boro Boundary Road and was designated in the plan to provide a connection from Sterling Forest into Tranquility Ridge and the Hasenclever Iron Trail. An additional connection in this area is not warranted.

Comment: There should be mountain bicycle trail access to a local train station, as the Sapphire Trail provides hikers this opportunity.
Response: As noted above, one of the goals of the plan is to develop trail linkages to access mass transportation. The Agency recognizes this importance for different user groups. In the case of the Sapphire Trail, the trail corridor crosses the Appalachian Trail on National Park Service land on which mountain bikes are not allowed. Thus the Sapphire Trail is restricted to hiking use only. The Agency will look into other options for providing biking access from a local train station stop.

Comment: The Orange and Rockland Power electric transmission line runs from the northwestern section of the park to the southeastern section of the park. This corridor could potentially provide a connection between the Ramapo River Greenway, Harriman and Sterling Forest State Parks and the Appalachian Trail. This corridor should at least be identified in the plan as a possible route for trail development or state why trail establishment is not possible.
Response: The vision of the Trails Plan includes developing and maintaining a diverse trail system that is compatible with the natural, cultural and recreational resources of the park. The plan offers a variety of experiences to a variety of users throughout the park land. There are a number of trails that cross the utility corridor. The Agency does not see the need to explore use of the utility corridor itself as a multi-use trail bisecting through the park while there are plenty of trails which provide the expected "trail experience" with narrower corridors and following the natural contours of the land.

Comment: The Trails Plan should identify CR 84 as a potential corridor for roadside trail development.
Response: The Agency agrees that CR 84 provides the potential opportunity for an additional connection through the park. However, the existing paved road does not provide area for a bike lane. This project would involve widening the road and would incur substantial cost. Concerns were raised about funding for such a project. The Agency would support the county should it choose to widen the road to add a bike lane.

Comment: A request was made for a plan to provide some access to the large space surrounding Cedar Pond.
Response: Consistent with the Master Plan, the Trails Plan limits access to the Cedar Pond area to permit only. The Agency does not plan to provide trail access through this area in order to minimize the disturbance of significant ecological communities.

Signage/mapping:

Comment: The provision for positive signage stipulating allowed uses should be incorporated into the plan. Especially of note are the intersections of multi-use trails with single-use trails.
Response: The Park will utilize a standard method of signing trails appropriate for the needs of the trail system and visitors to the Park. This will include signage stating allowed uses on each trail and appropriately locating trail signs at trailheads and trail intersections.

Comment: Create a map with an easy system for trail users to report their location if lost, injured and/or needing medical assistance.
Response: This is a good suggestion and the park will take this under consideration.

Process:

Comment: Assurance was requested that submitted future trail proposals will receive consideration.
Response: As detailed in Chapter VI of the plan, there is a review and approval process for newly proposed trails as well as re-alignments of existing trails.

Environmental:

Comment: The question was raised as to the environmental sustainability of horse traffic across the north end of the Sterling Lake Loop across the edge of the beach. It was suggested that an environmental assessment for equestrian and bike use on this section of trail would be appropriate.
Response: The north section of the Sterling Lake Trail is currently open to hiking, biking and cross-country skiing. There have been no adverse effects noted with these current uses. The Park plans to continue monitoring the use of this section of trail as equestrian use is added. The trail surface in this area is firm and erosion is not expected to be a problem with the added use. It is not expected that the trail will be over used by equestrians and therefore any manure would not have an adverse impact on the lake quality. There is signage already in place stating that no swimming is allowed in the lake. The Park will install additional signage requesting that riders

remain on the trail with horses. If, in the future, trail monitoring identifies adverse impacts to the trail or to the lake, appropriate mitigation measures will be taken such as moving the trail farther away from the lake.

Comment: The Lake to Lake Trail should accommodate both hikers and bikers without developing a second trail (Cross Ridge) in this area. A second trail would contribute to possible fragmentation.
Response: With input from the Trails Plan Study Group, the Agency deemed it appropriate to have a single track hiking trail running east-west in this area of the park. The new trail will be carefully designed and constructed to minimize any possible impacts. In addition, improvements to the existing Lake to Lake Trail will assure improved conditions for the trail.

Comment: Regarding the Sterling Lake Trail, concern was expressed regarding the trail on the east side of the lake being listed as `unsustainable' (page 75-79) and therefore it is not open to biking. In addition, concern was expressed about creating trails that encircle a lake or source of water for wildlife such as the Sterling Lake Trail encircles Sterling Lake.
Response: The plan has been updated to describe the steep and rocky conditions along this section of trail that currently restrict the use to hiking only. As the park has a variety of trail experiences available to different user groups, it is not expected that this one trail will be over used. The Agency does not see this trail and its use as an impediment to wildlife's ability to access the lake.

Comment: Concentration of recreation creates overuse impacts; dispersed recreation minimizes impacts. NY State DEC has created a new policy that allows trails to be considered open for mountain bicycling unless otherwise signed. In addition, strategies to reduce off-trail travel of bikers can include exciting single track trails that have views, ridge tops, bare rock riding sections, rock out croppings and other natural features.
Response: The plan provides for a wide variety of uses on trails that span the entire area of the park. The development of trails and a few additional parking lots will help disperse users throughout the park land. The number of trails and the uses on those trails was the result of a lengthy planning process. In many cases, existing wood roads were chosen to be designated as trails in lieu of constructing new trails. The wood roads network was extensive through the park due to its history of forest management. The final plan combined recommendations of all the user groups taking into consideration the overall goals of the Park and Trails Plan and compatibility with natural and cultural resources and existing conditions.

Comment: Any logging that may occur needs to cause minimal damage to trails, especially single track trails. Loggers may not be allowed to follow trail routes and may only cross trails in a perpendicular manner to preserve the plant communities along the trail corridor.
Response: There is no commercial logging allowed in Sterling Forest State Park. Forest management could potentially be considered for safety reasons or for protection of sensitive habitat. The need for removal of any tree or vegetation for these purposes would consider potential impacts to trails and trail corridors and any impacts would be minimized to the fullest extent possible.

Comment: Trails in wet areas need to be rerouted, hardened or raised on boardwalks to avoid trail widening. There are a number of options for getting this work done.
Response: In the analysis section of the plan, wet areas are noted. In the implementation portion of the plan, improvements for wet areas are specified depending on the trail and situation; these improvements can include rerouting, water diversion, hardening, and boardwalk or bridge construction. The park staff along with the Trails Working Group will determine final needs for each section of wet trail and how the work will be performed.

Preservation:

Comment: The first priority for Sterling Forest State Park is preservation rather than recreation. The parking capacity should not be increased and trail expansion should be limited.
Response: The Agency believes that the proposed increases in parking capacity and trails are relatively minor considering the size of the park and the newly acquired lands. Three of the new parking areas are located on new acquisition properties. The noted recommended major improvements to parking areas will be prioritized and implemented over time as public use increases. The plan includes only three miles of new single track trail while the remaining 16 miles of additional designated trail are located on existing wood roads, and seven of which are located on newly acquired property. The Trails Plan affords a number of facilities to disperse use throughout the park's land and addresses the public demand for recreational opportunities in this area.

Persons/Organizations Who Provided Comments

Name, Title, Organization

Robin Dropkin, Executive Director, Parks & Trails New York

Rodger Freidman, Chair, Sterling Forest Partnership

Edward K. Goodell, Executive Director, New York-New Jersey Trail Conference

Michael Vitte, New York Representative, International Mountain Biking Association; New York State Trails Council

Larry Wheelock, New York West Hudson Regional Representative, New York-New Jersey Trail Conference