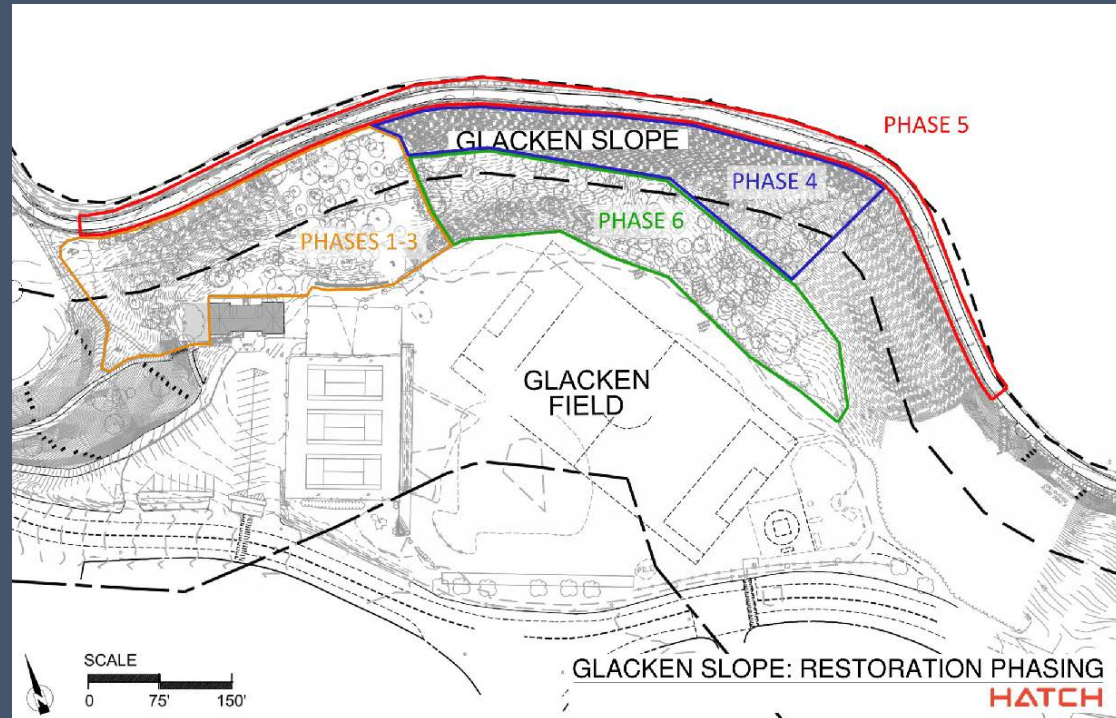
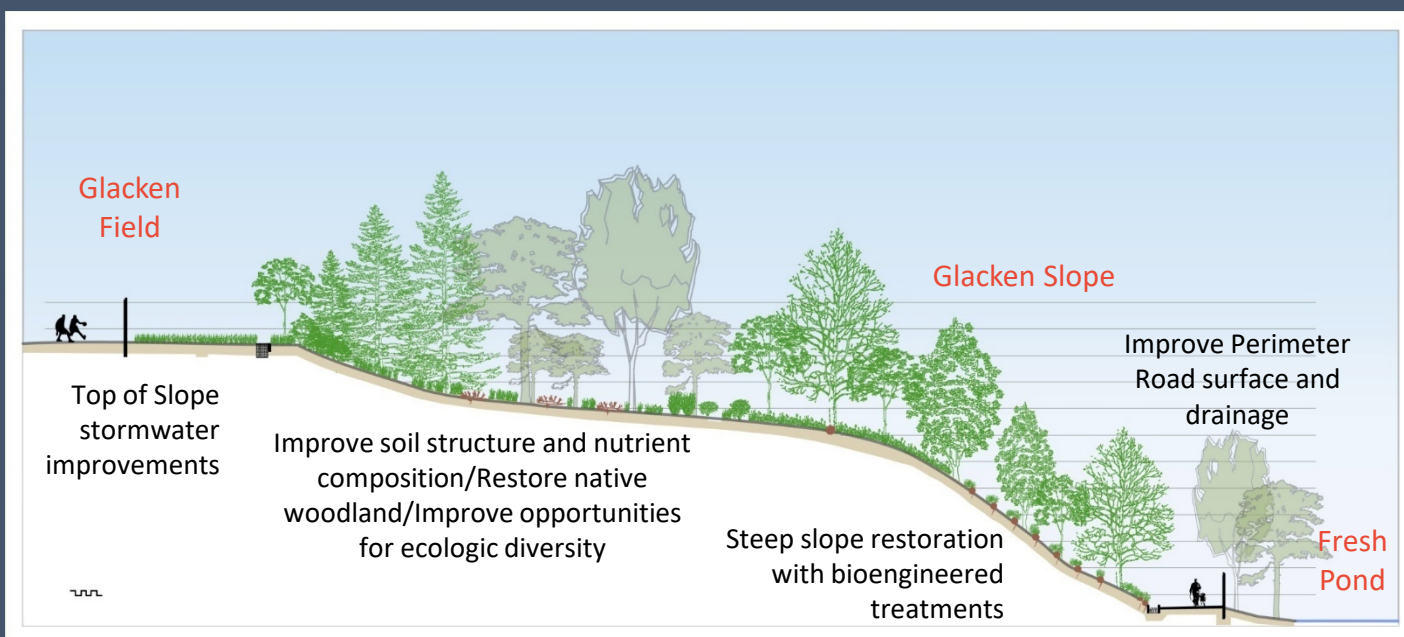


# Glacken Slope Restoration – Previous Phases

## Phasing Diagram



## Section – Restoration Zones



## Phase 1

- Remove Degraded Concrete Walkway
- Redirect downspouts towards infiltration BMPs
- Water Quality Swale
- Rain Garden with Underdrain and Level Spreader
- Resurface patio with Porous Paving
- Infiltration Trench with Level Spreader



## Phases 2, 3 & 4

- Slope Stabilization
- Gully Repair
- Woodland Soil Amendments
- Trail Closures
- Invasive Species Removal
- Restoration Plantings



## Phase 5

- Drainage Improvements to Perimeter Road
- Cobble Swale
- Porous Bituminous Concrete Perimeter Road
- Improve Views of Fresh Pond / New Fence
- Restoration Plantings





# Black Locust Removal Plan

## Existing Black Locust Trees



## Black Locusts to be Removed



## Black Locust Characteristics

1. Legume family and N-fixer
2. Source of bee nectar
3. MA-listed invasive plant, non-native
4. Clonal growth/dense shade limit native plant competition
5. Secretes allelopathic chemicals
6. Excess N input into soil reduces plant diversity & soil carbon storage
7. 8" caliper and greater (46); 6" to 8" caliper (8) – 54 total

### Photo Location Plan





# Concept Plan and Slope Stabilization

## Restoration Plan

## Existing Slopes & Gullies



### Slope Restoration

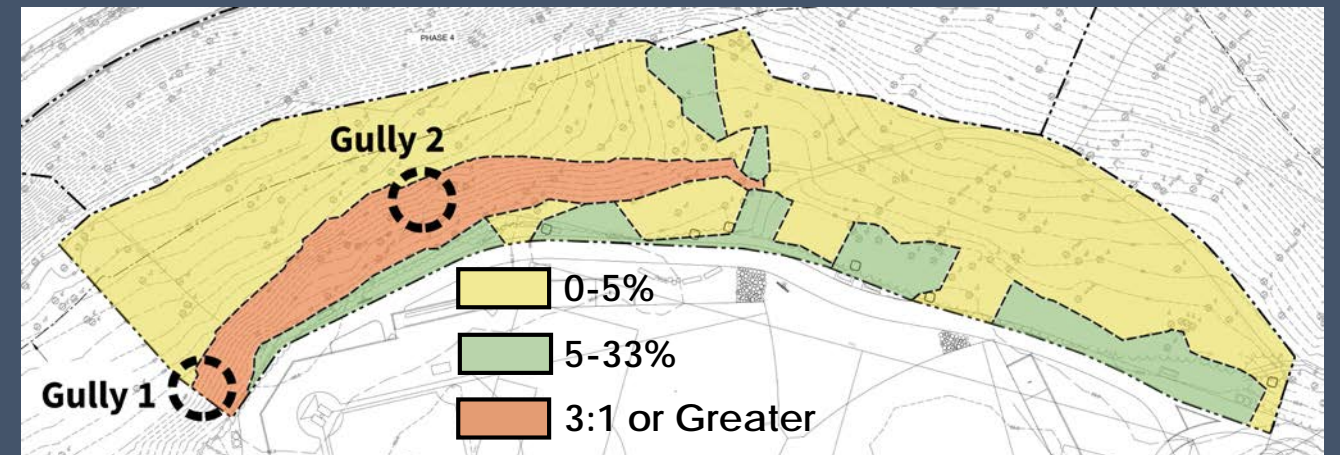
- Invasive removals
- Debris removal (>1" dia.)
- Leaf compost amendment
- Gully repair & slope breaks
- Tree and understory planting

### Woodland Restoration (Edge)

- Decompaction
- Invasive removals
- Leaf compost amendment
- Woodland Edge planting

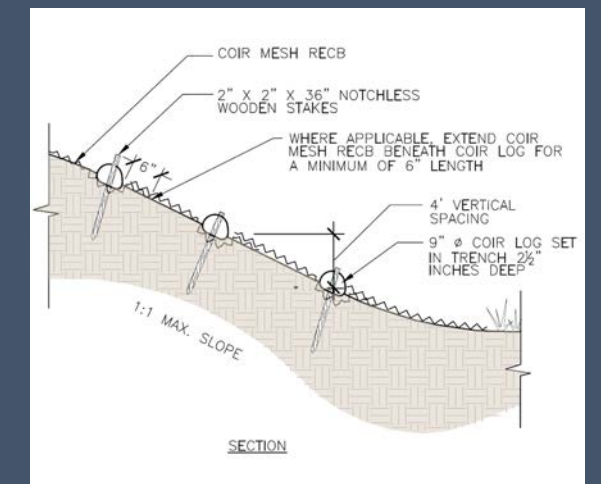
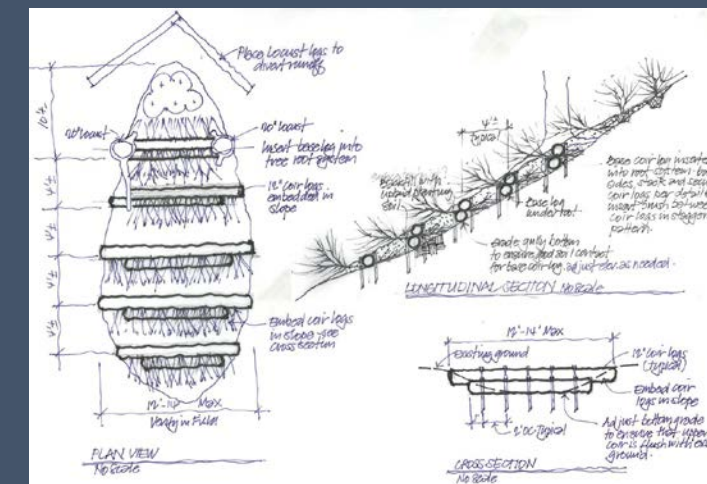
### Woodland Restoration (Canopy)

- Decompaction
- Invasive removals
- Debris removal
- Leaf compost amendment
- Tree and understory planting



## Restoration Goals

1. Mitigate stormwater runoff from athletic fields
2. Improve habitat and protect water quality of Fresh Pond
3. Minimize compaction and erosion due to increased foot traffic
4. Restore forest floor soil matrix
5. Restore steeper slopes and repair gullies
6. Restore natural plant community



## Slope Stabilization Techniques





# Woodland Restoration Plantings

## Invasive Removals (Understory)

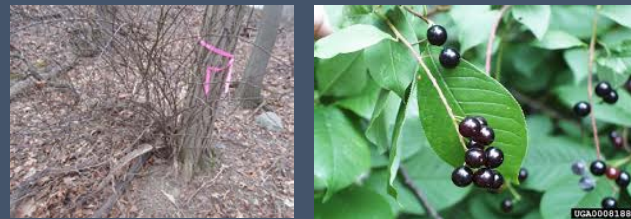
### Understory Trees and Shrubs

- *Rhamnus sp.* (buckthorn)
- *Rosa multiflora* (multiflora rose)
- *Euonymus alatus* (burning bush)



### Groundcovers and Vines

- *Ficaria verna* (lesser celandine)
- *Alliaria petiolata* (garlic mustard)
- *Toxicodendron radicans* (poison ivy)



## Shrubs and Groundcovers

### Shrubs

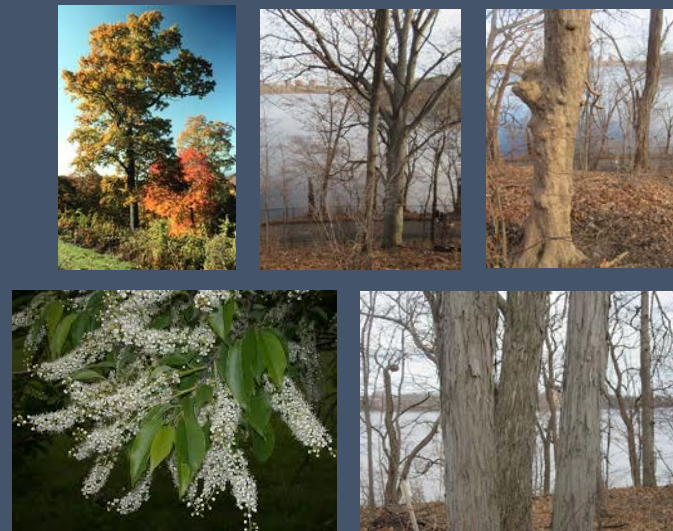
- *Amelanchier canadensis* (serviceberry)
- *Corylus cornuta* (beaked hazelnut)
- *Cornus racemosa* (gray dogwood)
- *Lindera benzoin* (spicebush)
- *Viburnum acerifolium* (maple-leaved viburnum)
- *Viburnum dentatum* (arrowwood)



## Canopy and Understory Trees

### Canopy Trees

- *Quercus spp.* (red/white oak)
- *Carya ovata* (shagbark hickory)
- *Prunus serotina* (black cherry)
- *Fraxinus americana* (white ash)
- *Acer saccharum* (sugar maple)
- *Fagus grandifolia* (American beech)
- *Pinus strobus* (white pine)
- *Carya tomentosa* (mockernut hickory)
- *Carya glabra* (pignut hickory)
- *Betula lenta* (black birch)



### Understory Trees

- *Ostrya virginiana* (hophornbeam)
- *Betula alleghaniensis* (yellow birch)
- *Hamamelis virginiana* (witchhazel)
- *Cornus florida* (flowering dogwood)



### Groundcovers

- *Carex pennsylvanica* (Pennsylvania sedge)
- *Asarum canadense* (Canadian wild ginger)
- *Eurybia divaricata* (white wood aster)
- *Dennstaedtia punctilobula* (hay-scented fern)
- *Dryopteris marginalis* (marginal woodfern)
- *Pteridium aquilinum* (bracken fern)
- *Tiarella cordifolia* (foamflower)

