

To: Dave Caron, Town Manager
From: John Vogl, GIS Manager/Planner
Date: June 1, 2012
Re: Musquash Conservation Area Target Range Analysis

Town GIS Staff was asked to perform a review of the Musquash Conservation Area (MCA) to determine if there are any sites for which development of a public firing range may be possible. Staff limited review to the Town-owned portions of the Conservation Area, specifically; properties identified as Map 5, lots 12 and 17, Map 8 lots 11, 16 and 24, Map 11 lots 48, 48-1, 49, 50 and 57-12. Together, these lots comprise approximately 1,082 acres. Presently, the properties are used for passive recreation, inclusive of 15 miles of developed trails. Seasonal hunting is permitted. There are four public access trailheads to the property, each with limited parking. Most access points are limited to foot travel; the Hickory Hill Road trail is wide enough to be accessed via ATV. The east side of the MCA is characterized by residential uses and a golf course; the east side is characterized by open space to the Litchfield town line and an active gravel pit, with further residential development beyond that. There are two target ranges already in operation in proximity to the MCA, the Londonderry Fish and Game Club and the Londonderry Police Department range, both abutting the western edges.

GIS Staff established four criteria that were applied to the conservation area to determine potential target range sites, as itemized below. These criteria provide a simplistic 'yes' or 'no' approach to establishing a potential location. Following this general review, specific sites that emerge should be looked at from an access and development point of view.

Location criteria:

- Compliant with RSA 644:13 Unauthorized Use of a Firearms and Related Offenses.
- Within a 300' buffer around property borders. This will permit compliance with structures that may be built around the property edge in the future, and maintain compliance with RSA 644:13
- Placed on dry, upland areas, outside of Conservation Overlay District wetland buffer restrictions
- Placed on generally level land, less than 10% slope
- On municipal land, unencumbered by easements
- Within 1/2 mile of trailheads

These criteria were established by the GIS Manager, with review by Londonderry PD Lieutenant Chris Gandia. Of principal importance is access to the potential sites for maintenance, oversight and potential rescue. While potential users may be able to hike into a target range for use, town enforcement agencies require easy access to enforce and/or monitor activities taking place. This is a critical requirement for a town-sponsored range. Roughly two acres will be required to establish a 300' target range.

Noise from the existing firing ranges can be heard throughout the entire MCA. With that in mind, noise generated from a new range was assumed to travel just as far and was not considered in this analysis.

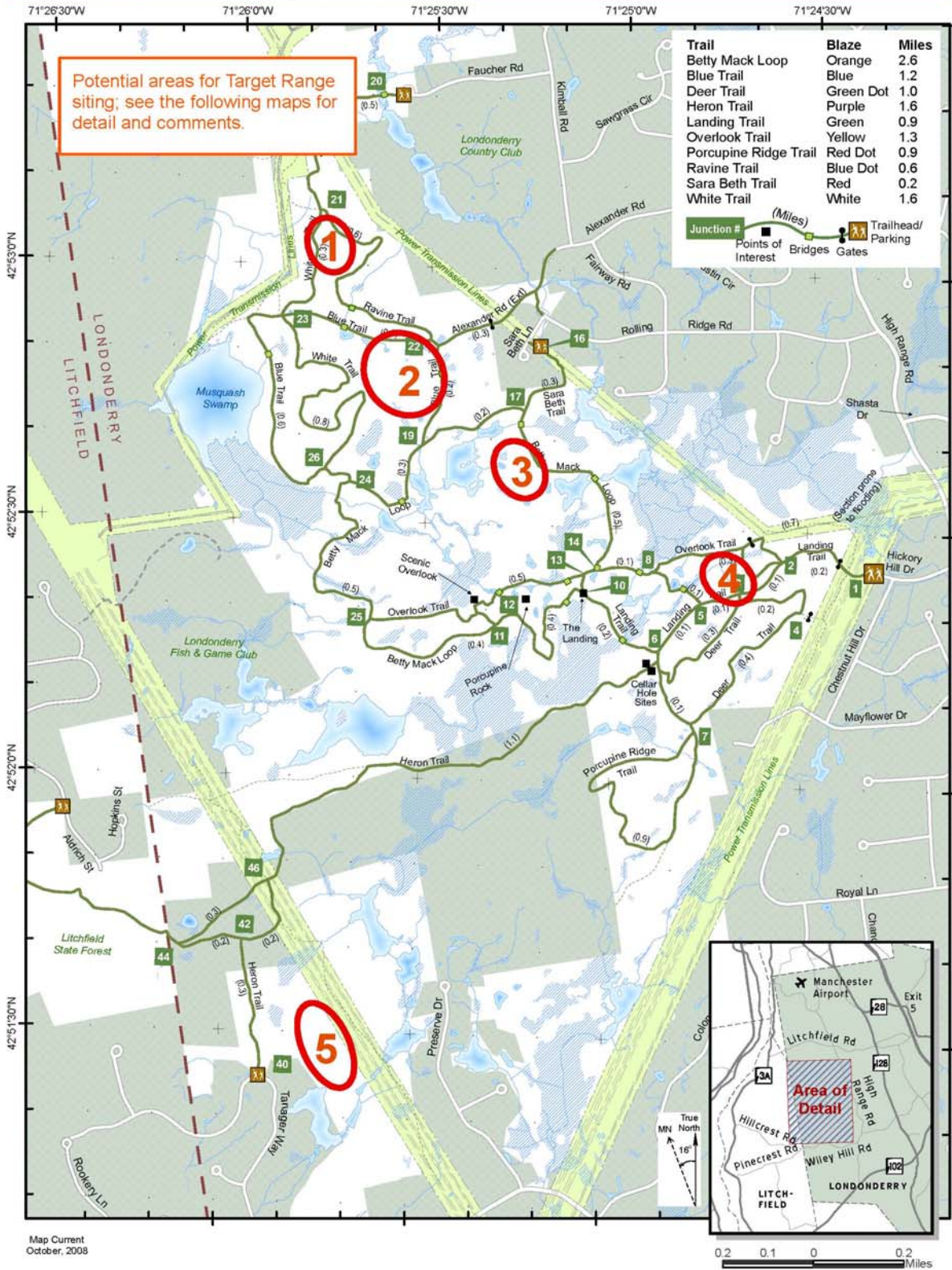
The conservation area was divided into equally positioned, ¼ acre cells. Each cell was assigned a score of 1 or 0 for compliance with the criteria, with a total score of 1 or 0 being reported out for each cell as a determinant of viability. The cells that were identified as possible are depicted in green on the detail maps below. These can be described as five areas, as depicted:

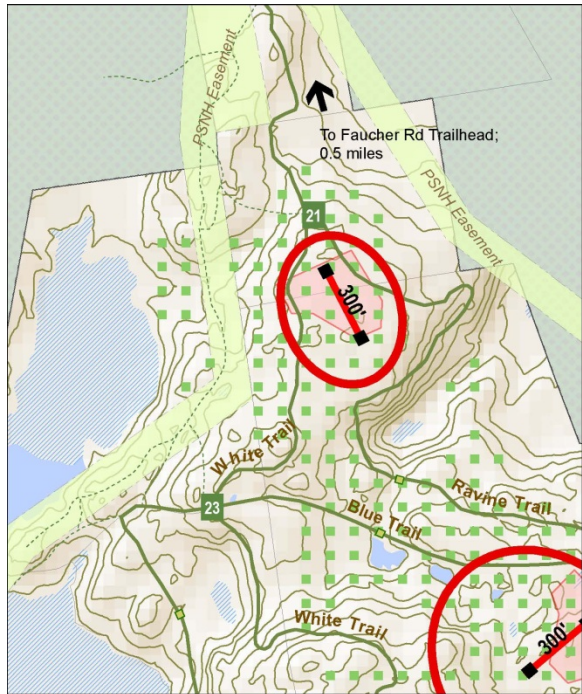
After review, Staff has identified that there are no sites that are clearly suitable for use as a target range. Of 5 locations with potential, none are located within suitable access to provide services or oversight, in particular, emergency vehicles and personnel. Absent accessibility and monitoring, the safety of the site can not be ensured. In addition, the proximity of the potential sites in respect to existing trails and residences has the potential for introducing competing, incompatible uses into a well established recreational area. Further, while existing topography might support placement of a target range on paper, the reality of ground material would need to be taken into consideration and might require heightening of natural berms or adding additional material to mitigate ricochets. Again, these improvements would require vehicle access to deliver the necessary materials.

See below for a full inventory of the identified potential target sites.

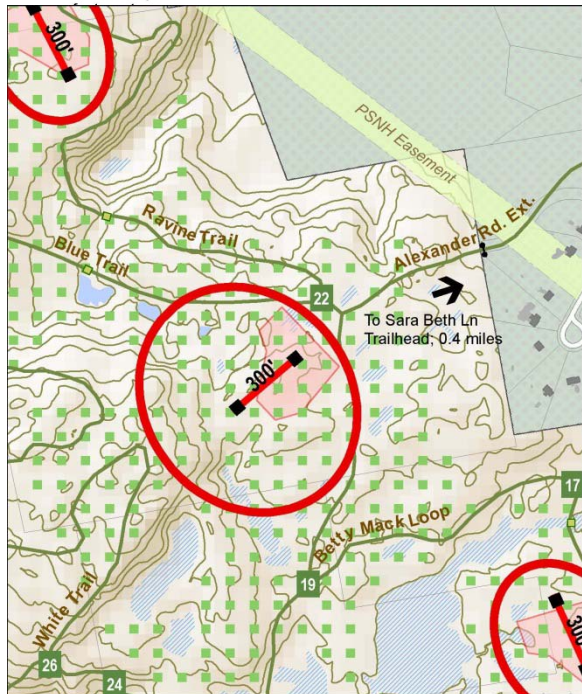


Musquash Conservation Area Londonderry, NH





Area 1



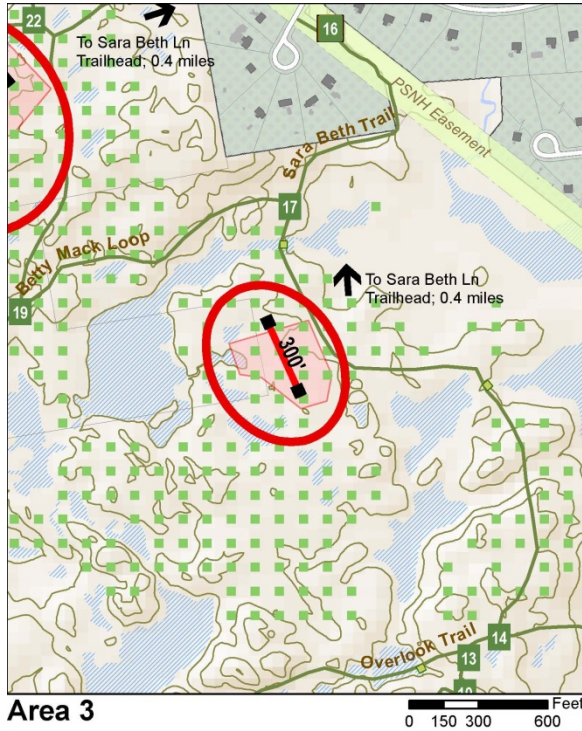
Area 2

Area 1:

This area is located in the vicinity of the White Trail and the Ravine Trail, at roughly intersection 21. Access is via either the Faucher Road or the Alexander Road trailhead, which would each require a roughly ½ mile walk to access. Topographically, the area is the plateau of a small hill. Range positioning would likely be due south, in between the existing trails. The White trails and upper portion of the Ravine Trail are at the same elevation, given the flat topography in this area. Development would require extensive berms to contain shots and protect hikers on the trails from stray bullets. The area is situated in close proximity to the Londonderry Country Club property, just over 300' from the property line. Given the excessive distance from access points and the close proximity to existing trails and the golf course, further consideration and review is not recommended in this area.

Area 2:

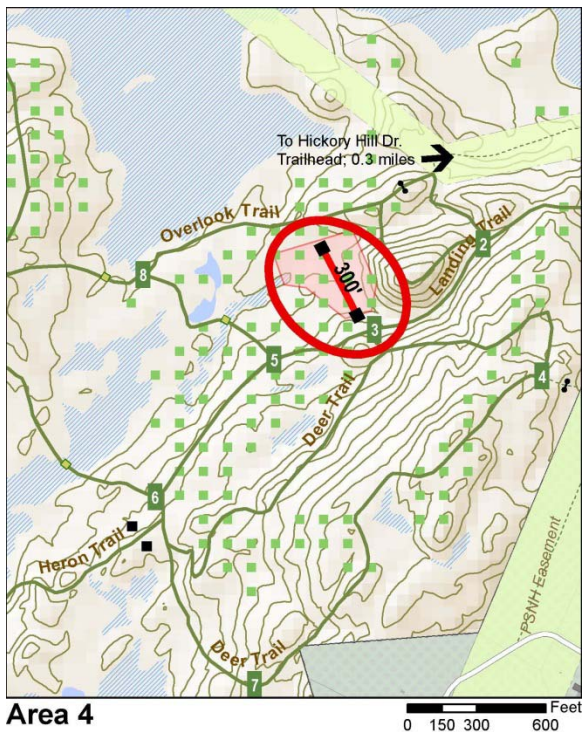
This area is located at intersection 22, the intersection of the Alexander Road Extension and Blue Trail. Range positioning would likely be southwesterly. Access would likely be via the Alexander Road Extension trailhead, and require a roughly ¼ mile hike in to access. The Alexander Road Ext trail is gated at the entrance to discourage ATV travel. Topography in this area (southwesterly from the trail) is generally level for a radius of +/- 700 feet, then slopes upward to the intersection of the Alexander Road Ext and Blue Trail to the White trail. The elevation change is roughly 30 feet. This elevation change may form a natural berm to contain shots fired in the direction of the White Trail. This area is removed from the Londonderry Country Club and the Sara Beth Lane neighborhood by a minimum of 500 feet. Given the distance from the trailhead (0.4 miles), further consideration and review is not recommended in this area.



- Existing Formal Trails
- Existing Informal Trails
- 10' Contour intervals
- Areas of 1/4 acre in size that may be suitable for placement of a target range.
- Footprint of existing Londonderry Police Department Target Range (for comparison)
- Easements
- Non Town-owned parcels

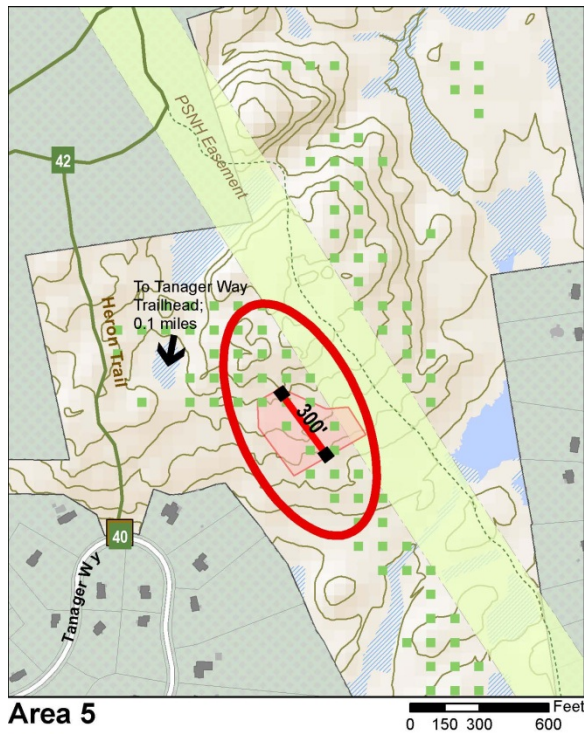
Area 3:

This area is located along the Betty Mack Trail between intersections 17 and 14. Range positioning would likely be southerly. Access would be via the Sara Beth Ln trailhead, and would require a roughly 4/10 mile hike to access. Site positioning is somewhat constrained due to extensive wetlands near the trail and encircling the developable area. Topography in this area is generally level. Development would require berms set up to contain stray bullets, given the absence of natural hillsides. This area is removed from the Sara Beth neighborhood by a minimum of 800 feet. Given the distance from the trailhead (0.4 miles), further consideration and review is not recommended in this area.



Area 4:

This area is located in between the Overlook Trail and the Deer Trail in an area of the Musquash that is dense with trails. Access would be via the Hickory Hill Drive trailhead and require roughly a 1/3 mile hike in to access. Range positioning could be southerly. Topography in the area between the Overlook and Landing Trails slopes upwards to the Landing Trail. There are two streams crossing through the area that would require site improvements to make a viable target range and add expense. Development would require extensive berms to contain shots and protect hikers on the trails from stray bullets. The maximum separation of trails in this area is 500'. The area is removed from the Hickory Hill Drive and Chestnut Hill Drive neighborhoods by a minimum of 1,000 feet. Given the streams present in this area and the dense trail network, further consideration and review is not recommended in this area.



Area 5:

This area is located in the MCA on a roughly 140 acre parcel between Tanager Way and Preserve Drive. The model suggests a firing range may be established facing northwesterly, roughly in alignment with the PSNH power lines. This alignment would be in close proximity to residential homes (just over 300') with the direction of firing passing by several residences. Access would be via the Tanager Way trailhead and would require construction of a new trail to get closer to the site. Development would require construction of a berm to protect residences and close utility structures. Given the compressed layout of this area and close proximity to homes on either side, further consideration and review is not recommended in this area.