Godsey Ridge
Trail Design Plan

Prepared Summer 2024
for the Trust for Public Land
by Valerie Naylor, Trails Specialist

VNTS
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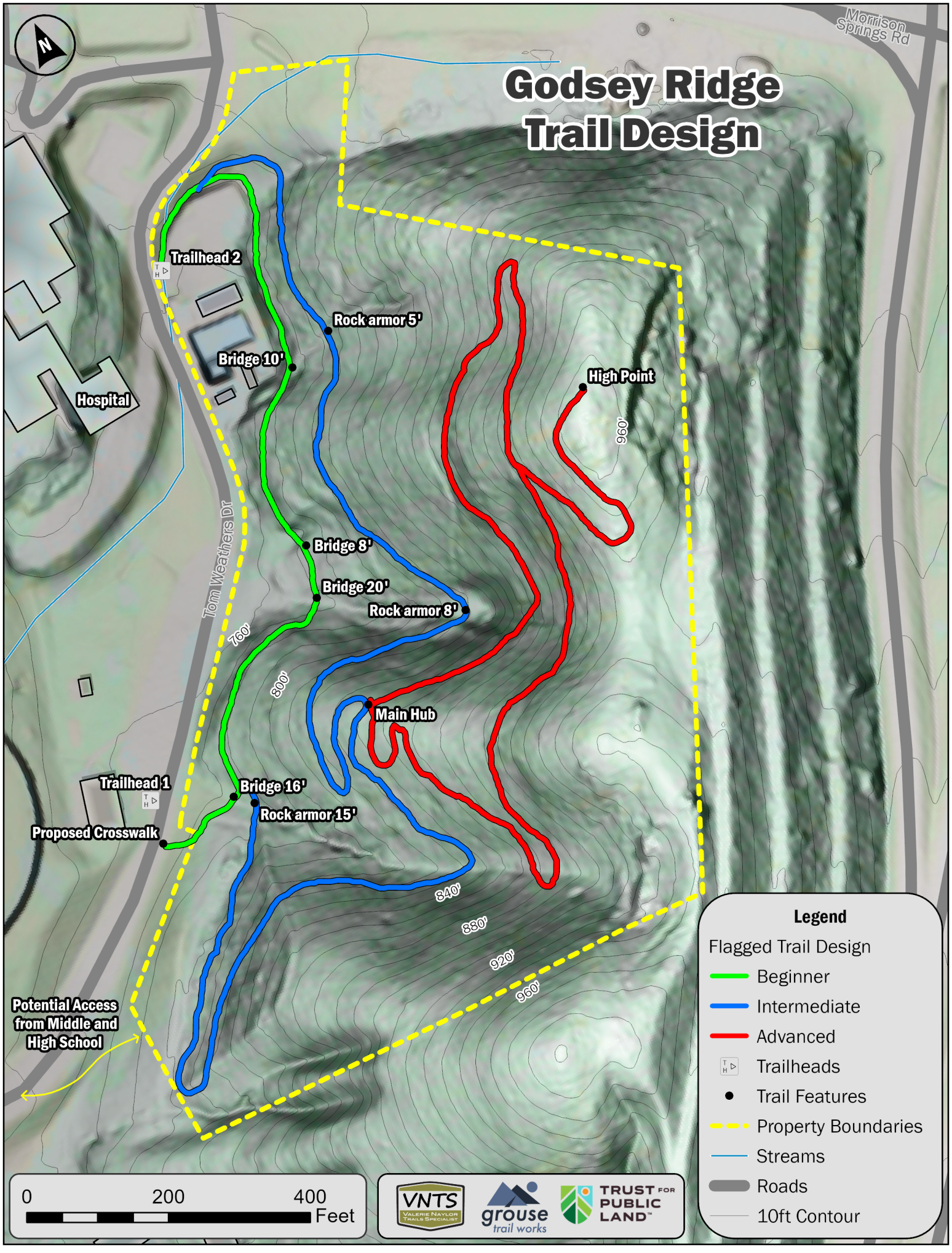
Background:
The Godsey Ridge property in Red Bank, TN comprises approximately 19 acres of steep, mostly forested land owned by the City of Red Bank. In recent years Red Bank has demonstrated that as a community it values open space and outdoor recreation, developing trail systems and connections at White Oak Park and Stringers Ridge in partnership with the Tennessee Office of The Trust for Public Land (TPL). The benefits of recreational trails are well documented and include improvement of physical and emotional health, enhancement of the local community and economy and increased support for preserving public land and the natural environment.

The location of Godsey Ridge within reach of schools, hospital and neighborhoods increases it's value to residents and visitors of Red Bank. Erlanger North Hopsital, Red Bank High School, Red Bank Middle School and Red Bank Community Center are within sight and easy walking distance. In addition the greater Chattanooga metropolitan area has a population well over 500,000 (2020 census) potential trail users in close proximity to the city of Red Bank and Godsey Ridge.

In fall 2023 TPL staff reached out to Valerie Naylor, Trail Specialist (VNTS) to develop a conceptual trail plan and on the ground design for sustainable, enjoyable trail on the Godsey Ridge property. Deliverables included a conceptual trail plan document and map (phase one), on the ground flagged trail corridor with GIS record and a trail design plan document and map (phase two). Phase one was completed spring 2024, as was on the ground trail design. This document compliments the on the ground design and completes the remainder of the contract.

Trail Design Overview:
Stakeholder input indicated a desire for beginner friendly opportunities and maximizing trail mileage. However, the topography and property boundaries of the Godsey Ridge property limit trail potential; in particular the steepness of the terrain limits the amount of low gradient beginner friendly trail potential. The location of nearby schools suggests the highest priority for all abilities trail is at the bottom of the property with difficulty levels rising with the elevation and distance from the schools. The ridgeline, with it's potential views, makes for an attractive destination to encourage trail users to expend the additional effort needed to reach the top.

Existing parking areas and facilities at the Red Bank and Joseph Glasscock Community Centers provide **trailhead** opportunities. The addition of a crosswalk at the southern trailhead will provide a safe way for trail users to cross Tom Weathers Drive. Kiosks at each trailhead with trail maps, trail descriptions, trail use guidelines, and information on what to do in an emergency will give trail users the information they need to curate an appropriate trail experience. Gateway arches easily visible from the road in the open grassy area at either end of the green trail will draw attention to the trail opportunities and welcome trail users to Godsey Ridge.


Godsey Ridge
Trail Design
Morrison Springs Rd
Trailhead 2
Rock armor 5'
Bridge 10'
Hospital
High Point
960'
Tom Weathers Dr
Bridge 8'
Bridge 20'
Rock armor 8'
760'
800'
Main Hub
Trailhead 1
Bridge 16'
Rock armor 15'
Proposed Crosswalk
840'
880'
920'
960'
Potential Access from Middle and High School
0
200
400
Feet
VNTS
Valerie Naylor Trails Specialist
grouse trail works
TRUST FOR PUBLIC LAND
Legend
Flagged Trail Design
Beginner
Intermediate
Advanced
Trailheads
Trail Features
Property Boundaries
Streams
Roads
10ft Contour

The **Green Trail** will provide an all abilities trail opportunity with an all weather friendly gravel surface. It will connect the two trailheads at the lowest elevation of the property and will meet federal accessibility standards. A summary of accessibility standards for Federal outdoor developed areas is available at https://www.access-board.gov/files/aba/guides/outdoor-guide.pdf. A short segment above the pool facility appears to have rock near the surface that may require a jackhammer and / or crib wall. In addition, railing may be needed in this area to protect inexperienced trail users from a drop off at the trail edge (alternatively, significant grading and fill may be used to mellow out the downslope). Several 6' wide bridges will be used to cross active drainages.

The **Blue Trail** will provide a loop opportunity when combined with the green trail. It will provide a step up in difficulty with natural surface tread, rock armored drainage crossings instead of bridges, narrower tread width and slightly steeper trail gradients. A short distance in open, grassy area on the north end will require gravel surfacing. This trail should accommodate adaptive mountain bikes – standards available at https://kootenayadaptive.com/wp-content/uploads/2021/03/KASA-Adaptive-Standard_FINAL-EDIT2.pdf

The **Hub** at the intersection of the red and blue loops will provide a destination for blue trail users including an attractive rest area with primitive seating as well as a “you are here” map.

The **Red Trail** will provide the most challenging trail experience in the system with substantially steeper grades and narrower tread. The main red loop will also offer access to a short out and back trail connecting to the high point of the trail system. We do not recommend allowing bikes on the red trail due to the gradients encouraging speed and additional erosion; steps installed shortly after the trail leaves the hub will reinforce signage indicating that this trail is pedestrian only.

The **High Point** will provide a rewarding destination for trail users with primitive seating and vegetation clearing to allow views of the valley below.

Please note, trail and intersection **names** are for planning purposes only, we would encourage stakeholders to develop more creative locally appropriate names.

Directionality: With open sightlines, mellow gradients and a wide tread we do not anticipate significant use conflict on the green trail. Similar sightlines but a narrower tread width and steeper grades on the blue trail suggest that this trail may be more problematic with bike traffic at high use times; we would suggest opening the trails without designated directions and adding directionality for bikes if problems become apparent.

Signage: In addition to Kiosk signage and a “you are here” sign at the hub we would recommend one sign for each trail option at each intersection. These should indicate trail name, permitted users, and trail difficulty.

Recommended Trail specifications:

Trail	Tread width*	Tread surface	Average grade over any 250'	Maximum grade	Maximum Unavoidable Obstruction Height
Green (beginner)	72"' typical, 48" minimum for < 50' distance	gravel	<5%**	8%**	2"
Blue (intermediate)	48"	natural	<7%	15%	5"
Red (advanced)	39"	natural	<10%	20%	10"

* tread width may be substantially greater in turns
** An approximately 200' section leaving the northern trailhead is heavily constrained due to existing infrastructure. This segment may slightly exceed 8% when built. Accessibility guidelines require a resting interval (<5% for 5' minimum) if trail grade exceeds 8.33% for more than 200'.

Recommended Trail Construction Methods:
We recommend mechanized construction by a professional trail builder with experience developing similar hike / bike trails in similar terrain. Equipment width should not exceed desired tread width. In addition to grading equipment hauling equipment will be needed to bring in gravel surfacing and bridge materials to the green trail and move rock armoring material to the blue trail. Compacting equipment will also be necessary. Equipment access is available at either end of the green trail and may also be available via a powerline access road along the eastern boundary. Contractor will determine exact alignment within 50' of tape flagline; trail should weave through trees, avoid straight lines, and emphasize undulation and meander. Healthy trees over 6" DBH should not be removed without client approval. Green and blue trails should take bike flow into account but should not encourage bike speed or be heavily bike optimized – turns should be moderately insloped, no jumps or berms. Red trail should be hike optimized and outsloped.

Natural surface trail construction starts with clearing corridor 4' wider than the trail tread and 8' high – tree gateways may be narrower. Cut saplings, branches and larger debris is naturalized and visually blended into the landscape. Vegetation and organic material is removed from the trail tread. Grade reversal drains are installed before and after every turn and every 100' minimum, drains need to be full bench cut construction. Avoid placing debris or soil adjacent to waterways or blocking drainage. Roots over 1/4" diameter are removed below tread level. Backslope is blended into trail tread. Tread is compacted and any uncompacted spoils covered with leaf little prior to rain, trail in the open grassy area receives seed and straw.

Gravel surface trail construction is similar to natural surface, starting with corridor clearing, organic removal, and rough grading with drainage installation. This is followed by application of minimum 4" of aggregate base course (aka "road base" or ABC), and compaction. Seep areas may be encountered when soil is disturbed, such areas may need an underlayment of larger clean stone prior to road base application.

Rock armoring will be used for drainage crossings on the blue trail. Rock should be available onsite as a byproduct of trail construction but will need to be moved into place. Larger (minimum 50 lb) flat rocks may be flagstoned, placed with their largest surface area facing up. Smaller rocks are pitched vertically with the bulk of the rock buried. Rock armoring is solidly chinked so that rocks do not move underfoot,. Unevenness should not exceed maximum obstruction height.

Ongoing Trail Maintenance:

A well designed and built trail will minimize the need for ongoing maintenance. However, vegetation management (grass mowing, trailside vegetation trimming, down tree removal) will be an ongoing need. Care should be taken not to block drainage with vegetation – do not allow downed trees and branches to block drains.

Inevitably over time sediment will be deposited in drains leading to puddling and, potentially, eventual failure of the drain. Annual leaf blowing and berm buildup removal by hand will ensure functioning drains; without periodic maintenance drains may eventually need heavier machine maintenance, particularly with heavy trail use in wet conditions and many years without hand maintenance.

Surface trail will bleed some gravel fines into the drains, especially when new. Major erosion, though, should not be an issue with mellow gradients and frequent drains. If problems arise they need to be addressed by regrading and re-establishing drainage prior to replenishing surfacing material.

Weight bearing wooden structures (bridges) should be inspected at least annually with unsafe structures immediately repaired or closed until they are made safe. Document inspection and repairs.

Additional connectivity recommendations:

Creating safe and inviting connections from the Godsey Ridge trail system to the adjacent schools and hospital, nearby neighborhoods, and nearby outdoor amenities and trail systems is extremely desirable, however it is beyond the scope of this trail design project. In particular, connection to the school facilities and an adjacent proposed development on the northern boundary were identified. Due to topography challenges and access management concerns creating links to the two trailheads is generally more desirable than creating additional access points. A sidewalk on the southeast side of Tom Weathers Drive would serve several purposes, creating a safe route to the schools and creating an all abilities loop opportunity with the green trail. We would also recommend the new development incorporate a sidewalk link to the northern trailhead.

Cost Estimates:

Please note that these are estimates only; variation in contractor costs, materials, and timing will cause variation in pricing. In addition, unforeseeable circumstances such as weather impacts or slab rock below surface may create additional costs. Lastly, while we do not foresee need for permits local ordinances and permitting requirements may require additional measures; such measures are beyond the scope of this plan and associated costs are not included.

Trail	feature	Cost / Unit	Quantity	Total Cost
green (surfaced)		20$/lf	1790 lf*	$25,800.00
	Slab rock / railing contingency			$5,000.00
	Bridge 1	$500 + $200/lf	10'	$2,500.00
	Bridge 2	$500 + $200/lf	8'	$2,100.00
	Bridge 3	$500 + $200/lf	20'	$4,500.00
	Bridge 4	$500 + $200/lf	16'	$3,700.00
Blue (open area, surfaced)		$18 lf	200 lf*	$3,600.00
(under canopy, unsurfaced)		$8/lf	3540 lf*	$28,320.00
	Rock armoring***	$20/sf	112 sf	$2,240.00
red		$7/lf	3510 lf*	$24,570.00
	Steps – 8x8 pt lumber or rock	$250 / step	2 flights approx 6 steps each	$3,000.00
Trail signage**		$100.00	11	$1,100.00
Entryway arch**		$2,000.00	2	$4,000.00
Kiosk**		$4,000.00	2	$8,000.00
Hub seating area**		$2,000.00	1	$2,000.00
High Point seating area with view clearing**		$3,000.00	1	$3,000.00
Total estimated cost				$123,430.00

*obtained by adding 20% to GPS generated distance.
** amenity costs are placeholder estimates only, will vary widely based on design decisions.
*** assumes sufficient rock is available onsite.

Conclusion: Valerie Naylor, Trails Specialist has been pleased to be a part of this important trail development effort at Godsey Ridge and looks forward to continued involvement in local trail improvements. We applaud The Trust for Public Lands, the City of Red Bank and other local trail advocates and partners for working to provide outdoor recreation opportunities so close to the center of a thriving metropolitan area.

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