



Prepared For:

Rocky Branch Trail Committee

Tarheel Trail Blazers

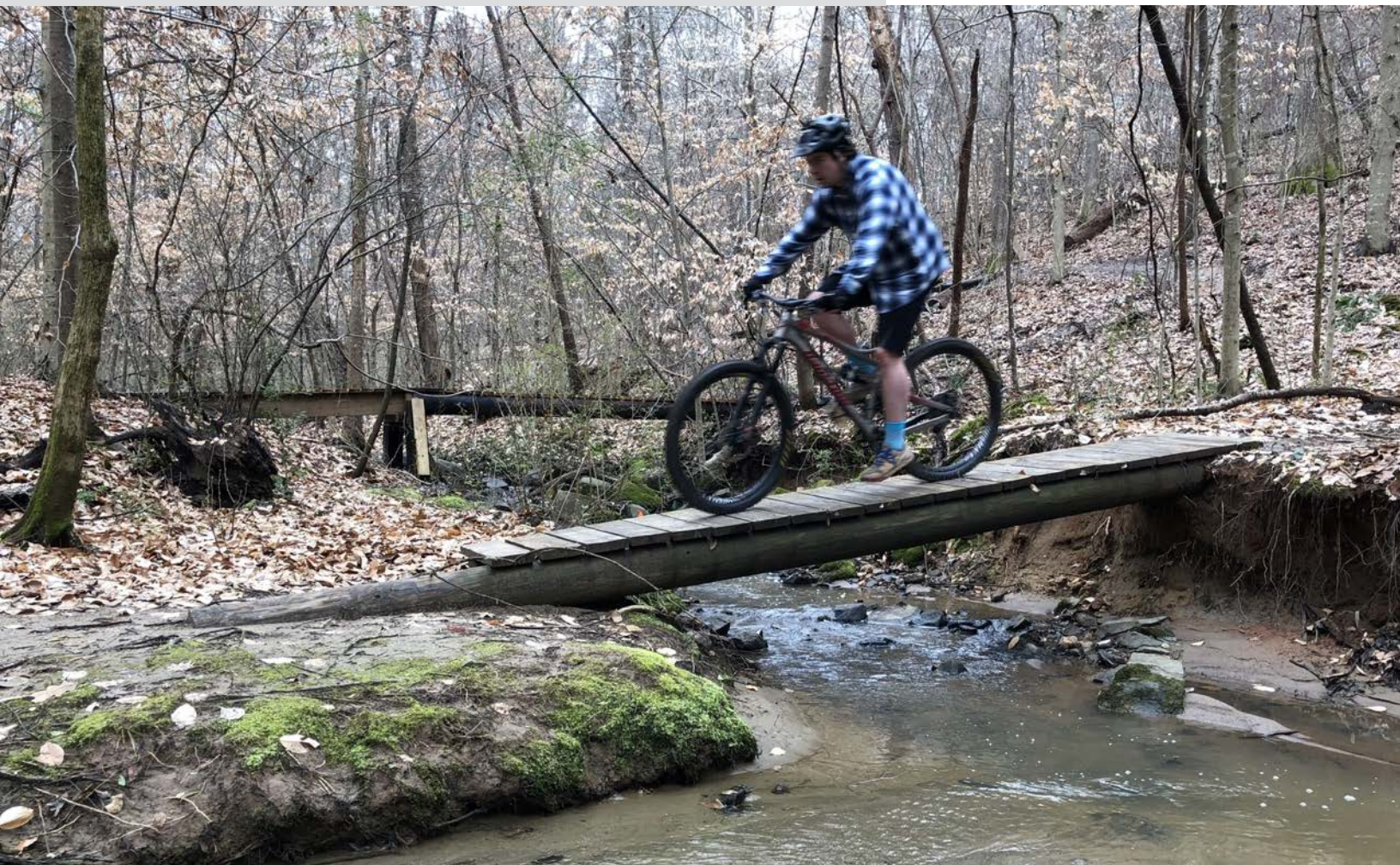
City of Belmont

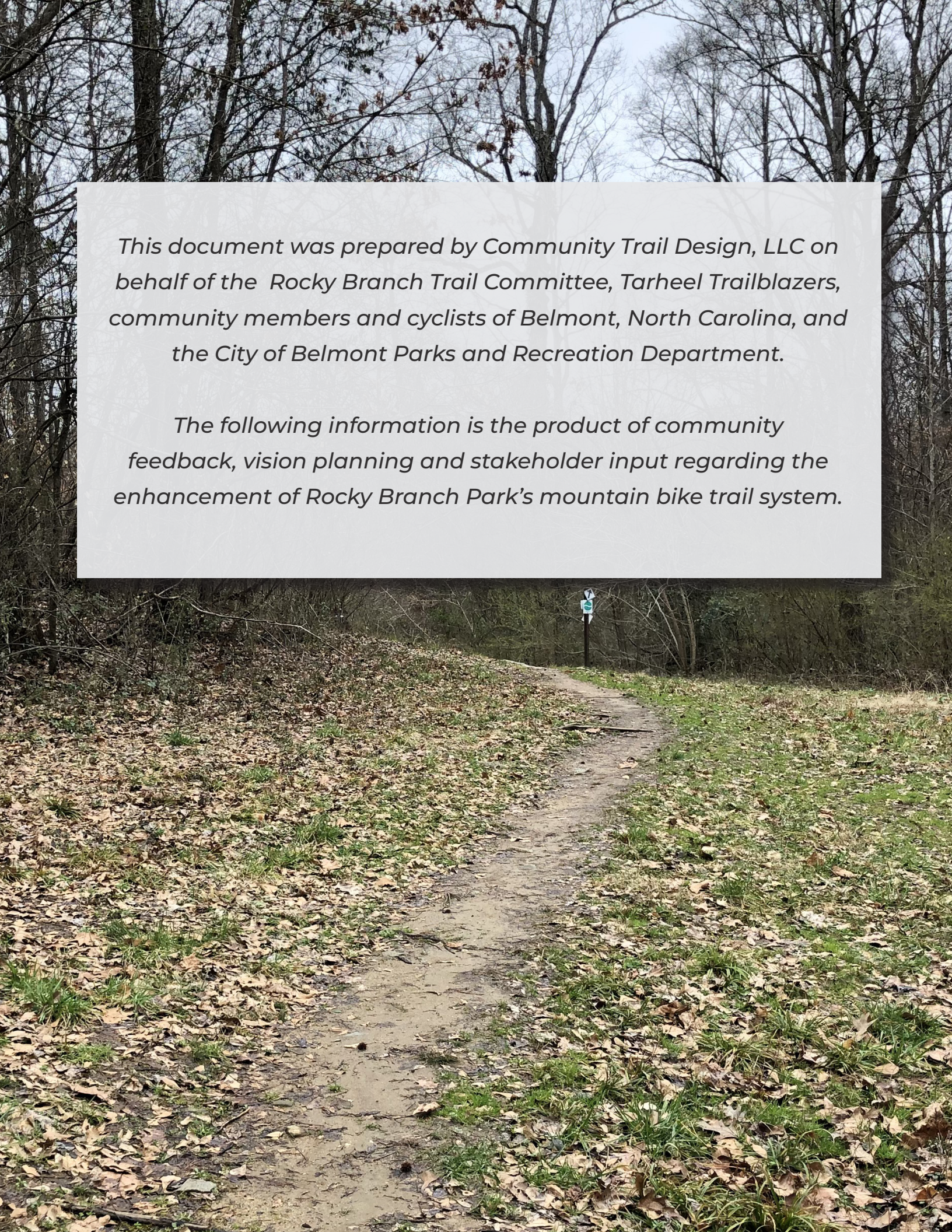
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ROCKY BRANCH PARK - TRAIL ENHANCEMENT PROJECT



A photograph of a dirt trail in a wooded area. The trail is covered with fallen leaves and patches of green grass. In the background, there are bare trees and a small signpost with a blue and white sign. The sky is overcast.

This document was prepared by Community Trail Design, LLC on behalf of the Rocky Branch Trail Committee, Tarheel Trailblazers, community members and cyclists of Belmont, North Carolina, and the City of Belmont Parks and Recreation Department.

The following information is the product of community feedback, vision planning and stakeholder input regarding the enhancement of Rocky Branch Park's mountain bike trail system.

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I. Background

Rocky Branch Park (RBP) is located 12 miles west of Uptown Charlotte at 103 Sacco Street in the historic mill town of Belmont, North Carolina. Surrounded by mostly working class residential neighborhoods and quiet streets, RBP is a relatively undeveloped urban greenspace within walking distance to public schools, parks, homes and Belmont's lively Main Street, a mere mile away.

Totalling just over 27 acres, the park is comprised of wooded, rolling terrain with its namesake stream, Rocky Branch, meandering through the property east to west. This small urban tributary of the South Fork Catawaba River drains a highly developed urban landscape and features a trickling boulder-strewn stream bed.

The trail network of RBP reaches beyond the park's boundaries and is established throughout a series of parcels, both on and off designated park land. A conglomeration of four contiguous parcels of land, three of which are owned by the City of Belmont, and a fourth owned by private landowner, comprises the trail network's legal jurisdictional boundaries. Access to the privately-owned 12 acre parcel is made possible under a rolling land use agreement with the landowner. The use of this private parcel for public access was established on December 4, 2012. The initial term of this agreement was two years. However, language in the agreement allows for an automatic renewal of access every two years unless terminated by one of the two parties.

With the City of Belmont's approval, a group of local volunteers established a small portion of what is now a six-mile trail system for bicycle access in 2013. The completion of this initial phase of RBP's trail system led to the opening of the park for public access later that year. As interest in the trail system grew in the years following, an agreement was established between the City of Belmont and the Tarheel Trailblazers Organization through a Memorandum of Understanding to perform any necessary or ongoing maintenance to the trail system, including further trail development. To date, the Tarheel Trailblazers and it's volunteers have contributed several thousand hours of volunteer labor towards the upkeep and development of the trails at RBP with very little, if any capital investment.

In late 2018, a donation from a local resident was gifted to the Tarheel Trailblazers Organization for further enhancement of the trail system and to contract a professional consultant to develop a plan to optimize the trail system for a modern user experience and to promote recreational tourism. A committee of stakeholders, 'RBP Trail Committee', was formed to oversee and manage the use of the funding and contracts, steered by a consensus based vision for the future of the park named The Rocky Branch Trail Enhancement Project.



EXIT

II. Community Vision


The following section describes the community's vision for Rocky Branch Park as outlined in the 'Rocky Branch Park Trail Plan Community Vision' document provided by the RBP Trail Committee.

ROCKY BRANCH PARK ENHANCEMENT PROJECT MISSION STATEMENT

"The mission of the Rocky Branch Park Trail Enhancement Project is to enhance the park and its existing trail system in order to provide a safe, sustainable, fun and marketable outdoor experience for Belmont residents and visitors alike."

A successful application of this mission would achieve the following goals:

- **Enhance the quality of life** for local residents by providing a healthy, fun, and challenging outdoor experience for various skill levels and abilities
- **Attract visitors to Belmont** from surrounding metro areas by developing a highly marketable destination facility at Rocky Branch Park
- **Connect visitors and residents** with the charm of downtown Belmont by boosting patronage of local restaurants, businesses, and bicycle retailers via trail tourism
- **Provide a venue for cycling events** such as youth cycling events (e.g. Charlotte Youth Cycling League) competitive mountain biking events, recreational group rides, demonstrations, and instructional skills clinics



Investing in Rocky Branch Park aligns with the City of Belmont's Vision Statement, Comprehensive Plan Goals and Guiding Principles.

BELMONT'S VISION STATEMENT:

"Nestled between two rivers in a major metropolitan area, Belmont celebrates its heritage while embracing opportunities that shape its future. From its charming main street district to its world-class botanical garden, Belmont exemplifies small-town charm, economic and entrepreneurial spirit, and environmental and social vitality. Above all, we are proud to be a family-friendly community."

COMPREHENSIVE PLAN GOALS:

- Land Use
- **Economy***
- **Mobility***
- **Community Character***
- **Parks and Recreation***
- Infrastructure
- **Environment***
- Intergovernmental Relations

GUIDING PRINCIPLES:

- **Economic Vitality***
- Balanced Growth
- **Community Character***
- Heritage
- **Access and Connectivity***
- Intergovernmental cooperation
- **Outdoor Recreation***
- Revitalization and Repurposing
- Schools

***See supporting research presentation**

II. Community Vision Cont'd

With RBP's central location in Belmont, many residents of all ages and abilities have easy access to the trails. RBP provides a unique opportunity to foster progression for local riders that have direct access to this trail resource. The community desires for the park to serve all riders while retaining the challenge and excitement it currently has for intermediate and advanced riders.

As the primary trail system for the Belmont community, RBP should function as a bike park that provides various trail experiences. The size of the park does limit the potential mileage of trail and quality user experiences should be prioritized over quantity.

Desired trail user experiences to maintain and/or enhance at RBP (as identified in the 'Rocky Branch Park Trail Plan Community Vision') include: create intuitive navigation through the trails and around the park; improve general trail sustainability; maintain and provide options for expanded pump track or skills areas; and construct a new gravity driven section of trail with intermediate level jumps within the RBP trail system. Details for each of these objectives is described in more detail on Page 8.

As part of the RBP Trail Enhancement Project planning process, Community Trail Design worked with the RBP Trail Committee to identify trail user objectives. A summary of the results from the desired objectives collected at the July 1, 2018 Design Charrette is provided below. In addition, during the month of July, the RBP Trail Committee collected survey responses from more than 250 members of the community. The purpose of the survey was to gain insights into how the community uses Rocky Branch Park today, and to learn more about what types of recreational improvements would increase their use in the future.

The results from these surveys and the committee's feedback have been used to develop recommendations and conceptual designs for the trail system outlined in **Section V** of this report.



Top 10 Trail User Objectives Identified at July 1st Meeting

- | | |
|----------------------------|------------------------|
| 1. Play/Playfulness | 6. Variety |
| 2. Fun | 7. Connectivity |
| 3. Challenge | 8. Nature |
| 4. Exercise | 9. Risk |
| 5. Escape | 10. Socializing |

Desired Trail Experiences to Maintain and/or Enhance

Wayfinding

Create intuitive navigation through the trails and around the park

- Easy to understand trail intersections
- Consistent trail experience for first time trail users and regular trail users through trailhead and intersection design

Sustainability

Improve general trail sustainability

- Trouble spots should be evaluated and recommendations for improved trail alignment or individual fixes
- Options for adding hardscape to improve trail sustainability should be considered
- This trail is heavily used by the community and we want it to be open as much as possible so the community can enjoy it

Skills Area

Maintain and provide options for expanded pump track or skills areas

- The community recognizes the pump track is not the signature piece of RBP but it provides value and variety to the park.
- Opportunities to enhance the pump track and add any complementary features such as a line of progression table tops at the entrance to the park or close to the trailhead should be explored.
- Care needs to be taken to accommodate for the utility company's right to access utilities through the corridor where the pump track is located

Progression - Intermediate and Advanced Options

Construct a new gravity driven section of trail with intermediate level jumps

- This line should make maximum use of the available topography and elevation
- The jumps should be intermediate level with advanced options where appropriate
- This line should be "sessionable" - Incorporate the line within the trail system so that it is efficient and intuitive to pedal back to the start of the line.
- Consider a gathering space at the top of the line that allows through riders to continue on and sessioning riders to congregate and rest.
- A large wooden berm at the bottom of the line would solidify the line as a signature trail for the park and the community

III. Existing Conditions

The following section describes the existing conditions of Rocky Branch Park specific to its recreation setting, available park property and trail system as assessed in the Spring of 2019.

Recreation Setting

Surrounded by working class residential neighborhoods, public schools and city parks, Rocky Branch Park is an anchor greenspace for Belmont and an important part of the City's urban fabric by providing a relatively undeveloped natural setting with defined borders and connectivity to multiple destinations. Just one mile from the lively Main Street shopping and dining district, the park is uniquely situated to contribute to the social character of the City.

Park Property, Facilities and Points of Access

The land that is used today for Rocky Branch Park's trail network is comprised of four contiguous parcels of differing acreage. Three of these parcels are owned by the City of Belmont and one parcel is owned by a private landowner (**see Table 1 on page 9 and Figure 1 on Page 10**). The privately-owned parcel is currently utilized for trail corridor based on a short-term land use agreement and provides vital additional acreage for Rocky Branch Park's trail network.

Today, the park is accessed from a gravel parking lot located at the intersection of Sacco Street and W. Woodrow Avenue. The parking provides space for approximately 10-15 cars. The trailhead is located within view from the parking lot, and has a map kiosk with information about the park. Park facilities include a tool station, changing room area, portable toilet and water fountain.



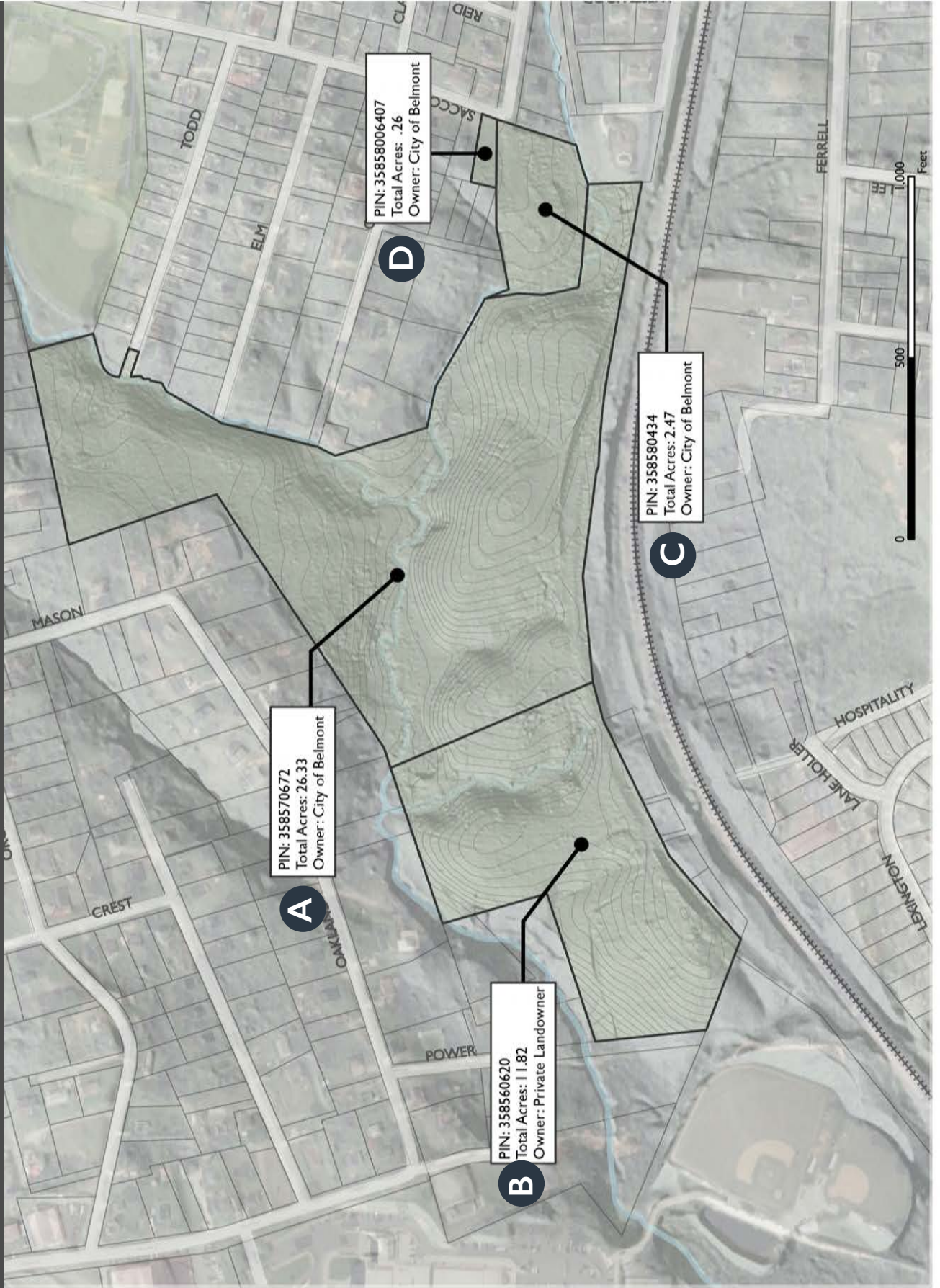
ROCKY BRANCH PARK
CITY OF BELMONT
PARKS AND RECREATION

WARNING
ABSOLUTELY
NO
MOTORIZED
VEHICLES

Table 1. Park and Trail Property Parcels

PARCEL INFORMATION	DESCRIPTION
<p>Parcel A PIN: 358570672 Total Acres: 26.33 Owner: City of Belmont</p>	<p>The largest of the park parcels, 358570672 provides the primary acreage and landscape for Rocky Branch Park. Nearly entirely canopied, it provides diverse terrain and quality landscapes including stream valleys, floodplains, mature hardwood canopy and gentle slopes. This parcel abuts Reid Park on its northeast corner.</p>
<p>Parcel B PIN: 358560620 Total Acres: 11.82 Owner: Private Landowner</p>	<p>The privately-owned parcel owned makes up the western territory of Rocky Branch Park's trail network. The majority of this parcel has undergone extensive logging and timber extraction, leaving behind a succession of young trees, brush and thickets. The landscape and terrain consist of rolling hills, knobs and ridges with small drainage valleys. This parcel's western edge abuts Stuart Cramer High School property.</p>
<p>Parcel C PIN: 358580434 Total Acres: 2.47 Owner: City of Belmont</p>	<p>A small parcel with Sacco and Woodrow Street frontage, 358580434 currently hosts the eastern gateway to RBP with a kiosk, trail map, water fountain, toilet, changing room, and tool station near the street's edge. This parcel also provides access for a sewer utility easement. It is mostly uncanopied, with a grassy open space that hosts several above-grade sewer caps and vents. 358580434 primarily provides pass-through access and connection to the main park parcel on its western flank.</p>
<p>Parcel D PIN: 3585806407 Total Acres: .26 Owner: City of Belmont</p>	<p>The smallest parcel of Rocky Branch Park, 3585806407 provides Sacco Street frontage, an existing gravel parking lot with 10-15 spaces, is mostly cleared and contains some trees and brush on its western edge.</p>

Figure 1 - Park Property - Parcels



Existing Trail Conditions

The existing trail network is comprised of 19 unique named trail segments and is roughly 6.3 miles in length (see **Figure 2**). The total mileage of trail within park boundaries is 5 miles, while approximately 1.3 miles of trail is located outside of the four permissible parcels, including the privately-owned property. Throughout the trail system, there are more than 60 unique intersections, confluences or divergences.

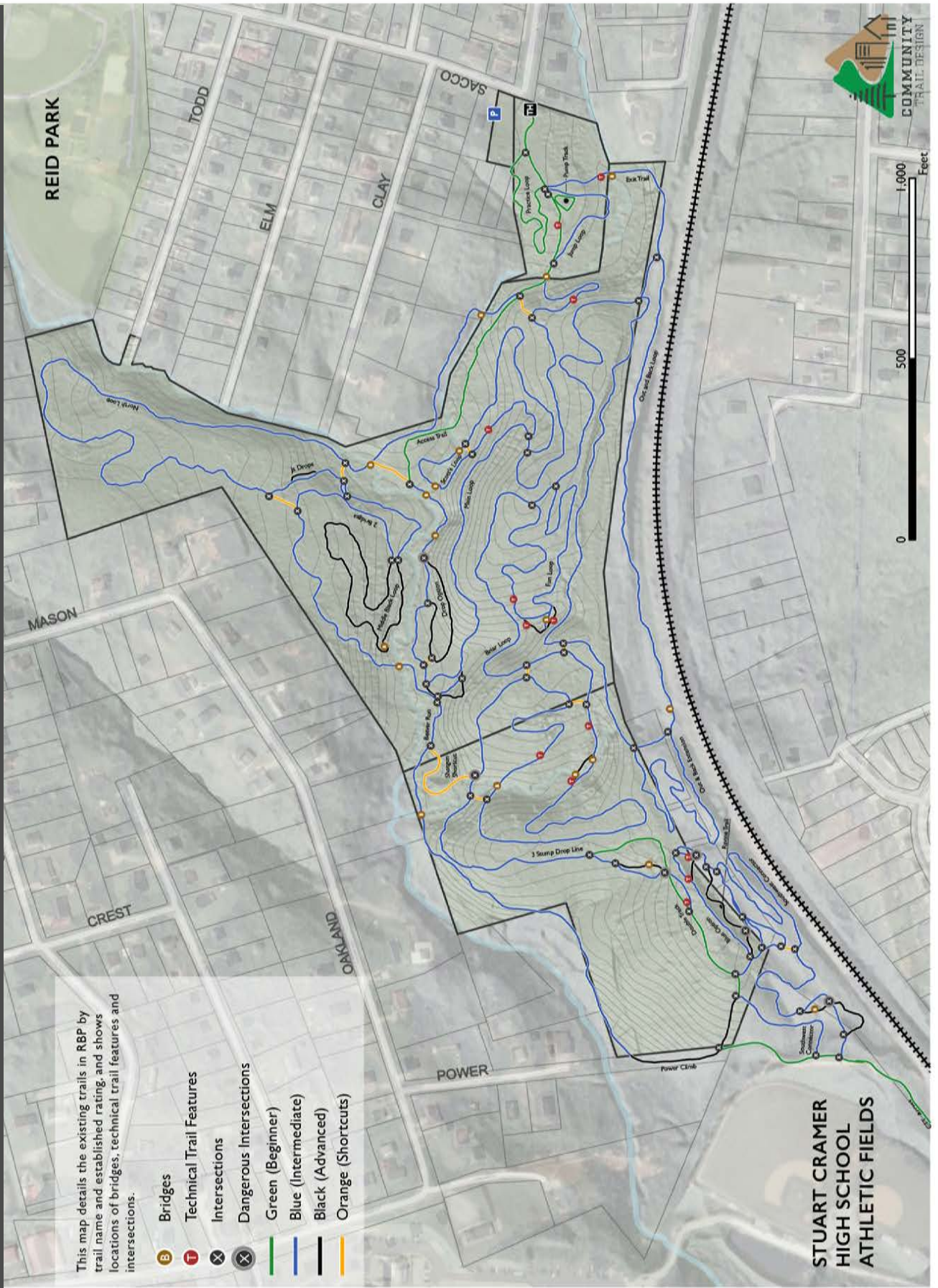
Each permissible parcel is home to a percentage of the official 5 mile trail network. Parcel A is home to the highest density and linear feet of trail corridor making up 67% or 3.4 miles. Parcel B hosts 25% or 1.3 miles of the trails, while Parcel C hosts .34 miles or roughly 7% of trails. Trail density within Parcels A and C is the highest, at approximately 1.3 miles/10 acres, or roughly 30% higher than the recommended trail density of 1 mile/10 acres. Parcel D hosts no trail mileage, only parking facilities. There are .56 miles of trails located in bottomland or floodplain habitats, making up roughly 12% of the total trail system.

Low intensity, hand-built trail characteristics and observed specs are common throughout the official network of trail corridor. Trail treads are variable, with narrow 18" tread width common on gentle slopes and low areas, and trail widening up to five feet on steeper grades where erosion has exposed the underlying roots and users have shifted left or right of centerline to avoid the obstacles. This phenomenon is known as trail creep and is common on slopes that exceed 50% trail/slope ratio as soil loss occurs from erosion.

The trail system is managed from the Sacco Street gateway and trailhead, as all trails are intended to originate from this single official point of access. The official trail network begins by passing through a split-rail fence stile (an opening that provides passage through a boundary) following a narrowly defined mineral soil tread surface in the open grassy area of parcel 358580434. Immediately adjacent to the trail in this open grassy area are a series of sewer caps, sewer gas vent pipes, a small pumptrack, as well as a very short beginner loop trail.

The trails at RBP consist of various levels of signed difficulty ratings identified with small green (beginner), blue (intermediate) and black (advanced) placards and arrows. It is unclear what criteria was used to evaluate the difficulty rating of each trail, however the presence of man-made technical trail features (MMTTF) on a trail may explain the rating system. MMTTFs can be found on nearly all of the trail corridors.

Figure 2 - Existing Trail System



IV. Recommendations

The following section outlines six key recommendations for improving Rocky Branch Park’s landscape, trail system, navigation and risk management.

1. Improve Loop Structure

A well planned loop structure with defined entry and exit points will aid in the navigation of the trail system, help with signage implementation, increase trail user situational awareness, improve user experience and reduce unnecessary shortcutting. The following bullets outline the recommendations for improving the loop structure of RBP.

- Establish loops contained within legal park boundary
- Develop multiuse connector trail as major arterial for traffic east to west
- Establish wayfinding hubs for each zone
- Establish minor gateways for each hub
- Drastically reduce and minimize number of intersections
- Maintain 50 foot trail buffer from trail centerline to deter shortcutting
- Utilize contour alignments and grade reversals spaced 50-75'
- Maintain average grade trail specs per individual trail
- Keep trail grades at less than 50% of hillslope
- Use full bench excavation
- Secure or purchase private parcels to expand park footprint

A recommended loop structure for the park is proposed in **Figure 5, outlined in Table 3 and described in Figure 6**. The proposed trail system utilizes existing trail where feasible.

Table 3 - Concept Trail IDs and Description

CONCEPT ID	TRAIL NAME	TRAIL LENGTH	AVERAGE GRADE
1	Access Trail	3,580 feet	5%
2	Green XC	5,689 feet	5%
3	Blue XC	5,687 feet	7%
4	Intermediate Flow	1,900 feet	7%
5	Advanced XC	1,500 feet	7%
6	Advanced DH	1,341 feet	9%
7	Advanced - Technical	1,585 feet	9%
8	Advanced - Gully	500 feet	10%
9	DH Return	500 feet	7%
10	East Bail Out/Return	970 feet	7%
11	Pump Track	200 feet	1%
12	Green Hub Connector	170 feet	5%

Figure 5 - Proposed Trail System

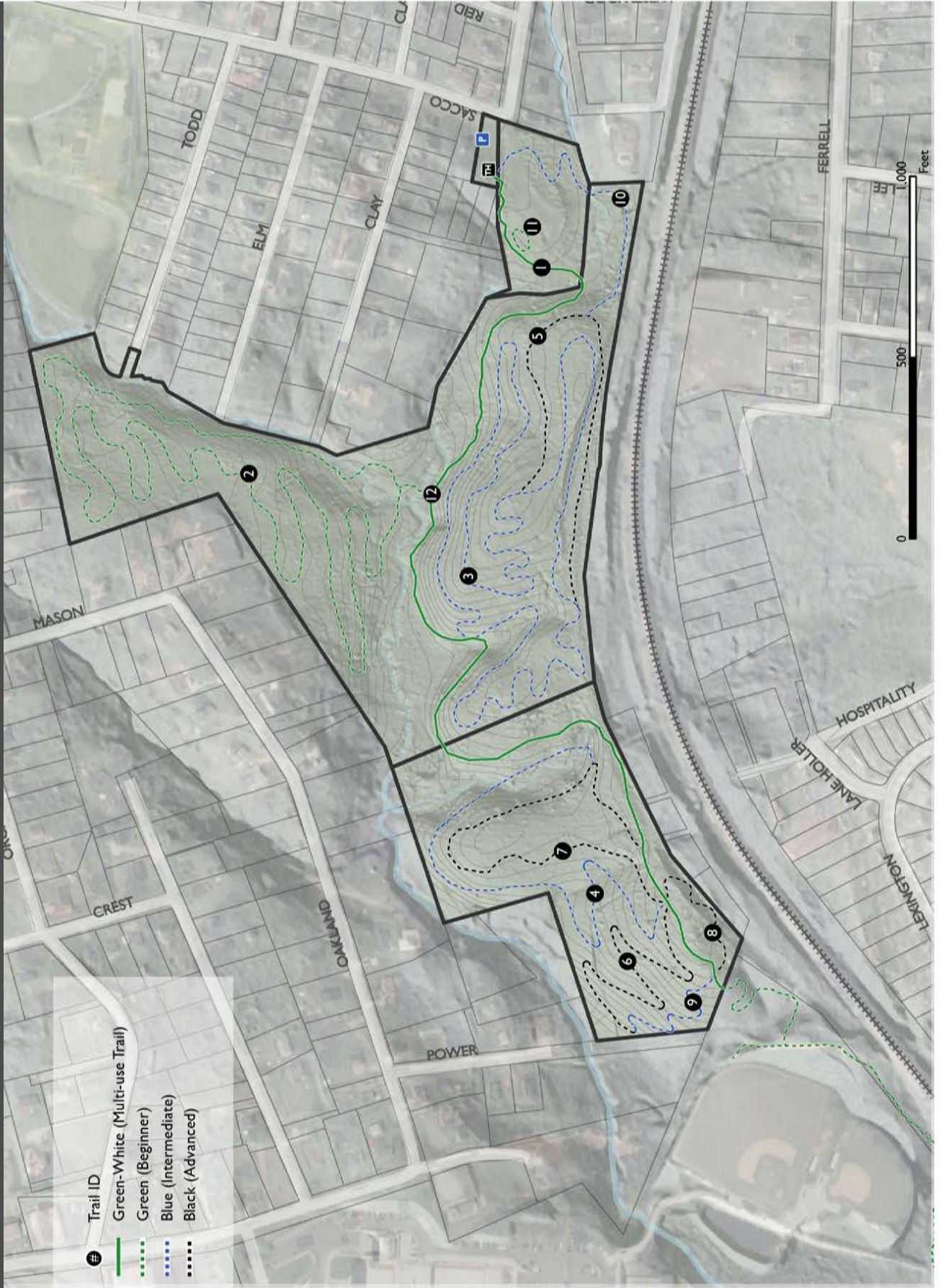


Figure 6. Desired Trail Experiences to Maintain/Enhance



GREEN ZONE

Multi-Use Access Trail

- Wide, smooth and stable trail tread (60-72")
- Open sightlines
- Room for passing



GREEN ZONE

Beginner XC/Flow Trail

- Wide, smooth and predictable trail tread (36-48") with optional lines and features
- Minimal rugosity and obstacles less than 4"
- Very playful



BLUE ZONE

Intermediate XC/Flow Trail

- Variable trail tread (24-36") with optional lines
- Embedded obstacles and higher speeds
- Insloped and traditional switchbacks
- Man made features and terrain manipulation
- Unavoidable obstacles up to 6" in height



BLACK ZONE

Advanced Technical Lines

- Highly variable trail tread (18-36") with mandatory lines
- Elements of exposure, risk and play
- Man made rock gardens and technical trail features
- Unavoidable obstacles up to 8" in height



BLACK ZONE

Advanced Downhill Trail

- Smooth and groomed to rough trail tread (36-48")
- Advanced DH Flow Trail Steeper grades, flowmentum, jumps, berms, drops, rocks
- Variable materials

2. Address Private Property Infringement

The existing layout of the Rocky Branch trail system is oriented in such a way that makes it difficult to use or navigate, without unknowingly leaving the authorized park boundaries. Further, the existing trail system is heavily dependent on the use of the privately-owned parcel to complete a loop or a ride in the park. Because the privately-owned parcel is not technically a jurisdiction of the park and subject to a short term land use agreement, effort should be made to establish a loop structure within the official park boundaries (27 acre tract) to protect the greater trail system from threat of sudden closure.

Establishing a network of stacked loops that use property lines of the official park as boundaries will further allow a reduction in risk management and liability to the city, as conditions on private property can be subject to change and the management of the property cannot be guaranteed as such as a municipal park. This threat is a reality for the trail system as numerous occasions of ATV trespassing, tree felling and trail modifications have occurred without warning on the privately-owned parcel by unknown parties. Lastly, signs and warnings should be posted at all private property line crossings notifying the public of their passage onto private land.

Currently, 6,580 linear feet of trail exists outside of the privately-owned/Belmont parcels. While we do not recommend the modification or closure of any trail on non-authorized private property, we do recommend establishing signage that adequately notifies trail users of any access point that deviates from legal or authorized land.

3. Create Gateways, Hubs and Nodes and Promote Connectivity

In order to create a friendlier perception of the park, it is recommended that the trail be relocated to the northern edge of the East Gateway, utilizing the thin strip of tree canopy that hugs the property line. This will not only cut down on maintenance of open sky trail, it will allow an experience away from the sewer and immediately thrust the user into an ideal wooded setting from the parking lot with a discernible tread. Gateways are a user's first impression of a trail, and essential to the experience.

The pump track facility is also located within this open sky clearing, surrounded by sewer caps. After closer inspection, it was determined that there is adequate space to relocate both the access trail and pump track under canopy cover slightly to the north. Developing trail within this clearing should be avoided at all costs as it provides little benefit to user experience, is susceptible to erosion and vegetation. The sewer easement also uses a fall line alignment which does not route sustainably with the contours of the landscape.

One of the primary goals identified for enhancements to RBP identified through community input is connectivity. Connectivity goals can also be found in Belmont's master plan and visioning documents making this an important objective for the conceptual design of the RBP's future trail system. A strong desire was also identified by the community to provide trail access for other users, including hikers and trail runners, which also had influence on the conceptual design outcome and use of connectivity. The three primary connectivity goals established through public input are as follows.

- Connection to the Carolina Thread Trail and Stuart Cramer High School
- Connectivity to Main Street Belmont
- Connection to Reid Park

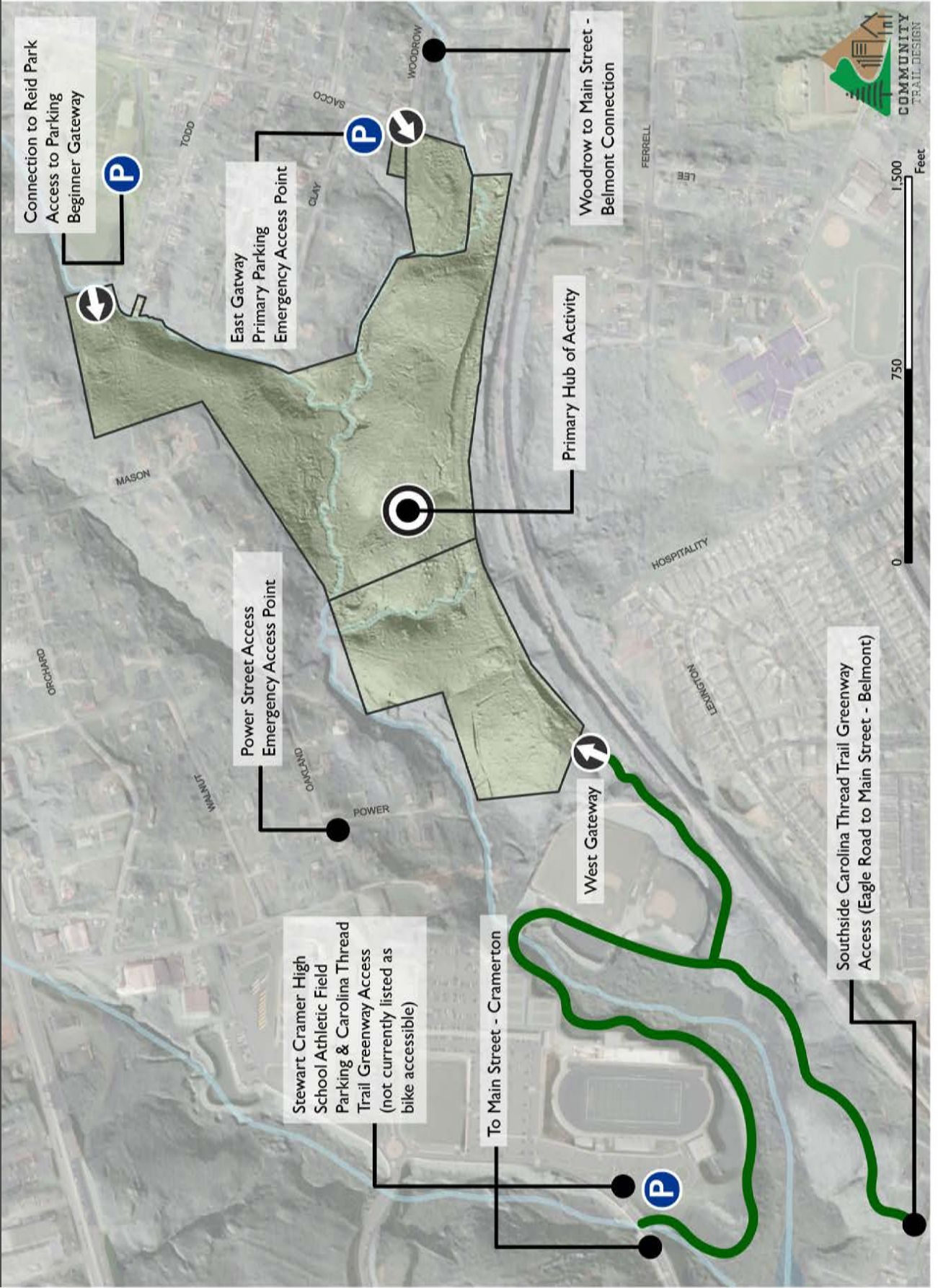
By evaluating the areas surrounding RBP for improved connectivity, it was deemed that these connections are feasible and viable through the development of a primary multiuse trail that would allow an east/west arterial path of travel through the heart of RBP, connecting the East Gateway at Sacco Street, directly west through the privately-owned parcel connecting to the Stuart Cramer High School cross country trail. This main arterial multiuse trail would be ideal as a wide, heavily developed path with gentle 5% slopes and enough space to accommodate both foot and bicycle traffic. Further, the development of this multiuse path would provide a direct and easily distinguishable connection to the three primary mountain bike trail loops via a series of hubs along the way.

While we do not recommend intense capital investment of trail development on the privately-owned parcel without securing a long term land use agreement or purchase of the parcel, developing the multiuse trail through the privately-owned parcel may be a viable option under the short term land use agreement in place currently due to the small investment required to establish the trail. Lastly, the connection to Reid Park to the north would provide access to RBP's trails from the neighborhoods



Use of pre-fabricated technical trail features (TTFs) like this Progressive Ramp Company skinny structure can provide years of safe, reliable, maintenance free fun and challenge along the trail.

Figure 7 - Promote Connectivity



4. Upfit Park and Trails to Meet Community Goals

A workshop on July 1, 2019 produced survey results indicating the top trail characteristic committee members would like to experience at RBP as playfulness (**see page 5**). Second and third were Fun and Challenge, respectively. All three of these desired trail characteristics are traits that highly developed, man made urban bike parks possess.

While the existing trail system was established through the hard work and generous efforts of local volunteers, its existing characteristics resemble more of a backcountry trail experience with narrow, lightly constructed trails, highly outsloped tread, fall-line grades and minimal terraforming. The existing characteristics align much more with the recreational setting of a national forest, state park, or backcountry trail system found in more remote landscapes. Users seeking a more intimate experience with nature, increased sense of remoteness and lightly developed trail tread can easily be accommodated by visiting one of the numerous national, state, or regional forests within a short drive.

In order to meet the community's desired experiential goals listed above, changes to the trail system's design and overall layout will be necessary to provide the desired outcomes. It should be noted that certain segments of the existing trail system may be suitable for preservation and integration into the new conceptual design of the trail system where it can meet sustainability principles and desired trail outcomes. Established trail that is deemed unfit for salvage should be mechanically scarified, renaturalized and closed to prevent continued use and to reduce the overall environmental footprint of the trail system.

Using an outcomes based approach in conjunction with the recreational setting characteristics, we can channel the community's feedback into a strategic assessment and framework for achieving the desired characteristics and experiences of the park's users. Playfulness is a critical component to the mountain biking experience, and often a staple of urban and front country trail systems. Playful obstacles that are specific to or optimized for mountain biking should be kept to bike optimized trails, and avoided completely on any multiuse trail. The concept of playfulness in a recreational setting such as RBP can be achieved with the use of a high manipulation of the soils and landscape of the park. Because RBP lacks many of the unique natural elements that are conducive to play, achieving this experience will require the use of trail tread terraforming, higher intensity construction, and/or importation of obstacles not present in the landscape such as rock and timber.

The use of rock can be an excellent way to make the trail system stand out in the region, create all weather and all season durable trail, attract tourists and provide a challenge and texture not found elsewhere in the Piedmont. Rock is an excellent material for trail development because of its long lasting nature, lack of susceptibility to vandalism, and predictability. Rock will need to be imported and professionally installed, but provides opportunity for community involvement in its installation. Ideal rock for challenging trail features is no less than 150 lbs, features square edges and grippy textures, and is large enough to not be moved or disturbed by the weight of users. Larger rocks such as boulders can be utilized throughout the park to create gateways, chokes, gargoyles and trail filters as user management controls to guide users through the trail and keep them on designated routes.

Use of equipment will be necessary to shape, sculpt, manipulate and terraform the trail surface to develop playful elements such as berms, rollers, jumps and rock features. Mechanical excavation can also reduce the amount of retainment structures necessary due to the volume of soil that can be moved. All elevated and terraformed earthen features should utilize a 1:1 fill slope and be completely renaturalized using native organic materials to achieve lateral integrity.

Achieving further goals of connectivity and tourism development means that the park and trail will require additional upfits to both the trails themselves and the user management controls that will be necessary to manage users, reduce conflict, and increase social and environmental sustainability.



Integration of rock of into a trail system can provide unique challenge and a predictable, low maintenance skill feature.

Establishing better user management controls and anticipating increased volume of use means that investment will need to be made in not only the trails themselves, but the materials and structures necessary to corral and direct traffic throughout the trail system. Use of split rail fence and boulders for trail hubs, chokes, corrals and gargoyle obstacles should be implemented at openings in the corridor where a trail user can easily deviate from the trail, and also used to create buffers between trail segments that may be tempting to shortcut.

Some examples of the techniques and features that can help achieve the desired trail experiences are the following:

- Terraformed and manipulated mineral soil trail tread surface (berms, rollers, jumps)
- Man made technical trail features using timber frames and decking (skinnies and boardwalks)
- Prefabricated man made structures using steel frames and timber (PBR Ramps, skinnies, drops, jumps, rollers)
- Importation and setting of large rock features (Jumps, obstacles, low and high speed technical challenge)

5. Invest in Model Signage and Structures

Some of the hallmarks of a well developed and attractive bike park are the integration of unique, custom signage and structures like gateways, bridges, benches, kiosks and railings. Investing in the craftsmanship of unique art and trail features may require the contracting of specialists in graphic arts, wood and metal crafting, and stone masons. Use of these unique structures can create an identity and memorable characteristic for the park. With today's connected world, people love to take photos and share their experiences with social media. Developing a facility that encourages and welcomes this behavior will increase the visitation and visibility of the park. Some recommendations for signage and wayfinding are listed below.

- Major Kiosk facing north with stylized map at gateways
- Maps at hubs and nodes
- Carsonites or wood posts demarcating every optional line
- Minor gateways at hubs with eye level signage and trail names.
- Color coded trail markers spaced at even intervals along trails
- Designated emergency access points with GPS locations



Unique and artistic gateways such as this arch and trail feature like this "snail" over-under in Solden, Austria can add to the trail's marketable character and also provide a social hub for people to gather around and share on social media. Customized signage can create a unique identity and add to the character of the park, such as this steel map kiosk in Knoxville, TN.

6. Create a Funding and Project Phasing Strategy

By compartmentalizing the development of the park into phases, funding can be achieved in separate stages. Through phasing the development of the trails, work for funding of future phases can commence during the implementation of other phases. Seeking funding while a trail phase is under construction can also demonstrate to the public that progress is underway and generate a tangible product for the community to see.

The most logical phasing approach for Rocky Branch Park would be to develop the three skill level zones in stages or blocks, beginning with the access trail and green skills, followed by the remainder of the blue zone and the trails that are proposed within park bounds as Phase 2. Utilizing funding to develop trails within the park's official boundaries first will ensure that capital investment is protected long term and provide a greater sense of ownership for the park with the security of its permanence, getting people into the park sooner, and mitigating the risks of conflicts with private landowners.

To satisfy the needs for accessibility and to help generate community support for the project, developing the multiuse trail corridor and green hub of trails would serve to get a wide audience involved in the development of the park and open up opportunities to a new group of users immediately including children and families. Developing the blue zone as Phase 2 will serve the majority of user groups that enjoy greater skills, risk and challenge, and the distance necessary for exercise.

Developing the black zone as Phase 3 allows the longest period for fundraising to take place, time to design creative and artistic features, and time to secure the longevity of access to the privately-owned parcel. While the 27 acre tract of Belmont park property known as Rocky Branch can provide near term success and increased trail access, one of the ultimate goals of the park, as indicated through feedback and the committee's goals, is to develop an advanced level skills area that support progressive riding opportunities, such as jump lines, flow trails, drops and technical features.

Developing a challenging and advanced skill area can and will contribute greatly to the park's popularity and success. This advanced user group, although small compared to the rest of the mountain biking community, is passionate about the sport and in desperate need of progressive, safe and entertaining facilities. Securing access to the privately-owned parcel long term will be essential to the support of this goal, as this private parcel provides the most ideal recreational setting and necessary space to develop this zone. Further, the privately-owned parcel can provide the necessary access and gateway for connection the Stuart Cramer High School, the Carolina Thread Trail and associated connections to the west, including the City of Cramerton.



V. Phasing & Cost Estimates

The following cost estimates are based on market rate prices for contracted trail services, and are meant to serve as estimates only. Costs of services will vary depending on material price, contractor availability, community and volunteer labor integration, donations and bid strategy. The total estimate to complete the project is \$185,000.

PHASE 1 - MULTI-USE & GREEN ZONE

Description	Estimate
TRAIL PLANNING & DESIGN	
<ul style="list-style-type: none"> Low Level design of Multiuse and Green Zone - includes trail flagging and recording GPS data for proposed corridor (\$.20/linear feet) 	\$2,000
TRAIL CONSTRUCTION	
<ul style="list-style-type: none"> Develop temporary connections or hubs to multiuse trail 	\$3,500
<ul style="list-style-type: none"> Construct multiuse trail (\$3.50/linear feet) 	\$12,500
<ul style="list-style-type: none"> Construct green trail (\$3.50/linear feet) 	\$20,000
TRAIL FEATURES	
<ul style="list-style-type: none"> Construct or purchase 5 Technical Trail Features (\$2,500/feature) 	\$12,500
<ul style="list-style-type: none"> Construct 3 new bridges (\$2,000 bridge) 	\$6,000
<ul style="list-style-type: none"> Build 200 feet of rock work (\$7 linear feet plus materials) 	\$1,400
SIGNAGE & WAYFINDING	
<ul style="list-style-type: none"> Relocate and construct east trail gateway (create archway) 	\$1,500
<ul style="list-style-type: none"> Phase 1 sign package (aluminized signs, kiosks posts, carsonites, maps) 	\$2,500
<ul style="list-style-type: none"> Install 200 feet barriers and fencing where needed (\$8 linear feet) 	\$1,600
*All estimates are rounded to nearest \$100	
	TOTAL \$63,500

PHASE 2 - BLUE ZONE

Description	Estimate
TRAIL PLANNING & DESIGN	
<ul style="list-style-type: none"> Low Level Design of Blue Trail and Advanced Option - includes trail flagging and recording GPS data for proposed corridor (\$.20/linear feet) 	\$1,500
TRAIL CONSTRUCTION	
<ul style="list-style-type: none"> Construct Blue XC and Advanced Optional Trail(\$3.50/linear feet) 	\$30,000
TRAIL FEATURES	
<ul style="list-style-type: none"> Construct or purchase 7 Technical Trail Features (\$2,500/feature) 	\$17,500
<ul style="list-style-type: none"> Build 700 feet of rock work (\$7 linear feet plus materials) 	\$10,500
SIGNAGE & WAYFINDING	
<ul style="list-style-type: none"> Phase 2 sign package (aluminized signs, carsonites) 	\$1,500
<ul style="list-style-type: none"> Install 200 feet barriers and fencing where needed (\$8 linear feet) 	\$1,600
TOTAL	
	\$62,600

*All estimates are rounded to nearest \$100

PHASE 3 - BLACK ZONE

Description	Estimate
TRAIL PLANNING & DESIGN	
<ul style="list-style-type: none"> Low Level Design of Black Zone - includes trail flagging and recording GPS data for proposed corridor (\$.20/linear feet) 	\$1,200
TRAIL CONSTRUCTION	
<ul style="list-style-type: none"> Construct Black Advanced Trail (\$4/linear feet) 	\$23,000
TRAIL FEATURES	
<ul style="list-style-type: none"> Construct or purchase 10 Technical Trail Features (\$2,500/feature) 	\$25,500
<ul style="list-style-type: none"> Build 500 feet of rock work (\$7 linear feet plus materials) 	\$3,500
SIGNAGE & WAYFINDING	
<ul style="list-style-type: none"> Construct west trail gateway (create archway) 	\$1,500
<ul style="list-style-type: none"> Phase 3 sign package (aluminized signs, carsonites) 	\$1,500
<ul style="list-style-type: none"> Install 400 feet barriers and fencing where needed (\$8 linear feet) 	\$3,200
TOTAL	
	\$59,400

*All estimates are rounded to nearest \$100

VI. Conclusion

The popularity of mountain biking is growing at an exponential rate nationwide and locally. As this popularity and demand increases, the needs of our trail systems to perform becomes imperative. Cities and towns across the United States are clamoring for opportunities to link the recreational economy, tourism development, and healthy outdoor pursuits to their main streets. From a financial standpoint, trails are one of the best investments a local community can make to bridge the economic, social and environmental gaps necessary to create an optimal quality of life for local residents and visitors alike. The City of Belmont is in a unique position to make that happen based on the recent donation of private investment, dedication from the Tarheel Trailblazers, and support from the local community.

Rocky Branch Park possesses many of the essential qualities to make it a highly valuable asset to the local community and inter-county region of parks, greenways, and nearby trail systems. It has the potential of becoming a crucial piece of the regional trail puzzle feeding money into local business and providing a sustainable, fun and marketable outdoor experience.

With the support from the City of Belmont for this project and dedication of funding, Rocky Branch Park will become an even more critical asset to enhancing the quality of life in Belmont, NC.

