Superior, Arizona

Conceptual Trails Plan

January 2016

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October 2015

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About IMBA and it's partnership with the United States Forest Service and the Legends of Superior Trails group

The International Mountain Bicycling Association (IMBA) is a 501(c)(3) non-profit educational association whose mission is to create, enhance, and preserve great mountain bicycling experiences. Since 1988, IMBA has been bringing out the best in conservation-minded mountain bicyclists by encouraging low-impact riding, volunteer trail work participation, cooperation among different trail user groups, grassroots advocacy, and innovative trail management solutions.

Based in Boulder, CO, and with staff distributed across the country and the world, IMBA works to meet many of its goals through technical assistance programs, notably the Trail Care Crew (TCC) and Trail Solutions (TS) consulting teams.

IMBA has a strong history of working with the United States Forest Service (USFS), including a national-level Memorandum Of Understanding (06-SU-11132424-076) that encourages:

- The USFS and IMBA seek to work cooperatively to encourage responsible use of federal lands by visitors participating in mountain bicycling and recreational activities. The USFS and IMBA have an interest in disseminating information to the public regarding conservation, recreation, and natural resource activities related to mountain bicycling.
- The USFS, IMBA and its affiliates to identify appropriate cooperative opportunities (such as trail projects, administrative studies, educational programs, tourism initiatives, and special events). Contingent upon availability of funds and personnel, jointly pursue these projects in conjunction with the mountain bicycling community and USFS Districts nationwide.
- Sharing the technical expertise between the USFS, IMBA and its affiliates in developing USFS educational programs related to mountain bicycling.
- Participation in projects that develop mountain bicycling opportunities on USFS lands, within the budget and resource capabilities of local USFS staff.
- Work between IMBA and local USFS staff to identify opportunities and areas for specialized mountain bicycling in accordance with special use permit requirements and other applicable legal requirements. Identify opportunities to promote the public health and fitness benefits of mountain bicycling.

Partnerships with other agencies and organizations within the project zone are equally as important as the aforementioned Memorandum of Understanding between IMBA and the USFS.

Superior is fortunate to have support from organizations such as, Legends of Superior Trails (LOST), Resolution Copper Mining, Tonto National Forest, the Superior Chamber of Commerce, and the Arizona Trails Association. Because of Superior's unique land management parameters and varied vested organizations, additional partnerships from groups like Gravity Riders Organization of Arizona, Backcountry Horsemen, Queen Creek Climbers, Pinal County Parks and Recreation and Arizona State Lands will be paramount to the success of the execution of the Superior Conceptual Trails Plan. The commitment of each of these parties in realizing the mutual benefits of their cooperation is inherent to accomplishing this project's objectives.

As a continuation of this partnership, IMBA's Trail Solutions program has been retained to work in cooperation with LOST, Resolution Copper Mining and the Tonto National Forest to review existing trails within the project area surrounding the community of Superior, Arizona. This review is intended to assess what kind of experiences the trail system currently offers, and determine what improvements can be made within the system and surrounding terrain. The resulting recommendations suggest improvements for existing trails, as well as design new routes within the area to create a more varied riding experience for its user groups.

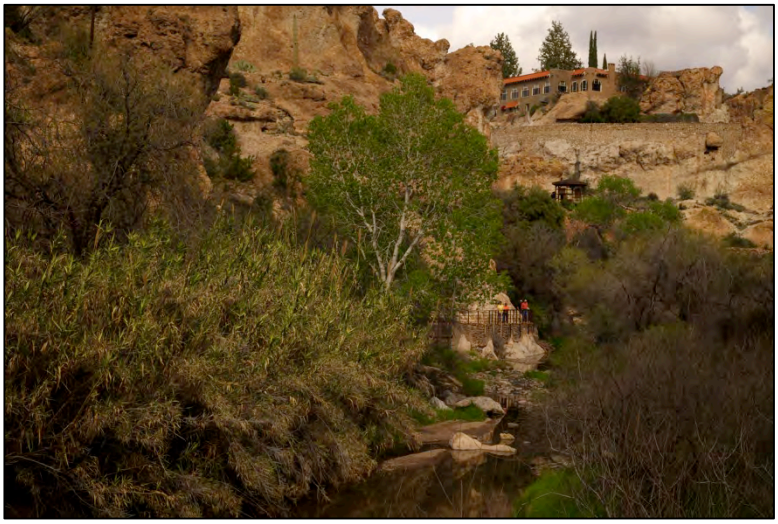
1. Introduction

This conceptual plan provides guidance and suggestions for the expansion and improvement for single-use and shared-use trails located on lands surrounding the small but once booming town of Superior, Arizona. Superior, one hour east of Phoenix, is located off Highway 60 and has a population of approximately 3,000.

The result of Trail Solutions' area assessment is an identification of terrain that is suitable for trail development. This is paired with appropriate trail design recommendations. In Superior's case, an expanded single-use and multi-use trail system will cater to the growing demand in this region for trails that are primarily optimized for mountain bicycling with central access to trail zones from the town center. The improved and expanded system will serve the needs of all recreation users by enhancing the multi-use trails that already exist but provide single-use trails optimized for mountain bicycles. The area detailed in this proposal includes the Legends of Superior Trail (LOST), which connects the town of Superior to the Arizona Trail (AZT) that is six miles west of the town of Superior. The AZT is an 800+ mile recreation trail that spans from Mexico to Utah. An improved multi-use trail system can be possible with a partnership between the Tonto National Forest, LOST, and other landholders within the study area.

The communities of Superior and the Tonto National Forest are well known for their recreational opportunities and have significant demand for an improved trail system. Hikers, backpackers, equestrians, rock climbers, mountain bikers, and OHV riders use the thousands of acres of beautiful country surrounding the town. Planning new trails and updating existing trails with this in mind will help direct visitors to use the trail system in ways that minimize conflict and help facilitate the sustainability of each route. The varied aspects of this region make it an appealing and interesting tourist destination. Improving the existing trails, trailheads, signage and creating a shared use network of trails with bicycle access will enhance the potential for increased tourist based economic development.

Superior also attracts many campers and recreational miners searching for Apache Tears and other rocks and minerals. In addition, visitors are also drawn to Superior and the Tonto National Forest because of points of interest such as abandoned accessible mining sites, petroglyphs, and vast canyons. The list of area tourist attractions continues with Picket Post Mountain, the most popular section of the AZT, The Apache Leap cliffs, Mattie Earp's gravesite and the Boyce Thompson Arboretum State Park.



The Boyce Thompson State Park Arboretum was founded in 1924 as a desert plant research facility and "living museum". It is the oldest and largest botanical garden in the state of Arizona. Located in the Sonoran Desert on 392 acres, the garden and State Park draw a significant number of visitors annually.

The Arizona Trail (AZT) is one of the premier long distance singletrack rides in the country. It is a magnet for recreational visitors and is well loved by the mountain bike community. The AZT is located approximately six miles west of Superior. The closest points of access are the Picket Post trailhead via HWY 60 or the LOST trail from the town of Superior. The passage leading south from Picketpost Mountain is one of the best and most used segments of the AZT for mountain bikes. It would be ideal to capitalize on the popularity and iconic status of the AZT and provide an experience that is optimized for users departing from the town of Superior.

This conceptual plan is written with several different objectives in mind:

- Create a more varied riding experience for visitors and meet the demand within the community for more recreational trail options.
- Refine the trail system in a way helps to successfully manage different user groups.
- Foster economic growth by creating a quality trail experience that attracts visitors from outside areas.
- Enhance community health and connect the population with the surrounding environment.
- Become an IMBA Ride Center®.
- Create a formal partnership between cooperating agencies and stakeholders.

The Review of the Superior study area revealed the following:

- The study area is already a destination for modest numbers of hikers, mountain bikers, OHV users, equestrians, and recreational miners.
- The AZT is currently the most significant attraction to the area for mountain bikers and is well known as a top riding experience in the region.
- Currently there is high demand for purpose-built downhill directional mountain bike trails that can be shuttled with vehicles. The existing system is limited in this type of trail, and does not meet the needs of the user group.
- The current condition of the open lands in the study area is either restricted access (generally because of mining) or relatively unmanaged with significant trash dumping on the southern edges of Superior and illegal or non-system trails proliferating, especially close in to the town of Superior. The USFS expressed that it lacks the funding and staff to patrol and manage the current property in their jurisdiction.
- There is limited trail signage, and many unmapped illegal or non-system trails, with only one marked trailhead location.
- There is negative impact recreation occurring including off road vehicle use, where users create their own routes around gated roads.
- The landscape offers incredible building terrain that has the potential to attract a high level of trail user traffic where access points can be centrally located relative to the town of Superior.

There is a need for improved organization and new types of riding experiences within the region. The region surrounding Superior is recreation minded and would benefit from a system that offers different styles of trail design that appeal to a wider range of rider ability. Adding more challenging routes (and gravity mountain bike trails which are optimized for the descent) for the experienced riders and more beginner and kid friendly routes for people newer to the sport will accomplish this goal.

Because of Superior's proximity to the AZT and excellent terrain creating an improved trail system will draw more visitors to the area. In addition, a quality trail system that offers enough terrain and varied loops will primarily draw visitors from the nearby population bases of Phoenix and Tucson, which are within one to three hours drive from Superior. By creating a high-quality purpose-built mountain bicycle trail system and in conjunction with trails in the surrounding region, the Superior area has an opportunity to become an IMBA Ride Center®. IMBA Ride Center® status increases economic benefits and growth for the community by drawing visitors to what will be known as one of the best mountain bicycling destinations.

2. Project Approach and Objectives

This project is crafted with the goals of locating the sustainable buildable zones within the study area, finding positive control points within these zones, and identifying good locations for the trail system's trailheads. The focus is building a multi-use trail system, which can provide one aspect of a sustainable economic future for Superior. While the trail system is primarily intended to attract mountain bikers, hikers as well as equestrians will also use it. The new and improved system will offer more routes to distribute users and deliver a wider range of trail experiences. A mix of purpose built trail loops nearer to the trailhead and expanded backcountry trails further away from the trailhead will offer welcome variety to the whole area. Each trail will be crafted in a way that features sustainable design and construction, and meets conservation and recreation objectives. These loops will create a progression of experiences and challenges as trail users explore them in more depth with each visit. Individual segments must provide consistent and expected experiences. The design of this system is similar to that of a well-designed ski trail system, with a collection of easier/green, more challenging/blue, and most challenging/black trails. These characteristics will appeal to a broad cross section of off-road bicyclists, from family-oriented entry-level riders to highly skilled enthusiasts. The following are objectives that this plan will help achieve. They are ranked in order of importance.

Objective #1 — Foster economic growth by creating a quality trail experience that attracts visitors from outside areas

The economic benefits of outdoor recreational tourism are significant. Outdoor recreation contributes $646 billion to the U.S. economy annually, while mountain bicycling contributes $82 billion to the national economy annually. Of that $82 billion, $11 billion is related directly to bicycling gear sales and services and $71 billion is related to bicycling trip-related expenditures. In addition, mountain bicycling supports nearly 2.5 million jobs across the U.S. and generates $5 billion in annual federal tax revenues and $5.6 billion in state tax revenues. This data shows that mountain bicycle trail building provides sustainable growth in rural communities.

The town of Superior supports the growth of outdoor recreation. Recreationally minded visitors patronize local businesses regularly. For example, Superior business owners welcome the OHV community because they provide a steady stream of traffic and revenue. A unique downtown including antique shops, watering holes and restaurants with close bicycle access to the trail system draws all types of recreations visitors into town. When this type of patterns are established and nurtured, local businesses benefit.

A case study in Cable, Wisconsin, clearly illustrates how a community can benefit from offering a world-class bicycling experience. Construction of new bicycle trails in Cable, resulted in:

- Increased property values
- Increased spending on bicycle related goods.
- 35 jobs created annually adding $523,000 to total employee compensation.
- Nearly $1.3 million impact related to spending from mountain bicyclists. [1]

[1] *The Economic Impact of Bicycling in* Wisconsin (Bicycle Federation of Wisconsin, 2006)

Another study in British Columbia provides interesting facts about their visitors and the potential economic benefits from mountain bicycling tourism:

Percentage of visitors who . . .	
are visiting from out of the area	75%
listed mountain bicycling as the primary motivator for their trip	96%
have a college degree	40%
have a Masters or PhD	10%
have a technical degree	22%
stay in a campground	36%
stay in a hotel	22%
stay in a resort	16%
travel with children	22%
report $100,000 in annual income	50%
report over $150,000 in annual income	22%
will visit the national park	37%
will go for a hike	28%
plan on riding for 3 days	85%
plan repeat visits in the same season	51%[2]

High-quality singletrack trails will attract mountain bicyclists, hikers, and equestrians, which will boost the economic health of the region. The development of *model trails* and other high demand trail types will create experiences that draw visitors to the area and establish it as a mountain biking destination

Objective #2 — Enhance community health and connect the population with the surrounding environment

The citizens of Superior should have safe and easy access to healthy recreation options. The employees of Resolution Copper Mining are also residents of Superior and the surrounding area. The proposed trail system in Superior will accommodate the entire spectrum of abilities and ages. Everyone from novice/beginner to advanced trail riders will enjoy the experience of riding a world-class sustainable mountain biking trail system in an incredibly beautiful environment. The trail system would benefit the community by creating a better living environment while

[2] *Golden Mountain Bike Visitor Study* (Tourism British Columbia, March 2013)

also providing a regional destination for mountain bikers and creating a larger tourist destination for other recreationists.

In addition to enhancing community health, building trails through volunteerism fosters community pride. In order to maintain sustainable trails, maintenance of the proposed trail system should be managed by local enthusiasts and rely on an organized membership base to promote local volunteer efforts. Volunteering with the organization will provide an opportunity for Superior residents to connect with the terrain and land that surround them.

In order to ensure success, singletrack trails should tie directly into the community and provide opportunities for citizens to be active. By building trails with a trailhead that is accessible via a corridor to town and the community, families are able to recreate together and reinforce the value of staying active and preserving nature among the youth. Many of the recommended trails will be directly accessed from the local high school and swimming pool. There is a wealth of local Native American history and control points including cliff dwellings and petroglyphs that could be accessed through the trail system so the users have an opportunity to experience the things that make Superior unique destination. These health enhancing and group building activities are a vital asset to any community and are proven to improve quality of life.

Objective #3 — Use best practices to develop trails that are optimized for a range of mountain bicycling styles and skill levels

In the years since the late-1970s when the first mountain bicycles were put to use the market has matured and diversified. A well thought out and executed conceptual plan creates potential for these diversified user bases to successfully coexist. The Superior area has potential for trails that cater to all of the following riding styles and trail types that currently exist. The following categories are descriptions of the main rider segments, mountain bicycle trail types, and skill levels.

Mountain Bike-Optimized Trails, Gravity Trails and Preferred Direction Trails

Mountain Bike-Optimized singletrack trails are designed and constructed to enhance trail experiences specifically for mountain bikers. Mountain bike-optimized trails might differ from traditional trails in several ways: enhanced tread shaping, directional or one-way travel, and through addition of man-made technical trail features (MMTFs). Bicycles move differently along a trail than other modes – the movement of the wheel, the use of gravity and friction, the transfer of energy from the rider to the wheel – offer both opportunities and constraints for trails and trail features that may differ from those of other users.

Mountain bike-optimized and one-way trails that harness gravity are a growing area of interest for mountain bikers. These trails can be provided at any scale, from beginner friendly "Flow Trails" to extremely difficult race-oriented downhill trails. Riders cherish the "feeling of flight" that a bicycle gives while coasting through a succession of bike-optimized features from top to bottom. A consistent trail is not necessarily a boring or easy trail (though it can be), it's one that is designed such that a preceding section of trail prepares users to subsequent sections. This aspect is a hallmark of flow trails and can be particularly important for beginner trails, as wells as for higher speed and/or gravity features, such as jumps and drops, on more advanced trails.

As trail systems grow and become congested, one-way trails help to take the pressure off of popular shared-use trails. Riders looking for speed, thrill, and challenge will have their own designated areas, and fewer user interactions with all users traveling in the same direction. Well-designed mountain bike-optimized singletrack and gravity singletrack are exciting for mountain bikers, but are also designed to help manage risk and minimize user conflict.

Trail Types

Traditional Singletrack (TR)

These natural surface trails will be built using sustainable trail construction techniques. Routes will be constructed and maintained using techniques that will minimize user conflict and maximize a natural surface texture and trail corridor. This type of trails should be narrower than 24" to reduce speed. All user types will use these routes so care should be taken to avoid obstacles that might exclude an allowed user type such as jumps, rollers, or water-bars. Turns will be constructed sustainably but will not be cambered to optimize cornering traction.

MTB Optimized Singletrack (MO)

These natural surface trails are built using sustainable trail construction techniques. They should be purpose-built for MTB users. This type of MTB-optimized trail is constructed with features such as rock areas, berms, larger grade reversals, wider cambered turns and skill level appropriate jumps. These trails should make use of gravity and are managed primarily for descending riders to provide a more enjoyable experience. This type of trails should be narrower than 36".

MTB Gravity Singletrack (GR)

These natural surface trails are built using sustainable trail construction techniques. They should be purpose-built for MTB users only. These trails are usually steeper than MO trails and have features that require more skill, and equipment that will handle more abuse. Jumps and drops are a key feature of these gravity-powered trails. This type of trail should be wider (up to 48") in segments that have jumps or technical features but can be narrower (as little as 12") in other segments.

Rider Types

Cross-Country riders — Characterized by their preference for the lightest-possible bicycles with a focus on pedaling efficiency over comfort, durability, or control. "Cross-Country" is primarily the domain of riders who are competitive and focused on racing and training. Physical fitness is more important than riding skill. These riders will embark on longer backcountry rides but tend to prefer diverse trail systems that are close to home and work to accommodate their frequent riding needs. They will rarely use a shuttle or lift service. Prefers narrower Traditional Singletrack trail and will enjoy MTB Optimized Singletrack if it provides a physical challenge. Use of MTB Gravity trails is extremely unlikely and would represent an outlier.

Trail Riders — Utilize a wide range of bike types with a multitude of wheel-sizes, suspension, and gearing options to provide a personalized riding experience. Bicycle pedaling efficiency is marginally sacrificed for more stability and comfort. Riders in this category frequently endeavor themselves to long backcountry rides where

scenery, solitude, challenge, and self-sufficiency are key. But they are equally attracted to quick "after work" rides on trails that are close to home. They will occasionally use a shuttle or lift service. This type of rider enjoys both Traditional Singletrack trail and MTB Optimized Singletrack, with rare trips on MTB Gravity Singletrack.

Enduro riders — Typically using bikes equipped with longer travel suspension, yet still capable of relatively efficient climbing. While challenging descents are desired, enduro riders will expect to use their own power to gain all or some of the necessary elevation. They will often use a shuttle or lift service. The trails most frequently used by enduro riders include both Traditional Singletrack and MTB Optimized Singletrack. Due to the impressive capabilities of enduro type bikes, MTB Gravity Singletrack is also very attractive.

Gravity riders — Prefers bikes with very long travel suspension that helps them absorb extremely rough terrain and the impacts of repeated jump landings. Gravity riders focus on control and maneuverability in technically challenging conditions, including man-made and natural jumps, drops, rocky areas, and steep terrain. They will expect that nearly all of the momentum they need to maintain speed will come from gravity, with pedaling only becoming necessary at strategic moments. Because their bikes are difficult to pedal uphill for long distances, they will almost always use a shuttle or lift service. Gravity riders will use Traditional Singletrack and MTB Optimized Singletrack but only if there are few if any climbs. MTB Gravity Singletrack is there dominant preference.

Skill Level

In order for this trail system to provide the varied riding experiences and skill progression that mountain bikers seek the trails must be built to provide relatively specific challenges and riding characteristics. The trails outlined in this concept have been given a target skill level that will help to guide the construction of these features.

The ridership within each category can be divided into the following groups: beginner, intermediate, advanced/expert. Using a basic bell curve distribution it can be assumed the majority of mountain bicyclists in any category and as a whole are intermediate riders.

The Superior trail system should utilize a consistent rating system. This will provide for a safer and more predictable experience for users. The Trail Difficulty Rating System is a basic method used to categorize the relative technical difficulty of recreation trails and should for the basis for a rating system in Superior.

The Trail Difficulty Rating System can:

- Help trail users make informed decisions
- Encourage visitors to use trails that match their skill level
- Manage risk and minimize injuries
- Improve the outdoor experience for a wide variety of visitors
- Aid in the planning of trails and trail systems

Please refer to Appendix A for details of the IMBA Trail Difficulty Marking System. This system may need to to have thematic modifications to match regional variations, legal considerations, and design aesthetics. For example, a very difficult/Black Diamond trail in a region with rolling terrain and very little rock, may be less difficult than a trail in steep rocky terrain that is rated the same. Although both trails have features of the same difficulty, the steep rocky region will have a higher frequency of these challenging features.

Objective #4 — Refine the trail system in a way that helps to successfully manage different user groups

In addition to a wider range of trail experiences, an increase in route options will prevent user conflict by providing recreational opportunities that meet the needs of many different types of user groups. Mountain bikers, equestrians and hikers currently use the trails around Superior. Roads in the study areas are currently open to motorized vehicles.

The Superior area is lacking good infrastructure to ensure that different types of user groups can share the trail system. Clear signage should be used to mark the different trail routes. A trailhead that is easily accessible from town with adequate parking and amenities is another key element in managing user groups.

Objective #5 — Create a variety of riding experiences for mountain bicycle users

One of the main objectives of this project is to diversify the trail system so it appeals to a wider range of mountain bike enthusiasts. This objective will be accomplished by creating a network of purpose built trails that appeal to a range of ability levels. By taking the existing trails, and improving upon the current offerings, more route options will be available to distribute riders of different interests and skill levels appropriately and deliver a wider range of trail experiences. Options will range from challenging trails that have a gravity-oriented feel with technical descending characteristics to kid and beginner friendly skill building loops.

Meetings with mountain bikers in the region showed that there is high demand for descending-direction shuttle friendly mountain bike trails. The existing system is limited in this type of trail, and does not currently meet the needs of the user segment. The result is disproportionate usage on the South Mountain trail system

near Tempe which currently is the only existing shuttle friendly mountain bike trail system. Trail Solutions' assessment has shown that the study area has many of the key elements necessary to address this demand. The terrain, access to roads for shuttle vehicles, proximately to town and strong user interest make this area an excellent candidate for a network of gravity fed trails. Creating a space that matches the demand of this group will appropriately distribute the downhill segment, which will abate conflict between mountain bikers of different abilities and interests while creating enough variety to encourage the downhill segment to visit the trail system regularly.

Within the proposed network, there is also a need for beginner loops, kids' loops and a skills loop that offers technical features for skills practice and development. These loops will be easy enough for kids, and still fun for more-experienced riders. This network of trails will be located near a proposed main trailhead and town center for easy access for families and mountain bikers that are new to the sport and may not have the skill or fitness level to reach outlying areas.

Through careful planning, design and construction, a varied trail network can become a critical component that can attract a steady flow of different types of visitors to the area. It is important to attract and satisfy visitor's desires with the full range of experiences for which they are looking. An inexperienced or not physically fit visitor may be forced to turn back if they encounter a mandatory obstacle on an otherwise "easy"-rated trail. Similarly, a high level rider may not bother to visit a destination that lacks the physically challenging and technically demanding trails that an established location such as Sedona, AZ, is famous for.

Objective #6 – Become an IMBA Ride Center®

IMBA Ride Centers® are extensive trail networks, masterfully designed for mountain bicyclists of every skill level and built by professional trail builders. They serve as social and educational hubs, where visitors can connect and learn new riding techniques. Ride Centers® provide the full range of mountain bicycling experiences today's riders crave, from long singletrack journeys to family-friendly loops, and areas with expertly designed technical challenges for advanced riders.

Superior Ride Center - By creating a high-quality purpose-built mountain bicycle trail system and in conjunction with trails in the surrounding region, the Superior area has an opportunity to become an IMBA Ride Center®. This designation represents IMBA's recognition of large-scale mountain bike facilities that offer something for every rider. As an IMBA Ride Center®, The Superior area can successfully promote itself as a well-respected destination that offers a complete mountain bicycling experience; from backcountry adventures to shuttle-served gravity trails, and from experts-only to family-friendly singletrack. With a ride

center designation in place, visitors can be assured that they can expect to encounter the best the sport has to offer.

Being designated as a Ride Center® would clearly identify the Superior area as being among the best places in the world to go mountain bicycling. As a result, the community will see an increase in both visitors and improvements in quality of life for residents because of better opportunities for outdoor recreation.

Developing the trails and facilities that are required for Ride Center® status are not insignificant. In Superior's case the costs will be considerable because of the current lack of legitimate sustainable purpose-built trails. Actual costs for constructing trails and amenities to meet the requirements are estimated at $2 – $4 million dollars over the next ten years.

Ride Center® brings economic benefits to their host communities. Given the Superior area's proximity to major population centers it is not unreasonable to assume that the Superior area Ride Center® could have, in the future, up to 80,000 – 120,000 visitors annually coming for the purpose of riding the trails. It is assumed that most of these visitors will be staying at least one night and possibly two.

IMBA Ride Center Success Stories

Park City, UT

Several years ago, IMBA was searching for the ideal location to host the organization's biennial World Summit mountain bike gathering. The winning candidate was Park City because it offered a successful local mountain bike community, diverse riding opportunities, and jaw-dropping natural beauty.

That was 2008, and since then Park City has continued expanding and improving its facilities, so much that IMBA enthusiastically awarded it the highest level of Ride Center® status. How did Park City become a gold-level designation? Through a combination of community support, master planning, and detailed execution. No location better exemplifies the Ride Center® ideal of offering great options for any level of rider and any style of riding. From standout beginner-to-intermediate trails to technical challenge and expert-only terrain, the options are expansive, with the trails quickly being augmented by lift-served downhill runs and community bike parks. Not surprisingly, Park City offers all the lodging and dining options you'd expect from a world-class resort. At the heart of it all, the IMBA-affiliated Mountain Trails Foundation pulls riders into a true mountain bike community and keeps them energized with new projects. It all works together at Park City and has resulted in the resort being the "gold" standard for mountain biking.

Oakridge, OR

The Oakridge Area Ride Center embodies the notion that the whole can be more than the sum of its parts. Its an incredible place to ride, not just because of the gorgeous trails but because the entire community supports the network of trails that has brought life to this community.

Similar to Superior's experience with the mining boom, when logging on federal lands decreased in the 1980s, the economic stability of dozens of towns in Washington, Oregon, and northern California became threatened. Many of the threatened towns are now are former shells of themselves, with mills shuttered and main streets and surrounding businesses vacant. The town of Oakridge found itself in a similar situation, but a visionary group of citizens refused to give up on their hometown, and instead began to look to mountain bicycling as a niche activity to provide them a livelihood. Over several years, and countless volunteer hours, the City of Oakridge has firmly established itself as a "must ride" stop for the fat-tire crowd.

With this inspiring backstory, it is no surprise that Oakridge is a Gold-level Ride Center®. The trails range from adventurous backcountry routes to close-to-town loops, with the stunning Cascades scenery as a backdrop. Local businesses have responded by developing bike-friendly lodging, an amazing pub geared towards hungry and thirsty riders, an extensive shuttle service to provide organized and top quality access to the trails. In addition, Oakridge is host to world-famous mountain bike races and events. With the upcoming addition of more purpose-built trails, the community is well on it's way to being upgraded to gold-level Ride Center® status. To say that Oakridge is an international destination is not an exaggeration. Every

year, visitors travel from Canada, Europe, Asia, and Australia to ride the epic singletrack. The famed Mountain Bike Oregon festival continues to be a mainstay of the town, providing recreation-based employment opportunities for residents in a town that refused to accept the fate of many of its timber-dependent neighbors, resulting a rural community that is determining its own future.

3. Opportunities and Constraints

Surrounded by public lands and cooperative land management

Superior is circled by extensive terrain that is appropriate for incredible trail development. The study area also includes land owned by Resolution Copper Mining who has indicated that it may be possible to create trails across some land in their ownership. The USFS has already indicated that it supports the concept to develop an improved recreational trail system on USFS lands surrounding Superior and connect them to the community through its partnership with the LOST organization and the Arizona Trail Association. A formal agreement and partnership with all involved agencies, volunteer groups, and entities is essential to the success of this plan. Because of the USFS's minimal budget for trail development and maintenance, volunteer organizations will need to provide most if not all of the ongoing maintenance for the trails. The USFS will not be able to support the development of any new trail without a mechanism and plan in place to prove the maintenance necessary.

The project area encompasses thousands of acres of land managed by the USFS. Parts of the long distance Arizona Trail, several national monuments, and a State Park lie within the region, and there is a wealth of Native American history including cliff dwellings and petroglyphs. The Globe Ranger District (Tonto National Forest) is interested in improving trails and access to recreational trail systems throughout

this section of the Tonto National Forest and private lands they manage. This project will set a good precedent for the area. Working with user groups and clubs like the LOST organization allows the Forest Service to increase the number of recreational trails in the district while delegating much of the maintenance to club volunteers

Ongoing and Future Mining Operations May Restrict Trail Development

The lands surrounding Superior are rich with minerals and have been the site of extensive exploration and mining. Some of the zones in this plan could see significant mining operations in the future including Bronco Creek Exploration on behalf of Desert Star Resources. Development of new trails should take this into account and involve all potential stakeholders to minimize impacts and conflicts.

Located on a major recreation access route

Superior's proximity to Phoenix and as a gateway to the Tonto National Forest creates a unique opportunity to capture the interest of visitors as they pass through the area. A top quality trail system for mountain bikes would create a significant incentive for these travelers to stop and enjoy the trails.

Community connectivity

Simple trailhead locations at the bottom with paths connecting the trails to the town of Superior could provide excellent access opportunities for visitors and residents. Its good terrain and scenic value create a corridor that users of all abilities and modalities can share. Connectivity to the town center also has the potential to reduce the use of automobiles for accessing the trails.

Suitable yet challenging terrain

The area has excellent terrain for the construction of sustainable purpose-built mountain bicycle trails. The topography of the proposed project area is varied and has a great mix of Cottonwood and Mesquite trees along with more open sections with Saguaros and Palo Verde trees. The local Sonoran desert is home to deer, coyotes, rabbits, quail and other desert animals. Historical and scenic positive control points include Apache Leap, Cliff dwellings, petroglyphs, wagon tracks, Mattie Earp's gravesite, Boyce Thomson Arboretum State Park and abandoned mining sites. The terrain is mostly open sections that have sunny areas to stay warm during cold weather. There is an estimated 1,500 feet of elevation change within the potential project area, which includes many canyons. The study area sits at an elevation between 2,500 and 4,800 feet, and remains snow-free during the coldest

winter months making it a perfect place for year-round use. Steepened terrain provides great conditions for trail work and minimal maintenance if trails are carefully planned and well constructed. The rough character and unpredictable rock formations will challenge trail designers and builders.

Abundant rock climbing routes

In addition to being a popular crossover sport for mountain bikers and other recreational trail users, rock climbing generates a demand for trails that access sites. Trail development can be planned in a way that provides climbers with improved access to sites. The Queen Creek Climber association is developing a plan and agreement to secure and improve access to many sites that fall within this planning area. Whenever possible, trails should be developed in a manner which is in harmony with this agreement.

Good road access

The project area is easily accessed via gravel and paved roads. It is proposed that the trailhead access is close in to the town of Superior, making it possible for residents and visitors to access the trail system directly from town.

Events

Events are excellent tools for attracting visitors and showcasing a destination. The trail system as planned would be an excellent venue for new events such as mountain bike races or festivals. It's proximity to Superior, Phoenix and Tucson makes it well suited as an event focal point. Events such as The Superior Trails Festival and The Superior Mining Festival are already drawing visitors.

Good weather

Superior has a hot semi-arid climate. In January the average high temperature is 60 degrees Fahrenheit and in July the average high is 98. The local mountain bikers report a little over 10 rideable months a year, with the exclusion of the monsoon season.

Potential conflict

There can occasionally be conflict between different recreational user groups, most often because the current trails are not managed properly as recreational trails. In addition, if there is more demand for trail opportunities than currently exist, this can lead to further disagreement. Building a modern well-managed trail system with organized and engaged cooperative

organizations that address user needs can alleviate these issues. Following are examples of potential conflicts within the Superior project area, along with proposed solutions to those conflicts:

Potential Conflicts

1) The potential area network area currently includes some negative recreation with off-road vehicles making their own routes around gated off roads. The Globe Ranger District is currently lacking funding to patrol the potential area.
2) The proposed area includes multi-use dirt Forest Service roads currently used by equestrians though new trails will be designated biking only.
3) Lack of Memorandums of Understanding between involved parties.

Proposed Solutions To Conflicts

1) An increase in positive use will help to prevent and push out negative uses. In addition, a plan to manage OHV use should be followed.
2) All multi-use trails and dirt Forest Service roads will remain multi-use and equestrians will be able to continue to enjoy the places they currently ride with potential for access to new routes as well. Having a mountain biking specific trail system in place will lessen the frequency of equestrian and mountain bike encounters.
3) Key parties such as the USFS, Resolution Copper, and LOST should come to an agreement regarding the funding, development, and management of the improved trail network and facilities.

Strong partnerships and funding potential

Communities have historically shown that strong partnerships can create powerful results. The potential partnership between LOST, Resolution Copper Mining and the USFS could serve as an excellent example if a well-organized agreement is finalized. These partnerships can also become the seed for generating project funding. Potential partners for the development of this trails concept include:

- USFS Tonto National Forest
- Legends of Superior Trails
- Resolution Copper Mining
- IMBA
- Arizona Trail Association
- Superior Chamber of Commerce
- Pinal County Parks and Recreation
- Arizona State Lands
- East Valley Backcountry Horsemen
- Queen Creek Climbers

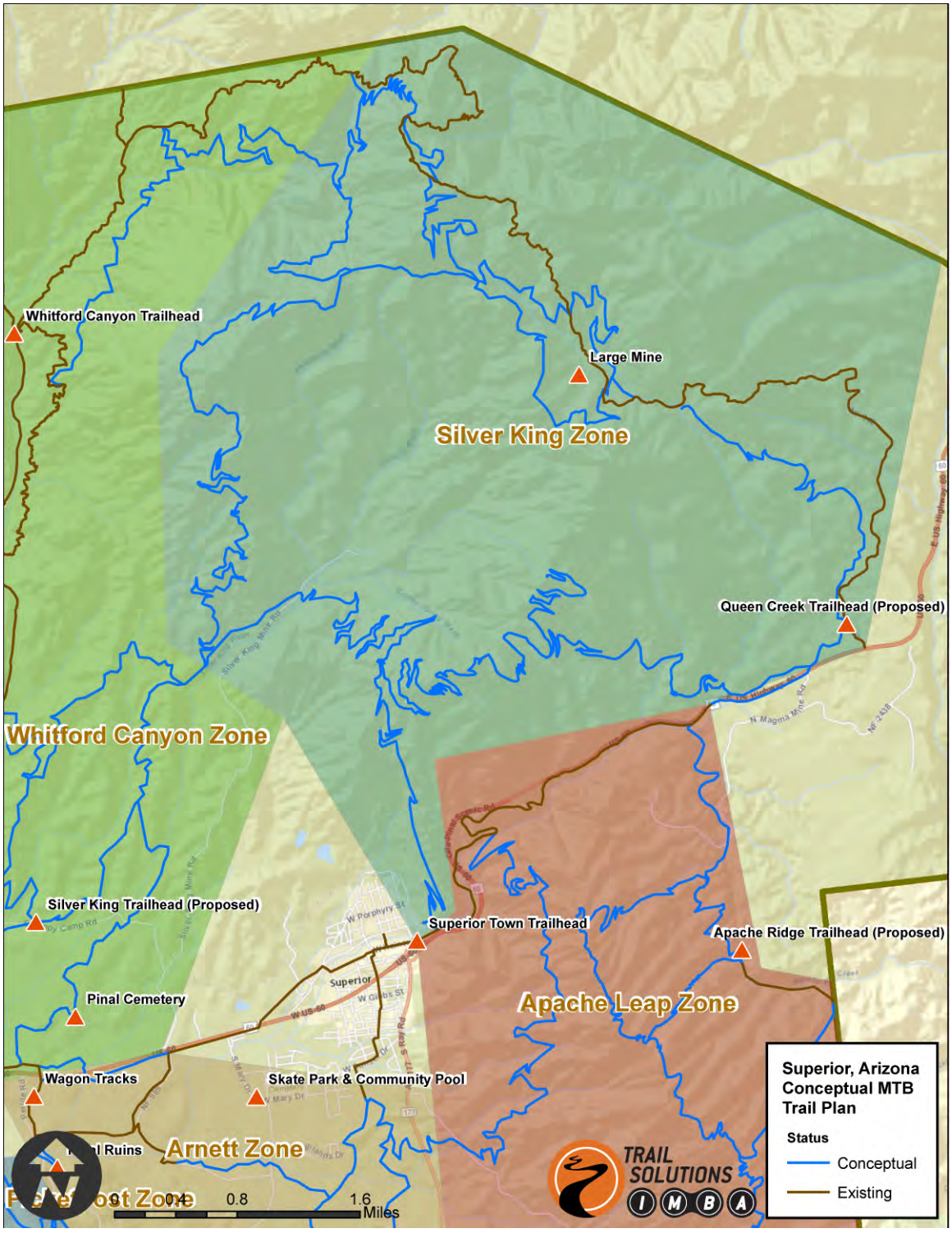
4. Proposed Trail Concept for the Planning Area

Trail System Summary

In this concept plan, the trail system is envisioned as a cohesive network of purpose built singletrack trails. These trails will radiate from multiple access points that can be shared by different user groups. The entire network will emphasize the town of Superior as the central access point for all trail zones. The planning area has existing use by mountain bikers, hikers, and equestrians. The conceptual trail plan as illustrated in this document provides the trails that MTB users demand, while also creating new singletrack, hiking opportunities and reducing the potential for conflict between MTB users and equestrians.

For the purpose of this plan, the Superior trail system is broken down into six different zones below. Opportunities and constraints are outlined for each of the zones with comments and recommendations to follow. The attached Conceptual Trail Plan Maps have additional details about the conceptual routes.

Silver King Zone



The Silver King zone features terrain that is moderately steep with rocky outcrops and big, territorial views. The vision in this zone is to create a network of fairly rugged gravity-oriented trails. Some will be optimized for bike, while others will be multiuse. These trails will begin near the proposed Queen Creek Trailhead. Traversing west across rugged terrain, they will descend down the canyons and ridges to the proposed Silver King Trailhead. Currently there are no existing singletrack trails in this area; all of the current riding options are over old double track roads.

Existing Trails

- None

Terrain and Geographical Features

Massive territorial views of the Silver King mine area from Fortuna Peak and Peachtree Mountain will draw riders into large descents of over 1,200 vertical feet. Rock outcrops will provide ample opportunities for technical features.

Opportunities

- Excellent terrain and rock features for challenging descents
- Ample vertical for large descents
- Views provide an epic backcountry feel
- Provides potential routes for a mountain bike shuttle service

Constraints

- Mining claims and closed roads complicate access
- Trail development will require thorough stakeholder involvement to prevent conflict with currently proposed mineral exploration
- Cost of new trailhead development
- No existing trails

Use

- Mountain Bikes
- Hike
- Trail Running
- Equestrian

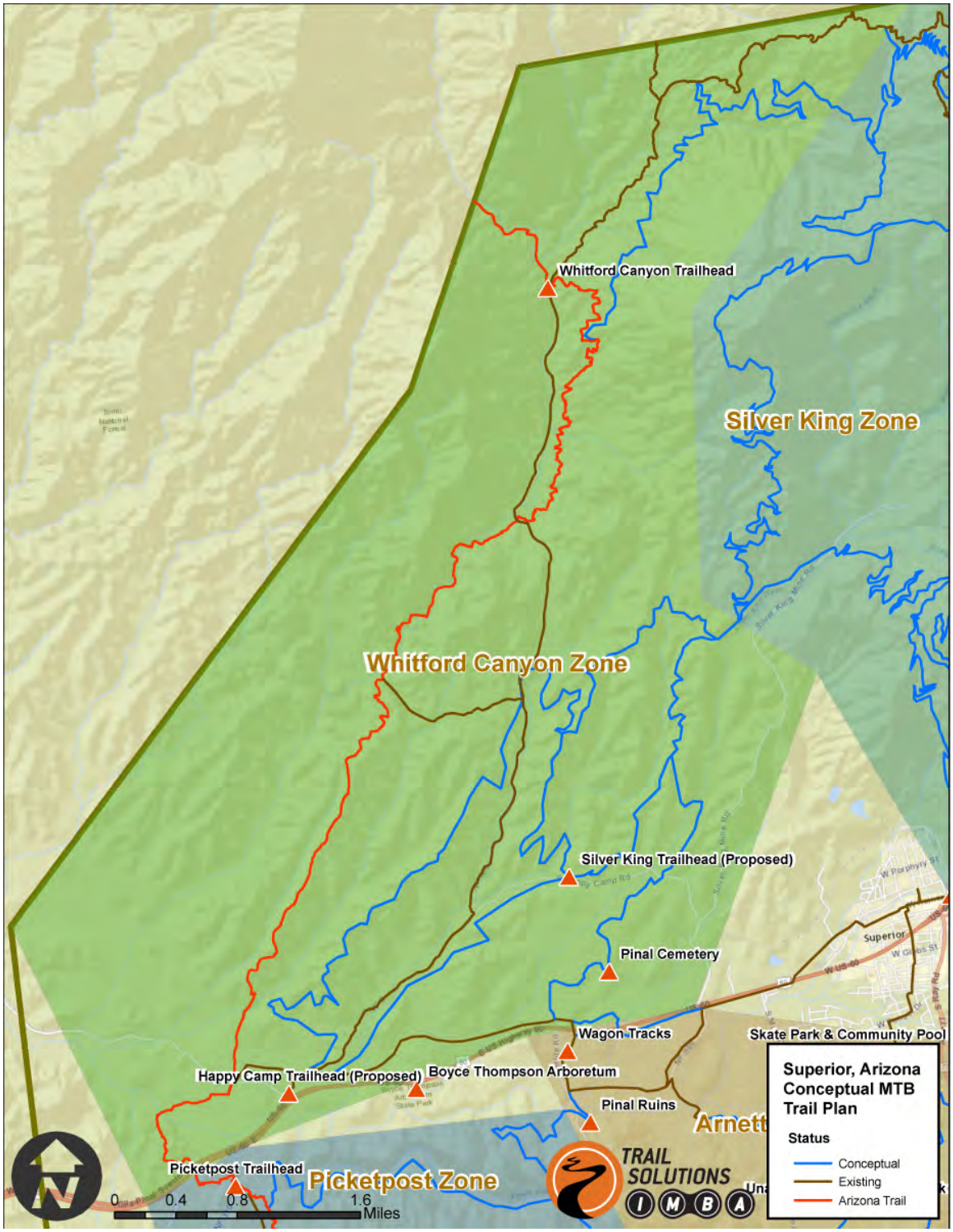
Trail Types

- Traditional
- Flow

Skill Level

More Difficult to Extremely Difficult

Whitford Canyon Zone



The Whitford Canyon zone features a segment of the Arizona Trail (AZT). New trails should be constructed to tie the AZT to the proposed Silver King Zone and the Picket Post Zone to create larger loops that leverage the existing AZT and LOST trail segments. An opportunity also exists to create a trail that visits the old Historic Pinal Cemetery and Mattie Earp's gravesite.

Existing Trails

- Arizona Trail
- The LOST Trail

Terrain and Geographical Features

Rugged ridgelines and canyons provide challenging riding opportunities that give way to more moderate and flowing terrain in the southern portion.

Opportunities

- Creating larger loops by leveraging the existing AZT and LOST Trails
- The old Superior Cemetery and Mattie Earp's gravesite

Constraints

- Cost of improving road access
- Cost of new trailhead development

Use

- Mountain Bikes
- Hike
- Trail Running
- Equestrian

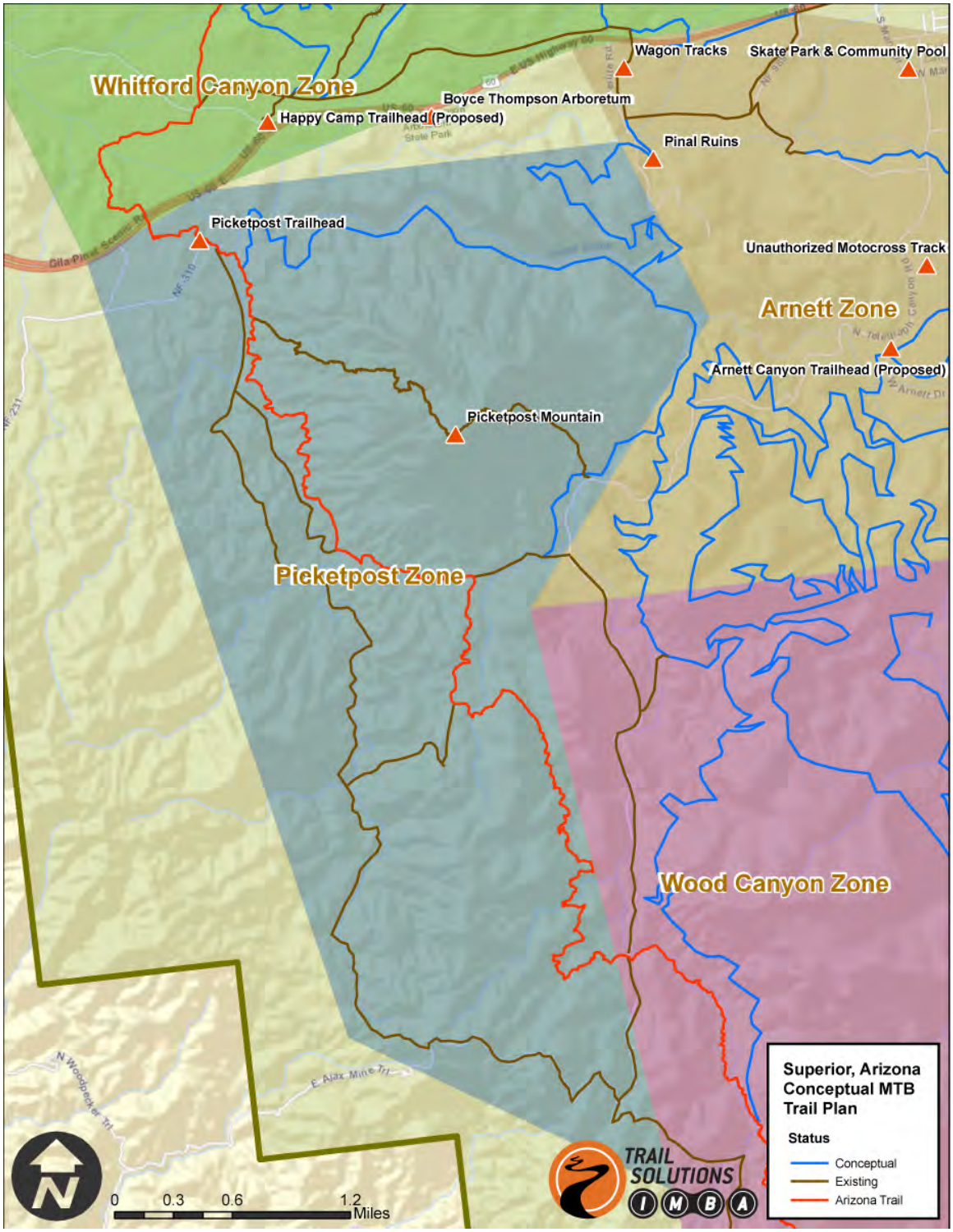
Trail Types

- Traditional
- Flow

Skill Level

More Difficult to Extremely Difficult

Picketpost Zone



The Picketpost zone features one of the most popular segments of the Arizona Trail (AZT) for mountain bikers. Access to the northern end of this trail is quite good because of the existing Picketpost Trailhead. Access to the south end already exists and creates a route that could be accessed via a mountain bike shuttle service. New trails should be constructed to tie the Picketpost Trailhead to the proposed Silver King Trailhead and the proposed Arnett Canyon Trailhead to create larger loops that leverage the existing AZT and LOST trail segments. These new segments will create a loop that circumnavigates Picketpost Mountain.

Existing Trails

- Arizona Trail
- LOST Trail
- Various Non-System Trails

Terrain and Geographical Features

Rocky ledges and rolling rock formations create ample opportunities for skill development and progression. Continuous vistas of Picketpost Mountain and narrow canyons draw the user into the environment.

Opportunities

- The AZT provides a potential route for a mountain bike shuttle business
- Creating larger loops by leveraging the existing AZT and LOST Trails

Constraints

- Potential conflicts and complications with trail development near the Boyce Thompson Arboretum

Use

- Mountain Bikes
- Hike
- Trail Running
- Equestrian

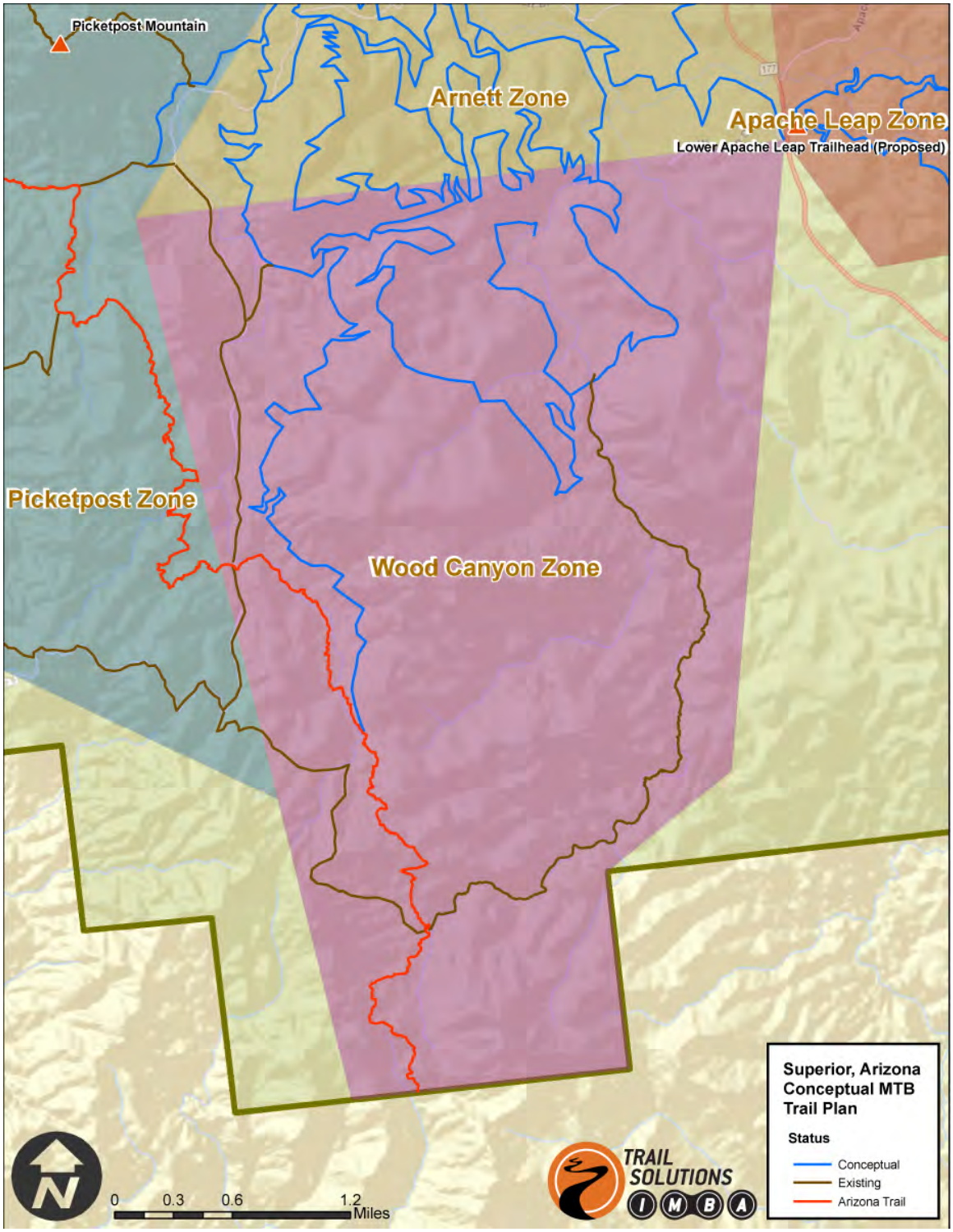
Trail Types

- Traditional

Skill Level

More Difficult to Extremely Difficult

Wood Canyon Zone



The Wood Canyon zone features a variety of landforms that include deep canyons, rock ledges, and rolling stone formations. This character combined with the feeling of remoteness creates a "backcountry" feel that is perfect for rugged traditional trails. The western half features an excellent segment of the AZT that creates a connection to the Picket Post Zone. Additional trails will be built to provide additional loops and connections between the AZT, the Arnett Zone, and the proposed Lower Apache Leap Trailhead.

Existing Trails

- Arizona Trail
- Various Non-System Trails

Terrain and Geographical Features

Rocky ledges and rolling rock formations create ample opportunities for skill development and progression. Deep canyons help to create a feeling of isolation for the user while still allowing views to major landmarks such as Buffalo Mountain, Picketpost Mountain and Apache Leap.

Opportunities

- Creating larger loops by leveraging the existing AZT route
- The area's "backcountry" character lends itself toward the creation of rugged, challenging trails
- Although access is challenging by vehicle, it will be relatively easy for users to access after trails are constructed because of it's proximity to Superior

Constraints

- Heavy OHV use on roads and non-system trails could create conflict if not managed well
- Many of the existing non-system trails travel through sandy streambeds, making them less appropriate for mountain bike use

Use

- Mountain Bikes
- Hike
- Trail Running
- Equestrian

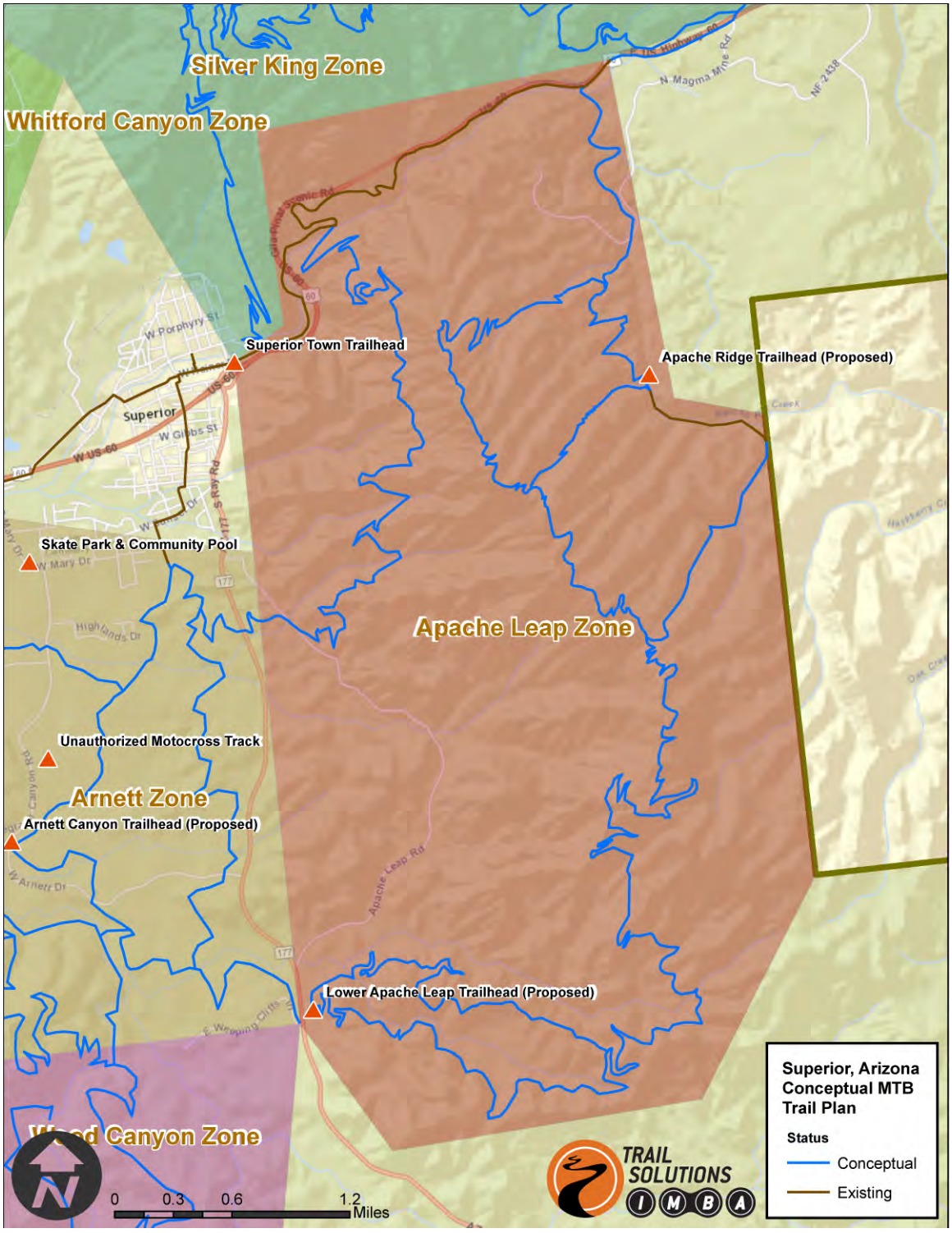
Trail Types

- Traditional

Skill Level

More Difficult to Extremely Difficult

Apache Leap Zone



The Apache Leap zone features some of the most iconic landforms in the study area. The Apache Leap cliffs tower above Superior and create a nearly impenetrable line of walls. These separate the Oak Flat Plateau from the western rocky slopes that tumble down towards Superior. The trails in this area will be a mix of types. Trails for mountain bikes as well as climbers will traverse the cliff tops. A gravity oriented route for mountain bikers will lead south to the proposed Lower Apache Leap Trailhead. Traditional multi-use trails will connect the proposed Upper Apache Leap Trailhead with the cliff tops and the proposed Queen Creek Trailhead. This will also allow connection to the Silver King, Arnett Canyon and Wood Canyon zones.

Existing Trails

- Various Non-System Trails

Terrain and Geographical Features

East of the Apache Leap Cliffs extremely rugged rock formations form complex ledges and rough ridgelines. Atop the cliffs, relatively moderate yet solid rock plateaus can be traversed as users take in the incredible vistas. The rock-strewn slopes west of the cliffs provide an excellent playground for riders seeking challenging descents back into Superior.

Opportunities

- Iconic views atop the Apache Leap Cliffs
- Provides potential routes for a Mountain Bike Shuttle Service business
- Improved trails will provide better access for existing users such as rock climbers

Constraints

- Few access points to come through the cliffs
- Current and future mining activity could complicate access
- Terrain east of cliffs is extremely challenging and will increase development costs, and limit route options.
- Trailhead development costs
- Area has cultural significance to Native American community

Use

- Mountain Bikes
- Hike
- Equestrian

- Rock climbing

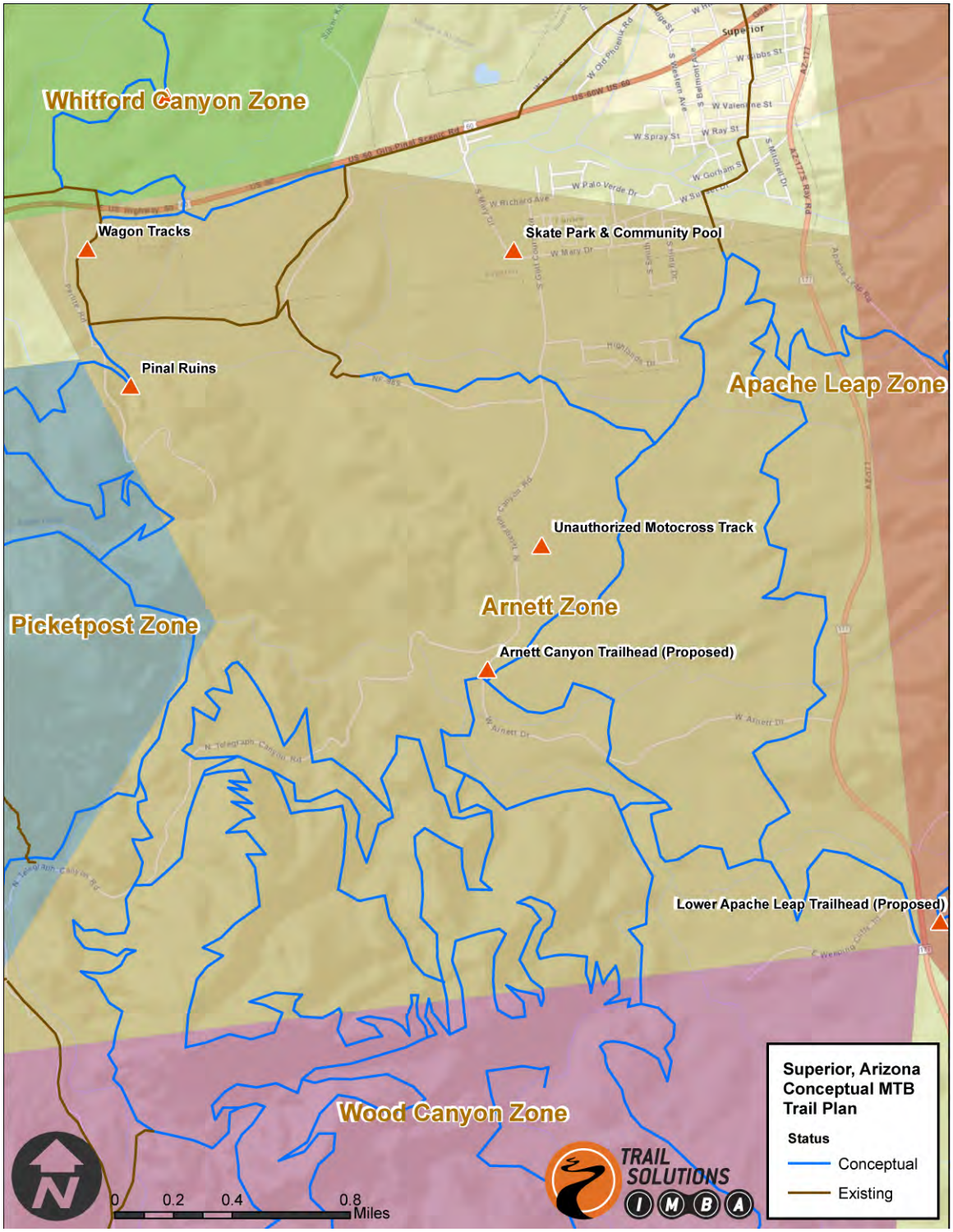
Trail Types

- Traditional
- Flow

Skill Level

More Difficult to Extremely Difficult

Arnett Canyon Zone



The Arnett Canyon zone is the most easily accessed from the town of Superior. An ideal paved road provides convenient access from town to the proposed Arnett Canyon Trailhead. A trail is proposed between Superior and the trailhead to provide users with a safe gateway route. This will encourage local and visiting users to access the trails from town and without vehicles. A variety of easy to more-difficult stacked loop trails for a wide range of users and skill levels will be developed. These loops could be optimized to provide a racing and training venue for student athletes of the National Interscholastic Cycling Association (NICA). These trails will access the various historical and cultural attractions in the zone, such as Pinal City and the Wagon Tracks. Trails will be created to provide connections between Picketpost, Silver King, Wood Canyon, and Apache Leap zones.

Existing Trails

- Various Non-System Trails
- LOST Trail

Terrain and Geographical Features

Relatively moderate terrain provides good opportunities for easier less challenging routes. The terrain becomes steeper as elevations increase.

Opportunities

- Close to Superior and municipal amenities such as the community pool, high school, and EMS
- Trails could become part of a youth MTB racing and training program because of easy connection with education facilities
- Flat terrain makes trailhead development less costly
- Provides an active recreation opportunity to residents of Superior
- Positive use can help to displace negative uses such as trash dumping
- Easy access to historical and cultural sites

Constraints

- Trash dumping
- Unmanaged OHV use

Use

- Mountain Bikes
- Hike
- Trail Running
- Equestrian

- Rock climbing
- Youth MTB competition and training

Trail Types

- Traditional
- Flow

Skill Level

Easiest to More Difficult

5. Next Steps

The most important step is to specify exact access points, trailheads, parking hubs, and other points of interest. The USFS will need time to go through the planning and contracting process to have appropriate parking and/or trailhead facilities built.

Once these *hubs* are pinpointed, trail corridor design begins, typically by mapping, collecting GPS data points, and finally flagging potential corridors deemed acceptable by the land manager. In the case of USFS lands, any new trail development will undergo National Environmental Policy Act review, and a series of walk-throughs to justify the layout.

It is optimal to flag the corridors just before the review team is available to physically tour the flag-line, so as not to lose flags from sunlight, wind, animal, human, and natural elements. Design and flagging costs will depend on conditions, accessibility, terrain, time of year, and other factors. A 5– 10 mile initial trail clearance goal is a good target for the first season of trail design and construction.

The synergy of creating traditional shared-use singletrack trail combined with enticing single-use MTB specific trails will guarantee a unique destination, drawing riders from afar while giving local families and residents an exhilarating outdoor activity close to home. Superior has limited existing singletrack trails. This allows for a fresh start and, if well planned, the opportunity to create an ideal mountain biking destination. For the short term, some double track roads and routes may be included in the overall design to reach more trail mileage and provide easy trail access.

Appendix A: IMBA Trail Difficulty Marking System

This system was adapted from the International Trail Marking System used at ski areas throughout the world. Many trail networks use this type of system, most notably resort-based mountain biking trail networks. The system applies to mountain bikers best, and is also applicable to other visitors such as hikers and equestrians. These ratings should be posted on trail signage and in all maps and descriptions. Following is a summary of criteria to be considered when implementing a trail rating system.

Tread Width
The average width of the active tread or beaten path of the trail.

Tread Surface
The material and stability of the tread surface is a determining factor in the difficulty of travel on the trail. Some descriptive terms include: hardened (paved or surfaced), firm, stable, variable, widely variable, loose, and unpredictable.

Trail Grade (maximum and average)
Maximum grade is defined as the steepest section of trail that is more than approximately 10 feet in length and is measured in percent with a clinometer. Average grade is the steepness of the trail over its entire length. Average grade can be calculated by taking the total elevation gain of the trail, divided by the total distance, multiplied by 100 to equal a percent grade.

Natural Obstacles and Technical Trail Features
Objects that add challenge by impeding travel. Examples include: rocks, roots, logs, holes, ledges, drop-offs, etc. The height of each obstacle is measured from the tread surface to the top of the obstacle. If the obstacle is uneven in height, measure to the point over which it is most easily ridden.

Technical Trail Features are objects that have been introduced to the trail to add technical challenge. Examples include: rocks, logs, elevated bridges, teeter-totters, jumps, drop-offs, etc. Both the height and the width of the technical trail feature are measured.

After evaluating the previous criteria the Trail Rating Guidelines below can be used to determine the correct difficulty level for each trail.

IMBA Trail Difficulty Rating System

	EASIEST WHITE CIRCLE	EASY GREEN CIRCLE	MORE DIFFICULT BLUE SQUARE	VERY DIFFICULT BLACK DIAMOND	EXTREMELY DIFFICULT DBL. BLACK DIAMOND
TRAIL WIDTH	72" (1,800 mm) or more	36" (900 mm) or more	24" (600 mm) or more	12" (300 mm) or more	6" (150 mm) or more
TREAD SURFACE	Hardened or surfaced	Firm and stable	Mostly stable with some variability	Widely variable	Widely variable and unpredictable
AVERAGE TRAIL GRADE	Less than 5%	5% or less	10% or less	15% or less	20% or more
MAXIMUM TRAIL GRADE	Max 10%	Max 15%	Max 15% or greater	Max 15% or greater	Max 15% or greater
NATURAL OBSTACLES AND TECHNICAL TRAIL FEATURES (TTF)	None	Unavoidable obstacles 2" (50 mm) tall or less Avoidable obstacles may be present Unavoidable bridges 36" (900 mm) or wider	Unavoidable obstacles 8" (200 mm) tall or less Avoidable obstacles may be present Unavoidable bridges 24" (600 mm) or wider TTF's 24" (600 mm) high or less, width of deck is greater than 1/2 the height	Unavoidable obstacles 15" (380 mm) tall or less Avoidable obstacles may be present May include loose rocks Unavoidable bridges 24" (600 mm) or wider TTF's 48" (1,200 mm) high or less, width of deck is less than 1/2 the height Short sections may exceed criteria	Unavoidable obstacles 15" (380 mm) tall or less Avoidable obstacles may be present May include loose rocks Unavoidable bridges 24" (600 mm) or narrower TTF's 48" (1,200 mm) high or greater, width of deck is unpredictable Many sections may exceed criteria

1. Rate Technical Challenge Only

The system focuses on rating the technical challenge of trails, not the physical exertion. It is not practical to rate both types of difficulty with one system. Consider, for example, a smooth, wide trail that is 20 miles long. The technical challenge of this trail is easy, yet the distance would make the physical exertion difficult. The solution is to independently rate technical challenge, and indicate physical exertion by posting trail length, and possibly even elevation change.

2. Collect Trail Measurements

Use the accompanying table and collect trail measurements for each criterion. There is no prescribed method for tallying a "score" for each trail. Evaluate the trail against the table and combine with judgment to reach the final rating. It is unlikely that any particular trail will measure at the same difficulty level for every criterion. For

example, a certain trail may rate as a green circle in three criteria, but a blue square in two different criteria.

3. Include Difficulty and Trail Length on Signs and Maps
Trail length is not a criterion of the system. Instead, trail length should be posted on signs in addition to the difficulty symbol. A sign displaying both length and difficulty provides lots of information, yet it is simple to create and easy to understand.

Likewise, elevation change is not a criterion. The amount of climbing on a trail is more an indicator of physical exertion than technical difficulty. Mountainous regions may consider including the amount of climbing on trail signs.

4. Evaluate Difficulty Relative to Local Trails
Trails should be rated relative to other trails in the region. Don't evaluate each trail in isolation. Consider all the trails in a region and how they compare to one another. This will help you rank the relative difficulty of each trail and will help trail users select an appropriate route. Trails will rate differently from region to region. A black diamond trail in one region may rate as a blue square in another region, but the ratings should be consistent locally.

5. Use Good Judgment
Rating a trail is not 100 percent objective. It's best to combine tangible data with subjective judgment to reach the final rating. For example, a trail may have a wide range of tread surfaces—most of the trail is easy, but some sections are more difficult. How would you rate it? Use your personal experience to consider all elements and select a rating that best matches the style of trail.

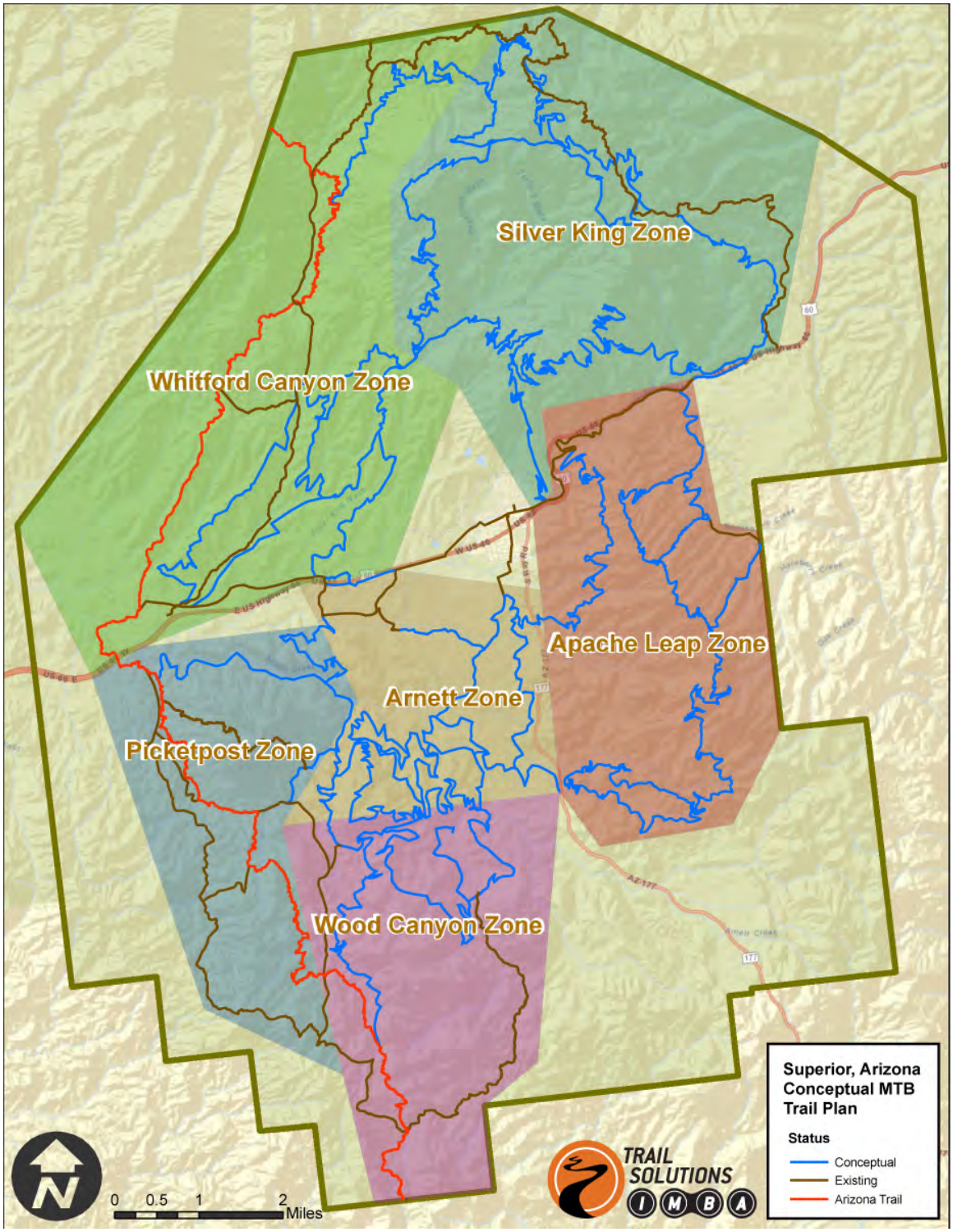
6. Consider Other Trail Qualities
Don't forget to consider trail qualities beyond the objective criteria. A wide variety of features could contribute to a trail's difficulty. For example, exposure—the feeling of empty space next to and below the trail tread—provides an added psychological challenge beyond the steepness or roughness of the trail. A three-inch rock seems like a boulder when a 50-foot drop looms on your side! Other qualities to think about are corridor clearance and turn radius.

7. Use Common Sense and Seek Input
No rating system can be totally objective or valid for every situation. This system is a tool to be combined with common sense. Look at trails with a discerning eye, and seek input from trail users before selecting the rating.

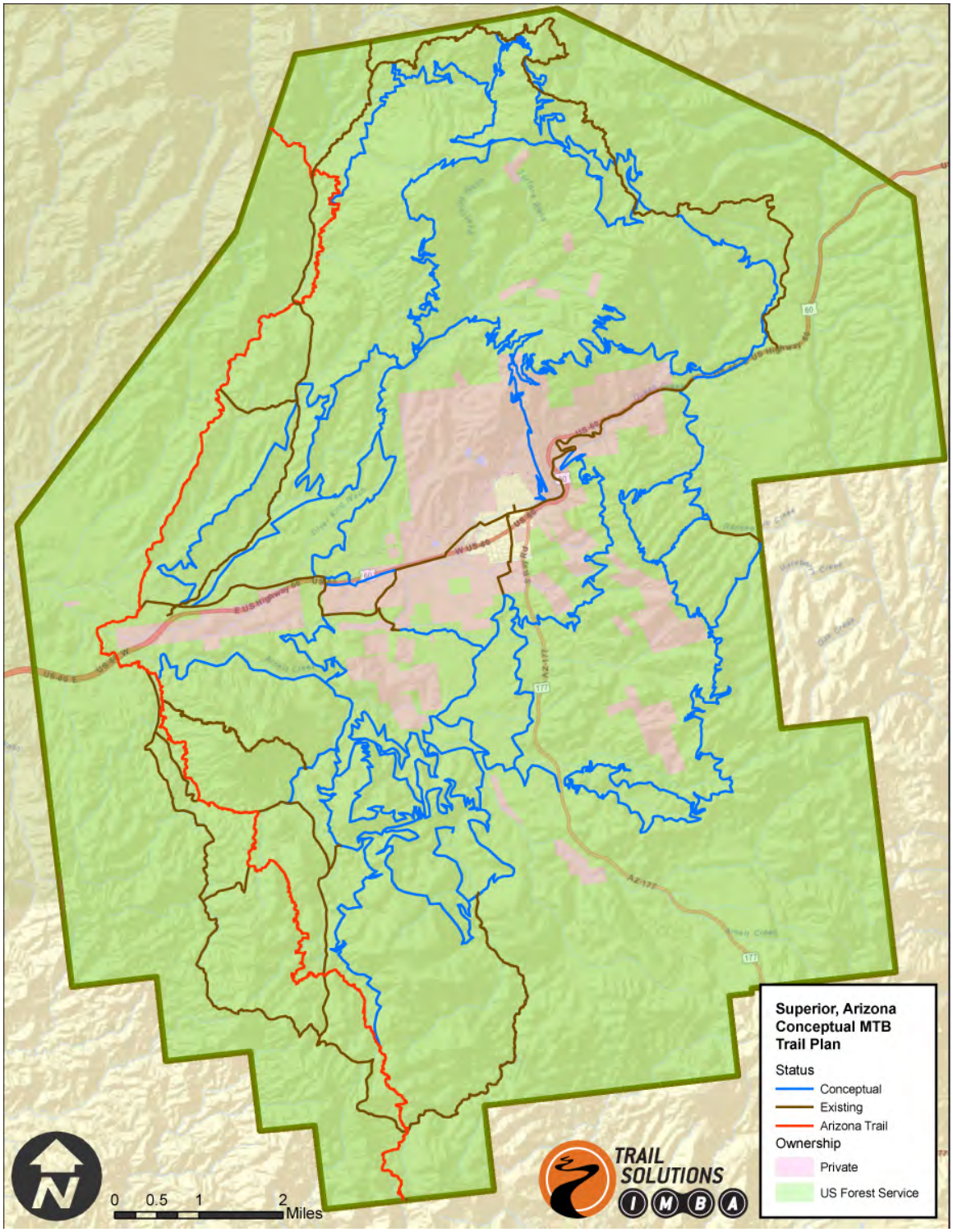
A diverse trail network with a variety of trail styles is a great way to ensure happy visitors. Provide both easy and difficult trails to spread visitors and meet a range of needs. By indicating the length and difficulty of trails with a clear signage system, visitors will be able to locate their preferred type of trail easily.

Appendix B: Maps of Planning Area

Experience Zones



Ownership


Superior, Arizona
Conceptual MTB
Trail Plan
Status
Conceptual
Existing
Arizona Trail
Ownership
Private
US Forest Service
0 0.5 1 2 Miles
TRAIL SOLUTIONS
IMBA