

INCLUSIVE ACCESS PLAN

Marin County Parks



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In collaboration with



Inclusive Access Plan

DRAFT

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Image: Rush Creek Marsh and Mount Burdell from Rush Creek Fire Road

1. Introduction

Marin County Parks is developing this *Inclusive Access Plan* to increase the equitability of access to Marin County Parks open space trails and give open space users increased flexibility in how they make use of the preserves according to their own abilities.

This plan is more than a review of regulatory compliance with accessibility standards. It is intended to reflect national demographics and address the need to provide recreation opportunities to all members of the community. A survey of Americans between 21 and 64 identifies 16.6 percent of the population with having a disability (2013 Annual Disability Statistics Compendium, Disability Statistics and Demographics, Rehabilitation Research and Training Center). Recreational trails and open space offer an important opportunity for people of all ages and abilities to experience nature, participate in physical activity, and explore their communities.

This plan is inspired by and based on inclusive design principles, also known as principles of Universal Design. The basic premise of inclusive design is that human abilities are distributed along a wide spectrum. Even the most able-bodied person passes through childhood, periods of temporary illness, injury, and old age. An inclusive approach to design in open space areas would aim to make our preserves safer and more comfortable to use for everyone, including older persons, persons without disabilities, and persons with disabilities.

The *Inclusive Access Plan* includes:

- An evaluation of the existing inventory of pedestrian trails, the identification of an initial system of Destination-Oriented Trails providing access for users of all abilities to experiences in a variety of natural settings and a framework for expanding an Improved Access Trail system
- A review of and recommendations for policies and procedures, including the use of service animals, mobility devices, and visitor amenities in Marin County Parks open space preserves
- Recommendations for methods of communicating information about trails and trail conditions
- Design guidelines and standards that incorporate inclusive design principles and accessible elements in new construction and reconstruction of existing open space trails

Engaging members of the public has been an important component in the preparation and review of the Plan. Open houses, focus groups and workshops have been helpful in identifying issues, reviewing proposals, and ensuring this plan reflects the goals and values of the Marin County Parks community. Each component of the plan listed above was informed by the public engagement process.

In 2014, Marin County Parks adopted a comprehensive *Road and Trail Management Plan* (RTMP) providing guidance on trail use, maintenance strategies, and environmental impacts and a framework for establishing a designated trail system in the preserves managed by Marin

County Parks. The *Inclusive Access Plan* is a supplement to the RTMP and will help guide the accessibility component of future trail-planning efforts.

Marin County Parks is the umbrella organization that manages both the Marin County Parks Department and the Marin County Open Space District (MCOSD). The MCOSD owns and manages 34 open space preserves, offering visitors a range of recreation opportunities in a less-developed outdoor setting than that generally offered in an urban or suburban park. These opportunities include hiking trails with scenic vistas, redwood groves, and cascading waterfalls; wildlife viewing; and access to other natural amenities. Preserves are managed primarily for natural resource preservation and, with the exception of trails used by pedestrians, mountain bicyclists, and equestrians, generally do not contain recreational facilities of the type found in parks.

Since its inception in 1972, the MCOSD has acquired and preserved nearly 16,000 acres of marshland, forests, creeks, and rolling hills that define the character and quality of life in Marin, promote health and wellness, and protect important natural habitats and ecosystem functions. These lands include over 250 miles of unpaved roads and trails that consist of former logging and ranch roads, fire protection roads, and narrow trails.

In addition to the MCOSD preserve system, Marin County Parks manages 19 parks owned by the County of Marin. The focus of the majority of these park facilities is to provide regional and active recreational opportunities for activities such as baseball, soccer, basketball, golf, and disc golf. However, a handful of the park properties owned or managed by Marin County Parks, including Stafford Lake Park, Agate Beach, Whitehouse Pool, Greenbridge, and Hamilton Path, provide high-value open space–like experiences.

The identification and development of a Destination-Oriented Trail system usable by people with and without disabilities will provide varied and immersive user experiences broadly representative of the array of outdoor settings available within the MCOSD preserves. The rich diversity of environments found in Marin County is well represented within the MCOSD preserves.

Marin County Parks recognizes the benefit and therapeutic value of being outdoors and in nature. With this plan, it is Marin County Parks' intent to increase the opportunities for open space recreation and nature appreciation for all park and open space users and community members.

2. Definitions

Accessible. A site, building, facility, or portion thereof is deemed accessible when it is approachable and usable by persons with disabilities in compliance with technical standards adopted by the relevant *Administrative Authority*.

Administrative Authority. A governmental agency that adopts or enforces regulations and guidelines for the design, construction, or alteration of buildings and facilities.

Disability. The term disability means, with respect to an individual:

1. A physical or mental impairment that substantially limits one or more of the major life activities of such individual;
2. A record of such impairment; or
3. Being regarded as having such impairment.

Discrimination on the Basis of Disability. Discrimination on the basis of disability means to:

- Limit, segregate, or classify a citizen in a way that may adversely affect opportunities or status because of the person's disability;
- Limit, segregate, or classify a participant in a program or activity offered to the public in a way that may adversely affect opportunities or status because of the participant's disability;
- Participate in a contract that could subject a qualified citizen with a disability to discrimination;
- Use any standards, criteria, or methods of administration that have the effect of discriminating on the basis of disability;
- Deny equal benefits because of a disability;
- Fail to make reasonable accommodations to known physical or mental limitations of an otherwise qualified individual unless it can be shown that the accommodation would impose an undue burden on the County's operations;
- Use selection criteria that exclude otherwise qualified people with disabilities from participating in the programs or activities offered to the public; and
- Fail to use tests, including eligibility tests, in a manner that ensures that the test results accurately reflect the qualified applicant's skills or aptitude to participate in a program or activity.

Having a Record of Impairment. An individual is disabled if he or she has a history of having an impairment that substantially limits the performance of a major life activity; or has been diagnosed, correctly or incorrectly, as having such impairment.

Maintenance. Routine or periodic repair of trails or trail segments to restore them to the standards to which they were originally designed and built. Maintenance does not change the original purpose, intent, or design of a trail.

Other Power-Driven Mobility Device (OPDMD). Any mobility device powered by batteries, fuel, or other engines that is used by individuals with mobility disabilities for the purpose of locomotion and designed to operate in areas without defined pedestrian routes.

Physical or Mental Impairments. Physical or mental impairments may include, but are not limited to, vision, speech, and hearing impairments; emotional disturbance and mental illness; seizure disorders; mental retardation; orthopedic and neuromotor disabilities; learning disabilities; diabetes; heart disease; nervous conditions; cancer; asthma; Hepatitis B; HIV infection (HIV condition); and drug addiction, if the addict has successfully completed or is participating in a rehabilitation program and no longer uses illegal drugs.

The following conditions are not physical or mental impairments: transvestitism; illegal drug use; homosexuality or bisexuality; compulsive gambling; kleptomania; pyromania; pedophilia; exhibitionism; voyeurism; pregnancy; height; weight; eye color; hair color; left-handedness; poverty; lack of education; a prison record; and poor judgment or quick temper, if not symptoms of a mental or physiological disorder.

Practicable. Capable of being put into practice or being accomplished within the context of the facility and within the limits of the applicable AGODA *Conditions for Exception*. Feasible.

Program Access. A *public entity's* services, programs, or activities, when viewed in their entirety, must be readily accessible to and usable by individuals with disabilities.

Public Entity. Any state or local government; any department, agency, special-purpose district, or other instrumentality of a state or local government.

Qualified Individual with a Disability. A qualified individual with a disability means an individual with a disability who, with or without reasonable modification to rules, policies, or practices; the removal of architectural, communication, or transportation barriers; or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by the County.

Regarded as Having a Disability. An individual is *disabled* if she or he is treated or perceived as having an impairment that substantially limits major life activities, although no such impairment exists.

Resource impact. Many of the roads and trails traverse sensitive habitats that can limit what improvement work can be done. Resource impact can include any permanent or temporary degradation of habitat or wildlife including removal or damage of native vegetation, sedimentation of waterways, or harassment of sensitive wildlife species. Resource impact can also be defined by other federal, state, or local environmental policies or legislation such as the California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA).

Scoping. Requirements that specify what features are required to be accessible and, where multiple features of the same type are provided, how many of the features are required to be accessible.

Service Animal. Service animals are dogs, and in certain circumstances, miniature horses, that are individually trained to perform tasks for persons who have qualifying disabilities under the ADA, including physical, sensory, psychiatric, intellectual, or other mental disability.

Substantial Limitations of Major Life Activities. An individual is disabled if she or he has a physical or mental impairment that (a) renders her or him unable to perform a major life activity, or (b) substantially limits the condition, manner, or duration under which she or he can perform a particular major life activity in comparison to other people.

Major life activities are functions such as caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working.

In determining whether physical or mental impairment substantially limits the condition, manner, or duration under which an individual can perform a particular major life activity in comparison to other people, the following factors shall be considered:

1. The nature and severity of the impairment;
2. The duration or expected duration of the impairment; and
3. The permanent or long-term impact (or expected impact) of or resulting from the impairment.

Technical Requirements. Specify the design criteria for accessible features, including the specific numbers, conditions, and measurements that are required.

Technically Infeasible. With respect to an alteration of a facility, something that has little likelihood of being accomplished because an existing physical or site constraint would prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements.

Trail. For the sake of this plan, a trail is an unpaved recreational pathway in a natural resource area. Marin County Parks designates its trail system by use and type. Trail types found in Marin County Parks open space preserves include:

Hiking-only Trail. Typically up to 6 feet wide and allows for use by hikers.

Multiuse Fire Road. Typically up to 14 feet wide, with a highly compacted surface and load capacity great enough to support heavy vehicles and allows for use by hikers, bicyclists and equestrians. Fire and maintenance roads are designed for use by maintenance and emergency vehicles.

Multiuse Trail. Typically between 4 to 8 feet wide and allows for use by hikers, bicyclists and equestrians.

Hiker/Horse Trail. Typically 4 to 8 feet wide and allows for hikers and equestrians. An overhead clearance of 12 feet is maintained to accommodate a mounted rider

Biker/Hiker Trail: Typically 4 to 8 feet wide and allows for hikers and bicyclists.

Social Trail. Narrow pedestrian footpaths that a) were not constructed and b) have not been improved, managed, or maintained. This definition extends to wildlife trails used occasionally by pedestrians.

Wildlife Trail. A non-constructed path worn clear through frequent use by wildlife.

The following trail designations are a subset of the above designations which have resulted from the *Inclusive Access Plan* process:

Destination-Oriented Trail. The Destination-Oriented Trail system is an experience-based network of multiuse fire roads and trails that will provide varied and immersive user experiences broadly representative of the array of outdoor settings available within the MCOSD preserves and that meet or exceed accessibility standards for recreational trails.

Improved Access Trail. Multiuse fire roads and trails that are substantially accessible, but do not meet all of the established accessibility standards for recreational trails, and could not be feasibly improved without severe impact to sensitive natural resources, are being considered potential candidates for enhanced trail information that will facilitate individual assessment on whether a trail is appropriate for a particular user.

Trail Width. The visible trail surface measured perpendicular to the direction of travel. For the purposes of this plan, trail widths are categorized:

- **Narrow Trail.** 2 to 4 feet average width of constructed road/trail bed.
- **Moderate Trail.** 4 to 8 feet average width of constructed road/trail bed.
- **Wide Trail.** Greater than 8 feet average width of constructed road/trail bed.

3. Regulatory Framework

Legal standards and regulations ensuring the rights of persons with disabilities to actively participate in public life have been in ongoing development for more than a century. These regulations have occurred at the federal, state, and local levels and range in form from civil rights acts to building codes with technical standards of construction. The technical standards have evolved from a beginning solely directed toward buildings and the public right-of-way to more recent expansions into outdoor recreation areas. These newer technical standards for recreation elements including recreational trails provide an exciting opportunity for people with disabilities to participate in activities outside the constructed urban environment.

Regulations and technical standards often are first made applicable to agencies of the federal government and then later mandated for state and local governments and private entities. The State of California has been an early developer and adopter of accessibility guidelines, and these state regulations have often exceeded the minimums established by the federal regulations.

Below is a brief listing and description of the various regulations, standards, and guidance documents related to recreational trails that were used to inform this plan.

Accessibility Guidebook for Outdoor Recreation and Trails. Updated in 2012 by the US Forest Service to incorporate AGODA, the guidebook was developed to inform the application of FSORAG and FSTAG and integrate accessibility into outdoor recreation and trails projects.

Accessibility Guidelines for Outdoor Developed Areas (AGODA). Technical standards for design and construction of outdoor recreation facilities designed, built, altered, or leased with funds supplied by the United States government. The Final Rule was published in the Code of Federal Regulations in September 2013.

Americans with Disabilities Act (ADA). A federal law passed in 1990, the ADA is a civil rights law that prohibits discrimination on the basis of disability. The ADA applies to many scopes of life, including employment, state and local governments, public accommodations and commercial facilities, telecommunications, and transportation. Technical standards for design and construction are addressed in the ADA Standards for Accessible Design.

ADA Standards for Accessible Design. US Department of Justice regulations providing technical standards for the built environment. These regulations are updated periodically and the 2010 version is current as of the time of publication of this plan.

Architectural Barriers Act (ABA). A federal law passed in 1968, the ABA requires that facilities designed, built, altered, or leased with funds supplied by the United States government be accessible to the public. Technical standards for design and construction are addressed in the ABA Accessibility Guidelines. The **AGODA** standards were added to the ABA Accessibility Guidelines in September 2013.

California Building Code Title 24 (CBC). The CBC provides scoping and technical standards for the design and construction of the built environment in the State of California. The CBC is updated every three years, with the 2013 version current as of the time of publication of this plan.

California State Parks Accessibility Guidelines. The Accessibility Guidelines define department policy and are a reference manual on technical standards for accessible design in the California State Parks System. These guidelines are updated periodically, and the 2015 version is current as of the time of publication of this plan. The California State Parks Accessibility Guidelines refer to the recreational trail access standards contained in the AGODA. These standards have been adopted by California State Parks.

Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG). FSORAG provides the enforceable design standards for National Forest System facilities. FSORAG incorporates AGODA standards and ensures the application of equivalent or more stringent guidelines to comply with Forest Service policies.

Forest Service Trail Accessibility Guidelines (FSTAG). FSTAG provides guidance for maximizing accessibility of trails in the National Forest System. FSTAG and FSORAG are the legally enforceable standards for outdoor recreation areas within the National Forest System.

Wayside Exhibits: A Guide to Developing Outdoor Interpretive Exhibits. While not mandated, this document is a useful guide to best practices and examples of wayside exhibits and interpretive signage produced by the National Park Service.

Applicability of Technical Standards

The US Access Board has developed the *Accessibility Guidelines for Outdoor Developed Areas* for federal lands and agencies. As of the time of publication of this plan, these guidelines have not been adopted into the ADA Standards for Accessible Design, the document of technical standards that would mandate for state and local governments, including Marin County Parks.

The California Division of the State Architect has provided direction within CBC Section 11B-246 for the development of accessible recreational trails and trail features and references the California State Parks Accessibility Guidelines, which contain the AGODA standards. The CBC is directly applicable to the County of Marin and the Marin County Parks trail system.

A recent court decision has also provided direction on providing accessible programs and services where there is an absence of technical standards relevant to the situation. In the September 5, 2014, Summary of the Opinion on *Fortyune v. City of Lomita*, the US Court of Appeals for the Ninth Circuit found:

... that the text of the ADA, the relevant implementing regulations, and the Department of Justice's interpretation of its own regulations all led it to conclude that public entities must ensure that all normal governmental functions are reasonably accessible to disabled persons, irrespective of whether the DOJ has adopted technical specifications for the particular types of facilities involved.

Plainly stated, even in the absence of adopted technical design standards, the County of Marin has an obligation to make its programs, including the trails program, accessible to all users. Marin County Parks has opted to follow the established guidelines for federal lands, supplemented by direction from the California Department of Parks and Recreation, the US Forest Service, and principles of Universal Design, to develop its own best practices for providing an accessible trail system.

Application of Regulations

Marin County Parks, as an agency that manages parks owned by the County of Marin and open space preserves owned by the MCOSD, is subject to the Americans with Disabilities Act (ADA) under Title II, State and Local Government Programs and Services.

The fundamental tenet of Title II of the ADA is *“the principle that individuals with disabilities must be provided an equally effective opportunity to participate in or benefit from a public entity's aids, benefits, and services.”* (**28 CFR 35.130-35.135. II-3.3000 Equality in participation/ benefits**)

This principle, here referred to as program accessibility, is described in **28 CFR 35.149-35.150. II-5.1000 General:**

A public entity may not deny the benefits of its programs, activities, and services to individuals with disabilities because its facilities are inaccessible. A public entity's services, programs, or activities, when viewed in their entirety, must be readily accessible to and usable by individuals with disabilities. This standard, known as “program accessibility,” applies to all existing facilities of a public entity. Public entities, however, are not necessarily required to make each of their existing facilities accessible.

With the provision of a public trail system as a program taking place on agency-managed lands and preserves, it becomes necessary for Marin County Parks to provide equal access to the trail system for people with disabilities. Marin County Parks currently provides program accessibility for the trail system that is representative of the different destinations and environmental experiences found throughout the County preserves, and to a standard consistent with the requirements of the ADA.

Federal regulations applicable to federally funded projects recognize that not all trails can be made compliant and provide conditions for exception to required trail accessibility standards. Trail improvements and compliance with established guidelines at specific locations may be limited by the following exceptions established by AGODA Section 1019. It is recommended in this plan, that Marin County Parks use these conditions for exception as guidance when evaluating the practicability of implementing accessibility design provisions. When using one of the conditions for exception to justify not improving a certain trail or trail section, the trail planner should document the reasoning behind the decision to employ the exception, and review the terms of the exception with the Marin County Disability Access Manager.

Exception 1 - When an entity determines that a condition does not permit full compliance with a specific provision on a portion of a trail, the portion of the trail shall comply with the provision to the extent practicable.

Exceptions to specific provisions shall be permitted when an entity determines that any of the following conditions does not permit full compliance with the provision:

1. Compliance is not practicable due to terrain.
2. Compliance cannot be accomplished with the prevailing construction practices.
3. Compliance would fundamentally alter the function or purpose of the facility or the setting.
4. Compliance is limited or precluded by any of the following laws, or by decisions or opinions issued or agreements executed pursuant to any of the following laws:
 - Endangered Species Act (16 U.S.C. 1531 et seq.);
 - National Environmental Policy Act (42 U.S.C. 4321 et seq.);
 - National Historic Preservation Act (16 U.S.C. 470 et seq.);
 - Wilderness Act (16 U.S.C. 1131 et seq.); or
 - Other federal, state, or local law, the purpose of which is to preserve threatened or endangered species; the environment; or archaeological, cultural, historical, or other significant natural features.

Exception 2 - After applying Exception 1, when an entity determines that it is impracticable for the entire trail to comply, the trail shall not be required to comply.

Maintaining Accessible Facilities

In addition to providing programmatic access, Marin County Parks is obligated to maintain all accessible facilities in working order. Exceptions are provided for temporary disruptions; in the context of Marin County Parks trails, this may be applied during storms or other unforeseen conditions that would undermine the integrity of a trail surface or trail usability (e.g., trail washout, fallen tree, mudslide).

The ADA contains the following language regarding the maintenance of accessible features:

28 CFR 35.130-35.135. II-3.10000 Maintenance of accessible features. Public entities must maintain in working order equipment and features of facilities that are required to provide ready access to individuals with disabilities. Isolated or temporary interruptions in access due to maintenance and repair of accessible features are not prohibited.

Where a public entity must provide an accessible route, the route must remain accessible and not blocked by obstacles such as furniture, filing cabinets, or potted plants. An isolated instance of placement of an object on an accessible route, however, would not be a violation, if the object is promptly removed. Similarly, accessible doors must be unlocked when the public entity is open for business.

Mechanical failures in equipment such as elevators or automatic doors will occur from time to time. The obligation to ensure that facilities are readily accessible to and usable by individuals with disabilities would be violated, if repairs are not made promptly or if improper or inadequate maintenance causes repeated and persistent failures.

The CBC contains the following language.

CBC 11B-108 Maintenance of Accessible Features. *A public accommodation shall maintain in operable working condition those features of facilities and equipment that are required to be accessible to and useable by persons with disabilities. Isolated or temporary interruptions in service or accessibility due to maintenance or repairs shall be permitted.*

Principles of Universal Design

In addition to technical standards and guidelines, the principles of Universal Design, provide practices that can enhance the fundamental usability of a place. Universal Design is a concept that asks designers to consider the widest spectrum of potential users of an environment, product, or process.

The Disability Act 2005 defines Universal Design as:

1. The design and composition of an environment so that it may be accessed, understood and used:
 - To the greatest possible extent
 - In the most independent and natural manner possible
 - In the widest possible range of situations
 - Without the need for adaptation, modification, assistive devices or specialized solutions, by any persons of any age or size or having any particular physical
 - sensory, mental health or intellectual ability or disability
2. In relation to electronic systems, any electronics-based process of creating products, services or systems so that they may be used by any person

These principles of Universal Design are not solely aimed at individuals with disabilities, but constitute an approach to design that is better and more easily used by the greatest breadth of people. From a hiker using a wheelchair to the family with a stroller and the grandparent bird watching with a grandchild, Universal Design aims to provide environments that accommodate user needs and enhance how people experience a site.

The *Inclusive Access Plan* incorporates the principles of Universal Design and the Standard for Accessible Design contained in the Architectural Barriers Act *Accessibility Guidelines for Outdoor Developed Areas*, 36 CFR Part 1191, published in the Federal Register on September 26, 2013, and supplemented with guidance documents produced by the US Forest Service and California Department of Parks and Recreation.



Image: Seating along Lagunitas Creek, Whitehouse Pool

4. Marin County Parks Trail Policies

Policies provide a transparent framework to guide the use and management of public open space. Two policies that impact the use of recreational trails are policies that address power-driven mobility devices such as Segways, electric bicycles and other mobility devices, and a policy regarding Service Animals for people with disabilities. Both of these policies are addressed in the 2010 Americans with Disabilities Act update, and must be incorporated into Marin County Parks policy.

Clear and publicized policies for Service Animals and mobility devices will enhance the safety and quality of experience for all trail users. Focus group and public open-house participants were vocal about the need for clear policies and enforcement regarding dogs and power-driven mobility devices. It is recommended that the OPDMD and Service Animals policies be made available on the Marin County Parks website.

Other Power-Driven Mobility Devices (OPDMDs)

Any mobility device powered by batteries, fuel, or other engines ... that is used by individuals with mobility disabilities for the purpose of locomotion and designed to operate in areas without defined pedestrian routes.

– US Department of Justice Definition of OPDMD

People with mobility impairment often use mobility devices such as manual or powered wheel chairs, electric scooters, canes, crutches, or walkers. Mobility impairment may be temporary, periodic or permanent. It may result from a mechanical injury such as a broken bone or a medical condition such as a stroke or heart condition. OPDMDs are intended to provide people with enhanced mobility, including on terrain where mobility devices that are intended for flat and level terrain are not effective.

The purpose of an OPDMD is to provide access to developed outdoor area facilities for persons with mobility impairments significant enough to warrant protection as a disability under the Americans with Disabilities Act. The goal of the Marin County Parks' OPDMD policy is to define parameters for this access that provides the maximum degree of access for persons with qualifying disabilities while also protecting the safety of the great many other users of open space and the environment.

The law encourages agencies to determine parameters for defining OPDMDs that are acceptable for use at their facilities. Consideration for environmental impact and public safety are paramount for the sensitive resources found on most MCOSD preserves.

Marin County Parks Policy for OPDMDs

The current MCOSD Motor Vehicle policy does not discriminate against the use of an OPDMD by a qualified user. Marin County Parks is expanding the guidance to include a description of the parameters for an acceptable OPDMD for use on Marin County Parks trails.

Marin County Open Space District Code Section 02.04.010 – Motor Vehicles addresses the prohibition of motor vehicles on district lands with exceptions for emergency vehicles, county or district maintenance vehicles, battery-powered wheelchairs and other power-driven mobility devices.

The use of a manual or motorized wheelchair by an individual with limited mobility is allowed to the extent that the same would apply to a pedestrian. The information in this section is intended to treat a person using a manual or motorized wheelchair as a pedestrian, and is not intended to restrict the activities of such a person beyond the degree that the activities of a pedestrian are restricted by the same regulations.

Engine Type: Not to exceed Zero Emissions during use. The engine noise level from an OPDMD may not exceed 60 dB measured on the A-weighted scale at a distance of 50 feet.

OPDMDs with Zero Emissions will exclude combustion engines and the use of gas or other fuel powered mobility devices. The noise and exhaust from gas powered engines would fundamentally alter the natural setting of many of the trails.

Size: OPDMDs may not exceed 36 inches in width.

Weight: Not to exceed 550 lbs including operator.

The weight limit is specified because (1) heavier loads may cause damage to the non-paved trail surface and structure and (2) of the potential for being unstable on trails that do not have compacted surfaces.

Speed: Maximum speed while operating an OPDMD cannot exceed 6 mph.

To ensure the safety of other trail users as well as protecting the experience and character of the trail as a pedestrian facility, the speed limit is to be limited to a maximum pedestrian hiking speed of 6 mph. Establishing a speed limit for OPDMD use on trails is a way of balancing pedestrian anxiety about the safety of sharing a trail with motorized devices moving at higher speeds and OPDMD users' right to experience the trail while using an OPDMD. 6 mph is a speed well in excess of average pedestrian walking speed, especially on undeveloped terrain, and is sufficient to provide access to the open space trails proposed to be open to OPDMD use.

Users: The use of OPDMDs, while allowed, is restricted to persons with mobility disabilities. The use of an OPDMD by a non-disabled person is prohibited on the MCOSD preserves. The causes of disability may not always be apparent to members of the public or agency staff.

Proof of having a disability may be provided by:

- a) a valid, state-issued disability parking placard or card
- b) other state-issued proof of disability
- c) other federal-issued proof of disability (National Parks and Federal Recreational Lands Access Pass)
- d) verbal representation, not contradicted by observable fact

Where: Paved paths of travel, trails designated for improved accessibility, and designated multi-use trails. Multi-use is a category that includes pedestrians, bikes, and equestrians.

- a) In the future, Marin County Park will maintain a category of "bike priority" or "Bike/Hiker" trails that would be open to electric bikes used as OPDMDs but not to segways, scooters, etc.

"Bike priority" or "Bike/Hiker" trails are trail alignments engineered to provide safe clearance for bicycles traveling in both directions. These trails do not provide adequate clearing for vehicles with two or more wheels on an axle. Permitting a vehicle with two or more wheels on an axle would effectively reduce the two track alignment to a single track and limit use for one direction of travel.

- b) OPDMDs are not allowed in areas closed to the general public or areas restricted due to specific circumstances of design limitations, natural resource protection or operational characteristics of the trail.

Rules for Use of OPDMDs:

The following conditions apply:

- A person must be of legal age to operate the specific OPDMD, as prescribed by federal and state law.
- A person using an OPDMD must yield the right of way to pedestrians and persons using wheel chairs.
- A person riding an OPDMD must always yield to pedestrians.
- Group size is limited to no more than four OPDMDs.
- No more than one person may ride upon an OPDMD at any time.

Every OPDMD shall be equipped with the following safety mechanisms:

- Front, rear, and side reflectors.
- A system that enables the operator to bring the OPDMD to a controlled stop.
- If the OPDMD is operated between one half hour after sunset and one-half hour before sunrise, a lamp emitting a white light that, while the OPDMD is in motion, illuminates the area in front of the operator and is visible from a distance of 300 feet in front of the OPDMD.
- A sound emitting device that can be activated from time to time by the operator.

Service Animals

Service animals provide valuable and sometimes life-saving services to their owners. While most people are familiar with guide dogs for people with visual disabilities, many people with a variety of disabilities use service dogs to assist with everyday life.

Service animals are dogs that are individually trained to perform tasks for persons who have qualifying disabilities under the ADA, including physical, sensory, psychiatric, intellectual, or other mental disability.

– US Department of Justice Definition of Service Animal

In 2010, the ADA updated regulations covering service animals. The definition limited animals to dogs, but also included miniature horses when conditions are appropriate.

- The task(s) performed by the dog must be directly related to the person's disability.
- The dog must be trained to take a specific action when needed to assist the person with a disability. The dog does not have to be professionally trained by others.
- Emotional support or companion dogs and animals are not considered service animals under the ADA or California state law
- Marin County Parks staff may ask only two specific questions: (1) is the dog a service animal required because of a disability? and (2) what work or task has the dog been trained to perform?
- The ADA does not require service animals to wear a vest, ID tag, or specific harness.
- Individuals who have service animals are not exempt from local animal control or public health requirements.
- Service animals are subject to local dog licensing and registration requirements.
- The ADA does not require Marin County Parks to modify its policies, practices, or procedures if it would "fundamentally alter" the nature of the goods, services, programs, or activities provided to the public.

Emotional support animals, including dogs that provide comfort just by being with a person, are not considered service animals. Because they have not been trained to perform a specific job or task, they do not qualify as service animals under the ADA. While the California Department of Fair Employment and Housing does recognize emotional support animals in certain situations like housing and employment, California state law does not recognize emotional support animals as service animals for accommodation in public places like the Marin County Parks open space preserves.

The ADA makes a distinction between psychiatric service animals and emotional support animals. If the dog has been trained to sense that an anxiety attack is about to happen and take a specific action to help avoid the attack or lessen its impact, that would qualify as a service animal. If the dog's mere presence provides comfort, that would not be considered a service animal under the ADA.

Marin County Parks Policy for Service Animals

Marin County Parks has existing codes that do not discriminate against service animals. Marin County Parks provides guidance on their website regarding dogs and the park system.

Marin County Municipal Code Section 10.06.010 - Dogs and other animals addresses dogs and service animals in county parks.

The current MCOSD policies do not discriminate against service animals, either dogs or miniature horses but would benefit from the exceptions below. Marin County Parks provides guidance on their website regarding dogs and the open space preserve system.

Marin County Open Space District Code Section 02.05.010 – Dogs and other animals addresses dogs in county open space preserves.

RTMP Policy SW.8 – Prohibition on Off-Road or Off-Trail Pedestrians with Dogs or Other Domestic Animals. Pedestrians with dogs and other domestic animals must stay on system roads and trails.

RTMP Policy SW.10 – Policy on Leash Only Preserves. Requires all dogs to be leashed when at “leash only” preserves due to sensitive resources.

RTMP Policy SW.11 – Policy on Leash Requirements for Dogs. Requires all dogs to be on leash on all trails in addition to “leash only” preserves.

Recommended Modifications to Existing Policies

Marin County Open Space District Code Section 02.05.010 - Dogs and other animals.

Service animals are not required to be on leash if being on leash would interfere with the service animal's ability to perform its service task. Where the service animal is not deemed a threat to the wildlife or natural resources, it is appropriate and necessary for Marin County Parks to allow the person to use such areas with their service animal.

RTMP Policy SW.8 – Prohibition on Off-Road or Off-Trail Pedestrians with Dogs or Other Domestic Animals. It is reasonable for Marin County Parks to enforce RTMP Policy SW.8 where the presence of a qualified service animal would negatively affect or impact the surrounding wildlife or natural resources. Where the service animal is not deemed a threat to the wildlife or natural resources, it is appropriate and necessary for Marin County Parks to allow the person to use such areas with their service animal.

RTMP Policy SW.10 – Policy on Leash Only Preserves. It is reasonable for Marin County Parks to enforce RTMP Policy SW.10 where the presence of a qualified service animal would negatively affect or impact the surrounding wildlife or natural resources. Where the service animal is not deemed a threat to the wildlife or natural resources, it is appropriate and necessary for Marin County Parks to allow the person to use such areas with their service animal.

RTMP Policy SW.11 – Policy on Leash Requirements for Dogs. Service animals are not required to be on leash if being on leash would interfere with the service animal’s ability to perform its service task. Where the service animal is not deemed a threat to the wildlife or natural resources, it is appropriate and necessary for Marin County Parks to allow the person to use trails with their service animal.

Concern regarding off-leash dogs was expressed by many individuals at focus group sessions who are accompanied by service animals as off-leash dogs can be aggressive or disruptive to the service animal. This in turn, can affect the experience of the person with the service animal and can potentially pose a threat to their safety.

Marin County Parks will:

- Provide information as to specific restrictions that may limit access to certain locations when visiting with a service animal
- Provide an advisory for people traveling with service animals that many trails allow for equestrians and off-leash dogs

Seating

A desire for seating along trails was expressed by several individuals at focus groups and public workshops. Providing seating at resting intervals or destinations along a trail can provide users with the opportunity for rest needed to explore an additional length of trail, or to simply lengthen the duration of their experience in open space.

Currently, Marin County Parks does not have a policy related to seating in open space preserves. It is recommended that Marin County Parks formally adopt a policy below regarding seating in open space preserves using the guidance below, in order to ensure a balance is maintained between natural resource protection, protection of the existing character of Marin County Parks open space preserves, and an enhanced user experience.

Marin County Parks Policy for Seating in Open Space Preserves

Technical Standards: All seating in open space preserves shall conform to the technical standards described in Chapter 6. Except at trailheads, seating shall be informal through use of boulders, logs or other native material.

Where: Seating shall be located to avoid impacts to sensitive natural resource areas and maintain the existing character of open space preserves. This determination will be made by Marin County Parks staff.

- With the exception of destination-oriented trails, seating shall be located within the first ½ mile of a trailhead.
- Seating in areas identified as legacy zone by the Vegetation and Biodiversity Management Plan will be limited to trailheads, Roy's Redwoods Meadow Trail and Vistazo Fire Road unless otherwise approved by Natural Resources and Sciences staff.
- Seating is only allowed on trails that meet Marin County Parks open space preserve trail standards.

When: Seating will be located on open space preserve trails and at trailheads as deemed necessary and appropriate by Marin County Parks. The public may request that seating be provided on a preserve or trail, but seating type and placement is at the sole discretion of Marin County Parks.

How: Seating may be funded through private donation, grant funding or the regular budget process. Although money may be donated to a seating fund, the placement and type of seating is at the sole discretion of Marin County Parks. In no instance shall Marin County Parks install memorial seating, or include a plaque in a seating area.



Image: Indian Valley Fire Road meanders through woodland and grasslands.

5. Planning the Trail System

All public agencies are required by the ADA to provide access to their programs, services, and activities. In context of this plan, Marin County Parks is seeking to provide programmatic access for people with disabilities to its existing open space preserve trail system. The manner and methods for decision making regarding how an agency will provide programmatic access are the responsibility of that agency to identify. As part of this *Inclusive Access Plan*, Marin County Parks has defined a methodology for identifying future growth of the Destination-Oriented and Improved Access Trail systems.

The **Destination-Oriented Trail System** provides varied and immersive user experiences broadly representative of the array of outdoor settings available within the MCOSD preserves. Standards for the Destination-Oriented Trail system can be found in Chapter 6. Candidate trails not included in the initial Destination-Oriented Trail system but considered to have good potential provide a framework for future growth of the inclusive trail system as opportunities for development or redevelopment of trails arise.

Trails that are substantially accessible but do not meet all of the established accessibility standards for recreational trails will be considered potential candidates for the **Improved Access Trails**. These trails will provide enhanced information resources and signage that convey trail conditions and facilitate personal decision making. Standards for the Improved Access Trails can be found in Chapter 6.

Creating a framework for systematic and transparent decision making regarding the improvements that are best able to increase access to trails in the open space preserve system will facilitate efficient and equitable growth of the trail system. It will help ensure access is being distributed throughout the County's geo-regions and that the Destination-Oriented and Improved Access Trail systems represent the variety of recreational trail experiences in Marin County.

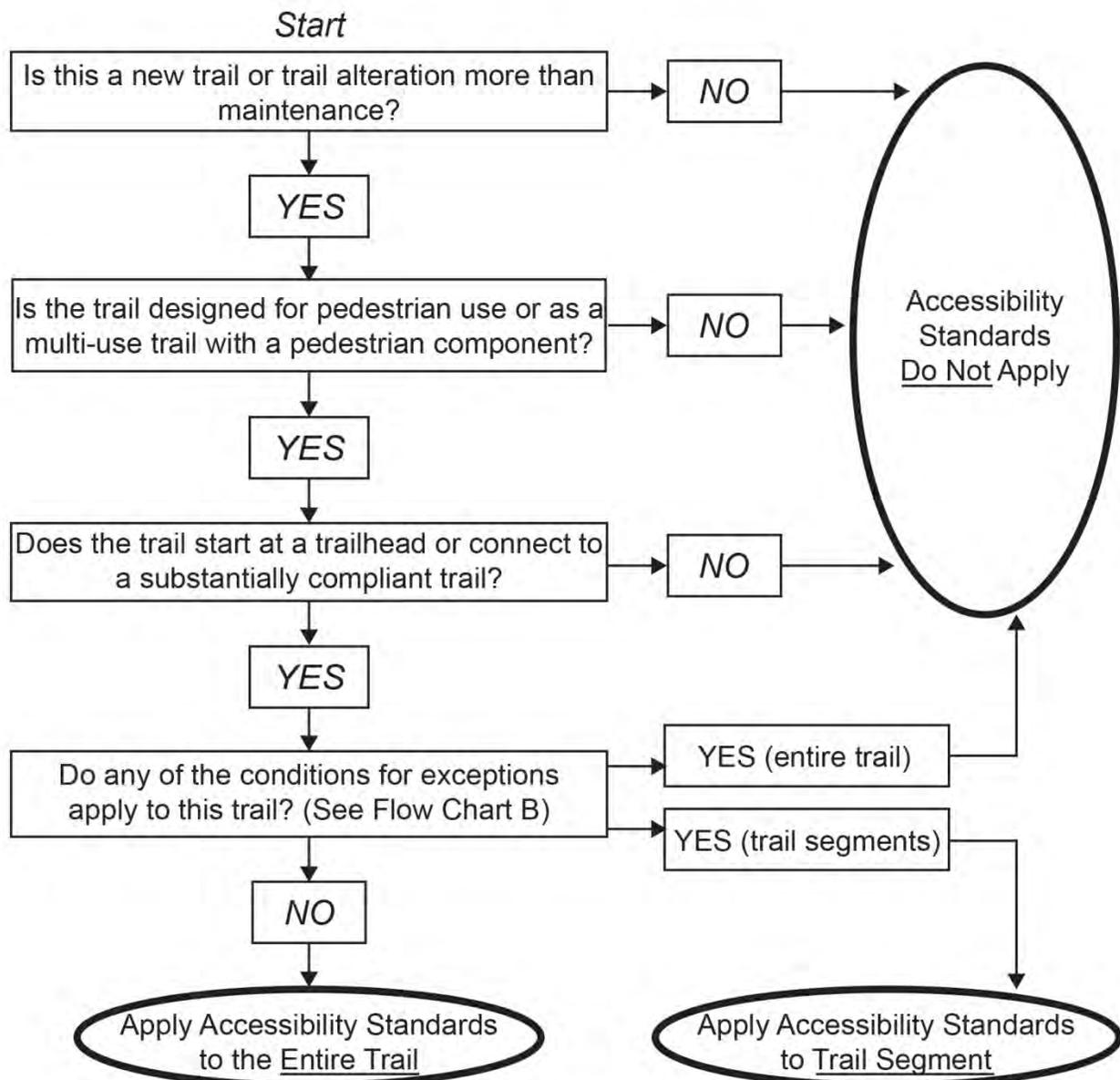
When making the decision as to whether a trail is an appropriate addition to the Destination-Oriented or Improved Access Trail systems, Marin County Parks will look at the appropriateness of the trail in relation to the entire network of trails and whether it is practicable for the trail to meet the technical standards. The trail regulations do not provide a minimum number or percent of existing trails that must meet the technical standards and focus on new and altered trails. This does not relieve the agency from an obligation to provide programmatic access. Moving forward, it is recommended by this plan that all new trails and those trails being considered for alteration be evaluated for the applicability of the technical standards. Part of this evaluation includes the Conditions for Exception, contained in AGODA Section 1019, which are used to determine where it may not be appropriate or feasible to apply technical standards and accessibility improvements. See Chapter 3, Regulatory Framework, Application of Regulations for a description of these exceptions.

The US Forest Service integrated the AGODA Conditions for Exception into decision-making workflow graphics in the Accessibility Guidebook for Outdoor Recreation and Trails. The US Forest Service workflow graphics have been modified in this plan to illustrate the Marin County

Parks decision-making process and can be found on the following pages. Decision making should include planners, natural resource staff, operations and maintenance staff and a member of the Marin County Disability Access Team to ensure programmatic access obligations are being met within the system while limiting the negative impacts to natural resources.

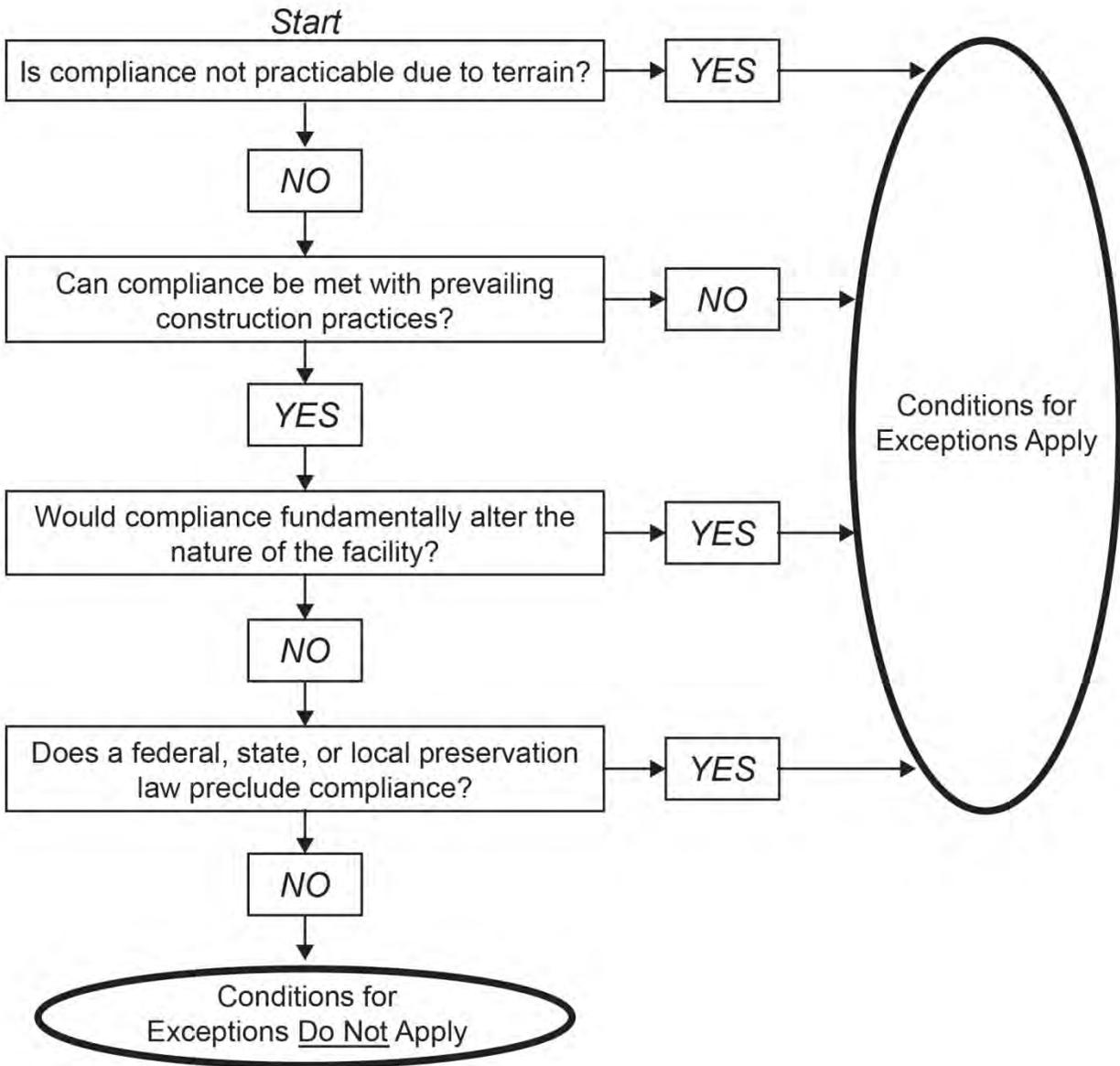
Moving forward, when a trail is undergoing redevelopment or there is a proposal to develop a new trail, the project must be assessed for the applicability of accessibility standards as defined by the Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. Marin County Parks will employ the following decision-making protocol to identify qualified trails and the necessary improvements needed to meet current design guidelines.

Flow Chart A: Do Accessibility Standards Apply to This Trail?

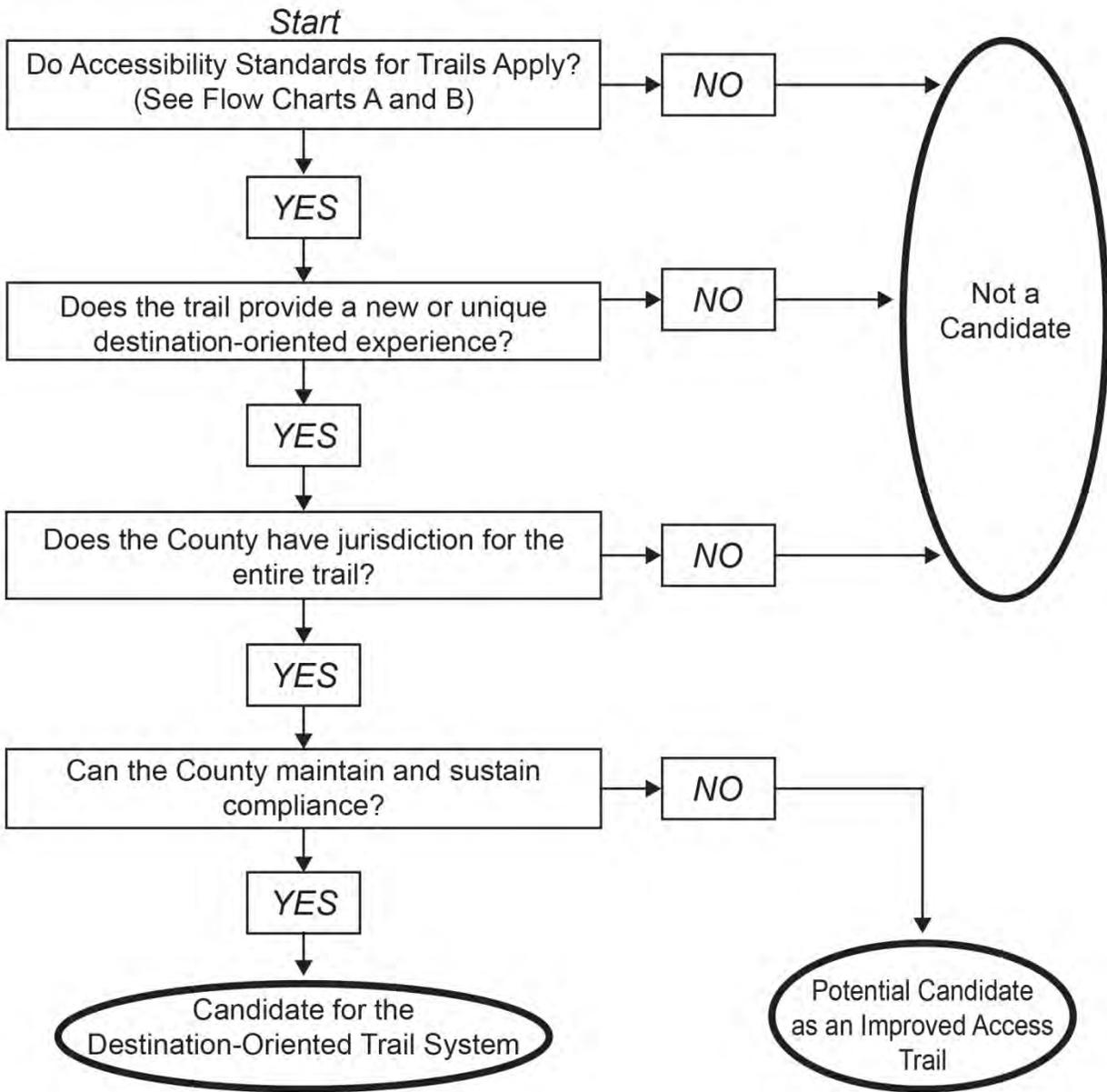


Substantial compliance with the essential requirements of the technical standards means that the trail satisfies its objective even though its formal requirements are not fully compliant. Factors that will assist in determining substantial compliance of an existing trail include severity of grade, location/proximity to an accessible trailhead, trail width, surface material, and necessary maintenance to ensure accessible conditions are sustained.

Flow Chart B: Do the Conditions for Exceptions Apply?



Flow Chart C: Is this Trail a Candidate for the Destination-Oriented Trails System?



If the trail is found to be a candidate as a Destination-Oriented Trail after evaluating the trail through the workflows above, then the design of the trail must incorporate the trail standards as described in Chapter 6.

Environmental Review and Permitting

All proposed trail improvements and new trail development will require an analysis of potential impacts and identification of permitting requirements. Although improvements to the selected destination trails mainly involved upgrades to existing trails, activities that may impact sensitive resources include placement of fencing, trail widening, trail surface and drainage improvements. Examples of trail improvement activities that would require resource agency permitting and coordination include any impacts to the bed and banks of creeks and streams, impacts to riparian vegetation, and drainage improvements adjacent to wetlands.

Based on the RTMP and the Marin County ADA plan, and in order to meet the requirements of the California Environmental Quality Act (CEQA), the Inclusive Trails Plan will include the preparation of an Initial Study/Mitigated Negative Declaration (IS/MND) that will describe the project's potential environmental impacts, and then define feasible avoidance and minimization measures and/or mitigations that will reduce potentially significant impacts to less-than-significant levels. For the project to comply with CEQA, those mitigations must be incorporated into the project.

The Initial Study will identify project elements that potentially impact the following resources:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality (focus topic)
- Biological Resources (focus topic)
- Cultural Resources (focus topic)
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality (focus topic)
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

The resource areas identified above as focus topics are anticipated to require the most analysis in the MND. The MND will address project impacts and provide avoidance and minimization measures and/or mitigations for impacts to the identified resources. The currently proposed trail improvements are assumed to be fully mitigatable. The environmental review process will include staff meetings and a public hearing. The final Plan will be adopted at the culmination of the CEQA determination.

Identifying Initial Trail Selections

One goal of the Destination-Oriented Trails and Improved Access Trails is to provide access to experiences representative of those that can be had throughout Marin County Parks' system of Open Space Preserves. This includes trails that provide access to the various environments and destination experiences, as well as trails that are distributed geographically across the county.

The MCOSD evaluated and analyzed the entire inventory of existing trails to identify the best candidates for an initial set of Destination-Oriented Trails that meet, can be improved to meet, or exceed accessibility standards for recreation trails, as well as identify trails providing improved access to people with disabilities, but that may not currently meet accessibility standards.

With guidance from the public, the MCOSD vetted the best trails for inclusion in the Destination-Oriented Trail system from a list of candidates based on geographic distribution, diverse experiences within the system, potential compliance with trail design standards, and degree of environmental resource impact.

Destination Experiences and Environments

The rich diversity of environments found in Marin County is well represented within the Marin County Parks open space preserves and provides ample opportunity for potential Destination-Oriented Trails and Improved Access Trails that would provide access to the iconic Marin County trail experiences.

Redwood Forest

Marin County is home to many stands of redwoods, a majestic coastal forest community that is dominated by coastal redwoods (*Sequoia sempervirens*) and often includes a lush understory of species such as huckleberry, western azalea, redwood sorrel, and sword fern. While Muir Woods National Monument may be the quintessential example of this habitat in Marin, many other redwood forests are located on Marin County Parks open space preserves, such as Roy's Redwoods in San Geronimo, Indian Tree in Novato, and Camino Alto in Mill Valley. These smaller groves often include other tree species such as California laurel and tanbark oaks, which are more readily established where redwoods were historically harvested for lumber.

Redwood forests are commonly found in valleys and along stream beds that are influenced by maritime fog, but often climb adjacent canyon sides and blend with other adjacent forest communities. As such, trails through redwood forests are often characterized by dense shade and cooler air temperatures, and may be subject to seasonal flooding if located along a stream.



Image: Redwood Forest ecology

Oak Woodland

A variety of emblematic oak woodlands are also widespread throughout the open spaces of Marin County Parks, including tanbark oak-dominated forests on hillsides above redwood forests, and coast live oak woodlands in drier inland areas. While these oak species are most prevalent, Marin is also home to valley oaks, black oaks, garry oaks, and occasional blue oaks, such as those found in the Rush Creek Open Space Preserve. The MCOSD Preserves include many trails that meander through oak woodlands, which typically provide dappled shade, ample wildlife viewing, and occasional views of surrounding landmarks and vistas.

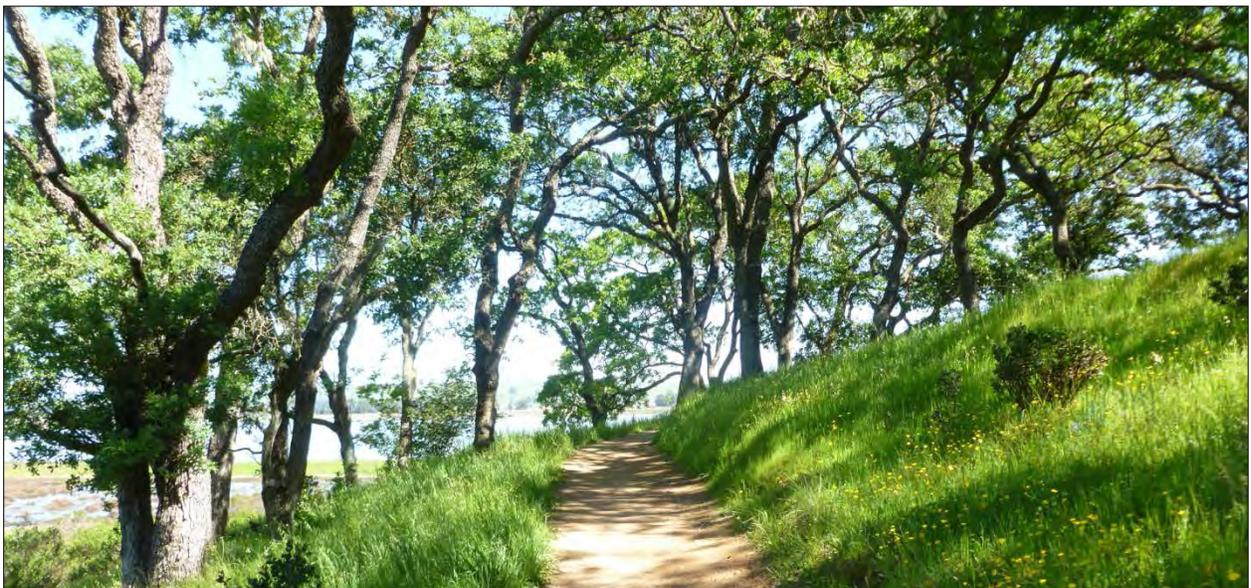


Image: Oak Woodland at Bahia Trail

Salt Marsh

Salt marsh habitat is found within a narrow elevation range on both the edge of San Francisco Bay and on the Pacific coast of Marin County, where tidal fluctuations create ideal growing conditions for native species such as cordgrass, pickleweed, and salt grass. Where freshwater and saltwater environments integrate and create brackish conditions, marshes may also include species such as bulrush and cattails. While the tidal marsh at China Camp State Park is a prime example of relatively undisturbed salt marsh, many other salt marshes are found on or adjacent to the MCOSD Preserves throughout the Marin County Parks system, such as Rush Creek, Santa Margarita, and Santa Venetia. These habitats are often smaller, remnant marshes that were spared from development or have been restored to a natural state, such as the Hamilton Field Wetlands in Novato and the Giacomini Wetlands in Point Reyes Station.

Trails along salt marshes are typically found on levees or at the base of adjacent ridges and slopes, and may occasionally be subject to seasonal flooding during high tides and storm events. Because salt marshes provide excellent habitat for species such as shorebirds and waterfowl, wildlife viewing along such trails is often exceptional.



Image: Salt Marsh between Pinheiro Fire Road and Rush Creek Fire Road.

Ridgelines

Ridgelines are found throughout the varied topography of Marin, creating distinct valleys and watersheds in both the developed and undeveloped portions of the county. Natural ridgelines may include woodland, chaparral, or grassland vegetation, and often provide exceptional views of landmarks such as Mount Tamalpais, the cities and towns of Marin, and the San Francisco Bay. Trails climbing to ridgelines often ascend quickly up canyon slopes, but are often flatter and more easily traversed along the ridge itself. Many of the Marin County Parks open space preserves include exceptional ridgeline destinations and views, such as Indian Tree, Terra Linda/Sleepy Hollow Divide, and Camino Alto.



Image: Ridgewood Fire Road follows the ridgeline between Terra Linda and San Rafael.

Meadows

Marin County is also home to a wide variety of open meadows and grasslands, including coastal grasslands, hill and valley grasslands, and serpentine grasslands, each of which is characterized by different native and non-native grass and forb species. Along the MCOSSD Preserve trails, such meadow environments are often interspersed with woodlands and forests and often offer opportunities for wildlife viewing, as many species will congregate along the ecotone between such habitats. In addition, meadows often offer views, ample sunlight, and places to stop and rest along a trail.



Image: Grassland meadows at the Mount Burdell Open Space Reserve.

Riparian and Creek side

Riparian habitat is found along the edges of streams, lakes, and ponds throughout Marin County, and is characterized by vegetation that is dependent upon the hydrology of the adjacent water body. In Marin, such vegetation often includes willows, alders, maples, and dogwoods on wetter perennial streams; and redwoods, coast live oaks, and laurels on drier intermittent streams. Such riparian habitat is found on many of the MCOSD Preserves, such as Roy's Redwoods, Cascade Canyon, and Baltimore Canyon.

As with trails through redwood forests, trails through riparian environments are often characterized by dense shade and cooler air temperatures, and may be subject to seasonal flooding. Furthermore, because these environments are typically home to a wide array of protected wildlife species, such as the endangered coho salmon in Lagunitas Creek, development and maintenance of trails and other facilities in riparian areas is highly regulated by state and federal environmental agencies, as well as the MCOSD's own RTMP.



Image: Lagunitas Creek and riparian habitat from Greenbridge Trail.

The different experiences of the Marin County Parks open space preserves are created by the diversity of climates and physical environments found throughout the county. This variety provides opportunities for Destination-Oriented Trail and Improved Access Trails to be located at sites dispersed around the county.

Geographic Distribution

Offering recreational trail experiences distributed across the geographic regions of the county provides trail users with access to recreational opportunities with a minimum of driving and in a variety of natural environments.

During focus group meetings held to establish criteria for developing a system of inclusive, Improved Access and Destination-Oriented Trails, proximity of sites to a home base was highly

valued. Adult daycare services often have limited mileage and time allotted for excursions, and having sites close enough to the starting point would allow these groups to use the new trail system. It is the intent of this project to identify trails located throughout Marin County to make accessible trail experiences more widely available where people live.

For planning purposes, the MCOSD's 34 preserves are organized into six regions as listed below. The regions are located in different areas of Marin County, have varying adjacent lands uses, and represent a variety of environments found in the San Francisco Bay Area.

Region 1: Baltimore Canyon, King Mountain, Blithedale Summit, Camino Alto, Horse Hill, Alto Bowl

Region 2: French Ranch, Maurice Thorne Memorial, Roy's Redwoods, Gary Giacomini, Loma Alta, White Hill, Cascade Canyon

Region 3: Indian Valley, Lucas Valley, Loma Verde, Pacheco Valle, Ignacio Valley

Region 4: Mount Burdell, Rush Creek, Little Mountain, Verissimo Hills, Indian Tree, Deer Island

Region 5: Terra Linda/Sleepy Hollow Divide, Santa Margarita Island, Santa Venetia Marsh, San Pedro Mountain, Bald Hill

Region 6: Ring Mountain, Old Saint Hilary's, Bothin Marsh, Bolinas Lagoon, Tiburon Ridge

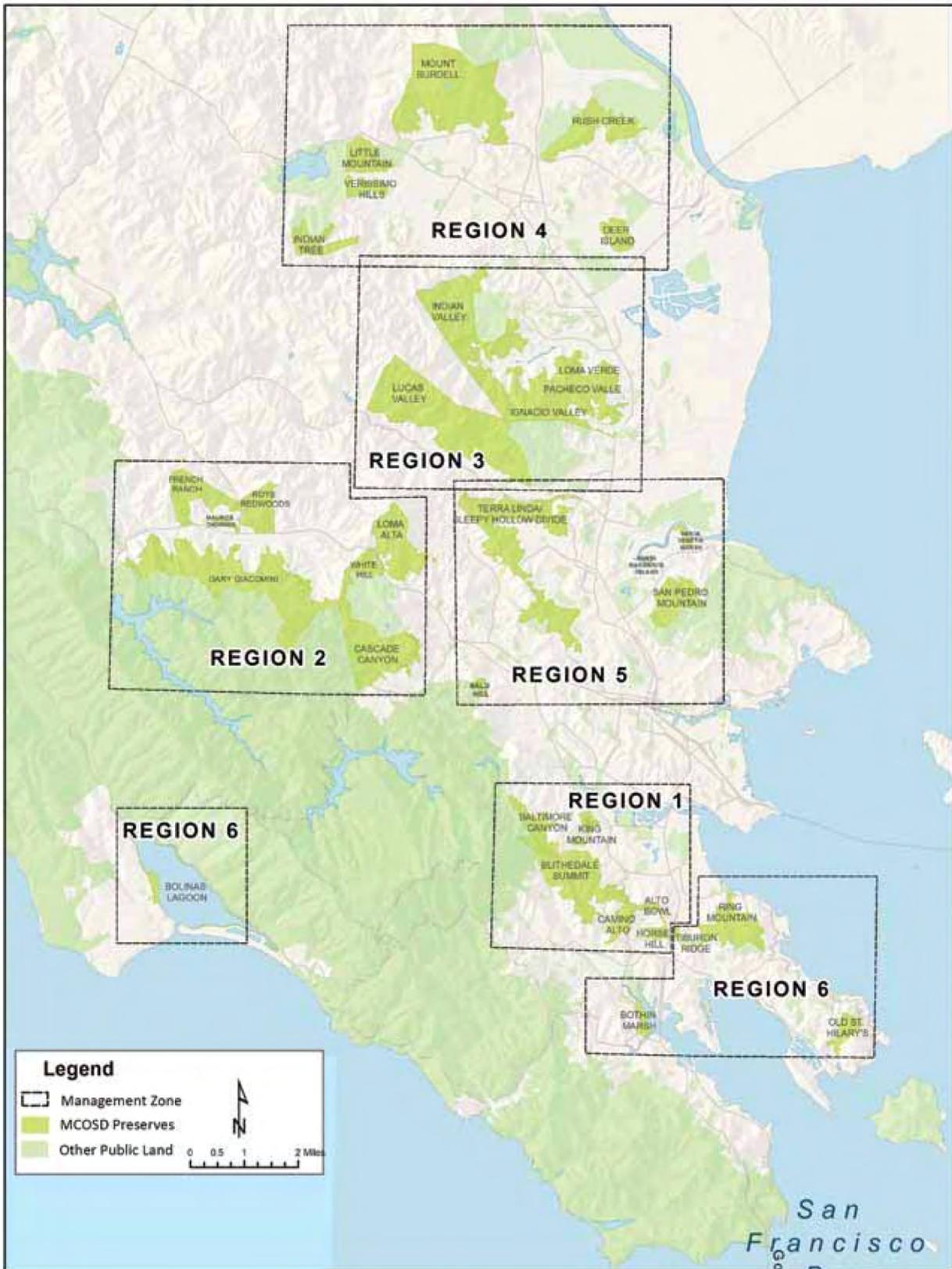
Existing Trail Conditions

In addition to the varied environmental experiences and geographic distribution of sites, trails also needed to meet or be able to meet technical standards for accessibility and create minimal environmental impact to be considered for either the Destination-Oriented Trails or the Improved Access Trails. Marin County Parks has an extensive database of trail condition information gathered to support the development of the RTMP. As part of the RTMP and to guide future management of the MCOSD lands, Marin County Parks collected a substantial amount of data describing the physical characteristics of the existing road and trails network. The data pertaining to the existing conditions of the road and trails network can be found in the 2011 *Road and Trails Assessment*, summarized below.

2011 Road and Trail Assessment

In 2010, the MCOSD contracted for an extensive assessment of the locations and existing conditions of all the roads and trails on the MCOSD preserves, including both the formal alignments maintained by the district and the many informal alignments created by users. The resulting *Road and Trail Assessment* provides detailed information about the condition of roads and trails and identified known problem areas, such as locations with erosion and drainage issues, steep grades, or rough tread. The *Road and Trail Assessment* report is described in detail in the *Road and Trail Management Plan*.

Preserves by Marin County Parks Regions, 2014 Roads and Trails Management Plan



The data included in the *Road and Trail Assessment* is based primarily on a systematic and comprehensive field-based inventory of significant features identified at distinct points (point data) or along reaches (reach data) of roads or trails. Reaches are defined as linear segments of a road or trail with similar average characteristics, conditions, and constraints.

Data found in the *Road and Trail Assessment* report include:

- Stream crossings
- Cross drains or drainage structures
- Landslides or erosion
- Constructed facilities such as gates and signs
- Utilities such as water and power along the route
- Water features such as springs, streams, lagoons or wetlands
- Length
- Location such as ridge top, valley, etc.
- Surface width
- Surface material
- Grade
- Level of use
- Drivability
- Maintenance
- Accessibility potential
- Seasonal conditions

In order to identify trails that met or could be made to meet the trail design standards and be considered for the Destination-Oriented Trails network, the database of existing trail conditions from the *Roads and Trails Assessment* was analyzed, and sites were flagged for further evaluation. Trails with characteristics that made them unlikely to provide an enhanced accessible experience were eliminated.

Methodology for Selection

Taking into consideration the ultimate technical standards that would need to be applied to the Destination-Oriented Trails and Improved Access Trails, staff developed acceptable tolerances to the data sets below to identify trails that would not meet the conditions for exception. The acceptable trail condition limits are defined, and when applied to the *Roads and Trails Assessment* data, provide a filter to identify potential candidate trails.

Trail Grade. Trails with running slope exceeding 25% were excluded. Conventional trail standards allow a maximum of 12%, and it was assumed that making a trail with existing grades greater than 25% meet accessibility standards would be technically infeasible due to the terrain.

Drivability. Roads and trails classified as being accessible only by four-wheel drive or all-terrain vehicles were excluded. It was inferred that if a trail was not accessible to a two-wheel drive vehicle, it was indicative of conditions beyond grade, such as rutting, significant cross slope, surface conditions, etc. that would limit the likelihood of a trail being a successful candidate for accessibility.

Class. Road and trail class data was used to identify private driveways, which were then excluded from the list of potential trails.

The following additional data from the *Road and Trail Assessment* is useful to further describe the qualitative nature of a potential accessible trail and user experience. These characteristics

provide insight into the condition of the trail and its immediate environment and whether trail improvements might be viable. Other data used include the following:

Resource impact. Many of the roads and trails traverse sensitive habitats that can limit what improvement work can be done.

Stream crossings. Bridges or culverts can provide accessible routes but may also prove to be a barrier to some users. In low-lying areas with stream crossings trail, surfaces may also be prone to wetness.

Cross drains or drainage structures. Unless specifically designed for accessibility, surface drain structures can increase the slope or cross slope of trail surfaces.

Landslides or erosion. Landslides and erosion can reduce accessibility and increase work to maintain the surface in an accessible condition.

Gates and entries. Entries must be wide enough to allow for the passage of wheeled mobility devices, and those with operating hardware must be operable by a person with limited dexterity. Gates and entries may be designed to exclude unauthorized vehicles such as all-terrain vehicles and motorcycles, or to control grazing. These can be prohibitive to people using wheeled mobility devices.

Utilities. Availability of water or phone signals along the trail route may provide a welcome amenity for some users. Water hydrants and drinking fountains must be accessible for wheelchair users and people who have limited reach. Phone signal can provide a sense of security to users who may need to call for assistance while on the trail.

Length. The length of the trail may not be an issue for some trail users, but it is important to provide this information for appropriate trip planning.

Location. The surrounding environment of a trail will indicate to users if they can expect sun or shade, wind, and what experiences may be expected.

Trail width. Adequate width must be provided for passing on a trail and to accommodate the varied user groups of the particular trail. This data will also identify the potential for emergency vehicle access.

Surface material. Surfacing that is loose or soft makes it difficult for hikers with limited mobility or people who use wheeled mobility devices including wheelchairs.

Level of use. The popularity of a trail may identify it as highly desirable experience. Level of use may also provide insight to the availability of rescue assistance.

Maintenance. Seasonal conditions may create water ponding or flooding of the trail, reduce the accessibility of the surface, and increase maintenance requirements. Maintaining accessible features in a useable condition is a requirement of both the ADA and CBC.

Marin County Parks owns or manages several paths and trails outside of open space preserves. These trails may provide regional connections and cross several jurisdictional boundaries, or may be part of a Marin County Parks facility. Since the *Road and Trail Assessment* was developed as a tool for developing the RTMP, it surveyed only open space preserve trails. Therefore, Marin County Parks staff also identified candidate trails in county parks, as well as public trail easements it owns, to add to the list of trails for evaluation, using data from the *Road and Trail Assessment* and based on professional judgment and knowledge of conditions in the field.

Initial Output

The list of trails identified for further evaluation was determined by filtering the existing data. The initial application of filters to the existing road and trail data identified 21 trails with the potential for being made compliant to trail standards. An additional trail, Indian Valley Fire Road, was subsequently added after the initial data analysis.

- | | |
|-------------------------------|--|
| 1. Agate Beach Bluff Trail | 12. Pinheiro Fire Road |
| 2. Bahia Trail | 13. Ridgewood Fire Road |
| 3. Big Tree Trail | 14. Roy's Redwoods Meadow Trail |
| 4. Deer Island Loop Trail | 15. Rush Creek Fire Road |
| 5. Dwarf Oak Trail | 16. San Andreas Fire Road |
| 6. Escalon Fire Road | 17. Santa Margarita Island Trail |
| 7. Greenbridge Trail | 18. Santa Venetia Marsh Trail |
| 8. Hamilton Path Trail | 19. Shipmast Trail |
| 9. Hill Ranch Waterfall Trail | 20. Taylor Fire Road (Ring Mountain) |
| 10. Indian Valley Fire Road | 21. Vistazo Fire Road (Old Saint Hilary's) |
| 11. Old Railroad Grade | 22. Whitehouse Pool Trail |

Evaluations and Analysis

With the data included in the *Road and Trail Assessment* report as the initial basis for evaluating potential trails for improvement, the 22 trails listed above were evaluated in the field. The standards for the evaluation are contained in the *Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas*, 36 CFR Part 1191, published in the Federal Register on September 26, 2013, and supplemental guidance documents produced by the US Forest Service and California Department of Parks and Recreation. Design standards for recreational trails can be found in Chapter 6.

The field evaluations provided a quantitative and qualitative assessment of the potential trails, and created a structure where the trails could be compared to one another to identify the best candidates for the initial system of Destination-Oriented and Improved Access Trails. Each trail evaluation analyzed the following parameters:

Quantitative Criteria

- grade (running slope parallel to the direction of travel)
- cross slope (slope perpendicular to the direction of travel)
- trail surface (firmness, stability, and changes in level)
- trail width (clear width of the trail surface)
- trail length

Qualitative Criteria

- site access (parking, transit, gates)
- destination and experience
- site amenities (restrooms, benches, drinking fountains)
- probable maintenance issues (drainage, erosion, user groups)

Destination and Experience. The user experience, special features, and geographic location of the trail were evaluated. The associated preserve or parkland was identified, as was the nature of the environment/ecosystem.

Parking. The availability and condition of parking at the trailhead were noted. This included parking lots or on-street parking, presence of a designated accessible parking space, and the nature of the trailhead parking, such as a residential street or a public park area.



Images from left: Formal parking area with designated accessible spaces at Agate Beach County Park and informal street parking at Escalon Fire Road Trail.

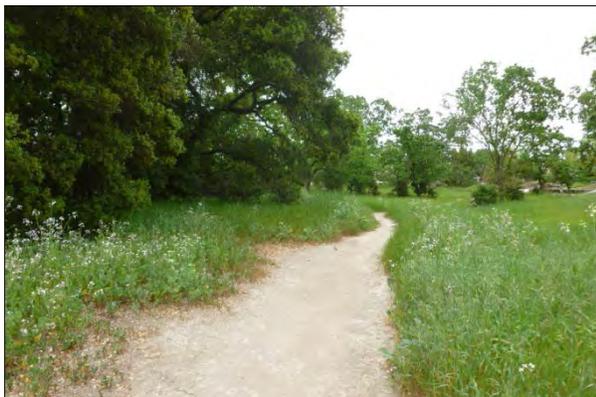
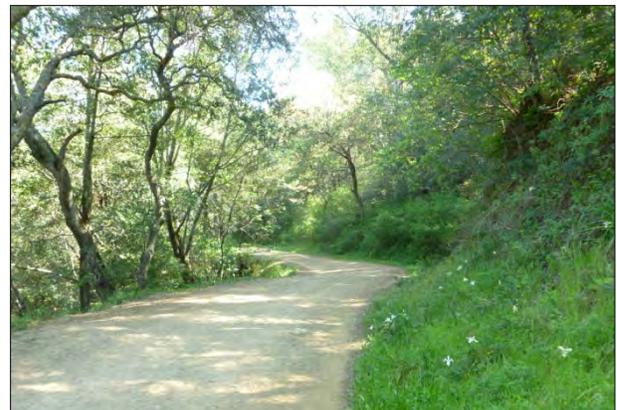
Alternative Means of Access. Evaluations included whether access was provided to the trailhead via a public sidewalk and/or the proximity of public transportation facilities.

Gate/Entry. Many different gate and entry types were observed during the evaluations. Entries at trails intended to be accessible must be sufficiently wide to allow the passage of wheeled mobility devices, must be sufficiently level, and must have hardware operable by a person with limited dexterity. Gate features that limit access to certain user groups, like a zig-zag chicane, a step over, or cattle grates, should be limited in use and an alternative compliant gate provided.



Images from left: Pedestrian gate opening adjacent to maintenance vehicle access gates at Escalon Fire Road and Rush Creek Fire Road.

Trail Conditions. Trail width is indicative of how trail users interact with each other and whether adequate passing space is provided, such as when an equestrian and a person using a wheelchair must pass one another. Sight lines and speed of travel also affect user interactions.



Images top row from left: Narrow trail at Dwarf Oak Trail and wider alignment at Escalon Fire Road. Bottom row: A moderate width trail at Santa Margarita Island and split-level trail with grass median at Pinheiro Fire Road.

Surface. Trail surfaces are required to be firm and stable. Surface evaluations followed the guidance of the US Forest Service, which states that if the answer to both of the following questions is yes, the surface is likely to be firm and stable:

- Could a person ride a narrow-tired bicycle across the surface easily without making ruts? (The size of the bicycle tires is similar to large rear wheels of a wheelchair.)
- Could a folding stroller with small, narrow plastic wheels containing a 3-year-old be pushed easily across the surface without making ruts? (The size of a stroller's wheels are similar to the front wheels of a wheelchair.)



Images from left: Bike and equestrian tracks in dry and hardened trail surface and loose sandy material illustrate a trail surface that is not firm and stable, as described by the US Forest Service protocol for evaluating firmness and stability of trail surfaces. Both images are from Rush Creek Fire Road.

Slopes. Trail guidelines for accessibility identify maximum slopes allowed for specific distances between level resting intervals. Trails were evaluated to determine the running slope (the grade of the trail parallel with the direction of the path of travel) and cross slope (the grade of the trail perpendicular to the path of travel). Measurements were taken where either running or cross slopes exceeded what is identified in the guidelines as acceptable. An initial assessment of terrain constraints was noted for the potential to improve excessive slopes.



Images from left: Running slope with drainage channel parallel to the path of travel within the trail surface and cross slope running perpendicular to the path of travel. Both images are from Dwarf Oak Trail.

Probable Issues/Maintenance. Federal and state regulations require designated accessible facilities to be maintained in an accessible working condition. Trails that are subject to erosion, drainage issues, or other environmental factors that would impact surface quality and require excessive maintenance to sustain usability were not considered viable candidate trails due to the financial and human resources needed to keep them accessible.

Overgrown vegetation may limit the accessibility of a trail and should be regularly cleared when it will limit the usable width or height of the trail. Overhanging branches can cause injury to people with visual disabilities who may not be able to detect the impending hazard.



Images from left: Overgrown branches and grass at Whitehouse Pool reduce the clear height and width of the trail.

Preliminary Assessment

Trails were classified in three categories: 1) a candidate for the Destination-Oriented Trail system, 2) a potential candidate as an Improved Access Trail to receive enhanced trail information communication strategies, or 3) not a candidate. All conclusions come with the caveat that accessibility improvements will need to be made and maintained. The *Trail Accessibility Assessment Report* with the findings of the trail evaluations can be found in Appendix A of this document.

At the public workshop held on May 19, 2015, 22 trails were presented as potential candidates for the Destination-Oriented Trail system. With public feedback and the selection criteria listed below, 7 of the 22 candidates were identified for the initial set of Destination-Oriented Trails.

Trails were evaluated according to the process described in Chapters 5. Evaluations identified trails where the conditions for exception would not apply and it would be feasible to meet or exceed the standards for recreational trail accessibility.

Selection criteria:

- input received at focus groups and public workshops
- evaluation of the potential improvements
- potential for impacts to natural resources
- availability of parking, transit, or a connection to the pedestrian network
- an established presence of other user groups that are less compatible with maximizing accessibility
- geographic distribution
- uniqueness of the trail experience

Candidates for the **Destination-Oriented Trail System** are substantially accessible in their current state and do not require significant improvements to the trail structure. These trails will receive further design development for trail improvements to meet the trail design standards defined in this plan and directed by best practices and the guidelines adopted by the Architectural Barriers Act, California State Parks, and US Forest Service.

Potential candidates considered as **Improved Access Trails** with enhanced information strategies are trails that do not currently meet the accessibility standards but provide a sufficiently accessible experience to some users. Information about the trail conditions will be provided through a variety of methods outlined in the Communication Strategy section of this plan so individuals can make informed decisions as to the appropriateness of the trail for their use. These trails will remain priorities for future accessibility improvement as opportunities for development or redevelopment arise.

Some of the trails were found to require significant improvements to the trail structure that may be considered technically infeasible. These trails are not currently candidates for either inclusion in the network of Destination-Oriented Trails or Improved Access Trails.



Image: Seating at Agate Beach Shoreline Trail

Initial System of Destination-Oriented Trails

The Destination-Oriented Trail system is an experience-based network of trails that meet technical design standards for accessible trails and will provide varied and immersive user experiences broadly representative of the array of outdoor settings available within the MCOSD preserves. A description of Destination-Oriented Trails and the standards for design are contained in Chapter 6.

The seven trails selected for inclusion in the Destination-Oriented Trail system are:

1. Agate Beach Trail – Bolinas

This site offers opportunities to explore tide pools filled with marine life, general beach recreation, wildflower viewing, bird watching, and—on clear days—views to the Farallon Islands. Agate Beach is a county park that is also part of the Duxbury Reef State Marine Reserve. Duxbury Reef is designated by the State of California Regional Water Quality Control Board as an Area of Special Biological Significance because it supports an unusual variety of aquatic life and plays host to unique individual species.

2. Hamilton Path – Novato

This is a newly constructed decomposed granite trail running along a levee adjacent to seasonal wetlands and the newly constructed Hamilton Field Wetland Restoration area. The path was developed and is currently owned by The California Coastal Conservancy (CCC). Marin County Parks provides management and maintenance of the path under a multi-year agreement with the CCC.

3. Indian Valley Fire Road – Novato

This creek side trail weaves through oak and bay woodlands, providing ample shade for much of the trail. The trail passes seasonal ponds with an array of freshwater species.

4. Roy’s Redwoods Meadow Trail – Woodacre

The trail runs through an open meadow surrounded by old-growth redwood forest and tall bay trees. At the terminus of the Meadow Trail is an ancient “fairy ring” where the parent tree died and several new trees grew up to surround it.

5. Rush Creek Fire Road – Novato

Views from the trail face northward toward Mount Burdell and Gnos Field Airport and east toward the Petaluma River Marsh Wildlife Area. This trail passes California bay and coast live oak woodlands along the edge of Rush Creek Marsh, part of the Rush Creek Open Space Preserve.

6. Vistazo Trail – Tiburon

This trail is located in the Old Saint Hilary’s Preserve in Tiburon and provides expansive views of San Francisco Bay to the south and the surrounding Tiburon peninsula neighborhoods in other directions. Old Saint Hilary’s Preserve is one of only two places to see the extremely rare Tiburon jewelflower.

7. Whitehouse Pool – Point Reyes Station/Inverness

Whitehouse Pool Trail is located near Point Reyes Station along Lagunitas Creek in the Tomales Bay Estuary. Whitehouse Pool is surrounded by riparian vegetation and provides significant wildlife habitat for species such as coho salmon, and is popular for bird watching, nature study, and wildlife viewing.



Marin County Parks
Destination-oriented Trail System

-  Initial Trail Locations
-  MCOSD Preserves
-  Other Public Lands

Agate Beach

Ocean Parkway, Bolinas



Destination and Experience:

Agate Beach County Park has two trails being proposed for the Inclusive Access Plan, the Vista Trail located at the south end of the parking lot and a trail leading down toward the rocky shoreline. Agate Beach Park is located in Bolinas and offers opportunities to view or explore tide pools filled with marine life, wildflower viewing, bird watching, and on clear days, views to the Farallon Islands. Agate Beach is part of the Duxbury Reef State Marine Reserve, which includes federal and state jurisdictions and signifies its status as a sensitive and highly protected resource area. The Marin County Parks jurisdiction includes the shoreline and the upland area above the bluffs, which includes grassland, woodland, and coastal scrub habitat. The park has a paved parking area, a bench, and portable toilets, one of which provides space for wheelchairs.

The Shoreline Trail has a total length of 275 linear feet with the initial 121 linear feet being 8 feet wide terminating at a memorial bench and constructed of decomposed granite. The remainder of the trail is steeply sloping and is comprised of compacted native surface material reduced to 48 inches to 60 inches wide. Water bars cross the path of travel. There are no resting intervals along the trail. The Beach Trail has an initial running slope up to 8.1% for 121 linear feet. Beyond the memorial bench, the running slope ranges from 9% to 11% for 100 linear feet before steepening to 14.5% down to the rocky shoreline. There is sufficient width to provide resting intervals along the length of the trail.

The Vista Trail is 90 linear feet from the parking area to a potential overlook with a dramatic view of Duxbury reef. The trail is level after a slight rise at the trail head. This trail is adjacent to a neighboring private property.

Hamilton Path

Road ID N/A | Hangar Avenue, Novato



Destination and Experience:

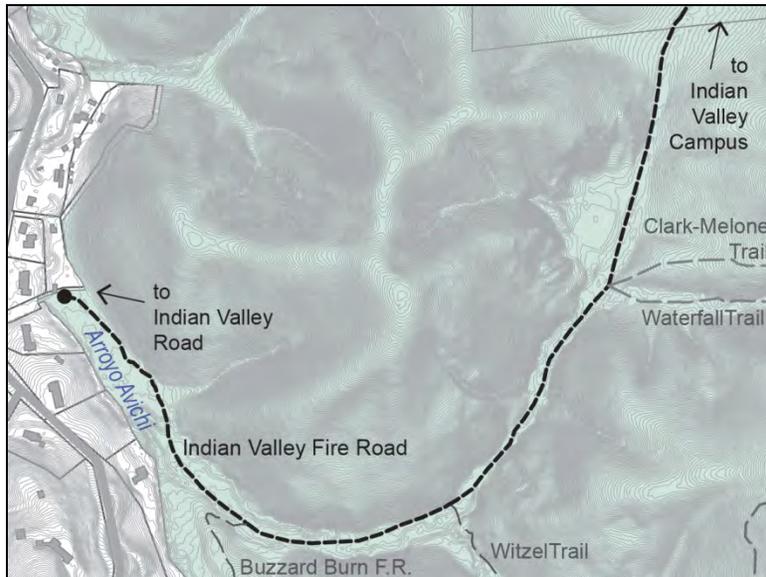
Hamilton Trail is a 14 foot wide newly constructed decomposed granite trail running along a levee adjacent to seasonal wetlands and the newly constructed Hamilton Field Wetland Restoration area. It provides views of Mount Burdell, Mount Diablo, and Mount Tamalpais from different vista points. The trail has historical significance as a former airfield with hangars and air tower remaining along the central section. The trail is exposed to sun and wind; minimal shade is available and only at the south end. Benches and interpretive signage stations are provided along the length of the trail. Some benches are not located on an accessible surface.

The adjacent tidal marsh restoration area will continue to develop marsh vegetation such as pickleweed and salt grass, which will in turn provide habitat and ample bird watching opportunities along the trail.

Pedestrian access is available along the roadway from the adjacent neighborhood to both entrances. A timed bus stop for Marin Transit Routes 49, 151, 251, 257, and 259 and Golden Gate Transit Route 58 is located at the Hamilton Community Center, less than ½ mile away from hangar parking area entrance.

Indian Valley Fire Road

Road ID 17100



Destination and Experience:

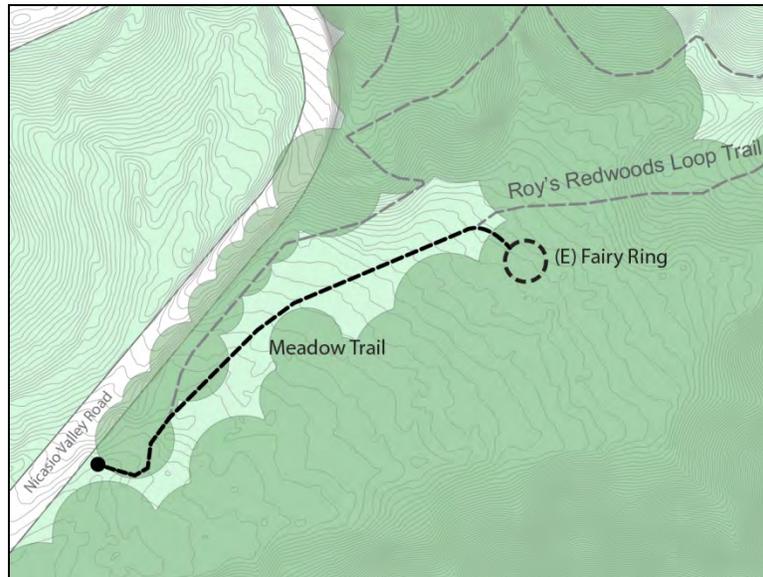
This creek-side trail weaves in and out of oak and bay woodlands, providing ample shade for much of the alignment. The trail passes seasonal ponds with an array of freshwater animals. Restrooms and a drinking fountain are available at the Indian Valley College Fields complex.

The Indian Valley College entrance to the trail is located ½ mile from the Golden Gate Transit campus stop for lines 151, 251 and 257.

The existing trail/fire road is wide and substantially level starting from the Indian Valley Road entrance. A steeper section starts from the Indian Valley College campus side. There are numerous drainage channels and erosion ruts that cross the trail.

Roy's Redwoods

Road ID 23030



Destination and Experience:

The Meadow Trail is less than ¼ mile long and can be accessed from Nicasio Valley Road just north of the golf course in San Geronimo Valley. The trail runs through an open meadow which is surrounded by old growth redwood forest and tall bay trees. At the terminus of the Meadow trail is an ancient “fairy ring” where the parent tree died and several new trees grow up to surrounded it. The center of the ring is now hollow and is surrounded by towering old growth redwoods. This feature provides a great opportunity for interpretation. A portable toilet with adequate wheelchair turning space exists approximately 90 feet from the trailhead. This is a hiking only trail, although other trails in the preserve allow for equestrians and cyclists.

Trail width varies from a 6 - 8 foot vehicle access road at the trail head, to a 2 - 4 foot wide path through the majority of the meadow. The trail surface is varied with the majority being compacted native soil. Portions of the trail have become uneven due to concentrated flow along the center of the trail which has caused erosion and rilling. An intermittent stream crosses the trail surface near the gate/entry. This section of the trail has loose gravel, exposed tree roots and an uneven, rocky surface. Once past the entrance gate, most of the Meadow trail has a running slope of less than 5%. The section of the trail beginning at Nicasio Valley Road that descends to the trailhead has a running slope between 10%-15%.

Currently, there are plans to implement a meadow restoration at Roy's Redwoods. Any improvements to the meadow trail will be implemented in conjunction with the restoration of the meadow. This may result in a revised trail alignment which will be evaluated in the context of this plan.

Rush Creek Fire Road

Road ID 12200



Destination and Experience:

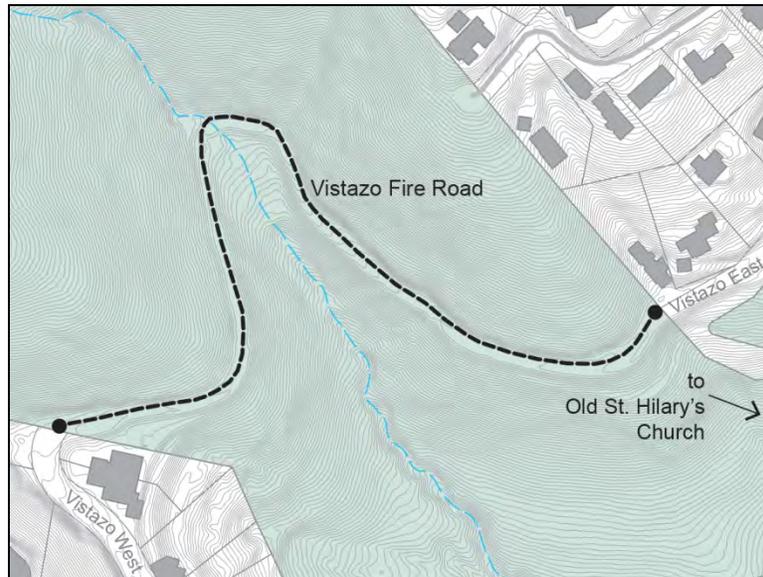
Rush Creek Fire Road is a mile long fire road located in the Rush Creek Open Space Preserve in Novato. It connects to the Bahia Trail at the east side of the Bahia Ridge to the Pinheiro Fire Road at the bottom of Cemetery Marsh. Views from the trail face northward toward Mount Burdell and Gness Field Airport and east towards the Petaluma River Marsh Wildlife Area. The trail is well used with a mix of hikers, mountain bikers, and equestrians.

As with the Pinheiro Fire Road, this trail traverses California bay and coast live oak woodlands and annual grasslands along the edge of Marin County Park's Cemetery Marsh and then continues around Bahia Ridge along the Petaluma River Marsh Wildlife Area, which provide estuarine marsh habitat for species such as pickleweed, salt grass, and bulrush. Due to its proximity to these marshes, the trail provides ample opportunities for bird and wildlife viewing, including hundreds of shorebird and waterfowl species, as documented in the Rush Creek Open Space Preserve Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/rush-creek> .

Much of the fire road has a clear width of greater than 8 feet. Grass medians occur at several sections along the length of the trail and reduce the clear trail width. Parallel social trails on the uphill side of the trail are present where poor drainage result in wet trail conditions.

Vistazo Fire Road

Road ID 42200



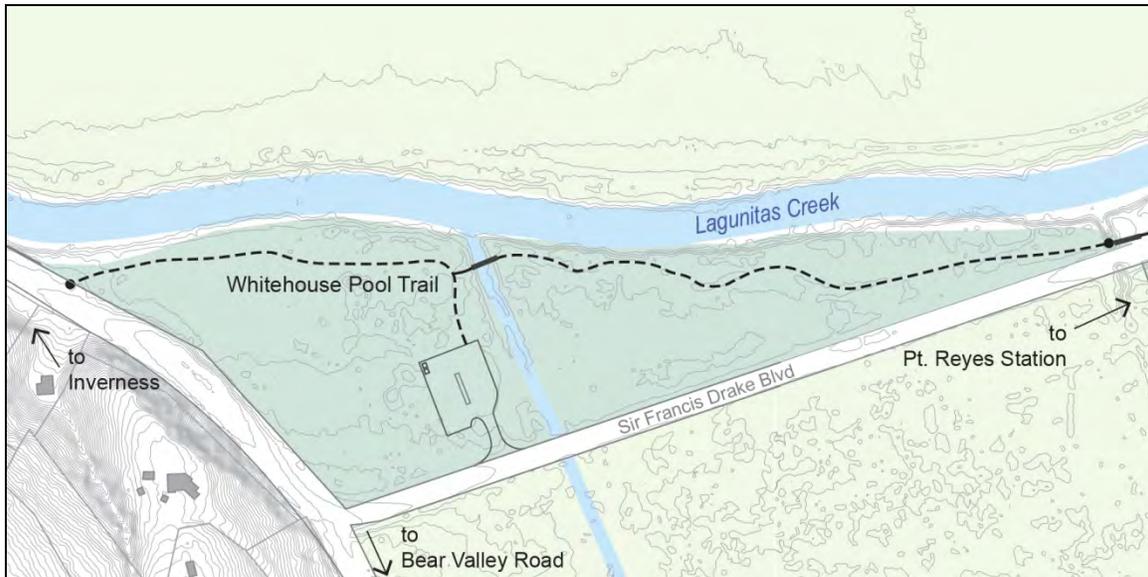
Destination and Experience:

The Vistazo Fire Road is an approximate ½ mile long round trip and is located in Old Saint Hilary's Preserve in Tiburon at the southern end of the preserve. From the hillside road are expansive views of San Francisco Bay to the south, and the surrounding Tiburon peninsula neighborhoods in other directions. The road winds through serpentine grassland and crosses one perennial drainage channel. The road provides access to fire and emergency vehicles and is open to pedestrians, equestrians and cyclists.

The trail is comprised of a combination of imported road base and compacted native serpentine soil and varies in width from 10 to 20 feet. Short sections of trail have severe erosion, exposed bedrock, and larger rocks. A perennial stream crossing exists which narrows the trail to approximately 6 feet. Most of the trail has running slopes of less than 10% and cross slopes less than 5%. A short segment immediately east of the stream crossing has a 20% running slope. Drainage from the adjacent hill side has cut deep ruts into sections of the trail surface.

Whitehouse Pool

Road ID N/A



Destination and Experience:

Whitehouse Pool Trail is located in Point Reyes Station, and is a level ½ mile trail along Lagunitas Creek in the Tomales Bay Estuary. In addition to the walking paths there are viewing areas, picnic tables, benches, access to Lagunitas Creek, and portable toilets - one of which is larger and provides wheelchair maneuvering space. Whitehouse Pool is surrounded by riparian vegetation and provides significant wildlife habitat for species such as coho salmon, and is popular for bird watching, nature study, and wildlife viewing.

There are no pedestrian sidewalks along the adjacent roadway. Whitehouse Pool is served by the West Marin Stage Coach Route 68. The bus stop is located at the west entrance to the trail.

The trail varies from 12 to 36 inches wide. Many sections of the trail have overgrown vegetation both on the ground surface and overhead reducing the clear width and height. The trail surface is varied with compacted native surface that is firm and stable in its dry state. Sections were observed with a top layer of loose small gravel.

Amenities such as the picnic tables, benches, and trash receptacles are located off the trail and require traversing grass.

Running and cross slopes along much of the path are less than 5%. The only sections observed to have excessive slopes were the ramp up to the bridge and the trail segment at the west entrance connecting to the bus loading area.



Image: View of Old St. Hilary's Church and the bay from Vistazo Fire Road

Initial System of Improved Access Trails

Trails that are substantially accessible, but do not meet all of the established accessibility standards for recreational trails and could not be feasibly improved without severe impact to sensitive natural resources, are being considered potential candidates for enhanced trail information communication strategies as Improved Access Trails. Enhanced trail communication includes information at the trailhead and on the Marin County Parks website describing the trail surface, slope, elevation rise or fall, tread obstacles, or other factors that would be helpful for trip planning.

These trails have good potential for being improved to meet standards and could provide a framework for future growth of the accessible trail system as opportunities for development or redevelopment of trails arise. A description of Improved Access Trails and the standards for design are contained in Chapter 6.

These trails include:

1. Bahia Trail – Novato

Bahia Trail is located in the Rush Creek Open Space Preserve adjacent to the Petaluma River Marsh Wildlife Area. The trail provides views of the wildlife area and the foothills.

2. Deer Island Loop Trail – Novato

The narrow trail passes grassland for several hundred feet before transitioning into bay laurel forest that is dense and shaded.

3. Escalon Fire Road – Mill Valley

The trail weaves in and out of a canopy of coast live oaks, California bay, and redwood forest interspersed with grasslands, and provides vistas of Mount Tamalpais.

4. Greenbridge Trail – Point Reyes Station

The site provides access to riparian habitat at Lagunitas Creek and the National Park Service's Lagunitas Creek Trail and Giacomini Wetlands.

5. Pinheiro Fire Road – Novato

This trail traverses California bay and coast live oak woodlands and annual grasslands along the edge of Rush Creek Marsh Wildlife Area and Rush Creek Marsh.

6. Ridgewood Fire Road – San Rafael

This trail is located on San Rafael Ridge in the Terra Linda/Sleepy Hollow Divide Open Space Preserve between Terra Linda, Sleepy Hollow, and San Anselmo.

7. Santa Margarita Island Trail – San Rafael

This trail circumnavigates the island among estuarine marsh habitat, coast live oak, valley oak and madrone woodlands, and serpentine rock outcrops.

8. Santa Venetia Marsh Trail – San Rafael

The trail is located on top of a levee that provides views of Gallinas Creek and the marsh areas of the preserve. It is flanked on either side by tidal marsh.

9. Taylor Fire Road (Ring Mountain Trail) – Tiburon

The fire road ascends into the Ring Mountain Preserve through grassland and oak savannah and culminates at a small plateau at the highest point within the preserve.



Marin County Parks

Improved Access Trail System

 Initial Trail Locations

 MCOSD Preserves

 Other Public Lands





Image: Meadow trail at Roy's Redwoods Preserve

6. Trail Design

Standards for recreational trail design included in this plan are based on the standards contained in the Accessibility Guidelines for Outdoor Developed Areas contained in the Architectural Barriers Act, the California State Building Code, and best practices used by Marin County Parks.

Destination-Oriented Trails

The Destination-Oriented Trail system is an experience-based network of fully compliant trails that will provide varied and immersive user experiences broadly representative of the array of outdoor settings available within the MCOSD preserves. These trails will meet or exceed the technical standards for accessible recreational trails and incorporate the principles of Universal Design to accommodate the needs of users.

Surface

Surface is to be maintained firm and stable with minimal vertical obstacles within the trail alignment.

Clear width

Clear width of the Destination-Oriented Trails shall be maintained at 60 inches minimum. Trail width may be reduced to 48 inches for a distance of 60 inches maximum, provided these sections are separated by segments at least 60 inches in length.

Slopes

Running slopes and cross slopes will be maintained at the minimum necessary to provide drainage. If drainage necessitates slopes exceeding the maximum allowed by the technical standards, alternative means of drainage should be employed.

Resting intervals and passing spaces.

Resting intervals and passing spaces will be provided to allow trail users to rest after vertical changes in elevation, or to allow simultaneous passage of hikers, OPDMD, bicycles, or equestrians.

Amenities

Seating at resting intervals are a helpful amenity to provide periodic resting opportunities along the trail. Seating should be provided at trail terminus points, vista points, and periodically on trails longer than one-half mile. There are, however, trail alignments where benches or other amenities may not be appropriate due to the potential for natural resource impact. The suitability of a location for an amenity will be evaluated during a review of site improvements for environmental impacts.

Getting there

Public transit and/or accessible parking enable(s) many visitors to arrive at the site from distant locations. There is no regulatory obligation to provide parking at trailheads.

Signage and information

Trailhead signage and website information about the trail allow people to gain an understanding of the trail conditions, environment, location, and other information that will assist in trip planning.

Improved Access Trails

Trails that are substantially accessible, but do not meet all of the established accessibility standards for recreational trails and could not be feasibly improved without severe impact to sensitive natural resources or issues of constructability, are being considered potential candidates for enhanced trail information that will facilitate individual assessment on whether a trail is appropriate for a particular user.

Surface

To the greatest extent possible, the trail surface is to be firm and stable with minimal vertical obstacles within the trail alignment. The presence of soft, rocky, or irregular surfaces will be identified on the trailhead sign and the website.

Clear width

Clear width of the Improved Access Trails shall be maintained at 48 inches minimum. Trail width may be reduced to 36 inches for a distance of 48 inches maximum, provided these sections are separated by segments at least 48 inches in length.

Slopes

Running slopes and cross slopes will be maintained at the minimum necessary to provide drainage. If drainage necessitates slopes exceeding the maximum allowed by the technical standards, alternative means of drainage should be employed. The total length of trail segments that exceed the standards will be listed on a trailhead sign and the website.

Amenities

Seating is a helpful amenity to provide periodic resting opportunities along the trail. Benches should be provided at appropriate locations on trails longer than one-half mile. There are, however, trail alignments where seating or other amenities may not be appropriate due to the potential for natural resource impact. The suitability of a location for an amenity will be evaluated during a review of site improvements for environmental impacts.

Getting there

Public transit and/or accessible parking enable(s) many visitors to arrive at the site from distant locations.

Signage and information

Trailhead signage and website information about the trail allow people to gain an understanding of the trail conditions, environment, location, and other information that will assist in trip planning.

Technical Standards

The following section contains the design standards for the Destination-Oriented Trails and Improved Access Trails as informed by the California and federal standards and codes for recreational trails and Principles of Universal Design. This section is a summary of general practices for the Marin County Parks' Destination-Oriented Trails and Improved Access Trails. The complete and full technical standards for recreational trails and trail amenities can be found in the state and federal standards.

- Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas (ABA)
- 2010 ADA Standards for Accessible Design (ADA)
- 2013 California Building Code (CBC)

Trails

Not all trails must meet the technical standards for accessible trails. When evaluating whether the technical standards for trail design apply to the site in question, the planner must look to the ABA Conditions for Exception listed in Chapter 3. If the Conditions for Exception are not met, the trail must comply with the following technical standards.

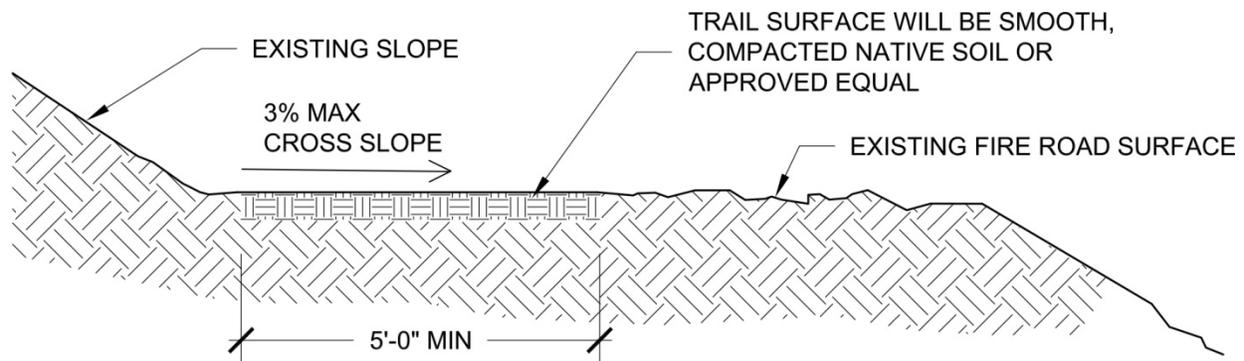
Surface

The surface of trails, passing spaces, and resting intervals shall be firm and stable. The Forest Service provides this guidance: In general, if the answer to both of the following questions is yes, the surface is probably firm and stable:

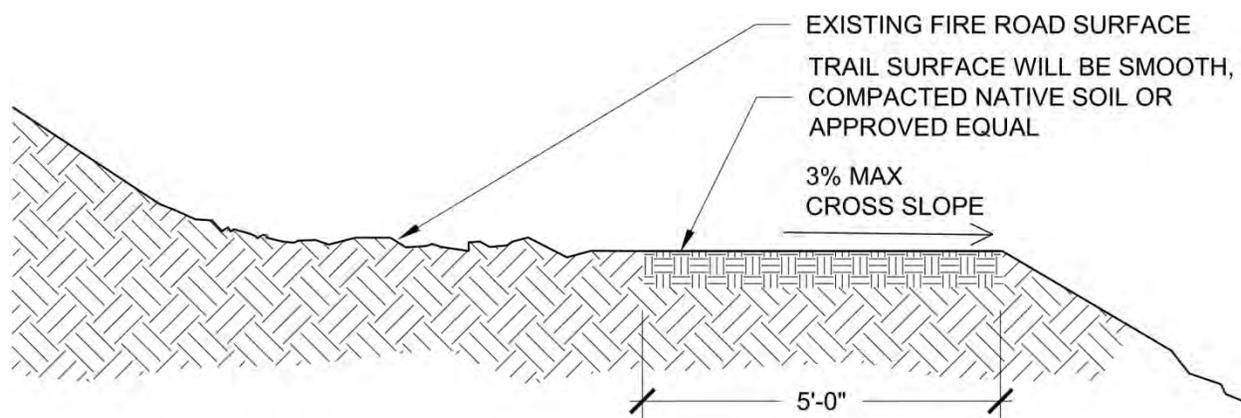
- Could a person ride a narrow-tired bicycle across the surface easily without making ruts? (The bicycle tires are similar to large rear wheels of a wheelchair.)
- Could a folding stroller with small, narrow plastic wheels containing a 3-year-old be pushed easily across the surface without making ruts? (The stroller's wheels are similar to the front wheels of a wheelchair.)

Clear Tread Width: The clear tread width of trails is recommended to be 60 inches minimum but no less than 48 inches with 60 inch passing spaces every 1000 feet.

Where fire roads have been identified as a Destination-Oriented or Improved Access Trail, it may be necessary to provide surface improvements along the alignment. It is not necessary that the improvements encompass the entire width of the fire road, but can be limited to a trail wide section.



Improved Surface on Uphill Side of Fire Road



Improved Surface on Downhill Side of Fire Road

Passing Spaces: Trails with a clear tread width less than 60 inches shall provide passing spaces at intervals of 1000 feet maximum. Where the full length of a trail does not fully comply, a passing space shall be located at the end of the trail segment that fully complies. Passing spaces and resting intervals shall be permitted to overlap. (ABA 1017.4)

Size of the passing space - The passing space shall be either:

- A space 60 inches (1525 mm) minimum by 60 inches minimum; or
- The intersection of two trails providing a T-shaped space where the base and the arms of the T-shaped space extend 48 inches minimum beyond the intersection. Vertical alignment at the intersection of the trails that form the T-shaped space shall be nominally planar. (ABA 1017.4.1)

Tread obstacles: Tread obstacles on trails, passing spaces, and resting intervals shall not exceed 1/2 inch in height measured vertically to the highest point. (ABA 1017.5)

Exception: Where the surface is other than asphalt, concrete, or boards, tread obstacles shall be permitted to not exceed 2 inches in height measured vertically to the highest point.

Openings: Openings in the surface of trails, passing spaces, and resting intervals shall not allow the passage of a sphere more than 1/2 inch in diameter. (ABA 1017.6)

Slopes

The slopes of trails shall comply with the technical standards contained below:

Maximum Running Slope and Segment Length: Not more than 30 percent of the total length of a trail shall have a running slope steeper than 1:12 (8.33%). The running slope of any segment of a trail shall not be steeper than 1:8 (12%). Where the running slope of a segment of a trail is steeper than 1:20 (5%), the maximum length of the segment shall be in accordance with the table below, and a resting interval shall be provided at the top and bottom of each segment. (ABA 1017.7.1)

Running Slope and Resting Intervals

Running Slope of Segment of Outdoor Recreation Access Route		Maximum Length of Segment before resting interval
Steeper than	But not Steeper than	
0	1:20 (5%)	No limit on distance
1:20 (5%)	1:12 (8.33%)	200 feet
1:12 (8.33%)	1:10 (10%)	30 feet
1:10 (10%)	1:8 (12%)	10 feet

Cross Slope: The cross slope shall be not be steeper than 1:48. (ABA 1017.7.2)

Exception: Where the surface is other than concrete, asphalt, or boards, cross slopes not steeper than 1:20 shall be permitted when necessary for drainage.

Resting Intervals

Resting intervals shall comply with the technical standards contained below:

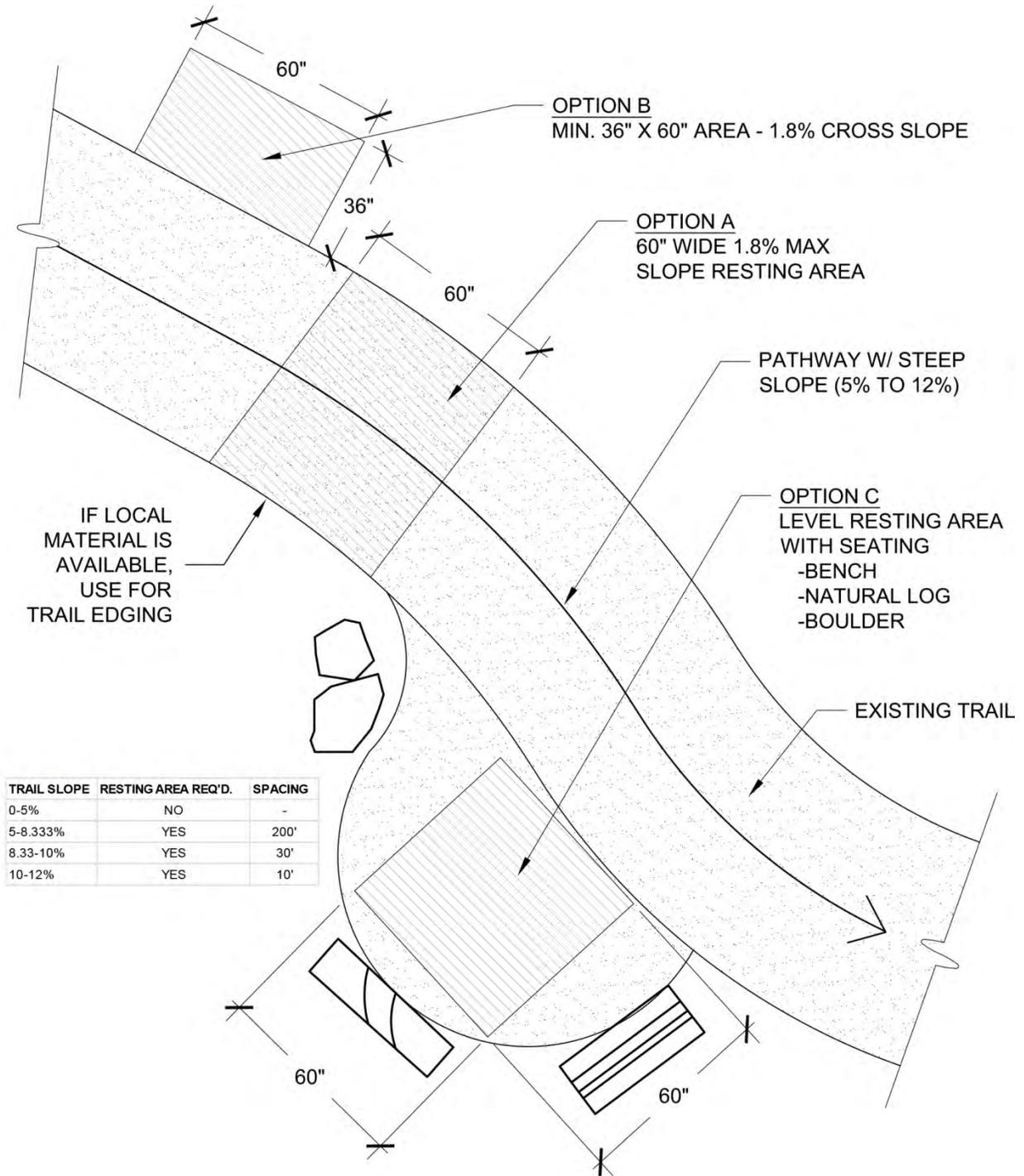
Length. The resting interval length shall be 60 inches long minimum. (ABA 1017.8.1)

Width. Where resting intervals are provided within the trail tread, resting intervals shall be at least as wide as the widest segment of the trail tread leading to the resting interval. Where resting intervals are provided adjacent to the trail tread, the resting interval clear width shall be 36 inches minimum. (ABA 1017.8.2)

Slope. Resting intervals shall have slopes not steeper than 1:48 in any direction.

Exception: Where the surface is other than concrete, asphalt, or boards, cross slope not steeper than 1:20 shall be permitted when necessary for drainage. (ABA 1017.8.3)

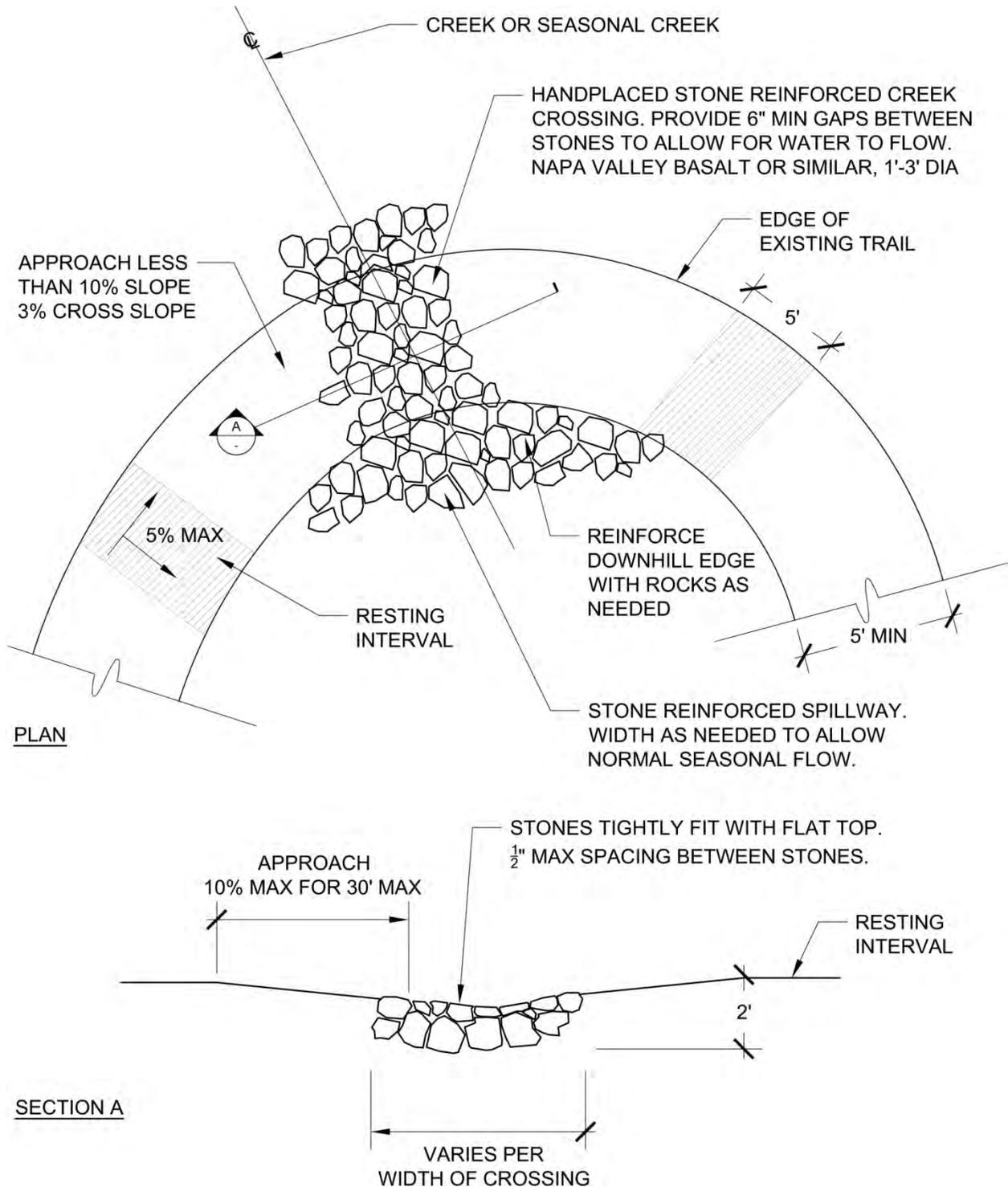
Turning Space. Where resting intervals are provided adjacent to the trail tread, a turning space shall be provided. Vertical alignment between the trail tread, turning space, and resting interval shall be nominally planar. (ABA 1017.8.4)



Resting Interval Location Options

Armored Crossings

Armored crossings are necessary where a waterway runs perpendicular to the trail alignment and may cause erosion. Modified crossings at a waterway of any kind will require permits from regulatory agencies. The final design specifications will be subject to review and approval by these agencies and may require modifications to the detail below.





Images from left: Armored crossing of stone with minimal openings at the surface and a trail section with compacted trail surface extending across top of armored crossing.

A puncheon style bridge is also an option for drainage control across a trail and may be more appropriate on pedestrian trails where the crossing does not need to support the weight of maintenance or emergency vehicles. Marin County Parks currently has standard details for puncheon design.

Edge Protection

Edge protection along a trail or boardwalk may be useful for providing non-visual tactile warnings or detectable wayfinding for trail users with visual disabilities. Edge protection can also be used to define the trail and limit access to sensitive areas adjacent to the trail alignment. Edge protection may take the form of rope or cable guidelines, a raised rock edging, or wooden wheel guides.

Edge protection is not required by AGODA or the CBC for trails and is not always appropriate to a natural resource area. Where the trail designer deems that it is appropriate to the trail and trail vicinity, the method of edge protection should meet the relevant CBC standards.

- Guard rails shall not be less than 42 inches high measured vertically from the trail surface when there is a drop off of 30" or greater. (CBC 1013.3)
- Raised rock edging or wooden wheel guides shall rise 6 inches minimum above trail surface and provide a continuous and uninterrupted barrier along the section receiving the edge protection. Any openings between the trail surface and the edging shall not be greater than 4 inches. (CBC 11B-303.5)
- Rope or cable guides are not addressed in regulatory standards however a height of 34 to 38 inches above the trail surface is consistent with other standards and is the height recommended by this plan.



Images top row from left: Rock trail edging to define and hold trail edge and wooden wheel guide along boardwalk. Bottom row: Cable guide along the trail edge and a wooden guardrail section where there is a significant drop off from boardwalk surface to adjacent natural surface.

Protruding Objects

Constructed elements on trails, passing spaces, and resting intervals shall comply with the technical standards contained below:

Objects overhanging any use area must be no lower than 80 inches from the ground surface. (CBC 11B-307.4; ADA 307.4; ABA-AGODA 1017.9)

Objects that protrude more than 4 inches into walkways must be installed or maintained so that their lowest edges are not between 27 inches and 80 inches above the ground. (CBC 11B-307.2; ADA 307.2; ABA-AGODA 1017.9)

Free standing objects mounted on posts may overhang no more than 12 inches between 27 to 80 inches above the ground surface. (CBC 11B-307.3; ADA 307.3; ABA-AGODA 1017.9)

Where a sign or other object is mounted between posts and the distance between the posts is greater than 12 inches, the lowest edge of the sign or object must be lower than 27 inches maximum, or higher than 80 inches above the ground. (CBC 11B-307.3; ADA 307.3; ABA-AGODA 1017.9)

Gates and Entrances

Gate Hardware

Handles, pulls, latches, locks, and other operable parts on doors and gates must not require tight grasping, twisting or pinching. Operable parts of such hardware shall be 34 inches minimum and 44 inches maximum above the finish floor or ground. (CBC 11B-404.2.7; ADA 404.2.7)

Spring Hinges

Gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum. (CBC 11B-404.2.8.2; ADA 404.2.8.2)

Gate Opening Force

The force for pushing or pulling open a gate shall be 5 pounds maximum. These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position. (CBC 11B-404.2.9; ADA 404.2.9)

Gate Surfaces

Gate surfaces within 10 inches of the finish ground measured vertically shall have a smooth surface on the push side extending the full width of the gate. (CBC 11B-404.2.10; ADA 402.2.10)

Clear Tread Width

This section requires the clear tread width of trails to be 36 inches minimum. The 36 inches minimum clear tread width is to be maintained for the entire distance of the trail and may not be reduced by gates, barriers, or other obstacles unless an entity determines under the allowable Exceptions 1 that a condition does not permit full compliance with the provision.

Where gates and barriers require wheelchair users to make 90 degree or 180 degree turns, sufficient space should be provided for wheelchair users to make the turns. (ABA- 1017.3)

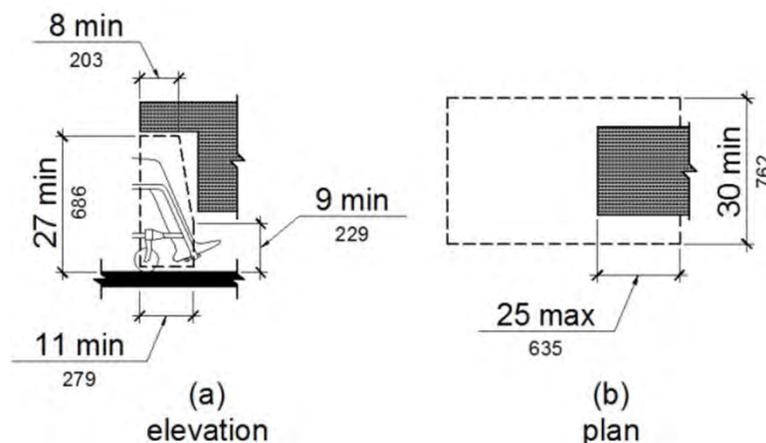
Outdoor Constructed Features

Drinking Fountains

Both a wheelchair accessible and a higher fountain for a standing person must be provided when drinking fountains are provided. When more than one of each type is provided, 50% are wheelchair accessible and 50% higher fountains. (CBC 11B-211.2; ADA 211.2)

Because drinking fountains may be dangerous protruding objects for people with visual disabilities, the drinking fountain must be positioned so as not to be a hazard. The drinking fountain can be located in an alcove that is 32 inches minimum wide and 18 inches minimum deep, or wing walls or railings may be provided that extend to the front edge of the fountain and to within 6 inches of the ground or floor, with 32 inches minimum clear width, providing a tactile cue for people using canes to safely navigate. (CBC 11B-307.2 and 602.9)

A 30 by 48 inch minimum clear, level space must be provided in front of the fountain for front approach. (CBC 11B-305; ADA 305)

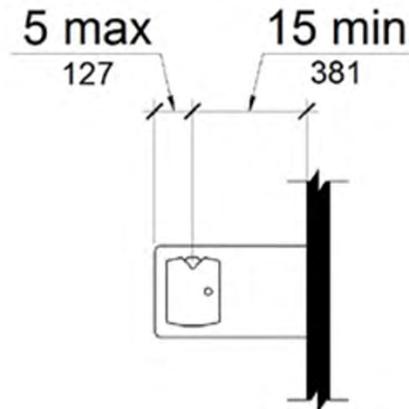


Knee and Toe Clearance at Drinking Fountain

The knee space between the floor or ground and the bottom of the fountain must be at least 27 inches. (CBC 11B-306; ADA 306)

The depth of the knee space must be 18 to 19 inches measured from the front of the fountain to the wall or post. (Pipes and other equipment may encroach upon knee space if they do not extend within 9 inches of the floor or within 8 inches of the front of the fountain.) Toe clearance must be at least 9 inches in height above the floor and at least 17 inches in depth from the front edge of the fountain. The toe clearance must be free of obstructions. (CBC 11B-306.2.3)

The flow of water must be approximately parallel to the front of the fountain and at least 4 inch high and located no more than 5 inches from the front of the drinking fountain. The bubbler is 15 inches minimum from a vertical support or wall if present. (CBC 11B-602.6)



Drinking Fountain Clearances

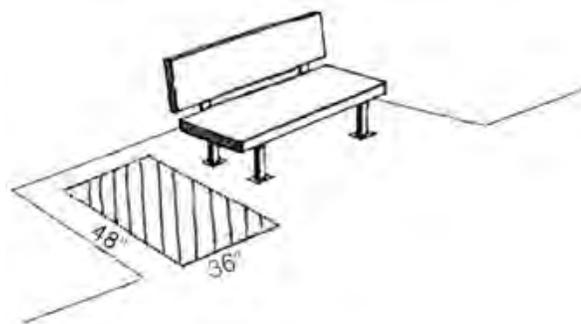
Where the spout is located less than 3 inches from the front of the unit, the angle of the water stream must be no greater than 30 degrees. Where the spout is located between 3 and 5 inches from the front of the unit, the angle of the water stream must be no greater than 15 degrees. (CBC 11B-602.6; ADA 602.5-6)

The bubbler height may not be more than 36 inches above the ground for an accessible fountain and between 38 and 43 inches for a standing person fountain. (CBC 11B-602.4 and 11B-602.7; ADA 602.4 and 602.7)

Drinking fountain controls must be located on the front of the fountain or if controls are side-mounted they must be within 6 inches of the front. (CBC 11B-602.3)

Controls must be operable with one hand and not require twisting or grasping. The maximum force to operate the fountain is 5 lbs. (CBC 11B-309; ADA 309)

Fixed Benches and Informal Seating



Companion Seating at Bench

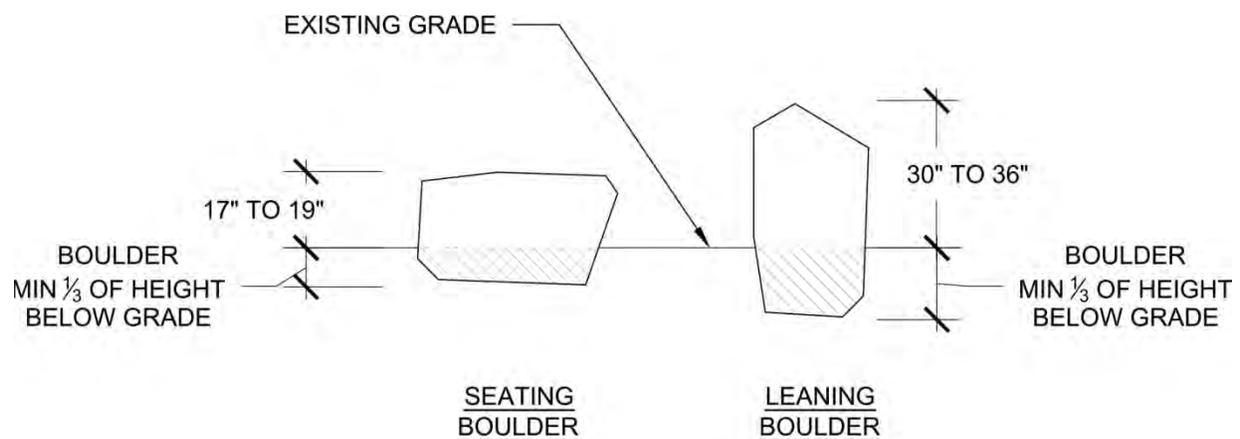
A clear floor space at least 36 by 48 inches must be positioned near the bench with one side of the space adjoining an outdoor recreation access route or trail, as applicable. The clear ground space may not overlap the outdoor recreation access route or trail, or another clear ground space (ABA-AGODA 1011.2.1)

The surface of the clear ground space must be firm and stable. (ABA-AGODA 1011.2.2)

The slope of the clear ground space surface may not be steeper than 1:48 (2%) in any direction. Where the surface is other than asphalt, concrete, or boards, slopes not steeper than 1:20 (5%) are permitted when necessary for drainage. (ABA-AGODA 1011.2.3)

Openings in the clear ground space surface may not allow the passage of a sphere more than ½ inch in diameter. (ABA-AGODA 1011.2.4)

Where formalized benches are deemed not appropriate to the trail or site, alternative seating models may be used. One such example would be boulders serving as informal seating or leaning stations. When using boulders and informal seating, ensure selected boulders are smooth and free from jagged edges.

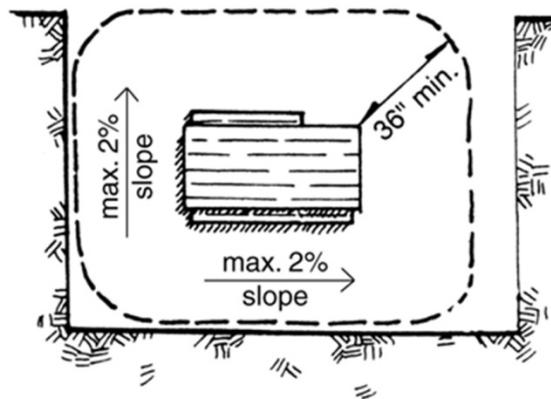


Informal Boulder Seating

Picnic Tables

Clear Ground Space

- One full unobstructed side of the clear ground space around an accessible picnic table must adjoin or overlap an outdoor recreation access route or a trail, as applicable, or another clear ground space. (ABA-AGODA 1011.2.1)
- The surface of the clear ground space must be firm and stable. (ABA-AGODA 1011.2.2)
- The slope of the clear ground space surface must not be steeper than 1:48 (2%) in any direction. Where the surface is other than asphalt, concrete, or boards, slopes not steeper than 1:20 (5%) shall be permitted when necessary for drainage (ABA-AGODA 1011.2.3)
- Openings in the ground surface such as grates, spaces in decks, etc. may not be greater than ½ inch. (ABA-AGODA 1011.2.4)
- A clear floor or ground surface at least 36 inches wide must be provided at the usable portion of the table measured from the back edge of the benches. (ABA-AGODA 1011.2.1)



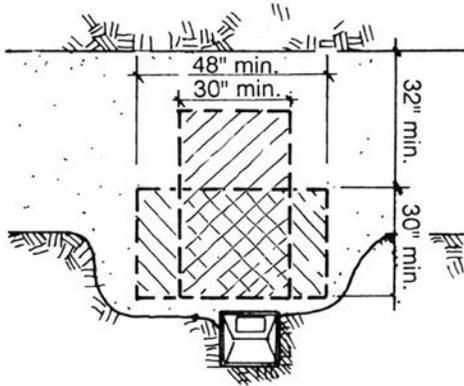
Clear Ground Space at Picnic Table

Table

- An accessible picnic tables must provide at least one wheelchair space for each 24 linear feet of usable table surface perimeter. Wheelchair spaces must be at least 30 inches 48 inches. Wheelchair spaces must be positioned for a forward approach to the table. (ABA-AGODA 1011.4.2)
- The top surface of the picnic table must be 28 to 34 inches above the floor or ground surface. (ADA 902.3; ABA-AGODA 1011.4.1)
- Toe clearance: At 9 inches above the ground toe clearance must extend at least 17 inches under table measured from the front edge of the table top. (ADA 306.2; ABA-AGODA 1011.4.2)
- Knee clearance: At 8 inches measured horizontally from the front face of the table top, knee clearance must be at least 27 inches between the bottom of the table surface including bracing and hardware and the ground surface. (ADA 306; ABA-AGODA 1011.4.2)
- Knee space below the table must be at least 30 inches wide. (ADA 306.3; ABA-AGODA 1011.4.2)

Trash and Recycling Receptacles

Where bins are provided for envelopes, waste paper, or other purposes, at least one must located along an accessible route. (CBC 11B-206.2; ADA 206.2)



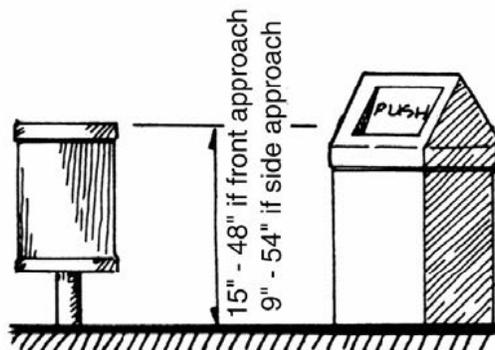
Clear Ground Space at Trash Receptacle (Plan)

A 36 by 48 inch minimum clear floor or ground space must be provided at the container opening for forward reach, or 30 by 60 inches clear floor space positioned for a parallel approach to the receptacle. (ABA-AGODA 1011.2.1)

The surface of the clear floor or ground space must be firm and stable. (ABA-AGODA 1011.2.2)

The clear floor or ground space slope may not exceed 1:48 (2%) in any direction. Where the surface is other than asphalt, concrete, or boards, the slope may not be greater than 1:20 (5%) as required for proper drainage. (ABA-AGODA 1011.2.3)

Operating mechanism is operable by a single effort with no grasping, pinching, or wrist movement. Operating effort does not exceed 5 lbs. 309.4 Exemption: Hinged lids and controls designed for large animal exclusion and dumpster type trash and recycling receptacles (ABA-AGODA 1011.3)

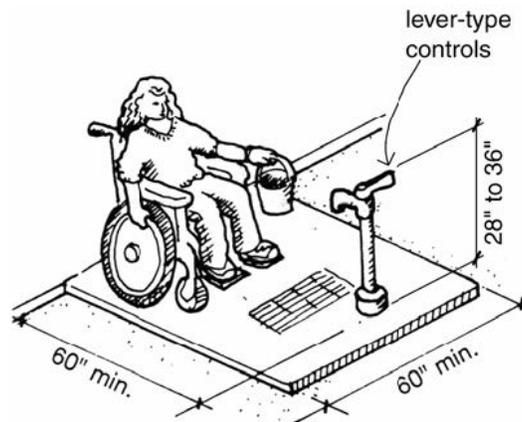


Operating mechanism or openings are located within 15 to 48 inches of the ground. (ABA-AGODA 1011.3)

Dumpsters

Dumpster type trash and recycling receptacles shall not be required to comply with height or operating mechanism regulations but must be located on an accessible route. (ABA-AGODA 1011.3)

Water Spigots/ Hand Pumps



A clear floor or ground space that is at least 48 by 72 inches must be provided at an accessible water spigot, with the long side of the space adjoining or overlapping an accessible route. The clear floor space must be oriented to that the water spigot is between 11 and 12 inches from the rear center of the long side of the space. (ABA-AGODA 1011.2.1)

The clear floor or ground space slope may not exceed 1:48 (2%) in any direction. Where the surface is other than asphalt, concrete, or boards, the slope may not be greater than 1:20 (5%) as required for proper drainage. (ABA-AGODA 1011.2.3)

The surface of the clear floor/ground space must be firm and stable. (ABA-AGODA 1011.2.2)

Water spouts and operating mechanisms must be located within 28 to 36 inches above the ground. (ABA-AGODA 1011.6)

The operating mechanism must be operable by a single effort with no grasping, pinching or wrist movement to the maximum extent possible with an operating effort not exceeding 5 lbs. (ABA-AGODA 1011.6; ADA 309.4)

Parking

Marin County Parks will rely primarily on public rights-of-way to provide the parking to serve open space visitors arriving by motorized vehicle (MCOSD Policy P1). However, there may be locations where adequate on-street accessible parking cannot be provided within the right-of-way. These situations will warrant further evaluation to the appropriateness of parking improvements located on open space preserves.

Managing emergency access for fire and emergency vehicles will also dictate where parking can and cannot be located. If a proposed parking area impedes emergency access in any way, the parking will need to be adjusted or removed.

When new parking areas are found to be an appropriate solution, new parking areas must meet the following technical standards.

Signs and Pavement Marking

A reflectorized sign that is 70 square inches minimum must designate each accessible space as reserved for people with disabilities and will not be obscured by parked vehicles. (CBC 11B-502.6.1)

Signs must designate one of every six (but at least one) accessible stalls as “Van Accessible” (CBC 11B-208.2.4; ADA 208.2.4)

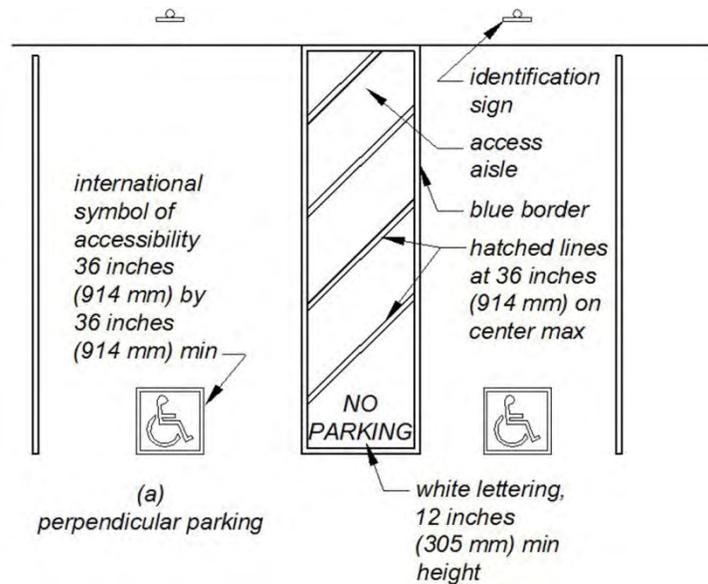
A warning sign, 17 by 22 inches minimum with 1 inches minimum high letters is posted at each street entry to the parking lot or adjacent to each accessible space and gives information regarding vehicles towed for unauthorized use of accessible spaces. Tow-away sign states:

“Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed away at owner’s expense. Towed vehicles may be reclaimed at _____ or by telephoning _____”. Contact information on the tow-away sign is provided. (CBC 11B-308.2)

Signs must be mounted on posts, 80 inches minimum, measured to the bottom of the sign, above the parking surface; or signs are wall-mounted at the end of the space. (CBC 11B-502.6)

The words NO PARKING must be painted in each access aisle in white, 12 inches letters. (CBC 11B-502.3.3)

Accessible spaces are outlined or painted in blue, and are marked with the International Symbol of Accessibility in a contrasting color that will not be obscured by a parked vehicle; There is a 36 by 36 inches minimum blue square with a white International Symbol of Accessibility positioned where it can be seen by parking enforcement officers and will not be obscured by the parked vehicle. (CBC 11B-502.6.4)



Stalls/Access Aisles

An adequate number of accessible parking stalls are provided. (See CBC 11B-208.2)

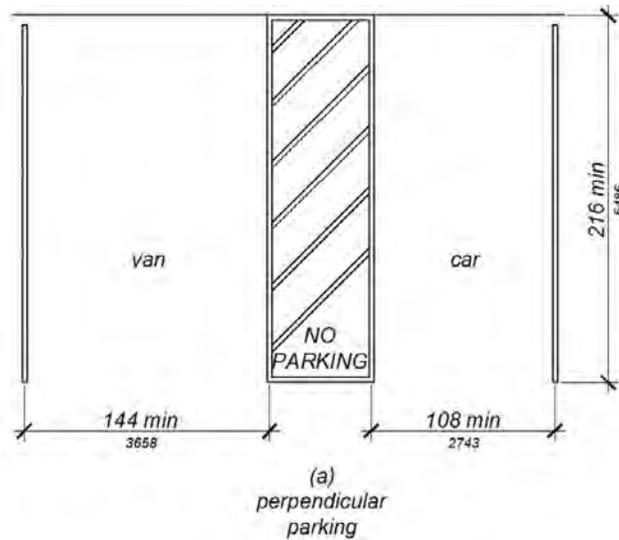
Wheelchair access must be provided to an accessible route to the pedestrian entrance without going behind other parked cars. (CBC 11B-502.7.1)

Overhanging bumpers do not reduce the clear width of the accessible route to less than 48 inches. (Practical standard: If there is a pedestrian path of travel at the front of the parking stall, there should be at least 24 inches between a wheel-stop and the edge of a walkway) (CBC 11B-502.7 and 11B-502.7.2)

Accessible parking stalls must be the stalls closest to an accessible entrance to the activity, building, or site. (CBC 11B-208.3)

Slopes of parking spaces and access aisles are no steeper than 1:48 (2%) in any direction. (CBC 11B-502.4 and 11B-302)

Vertical clearance at designated parking spaces, and at least one vehicle route from the entrance, must be at least 98 inches. This may include tree branches, signs, and other overhead objects. (CBC 11B-502.5)



Accessible stall width must be at least 9 feet measured centerline to centerline of the pavement markings. If there is only one accessible parking space, include the entire line width in the measurement. Stall length must be at least 18 feet. The van accessible space must be 12 feet wide if access aisle is only 60 inches wide. (CBC 11B-502.2)

An adjacent access aisle is provided on the passenger side of the accessible parking stall (two stalls may share an access aisle located between them, but the van aisle must be on the passenger side). (CBC 11B-502.3 and 11B-502.3.4)

The access aisle must be outlined with a blue border and must be at least the length of the parking stall it is serving. Hatched lines within the access lines must be no more than 36 inches on center and painted a color contrasting the parking surface. (CBC 11B-502.3.2 and 11B-502.3.3)

The access aisle width must be at least 60 inches. 96 inches is required for the van access aisle. The van access aisle must be on the passenger side of the van space. (CBC 11B-502.3.1)

On-Street Parking

- When provided, accessible on-street parking space length must be at least 20 feet.
- Marked with a blue curb

Maintenance and Monitoring Protocol

As required by both the ADA and CBC, Marin County Parks must maintain accessible facilities in a usable and accessible condition. Standard yearly trail maintenance includes trail corridor clearing, water diversion structure cleaning, and safety issue mitigation performed on all designated trails at least once per year.

Trail conditions can provide access or be a barrier to experiencing the trail, depending on the trails current condition. All surfaces require periodic maintenance and natural surface trails are particularly subject to erosion or channelization due to wear and drainage issues. Trail conditions should be inspected after every significant storm event to ensure continued compliance with trail standards. A significant storm event is a storm with rainfall exceeding two inches in a twenty-four hour period. If possible, an inspection and corrective measures should be performed a few days prior to any anticipated storms.

Common problems encountered on recreational trails designed for accessibility:

- Surface deterioration due to drainage running down the trail because drainage structures such as water bars or drain dips have failed. *Solution: maintain drainage structures.*
- Surface deterioration due to drainage running across the trail because drainage swales that are parallel to the trail, or culverts under the trail have failed. *Solution: maintain drainage structures.*
- Surface deterioration due to maintenance and emergency vehicle access during wet weather or softened surface conditions. *Solution: avoid to extent possible driving vehicles on improved trail surfaces when trail surfaces are saturated. Groom and recompact surface materials when in a dry state. Consider localized stockpile of trail material at improved trail sites.*
- Replacement of previously accessible surface materials with loose material. *Solution: make trail repairs with well compacted appropriate surface materials.*
- Changes in surface elevation at the junction of granular trail surfacing and rigid structures such as bridges, boardwalks, or rigid pavements. *Solution: Incorporate trail binding agents in the granular trail surfacing materials at the point of connection with rigid pavements.*
- Vegetation growing on trail surface. *Solution: Maintain the surface including depth of material and compaction.*
- Trees and vegetation overhanging trail causing hazards to people with visual disabilities. *Solution: Trim overhanging or protruding vegetation.*

Recommended Schedule for Maintenance Intervals

	Monthly	Quarterly	Semi-Annually	Annually	When Needed
Vegetation maintenance					
Brushing/clearing areas					
Clear fallen trees/branches					
Hazard tree removal					
Slope re-vegetation					
Back slope grooming					
Vista maintenance					
Poison oak removal along trail					
Tread maintenance					
Grading tread					
Slide removal					
Slump repair					
Filling erosion ditches					
Grubbing rocks/roots/stumps					
Spot surfacing					
On-grade waterway crossing repair					
Surface repair					
Remove loose rocks					
Drainage maintenance					
Cleaning/repairing structures					
Replace existing structures*					
Install new drainage structures*					
Trail and support structure maintenance					
Bridge repair					
Cribbing/retaining wall repair					
Barrier/guardrail repair					
Steps repair					
Fence/gate/stile repair					
Sign maintenance					
Sign repair/rehabilitation					
Sign replacement					
Maintain clear floor space					
Cleaning sign surface					

* Drainage structures include waterbars, culverts, drainage ditches and grade dips

7. Communications Strategy

The ADA Title II requires a public entity to ensure that its communications with individuals with disabilities are as effective as communications with others. This obligation, however, does not require a public entity to take any action that it can demonstrate would result in a fundamental alteration in the nature of its services, programs, or activities, or in undue financial and administrative burdens. **28 CFR 35.160-35.164. II-7.1000 Equally effective communication**

The Communications element of the *Inclusive Access Plan* aims to identify methods for making trail information available to the largest breadth of users. The Independent Living concept postulates that people with disabilities are the best experts on their own needs. It is not appropriate for a public agency to determine if a person with a disability can or cannot use a particular trail. Instead, an individual should be empowered to make an informed decision about their trail selection based on information available to them.

By creating a standard of information available in a variety of formats, Marin County Parks seeks to provide a source for an individual to gather information and decide whether a specific trail is accessible to them.

Methods for providing information can be on-site or intended for pre-planning purposes.

On-site Strategies include:

- trailhead signage
- wayfinding methods like progression markers and directional signage
- interpretive signage elements

Pre-planning Strategies include:

- website
- brochures and printed information made available at community centers and to service organizations
- having a designated accessibility liaison to field phone calls or in-person inquiries for people unable to access info on the Web
- Marin County Parks would also like to explore partnership opportunities with Google or others to create comprehensive "trail view" tours of select facilities.

This section is intended to provide guidance on trail accessibility information and a protocol for disseminating the information to the public regarding Destination-Oriented Trails and Improved Access Trails.

Trailhead Signs

Information

The following information requirements, based on federal guidelines and suggestions made during the public outreach process, apply to all new trail information signs provided at trailheads on newly constructed or altered trails designed for use by hikers or pedestrians regardless of the trail complying with the technical requirements. Information provided on the signs enables individuals with disabilities to decide whether to hike the trail based on the characteristics of the trail. Information made available at the trailhead should be presented in both text and graphic formats.

Suggested information to be presented on trailhead signage includes:

- trail name
- length of trail/trail segment
- surface type
- typical and minimum tread width
- typical and maximum running slope
- typical and maximum cross slope
- elevation change with gain and loss

(2013 Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas (ABA), 1017.10; 2015 California State Parks Accessibility Guidelines, Section 42)

Providing additional information regarding specifics to barriers is useful for Improved Access Trails where conditions or features considered by some to be potential barriers are more prevalent than on the Destination-Oriented Trails. A more thorough description of these trails would assist a person who is reviewing the information in making a decision as to whether or not the trail is appropriate for them. Expanded information can also be posted to the website.

Technical Standards for Signs

Finish and contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

Case. Characters shall be uppercase or lowercase or a combination of both.

Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

Character proportions. Characters shall be selected from fonts where the width of the uppercase letter “O” is 60 percent minimum and 110 percent maximum of the height of the uppercase letter “I”.

Character height. Minimum character height shall comply with Table 11B-703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter “I.”

Height from finish floor or ground. Visual characters shall be 40 inches (1016 mm) minimum above the finish floor or ground.

Table 11B-703.5.5 Visual Character Height

Height to Ground From Baseline of Character	Horizontal Viewing Distance	Minimum Character Height
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	less than 72 inches (1829 mm)	5/8 inch (15.9 mm)
	72 inches (1829 mm) and greater	5/8 inch (15.9 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1829 mm)
greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	less than 180 inches (4572 mm)	2 inches (51 mm)
	180 inches (4572 mm) and greater	2 inches (51 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4572 mm)
greater than 120 inches (3048 mm)	less than 21 feet (6401 mm)	3 inches (76 mm)
	21 feet (6401 mm) and greater	3 inches (76 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6401 mm)

Pictograms. A pictorial symbol that represents activities, facilities, or concepts.

Finish and contrast. Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field.

Text descriptors. Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with Sections 11B-703.2, 11B-703.3 and 11B-703.4.

(2013 California Building Code)

Informational Exhibits and Interpretive Signage

Signage providing information about the natural surroundings, current location along the trail, and other interpretive elements of the site were frequently brought up in focus groups. These signs may be permanent or temporary and seasonal. Informational and interpretive signage can be a valuable tool in wayfinding and educating trail users on habitats, cultural and historic context, user etiquette, and trail conditions. When providing interpretive signage or informational elements, it is required such features are provided in an accessible format and in accessible location to assist people with visual or mobility disabilities.

CBC 11B-246.8: Nature trails. *Nature trails and similar educational and informational areas shall be accessible to individuals with vision impairments by the provision of rope guidelines, raised Arabic numerals and symbols, or other similar guide and assistance devices.*

Providing access to trail users with visual disabilities can be accomplished on site by various existing and emerging technologies.

- Tactile signs, including Braille or raised lettering, are a traditional method of providing a descriptive experience to users with visual disabilities.
- Bas relief maps or sculptures may be used for orientation and educational purposes.
- Rope guidelines or trail edging provide a non-visual wayfinding and navigation method.

For people with vision impairments, the appropriate information formats will vary. Brailled materials, are ineffective for many individuals with vision impairments who do not read Braille, just as large print materials would be ineffective for individuals with severely impaired vision who rely on Braille or on audio communications. Tactile lettering on signs and audio tours may provide access to a greater number of people but may have their own limitations.

Local agencies have employed other emerging technologies for providing access to programs for people with disabilities including vision impairments. An exciting and quickly evolving field of new technologies is providing accessible experiences to people with visual disabilities. Some have been proven in local outdoor recreation environments, and others may be adaptable in the future for implementation at Marin County Parks' open space preserves as they are further developed.

- Self-guided Cell Phone Tour, Golden Gate National Recreation Area. The National Parks Service provides small signs at points of interest where a user can call in and hear a one to two minute description or story about that particular location. Quick Response (QR) codes have also been used to provide site information.
- Location-aware Beacon System, San Francisco International Airport. An emerging technology, the beacons help people navigate to points of interest or via a map directory where it directs the individual to the desired location.

Technical Standards and Recommendations for Information Exhibits and Interpretive Signage

Accessible Route. An accessible route to the information board shall be provided.

Information Resource. Where information boards are provided, at least one must be accessible, provide the same functions as inaccessible units, and are provided at each location. Where two information boards are provided at a location, one has compliant clear floor space.

Clear Ground Space. Information Exhibits and Interpretive Signage shall be placed adjacent to a clear ground space. Where duplicate information is presented at more than one exhibit, at least one exhibit has compliant clear ground space. Clear ground space for exhibits placed along accessible routes should be adjacent to and outside the regular path of travel so that people who stop to examine the exhibit do not impede the passage of others. Where duplicate information is presented at more than one exhibit, at least one exhibit has compliant clear ground space.

- a. The clear ground space is 30 by 48 inches minimum must be provided in front of the information board for either front or parallel approach.
- b. The clear ground space slope must be no greater than 1:48 (2%) on concrete, asphalt, or board walks surfaces or 1:20 (5%) at surface materials other than concrete, asphalt, or boardwalk.

Sign Height. Information exhibits must be installed at heights and angles favorable for viewing by everyone, including wheelchair users.

- Angled signs. The lowest part of the exhibit must be between 27 inches and 34 inches. The recommended height is 32 inches from the bottom of the frame to the finished grade.
- Vertical signs. Panels with most text and graphics between 46 inches and 62 inches and centered at 54 inches will provide a height comfortable to the range of vision for most viewers.

Sign Angle. Vertical signs should be installed at 90 degrees from the ground plane. Angled signs should have an angle between 45 degrees and 60 degrees in relation to the ground plane.

Graphic Standard. Information available on the information board must be presented with characters complying with Communication Elements and Features Standards found in Chapter 7 of the ADA and Division 7 of the CBC.

(2013 California Building Code, 2015 California State Parks Accessibility Guidelines and 2009 National Park Service Guide to Developing Outdoor Interpretive Exhibits)

Website

Two levels of information are suggested for an Accessibility web page. The first being system wide- describing where the Destination-Oriented Trails and Improved Access Trails are located within the Marin County Parks open space preserves. The second level is information specific to

the conditions of the trails being identified as Destination-Oriented or Improved Access Trails. It is ideal to provide information for all trails to assist a person who is reviewing the information to make decisions to whether or not the trail is appropriate for them.

System-wide Information

Identify the locations of Destination-Oriented and Improved Access Trails in the Marin County Parks system of open space preserves. The State of California Parks and Recreation department posts an interactive map where users can select a region and a list of facilities with accessible features is provided. Another interactive filter may be to allow a user to elect what kind of trail experience they would like to have (redwoods, ridgeline, or salt marsh) and the corresponding list of facilities would be formulated.

Other system wide information may include

- a list of upcoming accessibility improvements within Marin County Parks open space preserves
- a link to the County's Accessibility Request page so that a user may express interest in improvements at a specific facility
- a link to the Disability Access Program webpage complaint form

Trail Specific Information

It is recommended that trail condition information be presented on the Marin County Parks website identifying the Destination-Oriented and Improved Access trails. This information can be presented in many ways including a scrolling web page or by using accessible PDF, Word document or other format to make reports available for downloading. The benefit of having a report available to download as a PDF is that it would be formatted for printing and use on the trail. Making the report available as a Word document would allow users to manipulate the size of the text.

Information about a specific trail on the Marin County Parks website:

- short description including environment, experience, and amenities
- trail uses (hiking, bicycles, dogs, equestrian)
- trail length
- trail type (network, linear, loop)
- elevation change with gain and loss
- typical grade, cross slope, tread width, and surface
- hazards and obstructions
- statement that posted information reflects the condition of the trail when it was constructed or assessed, including the construction or assessment date

Additional information regarding amenities like drinking water and restrooms, as well as parking and public transit options will also be presented on the web page.

Mobile Technology

With increasing use and reliance on mobile technology including smart phones, the website should be formatted to be viewable by mobile devices. Similar applications currently exist for California State Park (CalParks) as well as the National Park Service (NPS National Mall). Marin County Parks is currently in the process of updating its website to be compatible with mobile devices. The updated website is anticipated to be completed in 2016.

Written/Graphic Publications

Providing brochures and other hard copy formats of trail information materials was mentioned many times during the focus groups and public workshops in order to serve an aging population in Marin County who may not use computers or regularly access the internet. Ensuring that these documents are legible to people with low vision as well as being available in an alternative format to be read by screen reader software is required.

The County of Marin has a standard protocol for producing printed materials in accessible formats. The standards were found to provide guidance on accessible formats for hard copy and electronic versions of documents available to the public. These standards should continue to be followed for production of publications.

In addition to following the existing County of Marin standards, Section 11B-703 of the California Building Code provides guidance on accessible character styles for visual content of signs. (e.g. character proportions, stroke thickness, and character and line spacing). The guidance provided for character styles as applied to signs may also be used to inform character style selection for other forms of visual content including written and graphic publications.

In addition to the methods listed above, a designated accessibility liaison to field phone calls or in-person inquiries for people unable to access the website was mentioned during the focus groups. Marin County Parks will explore how to best provide these services.



Image: Meadow along trail at Whitehouse Pool

8. Resources

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Image: Hamilton Path follows the edge the Hamilton Wetland Preserve

Appendix A: Trail Accessibility Assessment Report

The purpose of this report was to identify the best candidates for an initial set of Destination-Oriented Trails that meet, or can be improved to meet, accessibility standards for recreation trails, as well as identify trails providing improved access to people with disabilities, but that may not currently meet accessibility standards.

Not all candidate trails will be included in the initial set of accessible trails as part of the *Inclusive Access Plan*. With guidance from the public and the MCOSD staff, trails comprising the Destination-Oriented Trail system were selected from the list of candidates based on geographic distribution, creation of a diverse set of experiences within the system, and degree of environmental resource impact. Candidate trails not included in the *Inclusive Access Plan* but considered to have good potential will provide a framework for future growth of the accessible trail system as opportunities for development or redevelopment of trails arise.

Trails that are substantially accessible but do not meet all of the established accessibility standards for recreational trails will be considered potential candidates for enhanced signage and other communication strategies as Improved Access Trails.

The initial application of filters to the existing road and trail data identified 21 trails with the potential for being made compliant to trail standards. Indian Valley Fire Road was added at a later time and is not included in these initial assessment reports.

1. Agate Beach Bluff Trail
2. Bahia Trail
3. Big Tree Trail
4. Deer Island Loop Trail
5. Dwarf Oak Trail
6. Escalon Fire Road
7. Greenbridge Trail
8. Hamilton Path Trail
9. Hill Ranch Waterfall Trail
10. Old Railroad Grade
11. Pinheiro Fire Road
12. Ridgewood Fire Road
13. Roy's Redwoods Meadow Trail
14. Rush Creek Fire Road
15. San Andreas Fire Road
16. Santa Margarita Island Trail
17. Santa Venetia Marsh Trail
18. Shipmast Trail
19. Taylor Fire Road (Ring Mountain)
20. Vistazo Fire Road (Old Saint Hilary's)
21. Whitehouse Pool Trail

Agate Beach County Park Bluff Trail

Road ID N/A | Ocean Parkway, Bolinas

Destination and experience value/potential. Geographic location

The Agate Beach County Park Bluff Trail is located in Bolinas, and offers opportunities to explore tide pools filled with marine life, general beach recreation, wildflower viewing, bird watching, and on clear days, views to the Farallon Islands. Agate Beach is part of the Duxbury Reef State Marine Reserve, which includes federal and state jurisdictions and signifies its status as a sensitive and highly protected resource area. The Marin County Parks jurisdiction includes the beach and the upland area above the bluffs, which includes grassland, woodland, and coastal scrub habitat.

The park has three potential trails for consideration in the *Inclusive Access Plan*. In addition to the trails there are viewing areas, benches, and portable toilets, one of which provides adequate maneuvering space.

Parking:

A paved parking area is provided with two designated accessible parking spaces and two bus loading spaces.

Alternative means of access:

There is limited pedestrian access from the street; there are no pedestrian sidewalks to this trail. There are no public transit options adjacent to this trail.

Gate/Entry:

The Beach Trail entrance is 8 feet wide split by a removable bollard. There is a ½ inch change in level between the concrete paving and the decomposed granite surface.

The Vista Point entrance at end of Ocean Parkway is flush with the road and approximately 36 inches wide.

The Bluff Trail entrance is located behind a curb and both ends of the trail include wood stairs.

Trail Conditions:

The Beach Trail is 275 linear feet with the initial 121 linear feet constructed of decomposed granite. The remainder of the path is compacted native surface material and is reduced to 48 inches to 60 inches wide. Water bars cross the path of travel.

The Vista Trail is 90 linear feet from the parking area to a potential overlook and turnaround space. This segment is adjacent to a neighboring private property.

The Bluff Trail is 12 to 18 inches wide on compacted native soil. The trail is a good candidate for an Improved Access Trail serving people with limited mobility but not suitable for wheeled

mobility devices. The trail run has three sets of rustic stairs with no handrails and irregular wood and earth treads.

Surface:

The Beach Trail surface is a mix of decomposed granite and compacted native soil. Drain channels run parallel to and within the path of travel and affect the integrity and accessibility of the compacted surface. Closer to the beach access point, the rutted channels are more severe.

The Vista Trail surface is compacted native soil but covered by vegetation and does not have a clear delineation.

The Bluff Trail surface is varied with most classified as compacted native soil that is firm and stable in its dry state. Cracks were visible in the dry surface indicating some seasonal wetness. Sections have a loose top surface or vegetation.

Slopes:

The Beach Trail has an initial running slope up to 8.1% for 121 linear feet. Beyond a memorial bench, the running slope ranges from 9% to 11% for 100 linear feet before steepening to 14.5% down to the beach. There is sufficient width to provide resting intervals along the length of the trail.

The Vista Trail is fairly level with minimal running or cross slopes.

The Bluff Trail has fairly level sections but most running slopes range between 12% and 20%. Reducing slopes to meet standards is most likely technically infeasible but there is potential for improvements to increase accessibility for some users.

Probable Issues/Maintenance:

Seasonal rains and drainage will require maintenance of surfaces at certain times of the year. Erosion control will be needed particularly on the Beach Trail. The proximity of private neighbors may create potential for private/public conflict on the Vista Trail. Proximity to sensitive habitats should be reviewed.

Preliminary Assessment:

The Beach and Vista Trails are candidates for designation as part of the initial set of Destination-Oriented Trails once accessibility improvements are made and any potential social conflicts addressed. The Bluff trail is a potential candidate for enhanced trail signage.

Bahia Trail

Road ID 12500 | 500 Bahia Drive, Novato

Destination and experience value/potential. Geographic location

Bahia Trail is located in the Rush Creek Open Space Preserve in Novato, and is a 1-¾ mile long narrow trail located adjacent to the Petaluma River Marsh Wildlife Area in Novato. The trail faces north and east and provides views of the wildlife area and the foothills north of Highway 37. The trail is quiet and unaffected by road noise. The trail is well used with a mix of hikers, mountain bikers, and equestrians.

This trail is shaded under a woodland canopy of California bay and coast live oak, as well as occasional black oaks and the largest stand of blue oaks in Marin. In addition, the trail winds along the waterline approximately 30 to 40 feet above the marsh, which provides estuarine habitat for species such as pickleweed, salt grass, and bulrush. Due to its proximity to this marsh, the trail provides ample opportunities for bird and wildlife viewing, including hundreds of shorebird and waterfowl species, as documented in the Rush Creek Open Space Preserve Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/rush-creek> .

Parking:

Street parking is available on Bahia Drive at the trailhead.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhood. There are no public transit options adjacent to this trail.

Gate/Entry:

Approach from road has a 2 inch layer of loose sand and small gravel for 10 linear feet. This surface is not firm and stable.

The entry provides 10 feet of clear width. No step over or other form of barrier limits access through the entrance. The path approaching the trailhead has a running slope up to 19% for 16 linear feet. Sufficient space for grade improvement is available at the entrance.

Trail Conditions:

Much of the trail has a clear width of at least 3 feet. The trail width is sufficient for single file use but users have to step off trail to provide passing opportunities. It is recommended to locate resting intervals for steeper slopes off the path so that resting intervals can also function as passing spaces.

Surface:

The trail surface is compacted native surface that is firm and stable in its dry state. Areas were observed with a top layer of loose sand at a depth of 1 inch. Short sections of trail with erosion, exposed bedrock, tree roots, and larger rocks were observed. Some of the exposed barriers exceeded a 2 inch change in level. Sections of the trail are rutted from bike/equestrian use as well as drainage issues.

Slopes:

Few sections of the trail have cross slopes exceeding 5%. Where excessive cross slopes were observed, it was typically at turns where the outer arc has been worn by bicycles or where there are small erosion issues from the uphill side of the trail.

Running slopes along much of the path are less than 5% but many sections have running slopes that would require installation of level resting intervals. These were often noted at changes in direction such as at the top or bottom of inlets. Some sections of the trail with higher slope readings had informal level resting intervals. Few sections exceeded the 12% maximum running slope specified by most accepted trail guidelines but terrain would not appear to limit improvements for lessening the grade change.

Probable Issues/Maintenance:

Consideration will need to be taken for trails used by equestrians where horses do not use manure catch bags. Manure was observed in many spots along Bahia Trail and substantially limits the usable width of the trail.

Sections of the trail had drainage channels running parallel with direction of the path of travel. These channels could easily be addressed by incorporating drainage management features.

Speed of mountain bikers and equestrians along trail especially at blind turns in the trail may be a consideration.

Felled tree across path resulted in a vertical clearance of 79 inches.

Preliminary Assessment:

This is a candidate for designation as part of the initial set of Destination-Oriented Trails once accessibility improvements are made.

Big Tree Trail

Road ID 16100 | 3221 Vineyard Road, Novato

Destination and experience value/potential. Geographic location

Big Tree Trail is located within the Indian Tree Open Space Preserve and adjacent public lands owned by the North Marin Water District in Novato, and is a 2-1/3 mile trail from Vineyard Road to the Shipmast Trail trailhead. The trail is popular with equestrians and evidence of frequent bike use was also observed.

This trail provides views of adjacent valleys, and runs through mixed broadleaf and coast live oak woodlands with hardwood species such as California bay, Douglas fir, and madrone, before reaching a redwood grove at the top of the ridge. Poison oak is prevalent the length of the trail and encroaches on the usable trail width, limiting useable passing spaces. Due to the variety of habitats encountered on the trail, a wide variety of birds, butterflies, mammals, amphibians, and reptiles may occasionally be spotted along the trail, as documented in the Indian Tree Open Space Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/indian-tree> .

Parking:

Informal street parking is available on Vineyard Road. Road surface at trailhead is compacted road gravel and has up to 4% cross slopes.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhood. The paved roadway ends before the trailhead entrance. There are no public transit options adjacent to this trail.

Gate/Entry:

The trail entry has a clear width of 84 inches. The running slope from the gate for first 25 linear feet ranges from 12% up to 18% with up to a 7% cross slope. The running slope reduces to 10% for next 65 linear feet.

Trail Conditions:

The trail is approximately 24 to 36 inches wide with split level single tracks common and reducing the usable width of each parallel track to 12 inches. Relatively accessible segments are separated by steep switchbacks.

Water bars were a common treatment for drainage. Rutted drain channels were observed both crossing and parallel to the path of travel. Surface material in the rutted channels is loose rock not considered to be firm and stable. Where water bars were used, they also served as a resting interval between steeper trail segments. The timber headers used in this detail often created a 2 inch change in level in the path of travel.

The stream crossings between the road entrance and the trailhead have $\frac{3}{4}$ inch openings between planks exceeding the $\frac{1}{2}$ inch maximum typically accepted.

Surface:

The trail has a compacted native surface with exposed rock and tree roots. Sections of loose sand were observed. Many sections of the trail appeared to be seasonally wet with erosion and drainage ruts in the dry surface. A trail user encountered during the field visit observed that the trail is extremely “dusty” in the dry months with the thick layer of loose material masking exposed roots and rocks and becoming a tripping hazard.

Slopes:

The trail alternates between sections that follow the contour where running slopes are fairly level to many sections having running slopes exceeding 12% and up to 30%. The lower reach of the trail had 20 to 25 linear foot sections with slopes up to 20% with water breaks also serving as resting intervals between the sections. The trail continues to have slopes up to 25% and 30% at switchbacks and between more level segments.

Sections have significant cross slopes exceeding the 5% maximum typical of accessible trails.

Probable Issues/Maintenance:

Slope, width, and drainage are significant impediments to making the trail accessible. Trails with running slopes over 10% and up to 12% require resting intervals every 10 feet. Drainage solutions will be needed along the length of the trail where it is creating rilling and surface obstacles as well as an improved detail for stream crossings. Due to the high equestrian use and narrow sections of the trail, level resting intervals that also serve as passing spaces located off the trail/path of travel are needed.

Preliminary Assessment:

This trail is not a candidate for designation as part of the accessible trails system unless substantial accessibility improvements can be made to the trail grade and surface condition. The excessive slopes and uneven surfaces are limiting factors to making this an accessible trail.

Deer Island Loop Trail

Road ID 13000 | Deer Island Preserve, Novato

Destination and experience value/potential. Geographic location

The Deer Island Loop trail is approximately 2 miles long and begins at Deer Island Lane in Novato. The narrow trail passes grassland for several hundred feet before transitioning into bay laurel forest that is dense with shaded. This portion of the trail runs parallel to a corporation yard fence for about 1,000 feet. The remainder of the trail ducks in and out of oak/bay forest and grassland and has views to Novato Sanitary District treatment ponds, Highway 37 and beyond. The trail is open to pedestrians and equestrians and provides opportunities for bird and wildlife viewing.

Parking:

A small, informal parking area at the trailhead provides parking for about 4 vehicles. The surface is loose gravel and dirt with slopes of 1-3%. Potential for additional parking may exist by the house on the property if visitors were given vehicular access to this area.

Alternative means of access:

Safe pedestrian access is not available. There are no public transit options to this trail.

Gate/Entry:

The trailhead has a 38 inch wide opening with no gate and a nearly level surfacing. The trail just beyond the opening is 1 to 2 foot wide and uneven due to erosion.

Trail Conditions:

Trail conditions vary from is 1 to 2 foot wide compacted native soil to 2 to 4 foot wide compacted native soil.

Surface:

The trail surfaces is varied with most classified as compacted native soil with some loose gravel or aggregate that is firm and stable in its dry state. Short sections of trail with erosion, exposed bedrock, tree roots, and larger rocks were observed.

Slopes:

Slopes along the trail could are generally less than 10% running slopes and between 5-10% cross slopes. Occasional, brief sections of trail are 15-20% running slope and occasional, short sections of trail have cross slopes between 10-15%.

Probable Issues/Maintenance:

Much of the trail would require widening by 1 to 3 feet in order to provide a suitable width for accommodating a broader user group. Also, fairly long segments of trail tread have large boulders which may be difficult to navigate around or excavate. Several stream crossings require improvement.

Preliminary Assessment:

The trail is a potential candidate for enhanced information and signage but would require significant lengths of trail widening and resurfacing to be a part of the Destination-Oriented Trail system.

Dwarf Oak Trail

Road ID 11570 | 3050 Novato Boulevard, Novato

Destination and experience value/potential. Geographic location

Dwarf Oak Trail is located in the Mount Burdell Open Space Preserve in Novato, and is a 1-³/₄ mile trail between Novato Boulevard and San Andreas Fire Road. This narrow trail originates in a residential area behind San Marin High School, and climbs the lower slopes of Mount Burdell to expansive views of Novato and San Pablo Bay.

Once in the Preserve, this trail crosses open grassland with ample wildflowers in the spring before meandering through woodlands composed of valley oaks, coast live oaks, and California bay trees. In addition, the trail crosses multiple small swales and small intermittent streams with associated riparian species. This trail is located near a wildlife area that provides habitat for a wide variety of fauna, including many species of birds that are scarce in the rest of Marin, as documented in the Mount Burdell Open Space Preserve Field Guide here:

<http://www.marincounty.org/depts/pk/divisions/open-space/mount-burdell>

Parking:

Informal street parking is available on Novato Boulevard or on San Andreas Drive if accessing Dwarf Oak Trail via San Andreas Fire Road.

Parking on Sandy Creek Way or San Ramon Way will also provide access to the trail but these are residential cul-de-sacs with limited available street parking. Barriers were observed at the gates serving these entrances including a chicane gate with 17-¹/₂ inches and 20-¹/₄ inches wide openings at the San Ramon entrance. A locked vehicular gate with no pedestrian gate is located at the entrance on Sandy Creek Way.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhoods via non-surveyed asphalt pedestrian sidewalk. Marin Transit Routes 151, 154 and 251 as well as Golden Gate Transit Routes 54 and 56 have a time point stop at San Marin Drive and San Carlos Way, approximately a third of a mile from the entrance.

Gate/Entry:

The gate from San Andreas Fire Road has locking hardware 68 inches above the ground surface and requires more than 5 lbs of operating effort. There is a 2-¹/₂ inch change in level across the opening. The gate does not have a kickplate for use by a person using a wheelchair or wheelchair maneuvering space adjacent to the gate hardware.

Trail Conditions:

The trail is a single track approximately 12 inches to 18 inches wide with multiple stream crossings. Stream crossing details varied from timber planks to channel cuts across the path of

travel. Changes in level exceeding two inches are common at these crossings. One stream crossing had a compound slope of 36% (23% on one side and 13% coming up the other side).

The bridge crossing at the bottom of the trail has 1 inch openings between planks exceeding the ½ inch maximum typically allowed and a 2 inch change in level from trail surface to timber surface.

Drainage improvements are needed. The surface is rutted with drain channels crossing and running parallel to the path of travel. The material in the drainage channels is loose not firm and stable.

Surface:

The surface is a compacted native soil with exposed rock and tree roots. There are sections of loose sandy or gravel surface, particularly associated with observed drainage issues.

Slopes:

The trail alternates between sections following the contour where running slopes are fairly level to many sections having running slopes exceeding 12% and up to 20%. Some sections have significant cross slopes exceeding the 5% maximum typical of accessible trails.

Probable Issues/Maintenance:

Excessive slopes, narrow widths, and drainage structures are the significant impediments to making the trail accessible or qualified to be an Improved Access Trail. Trail segments with running slopes over 10% and up to 12% require resting intervals every 10 feet. Drainage solutions will be needed along the length of the trail as well as an improved detail for stream crossings.

Preliminary Assessment:

This is not a candidate for designation as part of the Destination-Oriented Trails system unless substantial accessibility improvements can be made to the trail grade and surface condition. The excessive slope is a limiting factor to making improvements to the accessibility of this trail. It may be a potential candidate for enhanced signage as an Improved Access Trail but will require significant enhancements.

Escalon Fire Road

Road ID 37000 | 99 Overhill Road, Mill Valley

Destination and experience value/potential. Geographic location

The Escalon Fire Road is located in the Camino Alto Open Space Preserve in Mill Valley, and is a wide ¾ mile trail that follows the hillside contour to “octopus junction”, providing good vista opportunities of Mount Tamalpais along the way. The intermittent tree canopy provides both sunny and shaded sections. Once on the west side of the intersection with Camino Alto Fire Road the trail is significantly quieter from Highway 101 vehicle traffic and bird calls became the dominant sound experience. The trail does not provide an immersive nature experience, but it is easily accessible from the street and neighborhood and is popular with dog walkers and off-leash dogs.

The trail weaves in and out of a canopy of coast live oaks, California bay, and redwood forest interspersed with grasslands, which provide wildlife habitat for a variety of species, as document in the Camino Alto Open Space Preserve Field Guide here:

<http://www.marincounty.org/depts/pk/divisions/open-space/camino-alto>.

Parking:

Informal street parking is available on a spur of Overhill Drive. At the time of survey, 10 vehicles were parked at the trailhead with more parking spaces available.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhoods. There are no public transit options or pedestrian sidewalks to this trail.

Gate/Entry:

Opening at entrance is 40-½ inches wide. The trail surface at the entrance gate has a running slope up to 13% for 10 linear feet on interior of gate.

Trail Conditions:

The fire road maintains a minimum width of 12 feet with some sections even wider.

Drainage needs some improvement. The trail surface was observed to be rutted with drain channels crossing the path of travel and areas of standing water. Drainage channels were typically 12 to 18 inches wide and have loose surface material not considered to be firm and stable.

Surface:

The surface appears to be a combination of native soil with added gravel, and exposed bedrock and remnant asphalt. Sections of loose sandy or gravel surface were observed, particularly associated with drainage issues.

Slopes:

Running slope was typically good. The section of trail when approaching the Camino Alto Crossing had slopes up to 10% and would need to be addressed with resting intervals.

Many sections of the trail had cross slopes exceeding 5% with some segments having up to 15% cross slope. Excessive cross slopes were found at segments where the trail changes direction with the low points being on the inside curve of the trail.

Probable Issues/Maintenance:

Surface drainage appeared to be the biggest issue for making the trail accessible. Most of the surface problems appeared to be topical and not requiring unreasonable modification.

This trail may not be usable in wet weather due to surface material and accumulation of water.

Most of the trail users were walking dogs that for the most part were off leash.

Preliminary Assessment:

This is a candidate for designation as part of the Destination-Oriented Trails system if accessibility improvements can be made to the surface.

Greenbridge Trail

Road ID N/A | C Street at 3rd Street, Point Reyes Station

Destination and experience value/potential. Geographic location

Greenbridge Trail is located in Point Reyes Station, and is a level ½ mile looped trail along Lagunitas Creek in the Tomales Bay Estuary. There is a main semi-formalized trail with indications of semi-developed routes leading to benches. Fencing has been installed to provide habitat protection. The site provides access to riparian habitat at Lagunitas Creek and the National Park Service's Lagunitas Creek Trail and Giacomini Wetlands. There is also potential for creek/beach access.

This trail is fairly quiet with some audible sounds from town (lawn mower, leaf blower, car horn). The trail is well used primarily by dog walkers with most of dogs being off leash.

Parking:

Street parking is available on both 3rd Street and C Street. Signs stating "No Parking" were noted on the neighbor's hedge in front of the house as well as the garage across the street from the entrance.

Alternative means of access:

There is limited pedestrian access from roadway; there are no pedestrian sidewalks leading to this trail. Greenbridge Park is served by the West Marin Stage Coach Route 68. The bus stop is located on A Street between 2nd and 3rd Streets, approximately 800 feet from entrance.

Gate/Entry:

The opening width at the pedestrian gate is 74 inches between posts. The entrance has a running slope of between 10% and 20% for 60 linear feet from the road, through the gate, to a level resting place. The surface near the entrance has an erosion channel running parallel to the path of travel. Loose aggregate material extends 100 linear feet from entrance.

Trail Conditions:

Trail width varies from 12 to 36 inches. Many sections of the trail have overgrown vegetation reducing the clear width with a few sections completely covered by grass. Two stream crossings were observed consisting of a 36 inch wide puncheon style timber crossing with no edge protection or handrails. The site has multiple social trails with no distinguishable designated route, wayfinding, or signage.

Surface:

The trail surface is varied with most classified as compacted native surface that is firm and stable in its dry state. Bike tire tracks were visible in dried surface indicating some seasonal

wetness. Some sections were observed with a top layer of loose gravel and others are completely covered by grass.

Slopes:

The trail is generally level with running and cross slopes along much of the path being less than 5%. The initial segment from the entrance and the start of the trail adjacent to the Wiebke's View memorial stone were observed to have running slopes up to 20%.

From Wiebke's View memorial plaque down to grass meadow path, the slope is between 15% and 20% for 40 linear feet.

Probable Issues/Maintenance:

Seasonal wetness will require appropriate trail design and maintenance. The proximity of private neighbors both at entrance and along Lagunitas Creek may create potential for private/public conflict. Clarification and delineation of agency jurisdiction is required.

Preliminary Assessment:

This is a candidate for designation as part of the Destination-Oriented Trails system once accessibility improvements are made.

Hamilton Path Trail

Road ID N/A | Hangar Avenue, Novato

Destination and experience value/potential. Geographic location

Hamilton Trail is a 14 foot wide newly constructed decomposed granite trail running along a levee adjacent to seasonal wetlands and the newly constructed Hamilton Field Wetland Restoration area, and provides views of Mount Burdell, Mount Diablo, and Mount Tamalpais from different vista points. The trail has historical significance as a former airfield with hangars and air tower remaining along the central section. The trail is exposed to sun and wind; minimal shade is available and only at the south end. Benches and interpretive signage stations are provided along the length of the trail. Some benches are not located on an accessible surface.

The adjacent tidal marsh restoration area will continue to develop marsh vegetation such as pickleweed and salt grass, which will in turn provide habitat and ample bird watching opportunities along the trail.

Parking:

Parking is available at the City of Novato's South Hamilton Park as well the parking lot serving the former airfield hangars. The parking area at South Hamilton Park is approximately 1000 feet from the trail head along the public street right-of-way and maintenance road.

Parking at the central section is located in a public parking area served by a pedestrian ramp leading up to and over the levee.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhood to both entrances.

A timed bus stop for Marin Transit Routes 49, 151, 251, 257, and 259 and Golden Gate Transit Route 58 is located at the Hamilton Community Center, less than ½ mile away from hangar parking area entrance.

Gate/Entry:

Entrances near South Hamilton Park do not have pedestrian gates, and have openings over 15 feet wide. There is a 90 linear foot section of loose road gravel between the asphalt maintenance road and the start of the decomposed granite path.

The pedestrian entrance at the hangar area parking lot involves two concrete ramps with compliant slopes up to the top of the levee embankment. The walk connecting the two ramps is 75 linear feet over loose road gravel.

Trail Conditions:

Compacted decomposed granite trail is consistently greater than 12 feet wide with minimal slopes and erosion.

Surface:

The decomposed granite trail surface appears to be well maintained with minimal erosion. The trail surface is firm and stable in its current condition. It is important to note the National Center on Accessibility commented on the frequent maintenance required to maintain accessibility for decomposed granite in their 2014 *National Trail Surfaces Study*.

Sections of road gravel between decomposed granite segments are not considered an accessible firm and stable surface. In addition to the section at the South Hamilton Park entrance, another approximately 700 linear foot section separates the middle section from the trail section to the north. Another 50 foot segment of road gravel separates the end of the decomposed granite surface from the Arroyo San Jose overlook.

Slopes:

The trail is fairly level with only a few sections having running slopes up to 6%.

Probable Issues/Maintenance:

Temporary water pumping equipment was situated across trail near north seasonal wetland and obstructed the path of travel. It may be necessary to have seasonal closures of the trail to maintain the working order of the wetland infrastructure.

The trail may not be usable in wet weather due to surface material and accumulation of water.

Proximity of the trail to adjacent houses may impact privacy of neighbors.

Preliminary Assessment:

This is a candidate for designation as part of the Destination-Oriented Trails system if accessibility improvements can be made.

Hill Ranch Waterfall Trail

Road ID 18610 | Ignacio Valley Preserve, Novato

Destination and experience value/potential. Geographic location

The Hill Ranch Waterfall trail is approximately a ½ mile long and starts at the terminus of Fairway Drive in Novato. The trail runs along a valley floor in the Ignacio Valley Preserve where the hillsides are covered by oak and bay forest. The trail begins on what is currently privately owned land with a trail easement that allows for public access to the preserve. Approximately half of the trail is through a canopy of the forest and runs alongside an intermittent stream called Arroyo de San Jose.

The forest is lush with ferns and provides ample shade along half of the trail and a creek side experience. The final 350 feet of trail is across private property where a trail easement allows for public access. The trail culminates at a waterfall which is active during, and some time following the rainy season. The first half of the trail is a multi-use fire road which allows for hikers, cyclists and equestrians; the second half is open only to hikers and equestrians.

Parking:

Informal street parking is available on Fairway Drive at the trail head. Fairway Drive culminates in a cul-de-sac with a 65 feet diameter turning area. The asphalt street is gently sloped 1-2% in either direction to accommodate drainage. A 60 inch sidewalk is provided on the south side of the street, and a small portion of the north side of the street just east of the trail entrance.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhoods with sidewalks. There are no public transit options to this trail.

Gate/Entry:

No gate exists at the trailhead. The trail begins just off of the street right-of-way at a 40 inch wide loose gravel path with a compacted base. The loose gravel path continues for 50 feet before reaching a 6 inch curb and gutter. Beyond the curb and gutter continues a 20 foot wide asphalt road for approximately 250 feet before reaching the native soil trail.

Trail Conditions:

Trail conditions vary from a 20 foot wide asphalt road near Fairway Drive to a 12 foot wide road, to a trail with trail treads 20 inches to 12 feet wide. Approximately half of the trail has a clear width of greater than 6 feet. Some drainage issues which have caused gullying exist on portions of the trail. Two creek crossings include loose gravel and large boulders.

Surface:

The trail surface is varied with most classified as compacted native soil with some loose gravel or aggregate that is firm and stable in its dry state. Short sections of trail with erosion, exposed bedrock, tree roots, and larger rocks were observed.

Slopes:

Running slopes along the trail were varied up to 12% and in some locations were as steep as 15%. Cross slopes are moderate for much of trail but at times were recorded as steep as 20% where erosion has created a severe imbalance in the slopes of the trail tread.

Cross slopes become particularly excessive toward the waterfall where the trail narrows and between steep hillside and large boulders or trees.

Probable Issues/Maintenance:

In steeper sections of the trail, poor drainage has caused significant gullying that will likely persist without some tread re-design. Two creek crossings, one of which is constrained by steep hillsides and vegetation on either side, need bridges to accommodate users more safely and provide a passable trail during or following wet weather.

Preliminary Assessment:

This trail is not a candidate for the Destination-Oriented Trail system due to surface conditions, parking, natural resources constraints and sections of excessive slope. It would be difficult to improve the accessibility of this trail to a level suitable for inclusion in the list of Improved Access Trails.

Old Railroad Grade

Road ID 36500 | Blithedale Summit, Mill Valley

Destination and experience value/potential. Geographic location

The Old Railroad Grade is an approximately $\frac{3}{4}$ mile long segment of a historic railroad alignment, which operated between 1896 and 1930 carrying tourists on scenic excursions. Because of this history, the current fire road is wide and relatively consistent in gradient. The fire road winds along the hill slope and follows a perennial stream. The majority of the fire road is shaded by bay, redwood and oak trees along the riparian corridor. West Blithedale Avenue below parallels the fire road and across the stream for the first $\frac{1}{4}$ before giving way homes that have been built into the hill slope nestled by vegetation on the other side of the stream. Old Railroad Grade is very popular with dog walkers, hikers and cyclists.

Parking:

Informal street parking is available for 3-5 cars over compacted dirt and gravel which is relatively flat. An accessible parking space is possible but would likely require approval and coordination with the City of Mill Valley since these would be within the public right-of-way.

Alternative means of access:

Safe pedestrian access is not available. There are no public transit options to this trail.

Gate/Entry:

The trailhead has a normally closed vehicular gate with a 48 inch wide entry. Immediately after the entry, a remnant railroad bridge crosses the perennial stream. The bridge surfacing is uneven due to its previous function as a railroad bridge. There is a 1 to 2 inch change in level at the transition from trail to bridge.

Trail Conditions:

Trail condition is a fairly consistent 15 foot wide fire road with occasional rilling or worn tread which has created some uneven segments. Drainage or bicycle use has worn the tread in a way that has left the uphill portion of the tread roughly 6 inches higher than the downhill tread for brief segments in some locations. Rolling dips for drainage have been incorporated into the trail tread at varying intervals which cause brief segments of steep conditions.

Surface:

The trail surface is compacted native soil that is firm and stable in its dry state. Exposed rocks and concentrations of loose gravel cause uneven and unstable conditions at various points along the trail.

Slopes:

Slopes along the fire road are fairly consistent. With the exception of rolling dips, the running slope remains between 5-8%. At rolling dips running can exceed 20% for as much as 20 feet. Cross slopes vary as well with some sections measuring up to 11%.

Probable Issues/Maintenance:

Uneven and unstable surfacing, excessive slopes at rolling dips and an aggressively cross sloped fire road may make this road difficult to improve for accessibility

Preliminary Assessment:

This trail is not a candidate for designation as part of the Destination-Oriented Trail system due to excessive cross slopes, rolling dips necessary for proper drainage and extensive exposed bedrock.

Pinheiro Fire Road (Rush Creek Trail)

Road ID 12100 | 8187 Binford Road or 645 Bugeia Lane, Novato

Destination and experience value/potential. Geographic location

The Pinheiro Fire Road, also known as Rush Creek trail, is located in the Rush Creek Open Space Preserve in Novato, and is a 1-½ mile long fire road between Binford Road and the Rush Creek Fire Road. Views from the Binford Road trailhead face northward toward Gness Field Airport and westward across Highway 101. Proceeding east from the trailhead the trail rounds southward toward Cemetery Marsh. Noise from highway was evident until the trail turned toward Cemetery Marsh. Pedestrian use was observed during the site visit. Equestrian and bike use is evident from tracks left in hardened surface.

This trail traverses California bay and coast live oak woodlands and annual grasslands along the edge of Rush Creek Marsh Wildlife Area and Marin Park's Cemetery Marsh, which provide estuarine marsh habitat for species such as pickleweed, salt grass, and bulrush. Due to its proximity to these marshes, the trail provides ample opportunities for bird and wildlife viewing, including hundreds of shorebird and waterfowl species, as documented in the Rush Creek Open Space Preserve Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/rush-creek> .

Parking:

Informal street parking is available on Binford Road near Highway 101 and a steep, informal parking area at the south end is located along Bugeia Lane. The Bugeia Lane parking area appears to be a better candidate for providing an accessible parking space and connection to the trail due to the steep and constrained trailhead entrance at Binford Road.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhoods. There are no public transit options or pedestrian sidewalks to this trail.

Gate/Entry:

Binford Road Trailhead: two openings for pedestrian access are 39 and 72 inches wide. There is no pedestrian control gate at the trail entrance. Immediately beyond the entrance is a 110 foot length of trail with a running slope exceeding 5%, 90 linear feet of which has a running slope of up to 17%. The slope of the initial reach would require significant modification with multiple resting intervals or a switchback alignment. Width of the entrance area is constrained by terrain.

Bugeia Lane: The pedestrian access opening adjacent to the vehicle gate is 44-¾ inches wide and has a 3.3% running slope. The fire road connecting to the trail is 8 to 10 feet wide and is surfaced with a compacted base with some loose gravel.

Trail Conditions:

Trail condition varies from a 15 foot wide asphalt entry covered with loose road gravel near the Binford Road entrance to a two or more track trail with treads 12 to 39 inches wide. Much of the trail has a clear width of greater than 6 feet. Grass medians were noted at sections along the length of the trail and reduce the clear trail width. Social trails on the uphill side of the trails are present where poor drainage result in wet trail conditions.

Surface:

The trail surface is varied with most classified as compacted sandy/silty clay that is firm and stable in its dry state. Areas were observed with a top layer of sand at a depth of 1 inch. Short sections of trail with erosion, exposed bedrock, exposed metal pipes, tree roots, and larger rocks were observed. Sections of the trail are rutted from bike/equestrian use.

Slopes:

Slopes along the trail were observed with the uphill side of the trail commonly up to 6 inches higher than the downhill side, either split level by a grassy median or sloping across the path of travel. The split level trail condition is primarily adjacent to the Cemetery Marsh on the east side of the trail. Sections of the trail have cross slopes of 13% and greater.

Running slopes along much of the path are less than 5% but sections up to 9% were observed particularly where the path is entering/leaving the tree line near the North Levee Trail trailhead.

Probable Issues/Maintenance:

The trail has poor drainage with very small occasional water breaks and culverts. Water ponds at areas of poor drainage. A majority of the trail is wet/muddy and eroded as water from the hillside seeps across the road.

Preliminary Assessment:

This may be a potential candidate for enhanced signage as an Improved Access Trail but will require substantial improvements to the road grade and surface condition.

Ridgewood Fire Road

Road ID 29500 and 29560 | Ridgewood Drive, San Rafael

Destination and experience value/potential. Geographic location

The Ridgewood Fire Road Trail is a $\frac{3}{4}$ mile trail located on San Rafael Ridge in the Terra Linda / Sleepy Hollow Divide Open Space Preserve between Terra Linda, Sleepy Hollow, and San Anselmo. The trail connects Ridgewood Road and Fawn Drive, and offers views north into Terra Linda and south into San Rafael, San Anselmo, and Mount Tamalpais. The trail does not provide an immersive nature experience, but is easily accessible and is popular with dog walkers and off-leash dogs.

The eastern portion of this trail is shaded by eucalyptus trees, while the western portion crosses through open grasslands and coyote brush habitat. A variety of wildlife, including cavity nesting birds, may be observed along the trail, as documented in the Terra Linda / Sleepy Hollow Divide Open Space Preserve Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/terra-linda-sleepy-hollow>.

Parking:

Informal street parking is available on Ridgewood Road. Home owner installed “No Parking” signs and driveway blockades were observed. Fawn Drive is signed as private property with right to pass being subject to the property owner.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhoods. There are no public transit options or pedestrian sidewalks to this trail.

Gate/Entry:

The pedestrian opening at Ridgewood Road entrance is 38 inches wide. The slope of the trail through the entrance gate is 9%.

The pedestrian opening at Fawn Drive entrance is 41 inches wide with loose surface material.

Trail Conditions:

The fire road is very wide - narrowing the road while continuing to allow for emergency access vehicles would provide a more pedestrian scale, facilitate maintenance and drainage, and define an accessible alignment.

Drainage needs significant improvement. The surface is deeply rutted with erosion channels crossing or running parallel with the path of travel. Erosion channels are typically 12 to 18 inches wide and in some locations 12 to 18 inches deep.

Surface:

The trail surface is varied with most classified as a compacted mix of road base and native surface that is firm and stable in its dry state. The trail showed evidence of standing water and softened surfaces but at the time of the evaluation was dry with hardened tracks. Exposed base rock and added gravel/road base were observed in sections up to a thickness of 1 inch. Sections of loose sandy or gravel surface were observed particularly associated with drainage issues and where trails converged.

Slopes:

Running slope alternates between steeper inclines and fairly level sections. From the Ridgewood Drive entrance, running slope is between 8% and 11% for 355 linear feet. The trail levels out for a few hundred feet before reaching another steeper incline up to 14% for 150 linear feet. Trail and side areas are sufficiently wide to provide the opportunity for switchbacks and periodic resting intervals. Many sections were up to 13% running slope. The section up from Fawn Drive has a running slope up to 8.3% for 770 linear feet.

Few sections of the trail had cross slopes exceeding 5%. Excessive cross slopes were found toward the middle of the trail between the Road 29510 connections.

Probable Issues/Maintenance:

The proximity of private neighbors at the Ridgewood entrance may be a potential for private/public conflict.

Surface drainage appeared to be an issue for making the trail accessible. Most of the surface problems appeared to be topical and not requiring unreasonable fixes.

Most trail users were observed walking dogs off leash.

Preliminary Assessment:

This is a candidate for designation as part of the Destination-Oriented Trail system if accessibility improvements can be made to the slopes and surface conditions.

It is recommended to follow the fire road 29560 running parallel to the primary road because the grades are less than those on 29500. The smaller road is also narrower creating a smaller sense of scale and enclosure. It is noted if the alternative road is used, views north will only be at the ends of the trail and most views will be to the south.

Roy's Redwoods Meadow Trail

Road ID 23030 | Roy's Redwoods, Fairfax

Destination and experience value/potential. Geographic location

The Meadow Trail is less than ¼ mile long and can be accessed from Nicasio Valley Road just north of the golf course in San Geronimo Valley. The trail runs through an open meadow which is surrounded by old growth redwood forest and tall bay trees. At the terminus of the Meadow trail is an ancient “fairy ring” where the parent tree died and several new trees grow up to surrounded it. The center of the ring is now hollow and is surrounded by towering old growth redwoods. This feature provides a great opportunity for interpretation. A portable toilet with adequate wheelchair turning space exists approximately 90 feet from the trailhead. This is a hiking only trail, although other trails in the preserve allow for equestrians and cyclists.

Parking:

Parking for Roy's Redwoods Preserve exists along the wide shoulders of Nicasio Valley Road. The shoulders are approximately 8 to 12 feet wide with a compacted native soil and loose gravel surface.

Alternative means of access:

Safe pedestrian access is not available. There are no public transit options to this trail.

Gate/Entry:

The trailhead has a normally closed vehicular gate with a 72 inch wide pedestrian entry.

Trail Conditions:

Trail conditions vary from a 6 to 8 foot road at the start, to a 2 to 4 foot wide path through the majority of the meadow. Portions of the trail have become uneven due to concentrated flow along the center of the trail which has caused erosion and some rilling.

Surface:

The trail surface is varied with the majority being classified as compacted native soil. The beginning of the trail has some loose gravel, exposed tree roots and a creek crossing with an uneven, rocky surface.

Slopes:

Most of the trail has a running slope of less than 5%. The cross slopes along this section vary due to some trail erosion which has caused some rilling. A section of trail beginning at Nicasio Valley Road that descends to the trailhead/creek bottom has a running slope between 10%-15%. An alternative entry route along the roadside fill slope is possible and would pass the portable toilet while maintaining a gentler slope.

Probable Issues/Maintenance:

Uneven surfacing along the portion of the road where erosion has caused uneven surfacing needs to be assessed for improvements. To improve access, a bridge over the creek crossing is necessary. This bridge would have to be a vehicular bridge to accommodate maintenance and emergency vehicle access.

Preliminary Assessment:

The trail is a candidate for the Destination-Oriented Trails system.

Rush Creek Fire Road

Road ID 12200 | 645 Bugeia Lane, Novato

Destination and experience value/potential. Geographic location

Rush Creek Fire Road is located in the Rush Creek Open Space Preserve in Novato, and is a mile long fire road that connects to the Bahia Trail at the east side of the Bahia Ridge to the Pinheiro Fire Road at the bottom of Cemetery Marsh. Views from the trail face northward toward Mount Burdell and Gness Field Airport and east towards the Petaluma River Marsh Wildlife Area. The Rush Creek Fire Road had significantly less noise than the Pinheiro Fire Road. The trail is well used with a mix of hikers, mountain bikers, and equestrians.

As with the Pinheiro Fire Road, this trail traverses California bay and coast live oak woodlands and annual grasslands along the edge of Marin County Park's Cemetery Marsh and then continues around Bahia Ridge along the Petaluma River Marsh Wildlife Area, which provide estuarine marsh habitat for species such as pickleweed, salt grass, and bulrush. Due to its proximity to these marshes, the trail provides ample opportunities for bird and wildlife viewing, including hundreds of shorebird and waterfowl species, as documented in the Rush Creek Open Space Preserve Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/rush-creek> .

Parking:

Informal gravel parking area with spots of significant slope is available on Bugeia Lane. Parking area connects to Rush Creek Fire Road via a section of the Pinheiro Fire Road.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhood. There are no public transit options or pedestrian sidewalks to this trail.

Gate/Entry:

Bugeia Lane: The pedestrian access opening adjacent to the vehicle gate is 44-³/₄ inches wide and has a 3.3% running slope. The fire road connecting to the trail is 8 to 10 feet wide and is surfaced with a compacted base with some loose gravel. The road has a slight crown creating up to a 4% cross slope at edges. Sections of the trail have loose sand material up to ³/₄ inch deep.

Trail Conditions:

Much of the fire road has a clear width of greater than 8 feet. Grass medians were noted at a couple sections along the length of the trail and reduce the clear trail width. Social trails on the uphill side of the trail are present where poor drainage result in wet trail conditions.

At the incline from the Cemetery Marsh section to the Basalt Creek section, an erosion channel was noted on uphill/inside curve of road.

Surface:

The trail surface is varied with sections of compacted sandy/silty clay considered to be firm and stable in its dry state, larger loose road gravel, and loose fine sand. Areas were observed with a top layer of sand at a depth of 1 inch. Segments of the trail along Cemetery Marsh are rutted and have standing water. Further drainage issues are evident where horse and bike tracks were observed in hardened dry surfaces.

Slopes:

Cross slopes were mostly less than 5%, compliant to standard trail codes for unpaved surfaces. Two sections, both where the trail is facing the Petaluma River Marsh Wildlife Area, had cross slopes of 12% and 17%.

Running slopes along much of the trail are less than 5% with a few sections up to 12.5% where the road turns to run along the Basalt Creek. It is recommended to incorporate resting intervals for steeper slopes.

Probable Issues/Maintenance:

The trail has poor drainage with occurrences of standing water. Low sections of the trail along Cemetery Marsh look to be wet/muddy and eroded as water from the hillside seeps across the road. Swales and culverts are present and drain water below trail surface. Ruts and trail surfaces will need seasonal maintenance.

Preliminary Assessment:

This may be a potential candidate for enhanced signage as an Improved Access Trail but will require substantial improvements to the road grade and surface condition.

San Andreas Fire Road

Road ID 11500 | San Andreas Drive, Novato

Destination and experience value/potential. Geographic location

The San Andreas Fire Road is located in the Mount Burdell Open Space Preserve in Novato, and connects San Andreas Drive with Burdell Fire Road and Dwarf Oak Trail. There is ample shade and wildlife viewing and expansive views and the top of the trail. The road is rilled for a majority of the alignment and is surfaced with remnants of base rock.

This trail follows a grassland corridor through adjacent woodlands composed of coast live oaks, valley oaks, and California bay trees, and is located near a wildlife area that provides habitat for a wide variety of fauna, including many species of birds that are scarce in the rest of Marin, as documented in the Mount Burdell Open Space Preserve Field Guide here:

<http://www.marincounty.org/depts/pk/divisions/open-space/mount-burdell> .

Parking:

Informal street parking is available on San Andreas Drive. At the time of survey, 8 vehicles were parked at the trailhead with more parking spaces available.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhoods via non-surveyed asphalt pedestrian sidewalk. Marin Transit Routes 154 and 251 as well as Golden Gate Transit Routes 54 and 56 have a time point stop at San Andreas Drive and San Marin Drive, approximately a half mile from the trail entrance.

Gate/Entry:

Two pedestrian and one vehicular gate are located at the entrance. The vehicular gate is locked. One pedestrian gate is a non-accessible chicane with openings of 19 inches and 22- $\frac{1}{4}$ inches at a 30 degree switch back. The third gate is sufficiently wide and the locking mechanism has been removed. This gate does not have a kickplate and does not provide adequate strike edge clearance for wheeled mobility device maneuvering due to the adjacent grass surface. The driveway has a slope up to 10% 36 linear feet and a 1- $\frac{1}{2}$ inch change in level from curb cut to the gutter. The approach to the pedestrian gates includes up to 14% running slope for 18 linear feet at the initial turn and then 4.9% to 8.6% for 43 linear feet to the entrance gate.

A second set of gates is located about halfway up the trail and includes a locked vehicular gate, chicane entrance with openings of 17- $\frac{3}{4}$ inches and 21 inches at a 30 degree switch back, and a third more accessible pedestrian gate. The locking hardware on the most accessible pedestrian gate is 60 inches above the ground surface and requires more than 5 lbs of operating effort. The gate at this opening does not have a kickplate.

Trail Conditions:

The fire road maintains a minimum width of 10 feet with some wider sections. Drainage needs improvement. The surface is rutted with erosion channels crossing the path of travel. Erosion channels are typically 12 to 18 inches wide with loose surface material not considered to be firm and stable.

Surface:

The surface is a compacted native soil with added gravel and exposed rock. Sections of loose sandy or gravel surface are associated with observed drainage issues.

Slopes:

Running slope from the vehicular gate is 10% to 11% for initial 225 linear feet and then up to 12% for next 930 linear feet until second set of gates. From the second set of gates, the running slope ranges from 5% up to 8.33% for 160 linear feet before increasing to 12.5% for 650 linear feet.

Cross slope for the 96 linear feet between the pedestrian gates at the trailhead and the fire road is 6.6%. Many sections of the trail had cross slopes exceeding 5%.

Probable Issues/Maintenance:

Excessive running slope appears to be the most significant accessibility issue. For routes with running slopes over 10% and up to 12% require resting intervals every 10 feet. Surface drainage will also be an issue for making the trail more accessible. Most of the surface problems appeared to be topical and not requiring unreasonable fixes.

Preliminary Assessment:

This is not a candidate for designation as part of the Destination-Oriented Trail system unless substantial accessibility improvements can be made to the road grade and surface condition. While it does provide a grassland and oak woodland experience, the excessive slope is an extremely limiting factor to making this an accessible trail. With substantial enhancements it may be a potential candidate for enhanced signage as an Improved Access Trail.

Santa Margarita Island Trail

Road ID 30000 | Meadow Drive, San Rafael

Destination and experience value/potential. Geographic location

Santa Margarita Island Trail is located in the Santa Margarita Island Open Space Preserve in Santa Venetia. A narrow to moderate trail circumnavigates a small island in the South Fork of the Gallinas Creek marshlands. The trail is 1/3 mile and is in fair to good condition.

This trail circumnavigates the island, between estuarine marsh habitat, coast live oak, valley oak and madrone woodlands, and, serpentine rock outcrops. Significant amounts of poison oak were also observed along the trail. Due to its proximity to the adjacent marsh, the trail provides ample opportunities for birding, including waterfowl, shorebirds, and rails, as documented in the Santa Margarita Island Open Space Preserve Field Guide here:

<http://www.marincounty.org/depts/pk/divisions/open-space/santa-margarita-island> .

Parking:

Informal street parking is available at the terminus of Meadow Drive and visitors park near residents' homes.

Alternative means of access:

A pedestrian sidewalk is provided to the bridge but is not located on the side of the bridge with a gate. A curb ramp is not provided. Marin Transit Route 233 has a bus stop at Meadow Drive on North San Pablo Road, approximately 1,600 feet from the entrance.

Gate/Entry:

The entrance has sufficient width but has up to 8.4% slope on the pull side of the gate and up to 8.3% slope on the push side.

Changes in level to the vehicle bridge from adjacent surfaces are up to 5-½ inches, exceeding allowable vertical changes in elevation for trails.

Trail Conditions:

The trail width varies from 12 to 30 inches wide along the southwest section of the island. A 15 inch change in level was observed from the trail surface to the adjacent marsh with no edge protection. Tree branches and poison oak overhang sections of the trail. The trail width widens around east side of island.

Surface:

The surface is a compacted fine clay-native surface firm and stable in its dry state. Wet spots and exposed tree roots were observed. The trail surface appears to be wet and muddy at times with cracking observed in the hardened dry surface.

Slopes:

The trail does not have a significant running slope and is substantially level with minimal erosion. Significant cross slopes were observed in sections along the outer water channel measuring from 4% up to 13%.

Probable Issues/Maintenance:

This trail may not be usable in wet weather. Ruts and trail surfaces will need seasonal maintenance. Poison Oak maintenance and privacy issues due to the proximity of the trail to adjacent houses are other potentially limiting factors.

Preliminary Assessment:

This is a potential candidate for enhanced signage as an Improved Access Trail with substantial enhancements. It is not a candidate for designation as part of the Destination-Oriented Trails system.

Santa Venetia Marsh Trail

Road ID 31000 | Vendola Drive, San Rafael

Destination and experience value/potential. Geographic location

Also known as Outer Levee Trail, Santa Venetia Marsh Trail is located in the Santa Venetia Open Space Preserve, and is a little over a mile long path located on top of a levee that provides views of Gallinas Creek and the marsh areas of the Preserve. The interior of the trail parallels the backside of many houses and may impact the privacy of those properties.

The outer trail is flanked on either side by tidal marsh with expanses of pickleweed and tidal channels that provide habitat for salt marsh harvest mouse, California clapper rail, and many other bird species, as document in the Santa Venetia Open Space Preserve Field Guide here: <http://www.marincounty.org/depts/pk/divisions/open-space/santa-venetia-marsh> .

Parking:

Informal street parking is available on Vendola Drive close to both entrances.

Alternative means of access:

Pedestrian access is available along the roadway from the adjacent neighborhood to the south entrance. Pedestrian sidewalks connect the neighborhood to the north entrance. Marin Transit Route 233 has a timed point stop at Vendola Drive and Estancia Way, approximately 600 feet from the south entrance.

Gate/Entry:

The pedestrian entrance at south entrance is 36- $\frac{1}{4}$ inches wide and has up to 12% running slope for 46 linear feet. A constrained width of 16 feet between the pump station and the top of the levee embankment may limit grading potential.

The entrance at the north side is 36 inches wide and has up to 13% running slope for 42 linear feet. There is potential to reroute the entrance around the pump station in order to provide accessible slopes.

Trail Conditions:

The trail width varies from 48 inches along the south section with stream crossings to 7 feet wide along much of the outer path. At the turn in the trail where the Gallinas Creek South Fork splits off, the trail is reduced to 30 inches of usable width due to overgrown vegetation for approximately 100 feet. Grass medians were noted at several sections along the length of the trail and reduce the clear trail width.

Surface:

The trail surface appears to be wet and muddy at times with both surface cracking and bike tracks in hardened dry surface.

Openings between timbers at both bridges are up to $\frac{3}{4}$ inch exceeding the $\frac{1}{2}$ inch maximum typically allowed. Changes in level up to 1 inch were also observed at transition from the trail surface to the bridge surface.

Slopes:

Cross slopes were mostly less than 5%, compliant with standard trail standards for unpaved surfaces. At several sections where the trail comes to a turn and changes direction the path had cross slopes exceeding 5%.

Running slopes along most of the trail are less than 5% and do not require resting intervals. The initial slope from the crown of the embankment down to the bridge at the south entrance is up to 18% for 12 linear feet and would require some grading to address the change in level. At the change in direction near the north pump station the trail has a running slope of up to 10.3% for 41 linear feet and would require a resting interval along the run.

Probable Issues/Maintenance:

This trail may not be usable in wet weather due to an accumulation of water. Erosion ruts and trail surfaces will need seasonal maintenance.

Preliminary Assessment:

This is a candidate for designation as part of the Destination-Oriented Trail system if accessibility improvements can be made.

Shipmast Trail

Road ID 16000 | Between Indian Tree Fire Road and Big Tree Trail, Novato

Destination and experience value/potential. Geographic location

Shipmast Trail is located within the Indian Tree Open Space Preserve in Novato, and is just short of one mile connecting Indian Tree Fire Road to the Big Tree Trail trailhead. The trail is a well built single track trail contouring across moderate to steep slopes in upper hillslope position with good views. The trail is popular with equestrians and dog walkers. Dogs have been observed off leash on the Shipmast Trail.

This trail traverses a redwood grove that is interspersed with coast live oak woodlands and other mixed hardwood species such as California bay, Douglas fir, and madrone. Poison oak is prevalent the length of the trail and encroaches on usable trail width which limits useable passing spaces. Due to the variety of habitats encountered on the trail, a wide variety of birds, butterflies, mammals, amphibians, and reptiles may occasionally be spotted along the trail, as documented in the Indian Tree Open Space Field Guide here:

<http://www.marincounty.org/depts/pk/divisions/open-space/indian-tree> .

Parking:

No parking is available at the Shipmast trailhead. Informal street parking is available at the start of Big Tree Trail or at the start of Indian Tree Fire Road located over two miles and one mile respectively from the Shipmast trailhead.

Alternative means of access:

Pedestrian access is available via other trails. There are no public transit options to this trail.

Gate/Entry:

No formal gates or entries. Trail is a spur between Indian Tree Fire Road and Big Tree Trail. Trailheads have markers.

Trail Conditions:

The trail is approximately 12 to 18 inches wide. The trail tread is smooth with few obstructions but entrenched from use and the low outside berm.

Surface:

The trail is a compacted native surface and is firm and stable.

Slopes:

Running slope of trail is good as it follows the contour of the hillside. Sections have significant cross slopes exceeding the 5% maximum typical of accessible trails particularly where the trail has a change of direction.

Probable Issues/Maintenance:

Access is the primary issue for this trail. The Indian Tree Fire Road is extremely steep and covered with loose road gravel. The surface is slippery and rutted. Big Tree Trail is the other access point and has its own limitations to accessibility outlined in the trail evaluation.

Narrowness and lack of passing spaces along the trail are also limiting factors to designating this as an accessible trail.

Preliminary Assessment:

This is not a candidate for designation as part of the Destination-Oriented Trail system unless substantial accessibility improvements can be made to provide access to the trail. This trail provides a quality redwood forest experience with a gentle running slope but access and width are limiting factors for this trail.

Taylor Fire Road (Ring Mountain Trail)

Road ID 40100 | Ring Mountain, Tiburon

Destination and experience value/potential. Geographic location

The Taylor Fire Road is an approximately ½ mile long fire road in the Ring Mountain Preserve that can be accessed at the end of Taylor Road in Tiburon. The fire road ascends into the Ring Mountain Preserve through grassland and oak savannah and culminates at a small plateau at the highest point within the preserve. The trail offers expansive views of Tiburon, San Pablo Bay, Richardson Bay and San Francisco Bay. The unique geology and microclimate of the preserve provide a home for a number of rare plants. The trail is open to hikers, bicyclists and equestrians.

Parking:

Informal street parking is available along Taylor Road. The road has a running slope of 5% to 7%. The existing road width and required emergency vehicle turning radius of the cul-de-sac may make it difficult to provide an accessible parking space.

There is adequate space to provide an accessible parking space within the MCOSD preserve with adjustment to the gate location.

Alternative means of access:

Safe pedestrian access is not available. There are no public transit options to this trail.

Gate/Entry:

The trailhead has a normally closed vehicular gate with a 36 inch wide pedestrian entry. Users must travel along 400 feet of moderately steep paved road from Taylor Road to the trailhead.

Trail Conditions:

Trail conditions include a fairly consistent 12 foot wide road for the first half narrowing to an 8 foot wide road for the second half.

Surface:

The trail surface varies between an asphalt road with sections of broken or uneven asphalt, and a compacted native soil with loose gravel which is unstable or slippery. No major erosion issues were observed.

Slopes:

A 400 foot long paved section of the fire road outside of the preserve provides access to the preserve from Taylor Road. This section of fire road has a relatively consistent running slope of 15%. Running slopes along the trail vary between 8% to 15% with a 2% cross slope for the first half of the road. The second half has running slopes between 8% to 12% and cross slopes

around 2%. The trail levels off at the top with a large clearing or viewing area, which is relatively flat.

Probable Issues/Maintenance:

Uneven surfacing along the portion of the road where asphalt has either been removed or is broken and deteriorating needs resurfacing.

Preliminary Assessment:

The trail is a potential candidate for the Destination-Oriented Trails system.

Vistazo Fire Road (Old Saint Hilary's)

Road ID 42200 | Old Saint Hilary's, Tiburon

Destination and experience value/potential. Geographic location

The Vistazo Fire Road is an approximate ½ mile long round trip and is located in Old Saint Hilary's Preserve in Tiburon at the southern end of the preserve. From the hillside road are expansive views of San Francisco Bay to the south, and the surrounding Tiburon peninsula neighborhoods in other directions. The road winds through non-native grassland and crosses one ephemeral drainage channel. The road provides access to fire and emergency vehicles and is open to pedestrians, equestrians and cyclists.

Parking:

A small, informal parking area at the trailhead to the west could provide parking for about 4 vehicles. The surface is loose gravel and dirt with 15% to 20% running slopes and 1% to 3% cross slopes. Informal street parking within the right-of-way exists at the eastern end of the alignment with 2% to 4% slopes in either direction.

Alternative means of access:

Safe pedestrian access is not available. There are no public transit options to this trail.

Gate/Entry:

The trailhead at either end has a normally closed vehicular gate with a 36 inch wide pedestrian entry.

Trail Conditions:

Trail is a compacted native soil and varies in width from 10 to 20 feet wide.

Surface:

The trail surface is varied with most classified as compacted native soil with some loose gravel or aggregate that is firm and stable in its dry state. Short sections of trail with erosion, exposed bedrock, and larger rocks were observed. One wet crossing exists which is comprised of small boulders and some loose rock.

Slopes:

Most of the trail has running slopes of less than 10% and cross slopes less than 5%. A brief segment immediately after the wet crossing has a 20% running slope.

Probable Issues/Maintenance:

Uneven surfacing caused by boulders and/or bedrock would need to be re-surfaced or removed. A bridge or other improvement at the wet crossing would need to be installed which could safely get users and emergency vehicles across it.

Preliminary Assessment:

The trail is a potential candidate for the Destination-Oriented Trails system.

Whitehouse Pool Trail

Road ID N/A | Sir Francis Drake Boulevard, Point Reyes Station

Destination and experience value/potential. Geographic location

Whitehouse Pool Trail is located in Point Reyes Station, and is a level ½ mile trail along Lagunitas Creek in the Tomales Bay Estuary. In addition to the walking paths there are viewing areas, picnic tables, benches, access to Lagunitas Creek, and portable toilets - one of which is larger and provides wheelchair maneuvering space. Whitehouse Pool is surrounded by riparian vegetation and provides significant wildlife habitat for species such as coho salmon, and is popular for bird watching, nature study, and wildlife viewing.

Traffic noise was persistent throughout the survey due to the proximity to Sir Francis Drake Boulevard.

Parking:

A paved parking area is provided at the trailhead. The parking area is not striped and does not include designated accessible parking spaces.

Alternative means of access:

There is no designated pedestrian access from the roadway and no pedestrian sidewalks along the adjacent roadway. Whitehouse Pool is served by the West Marin Stage Coach Route 68. The bus stop is located right at the west entrance to the park and trail.

Gate/Entry:

The entrance gate has a removable bollard with an opening 53 inches on one side and 54 inches on the other side. The entrance is level but the surface at the transition from asphalt paving to the granular trail is loose gravel and not firm and stable.

Trail Conditions:

The trail varies from 12 to 36 inches wide. Many sections of the trail have overgrown with vegetation both on the ground and overhead reducing the clear width and height.

The trail has two timber bridges. The bridge adjacent to Sir Francis Drake Blvd on the east side of the site is 60 inches wide. A 14% slope and 3 inch change in level were observed at the transition plate. The second bridge crossing the inlet between the two trail sections is 48 inches wide. The wood transition on the east side of the bridge has a slope of 12% for 14 linear feet and up to 24 inch changes in level on either side with no edge protection. The transition on the west side includes a 14 foot long timber section with a slope up to 6% connected to an earthen ramp with a slope of 9% to 11% for 15 linear feet.

Surface:

The trail surface is varied with compacted native surface that is firm and stable in its dry state. Sections were observed with a top layer of loose small gravel.

Amenities such as the picnic tables, benches, and trash receptacles were located off the trail and require traversing grass.

Slopes:

Running and cross slopes along much of the path are less than 5%. The only sections observed to have excessive slopes were the ramp up to the bridge and the trail segment at the west entrance connecting to the bus loading area.

Probable Issues/Maintenance:

The trail surface is irregular in some sections, with surfaces not considered firm and stable. Seasonal wetness may be a maintenance issue as well as bank erosion if the trail was to encourage water access.

Preliminary Assessment:

This is a candidate for designation as part of the Destination-Oriented Trails system once accessibility improvements are made.

Recommendations

Trails recommended as candidates for the Destination-Oriented Trails system include:

- Agate Beach Bluff Trail
- Bahia Trail
- Escalon Fire Road
- Greenbridge Trail
- Hamilton Path Trail
- Ridgewood Fire Road
- Roy's Redwoods Meadow Trail
- Taylor Fire Road (Ring Mountain Trail)
- Vistazo Fire Road (Old Saint Hilary's)
- Whitehouse Pool Trail

Trails sufficiently accessible to be considered candidates for enhanced signage and other communication strategies but that do not meet the more stringent criteria for inclusion in the initial network of Destination-Oriented Trails:

- Deer Island Loop Trail
- Pinheiro Fire Road
- Rush Creek Fire Road
- Santa Margarita Island Trail
- Santa Venetia Marsh Trail

Trails that are not currently viable candidates for either inclusion in the network of Destination-Oriented Trails or for enhanced accessibility communication include:

- Big Tree Trail
- Dwarf Oak Trail
- Hill Ranch Waterfall Trail
- Old Railroad Grade
- San Andreas Fire Road
- Shipmast Trail

The next steps in developing the Destination-Oriented Trail network will be the selection of a sub-set of finalist trails to be further developed with 30 percent design drawings. The selection was based upon considerations of geographic distribution, diversity of experience within the system, and environmental resource impacts, and was informed by guidance from the public solicited through a public workshop in May 2015. Candidate trails not included in the *Inclusive Access Plan* but considered to have good potential were added to the list of trails identified for enhanced accessibility communication and will remain priorities for future accessibility improvement as opportunities for development or redevelopment arise.