

Clark County, Nevada

Development Standards for Off-Street Trails

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Background

Clark County, Las Vegas, North Las Vegas and Henderson are planning and building an extensive network of urban trails in the Las Vegas Valley. Trails offer people of different ages, abilities, and financial means a chance to move around their communities, travel from one area to another or to simply get out and recreate without having to drive or walk on busy roadways. A comprehensive trail system not only provides a sense of freedom and mobility but also linear recreation and open spaces in the middle of an urban area.

The Department of Air Quality and Environmental Management (DAQEM) assists in the implementation of the Clark County Recreational Trails Program. Trails staff develop trail plans, identify trail projects, develop project funding requests, and coordinate with local and federal agencies and partners. The primary source of funding for trails is the Southern Nevada Public Lands Management Act.

A valley wide Primary Trail System was cooperatively developed through the Southern Nevada Regional Planning Coalition. This system creates a regional trails network in the Las Vegas Valley and provides interconnectivity with local neighborhood trails. As a result, these trails connect people and communities by providing access to parks, schools, activities, shopping, natural areas, federal lands, and employment centers.

Regional trails in the Las Vegas Valley tend to follow natural washes that meander through residential, industrial, commercial, and natural areas. These non-motorized trails provide alternative transportation routes and connections to secondary trails designed as pedestrian, equestrian or multi-use facilities.

Policies

- Regional trails typically connect different areas together and are best located in natural settings away from conflicting automotive traffic.
- Community and Neighborhood trails generally link to Regional trails and local points of interest.
- Trails should be located on public lands, in public rights-of-way, or within dedicated easements.
- Trails located on private land shall be built by the developer. Routine cleaning and maintenance is the responsibility of the developer, land owner or HOA. Clark County would typically be granted a public access easement for performing heavy maintenance and to assume liability for public users of the trail.
- Trail operation, maintenance and security are provided by Clark County Department of Parks and Community Services.
- Flood control maintenance roads used as trails will be maintained through a cost sharing partnership between Clark County Regional Flood Control District (RFCD) and Clark County.

Trails

Off-street shared-use trails/paths (off-street trails) and on-street alternate transportation facilities (on-street facilities) together make up an extensive network of multi-use pedestrian/bicycle/equestrian facilities in the Las Vegas Valley. A functional system consists of main Regional trails and localized Community or Neighborhood facilities.

Off-Street Trails

Policies in the Trails Element of the Comprehensive Plan support the implementation of the County off-street trails program by developing trails that offer people expanded recreation and transportation options. In certain instances, necessary segments of these trails are located along roads, although this is the exception rather than the rule. County trails which would connect to trails in adjacent jurisdictions that are substantially complete or identified as priority trails, should be completed as practicable. Equestrian trails may be built within public ROW on roads currently developed to rural standards. These trails can be realigned if full street improvements are later required.

On-Street Facilities

In addition to the trail development standards in this guide, the Regional Transportation Commission (RTC) developed standards for on-street pedestrian and bicycle facilities. Recommended cross sections and standards are included in the Alternative Transportation Mode Master Plan adopted by the RTC Board. Clark County Comprehensive Planning, Development Services and Public Works implement on-street pedestrian and bicycle facilities through project review and conditioning.

Trail Types

Multi-use Non-Equestrian (walking, bicycling, jogging, running, wheelchairs, skate boards, in-line skates, skates)

Regional – Paved bi-directional

- 10' minimum (12' preferred) asphalt or concrete.
- 12' minimum if flood control access roads are utilized.
- Multi-use trails provide recreation and serve as alternate commute routes.
- Where flood control access roads are utilized RFCD standards must also be met.

Community/Neighborhood – Paved bi-directional

- 10' minimum (12' preferred) asphalt or concrete.
- 12' minimum if flood control access roads are utilized.
- Some applications may permit adjacent pedestrian and equestrian trails.
- Where flood control access roads are utilized RFCD standards must also be met.

Equestrian

Regional, Community or Neighborhood – Improved/semi-improved bi-directional equestrian trails

- 5' Minimum (single tread) trail made of acceptable aggregate or gravel or suitable soil. (see table 1)
- Where flood control access roads are utilized RFCD standards must also be met.

OHV Trails

- Motorized trails are not permitted within hydrographic basin 212 due to air quality restrictions.
- The BLM resource management plan for the valley prohibits OHV use on BLM public lands.
- OHV use should be encouraged on existing designated roads and trails typically located on public lands that are administered by federal agencies.
- OHV trails are primarily located in rural areas but connections may pass near rural towns with appropriate separation from development and pedestrian and equestrian trails.

Trail Locations

Flood Control Channels, Desert Washes and Natural Areas – Off-street trails should be located adjacent to washes, in natural areas, and along improved flood control facilities. Where flood control access roads are utilized RFCD standards must also be met.

Rights-of-Way – Off-street trails and paths should be located in utility corridors, abandoned or active railroad rights-of-way, and adjacent to I-215.

Rural areas – Rural and backcountry trails are typically on federally managed public lands or on County owned land or rights-of-way and may include a motorized component. Some of these trails may connect to urban trail systems.

Air Quality

The non-motorized trail system in the Las Vegas Valley will provide pedestrians and equestrians additional recreation opportunities and offer alternative transportation choices which should help reduce automobile emissions. By linking parks, natural areas, industrial, commercial, and employment centers, people will have alternatives to commute to work, shopping, and recreation facilities without using automobiles.

Americans with Disabilities Act

In 1990, Congress passed the Americans with Disabilities Act (ADA). Among other provisions, the act prohibits state and local governments from discriminating on the basis of disability and requires government services, programs, and activities to be accessible to people with disabilities. Where potential use and/or ADA access needs warrant, provide trail access through, around, over or under major barriers.

The Federal Access Board is an independent agency that develops and maintains accessibility requirements. The Board proposed rules to define accessibility requirements for trails, based on a 1999 report, *Accessibility Guidelines for Outdoor Developed Areas*, prepared by the Regulatory Negotiation Committee. County trail projects shall comply with the rules as proposed in the report.

Trail Design and Construction Standards

The design and construction of non-motorized trails including road crossings, signage, and striping shall be in accordance with the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, United States Department of Transportation (USDOT) guidelines for sidewalk and trail access, USDOT requirements for uniform traffic control devices, and ADA standards for accessibility requirements. Where flood control access roads are utilized RFCD standards must also be met.

The following guidelines provide general standards for off-street trail design and construction. Some modifications may be required depending on trail type and location. These standards do not substitute for project plans and engineering specifications. See table 1 – Non-Motorized Off-Street Trail Development Standards.

Amenities/Enhancements – Off-street trail enhancements, which may include restrooms, shade structures, benches, trash receptacles, dog waste bag dispensers, drinking fountains, bike racks, artistic features, landscaping, and information kiosks are typically located at major trailheads. Shade structures, benches, trash receptacles and dog waste bag dispensers may also be located along trails for comfort and convenience.

Barriers – Three types of barriers are generally used: large boulders, wood or concrete barriers, and bollards. All three types of barriers are effective in stopping motorized access when placed at the trailhead. The location of such barriers is usually where trails intersect, at cross streets, and where trails parallel roads at points where access is likely. Rock barriers can also be used along portions of a trail where the down slope grades are hazardous, where switchback cutting can be a problem and along outside edges that are exposed to steep slopes. The placement and spacing of barriers are dependent upon unique trail site characteristics and use requirements. Where flood control access roads are utilized RFCD standards must also be met.

Benches/Shade Structures – Benches and shade structures are typically located near trailheads and may also be located along the trail to provide resting places for trail users. The location of benches and shade structures varies with the length, location, and type of trail but should generally be spaced at intervals of approximately ½ hour of travel for trail users. Benches and structures shall be located at least 3 feet from the edge of the trail. Where flood control access roads are utilized RFCD standards must also be met.

Boardwalks – All wood used in boardwalk construction will be pressure treated or approved rot resistant timber. Where flood control access roads are utilized wooden boardwalks may not be used.

Clearance – Vertical clearance will vary with trail type and location. Multiuse non-equestrian trails should have a minimum clearance of 10'. Equestrian trails, under crossings and tunnels should provide a minimum 12' clearance. Where flood control access roads are utilized minimum clearance is 17'. Horizontal clearance includes a minimum 2' clear zone on each side of the trail tread with a minimum 3' separation from obstacles such as poles, fence posts, protective railings and bridge abutments.

Cross Slope – For proper drainage the minimum pavement cross slope should be 2% (maximum 5%), sloped in one direction to simplify design and construction. Proper drainage is necessary to prevent water pooling and channeling. On the side slope of a hill the pavement shall be installed in an out-slope configuration so water drains off the downhill side of the trail, preventing water channeling and erosion on the uphill side of the trail tread. Where flood control access roads are utilized RFCD standards must also be met.

Easements – Ideally, the trail easement should be a minimum of 20' to accommodate a meandering trail and to provide open space and landscaping opportunities on either side of the trail tread. All trails that are open to the public should either be located on dedicated property or within granted easements. The dedication may include either the entire width of the easement or just the width of the trail tread. Where flood control access roads are utilized RFCD standards must also be met.

Often liability concerns are raised in the process of building trails. In cases where public easements are dedicated or agreements are negotiated for public use with private landowners, the jurisdiction should assume general liability responsibility in the same manner as assumed for streets and other public areas.

In specific cases, temporary trail easements and installations may be required. An example of such a need might be on a large phased project where a trail exists but is to be relocated and dedicated in a future phase. In this case, a temporary trail easement is needed to access the existing trail until the future phase is constructed. Another example involving a temporary trail easement is where a developer has property that will not be developed until a future time. The developer may allow trail access on this property on an interim basis until the land is developed. A temporary easement should be granted for trail purposes.

Environmentally Sensitive Sites – Avoidance will be the primary approach for protecting environmentally sensitive sites. When avoidance is impossible, special location or construction methods will be necessary to reduce impacts and minimize disturbance in environmentally sensitive areas. Examples of visually or environmentally sensitive sites include: wetlands, highly visible hillsides, significant vegetation areas, highly erodible soils, unstable slopes, and ridgelines. Where flood control access roads are utilized RFCD standards must also be met.

Handrails – Handrails shall be constructed and installed as per ADA requirements. Where flood control access roads are utilized RFCD standards must also be met.

Landings – Landings shall be constructed and installed as per ADA requirements on accessible trails with grades greater than 5%. It is preferable to design ADA accessible trails with a grade of 5% or less as ramps and landings are difficult for other trail users to negotiate. Where flood control access roads are utilized RFCD standards must also be met.

Lighting – Lighting at select trail heads and trail access points or along trails regularly used at night is an important factor in encouraging pedestrian activity after the daylight hours. Good illumination is especially important at intersections and crosswalks so that pedestrians are fully visible while waiting to cross and while actually crossing. In areas where crime is a concern, lighting is essential for fostering a

sense of safety particularly in underpasses and tunnels. Where flood control access roads are utilized RFCD standards must also be met.

Natural Considerations – Where significant wildlife, vegetation or other natural features exist, special trail routing, construction methods and trail use should be considered. Where flood control access roads are utilized RFCD standards must also be met.

Railings and Fences – Railings and fences should generally be installed only for safety reasons such as restricting access to highways, railroad corridors, and flood control facilities or as needed for physical separation from adjacent properties to maintain landowner privacy. Fences should not create a narrow corridor effect for long stretches along the trail and where possible should be located only on one side of the trail at a time. Where flood control access roads are utilized RFCD standards must also be met.

Running Slope – The running slope for multiuse non-equestrian trails should generally not exceed 5% except for short distances and significant or frequent grade changes are discouraged (see Table 1). Occasional changes in grade and alignment provide trail users with variety and challenge. Where flood control access roads are utilized RFCD standards must also be met.

Signage – Signs should generally indicate trail destinations, directions, and distances, and provide information regarding the type of trail and expected level of difficulty. Where possible, standardized signage should be developed and used for inter-jurisdictional trails. Requirements for the use and placement of signs, including regulatory signs at intersections, will follow the standards set forth in the Manual on Uniform Traffic Control Devices (MUTCD) section on ‘Traffic Control Devices for Bicycle Facilities’ and will apply to all multiuse paved trails. Bicycle Crossing Signs near a road approaching a crossing will conform to MUTCD standards. Where flood control access roads are utilized RFCD standards must also be met.

Trail user information signs should be placed at all major trailhead facilities and city parks where trails are accessed. At high volume multiple-use trailheads, informational signs indicating user etiquette should be posted. Signs should be located where they are clearly visible and where they don’t impede trail use or present a hazard to trail users. Trail courtesy signs should be posted at all trailheads and shortened user courtesy signs should be installed at trail access points.

In addition to signage, trail maps and guides may be made available to trail users and should contain the following information:

- Locations of trails, trailheads and a description of trail routes and distances, steepness and accessibility.
- Accessibility ratings, including the presence of staircases or barriers should be noted and fully accessible trails should be clearly marked.
- Pedestrian/bicycle corridors with wheelchair access, cross walks, transit connections, and trail connections clearly shown.
- Location of public and private facilities such as parking lots, drinking water, rest rooms and benches should be marked.
- Major destinations such as schools, universities, major employment centers, retail and social services, and residential areas.

Surface – For urban area non-equestrian trails the trail surface should be asphalt or concrete over an appropriate base material. This path provides a hard surface for walking, skating, biking and jogging with low maintenance requirements. If the trail also serves as a maintenance road it must be designed and constructed to accommodate necessary vehicles and equipment. Where flood control access roads are utilized RFCD standards must also be met.

Equestrian, rural, and backcountry trails are generally constructed of acceptable aggregate or gravel, suitable native soils or crushed stone. This trail surface is suitable for horses, walking, jogging, hiking, and mountain biking. Where flood control access roads are utilized RFCD standards must also be met.

Trailhead – A trail access point that typically includes various public facilities, such as parking areas, toilets, water, trash receptacles, dog waste bag dispensers and directional and informational signs. Trailheads should be located at the end of trail corridors and where large concentrations of trail users are expected such as in major parks. Informal trail access allows users to enter or exit the trail from small parks, schools, commercial areas, and adjacent communities.

Trail Markings – A centerline stripe is required for hard surfaced bi-directional trails to separate opposite travel directions. Where flood control access roads are utilized RFCD standards must also be met.

Trail Width – The minimum width of bi-directional trails should be 10' to provide for multiple users and easy passing. Trails with significant use (100 users/hour) should be 12' and heavy use trails (300 users/hour) should be 14'. Where flood control access roads are utilized RFCD standards must also be met.

Utilities – The routing of utilities within trail corridors is generally encouraged. Many trail managers have allowed co-location of utilities in consideration for appropriate fee payments by the utility company. Locations that are visually or environmentally sensitive may restrict or preclude sharing utilities with trails. The following guidelines for placement, site disturbance and access should be followed.

- Utility lines that run parallel to the trail should be placed under the trail bed where possible to minimize site disturbance. Utility lines that are perpendicular to the trail and lateral lines should be located to minimize site disturbance and removal of significant vegetation. Physical obstructions, such as utility pedestals, transformers and the like should be located out of the clear zone so they are not hazards to trail users. Access points which are not a physical obstruction, such as manhole covers should be located flush with the trail surface and where they do not pose a hazard to trail users.
- Access for utility maintenance vehicles will be evaluated on a case by case basis and provided for as part of the trail construction. Visually or environmentally sensitive sites may preclude full access to trail/utility corridors.
- Where flood control access roads are utilized RFCD standards must also be met.

Vegetation and Landscaping – Any vegetation or landscaping should be planted and maintained a minimum of 3' from the edge of the trail tread. For security purposes, plants, shrubs, and trees should be placed as to not obscure hazards or provide places for people to hide. Where flood control access roads are utilized RFCD standards must also be met. For on-street pedestrian facilities (sidewalks), standard County landscaping requirements are to be met.

Wetlands – Trails that cross or are located adjacent to wetlands should be designed for minimal impact. Wooden boardwalks or other techniques may be necessary to impose minimal construction impacts. Wildlife needs should also be considered when setting trails near wetlands. Where flood control access roads are utilized RFCD standards must also be met.

Design Standards

Table 1 – Non-Motorized Off-Street Trail Development Standards

Standards	Trail Types	
	Multi-use Non-equestrian	Equestrian
	Regional, Community, Neighborhood	Regional, Community, Neighborhood
Trail ROW Width	20' – minimum 30' – parallel pedestrian/equestrian trails	15' – minimum
Running Slope	5% – typical 8% – maximum of 200' 10% – maximum of 30' 12% – maximum of 10'	5% – typical
Surface	Asphalt or Concrete	<ul style="list-style-type: none"> • PM10 non-attainment – Compliant aggregate • PM10 attainment – Type 2 gravel • Suitable native soil
Trail Width	10' – minimum 12' – significant use (100 users/hour) 14' – heavy use (300 users/hour)	5' – minimum (single tread)
Cross Slope	2% (5% max.)	2% (5% max.)
Vertical Clearance	10' – along trail 10' – tunnels or under crossings 17' – along flood control facilities	10' – along trail 12' – tunnels or under crossings 17' – along flood control facilities
Horizontal Clearance	2' – min. clear zone each side of trail tread 3' – min. from obstacles	2' – min. clear zone each side of trail tread 3' – min. from obstacles
Signage	<ul style="list-style-type: none"> • User info. – trailheads and entry points • Markers/plaques for distance, direction, and destinations as needed along route • Regulatory signs per MUTCD • Crosswalks and intersections 	<ul style="list-style-type: none"> • User info. – trailheads and entry points • Markers/plaques for distance, direction, and destinations as needed along route • Regulatory signs per MUTCD • Crosswalks and intersections
Markings	4" center stripe on hard surface per AASHTO	None
Lighting	<ul style="list-style-type: none"> • Trailheads and entry points • Urban trails regularly used at night • Tunnels or under crossings • At grade or bridge crossings 	<ul style="list-style-type: none"> • Trailheads and entry points • Tunnels or under crossings • At grade or bridge crossings
Handrails	As required for ADA ramps	N/A
Railings or Fences	Highways, railroads, bridges, overpasses, flood control facilities, adjacent private property	Highways, railroads, bridges, overpasses, flood control facilities, adjacent private property

Note: Where flood control access roads are utilized RFCD standards must also be met.

Appendix A

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