TRAIL 6

Las Brisas Trail

Uses
Walking/Jogging, Biking

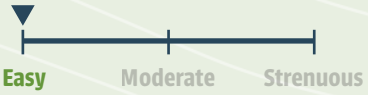
Trail Material
Asphalt

Trail Width
8-14 feet

Length
1.14 miles

Trail Type
Type 5

Difficulty



Las Brisas Trail is located in the center of Murrieta and provides a family-friendly experience to a variety of trail users. On-street parking is provided within 500 feet of a few of the trailheads. The trail does feature some exercise equipment and other amenities at various points along the route. The entirety of the trail is identified as a fitness route and serves a variety of users. This trail's proximity to residential areas and asphalt pathway makes it a popular trail for users every day. Additionally, this trail has offshoots which could provide future trail connections.

All images sourced from Fehr & Peers

TRAIL 7

Lincoln Ranch Trail

Uses
Walking/Jogging, Biking

Trail Material
Decomposed Granite

Trail Width
8-14 feet

Length
0.59 mile

Trail Type
Type 2

Difficulty

Lincoln Ranch Trail is located west of Ranch House Street adjacent to Interstate 215. This trail is accessible from many different locations within the nearby housing tract and provides on-street parking at all trailhead locations. While the trail material and design imply this is an easy trail, the elevation changes along the route do increase the difficulty. This trail is family-friendly and accessible for a variety of users. No amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 8

Los Alamos Hills Trail

Uses
Walking/Jogging, Biking

Trail Material
Decomposed Granite

Trail Width
8-14 feet

Length
1.57 mile

Trail Type
Type 2

Difficulty

Los Alamos Hills Trail is a path-like trail that surrounds the Los Alamos Hills Sports Park. The trail's location at the sports park provides many amenities such as restrooms, water fountain, benches, and picnic tables. Additionally, the trail's width and topography make it a family-friendly trail accessible to a variety of users. The entirety of the trail is identified as a fitness route. The parking along the trail perimeter does result in some overhang, which may cause some width reductions, and the multiple entrances to the park do create some trail and roadway crossing conflicts.

All images sourced from Fehr & Peers

TRAIL 9

Mapleton Trail East

Uses
Walking/Jogging, Biking

Trail Material
Decomposed Granite

Trail Width
20-30 feet

Length
0.33 miles

Trail Type
Type 3

Difficulty

Easy Moderate Strenuous

Mapleton Trail East is one of three trails in the Mapleton Trail system. This trail is located near Mapleton Trail West. The trail exists within a utility corridor and provides a wide, consistent surface and is family-friendly to a variety of users. The entirety of the trail is identified as a fitness route. Use of this trail does require a roadway crossing at the mid-block of Poinsettia Street. No amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 10

Mapleton Trail North

Uses
Walking/Jogging, Family-Friendly

Trail Material
Decomposed Granite/ Native Soil

Trail Width
10-12 feet

Length
0.71 miles

Trail Type
Type 2

Difficulty

Mapleton Trail North is one of three trails in the Mapleton Trail system is located in the northern part of Murrieta along the City boundary. This trail consists of multiple entry points within the Mapleton neighborhood and on Whitewood Road. On-street parking is provided within 500 feet of the trailheads in the Mapleton neighborhood. No other amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 11

Mapleton Trail West

Uses
Walking/Jogging, Biking, Family-Friendly

Trail Material
Concrete/Decomposed Granite

Trail Width
5-8 feet

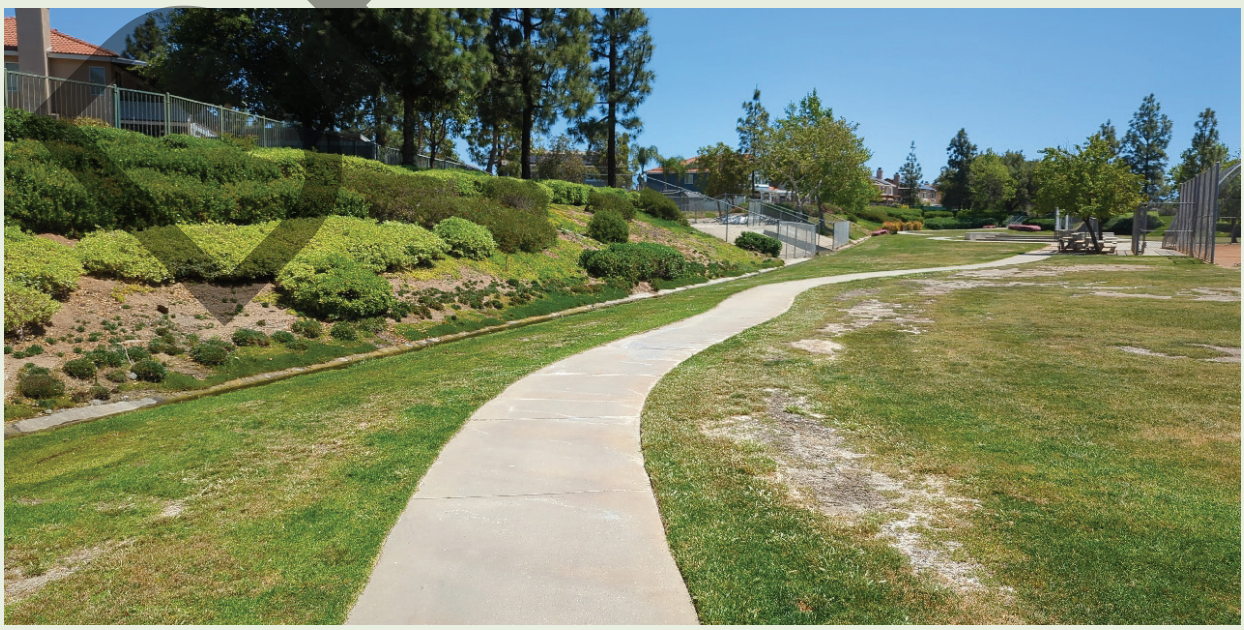
Length
0.75 mile

Trail Type
Type 4

Difficulty

Easy | Moderate | Strenuous

Mapleton Trail West is one of three trails in the Mapleton Trail system. This trail is located in the north portion of Murrieta adjacent to Mapleton Park and Oak Meadows Elementary School. The trail has various material types but is a family-friendly trail accessible by multiple users. The entirety of the trail is identified as a fitness route. Off-street parking is provided at Mapleton Park and on-street parking is provided within 500 feet of the other trailheads. A restroom and other amenities are provided at the Mapleton Park parking lot.



All images sourced from Fehr & Peers

TRAIL 12

Murrieta Oaks Trail

Uses
Walking/Jogging

Trail Material
Native Soil

Trail Width
8-14 feet

Length
0.19 miles

Trail Type
Type 2

Difficulty

Easy Moderate Strenuous

Murrieta Oaks Trail is a short, family-friendly trail located in central Murrieta. This trail's wide pathway makes it suitable for a variety of users. While the trail is short, access to the trail is simple with on-street parking within 500 feet of the trailheads. No amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 13

Pond Park Trail

Uses
Walking/Jogging, Biking

Trail Material
Concrete

Trail Width
5-8 feet

Length
0.3 mile

Trail Type
Type 4

Difficulty

Pond Park Trail is a simple out-and-back, sidewalk-style, concrete trail located in Pond Park in southeastern Murrieta. The trail is adjacent to the pond in Pond Park and provides a variety of benches, picnic tables, and w cans along the route. This is a family-friendly trail suitable for a variety of users. Publicly available parking near the trailhead is nonexistent, but signage at the trailhead does direct users to park at Firefighters Park.

All images sourced from Fehr & Peers

TRAIL 14

Rail Ranch Trail

Uses
Walking/Jogging

Trail Material
Asphalt

Trail Width
8-14 feet

Length
0.24 miles

Trail Type
Type 5

Difficulty

Rail Ranch Trail is located in central Murrieta adjacent to Rail Ranch Elementary School. The trail is family-friendly and suitable for a variety of users. On-street parking is available within 500 feet of both trailheads. No amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 15

Rancho Acacias Trail

Uses
Walking/Jogging, Biking

Trail Material
Asphalt

Trail Width
8-14 feet

Length
0.66 mile

Trail Type
Type 5

Difficulty

Easy Moderate Strenuous

Rancho Acacias Trail is located in central Murrieta with a portion of it located in Rancho Acacias Park. The trail is an asphalt-based trail that has trailheads on Whitewood Road and Avenida Palizada. On-street parking is only located near the Avenida Palizada trailheads. The trail is family-friendly and accessible to a variety of users. Use of this trail does require a roadway crossing at the mid-block of Avenida Palizada. While seating is provided in Rancho Acacias Park, no other amenities are provided on the trail.

All images sourced from Fehr & Peers

TRAIL 16

Rancho Los Alamos Trail System

Uses
Walking/Jogging, Biking

Trail Material
Native Soil

Trail Width
4-12 feet

Length
8.12 mile

Trail Type
Type 1

Difficulty

Located in the eastern portion of Murrieta with a trailhead in Northstar Park, this trail system provides users with a variety of trails. The system can provide users with varying distances and difficulties. At the time of the data collection, the trailhead at Northstar Park was closed for construction of a new residential development; however, the trailhead at La Alba Drive was accessible. Users for this trail system are limited and amenities are not provided.

All images sourced from Fehr & Peers

TRAIL 17

Sycamore Ranch Trail

Uses
Walking/Jogging, Biking

Trail Material
Decomposed Granite

Trail Width
8-14 feet

Length
0.72 miles

Trail Type
Type 2

Difficulty

Easy Moderate Strenuous

Located in western Murrieta, Sycamore Ranch Trail generally runs parallel to Sycamore Creek Avenue. The trail is located adjacent to a residential area and has multiple trailhead locations along the route. The wide pathway makes the trail suitable for a variety of users. On-street parking is available for most trailhead locations with the exception of Calle Del Oso Oro. No amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 18

Toulon Trail

Uses
Walking/Jogging, Biking

Trail Material
Native Soil

Trail Width
4-12 feet

Length
0.76 mile

Trail Type
Type 2

Difficulty

Toulon Trail is located in a hilly, undeveloped area in central Murrieta. The trail is an out-and-back style with a trailhead on Toulon Drive. Similar to Falcon's View Trail, Toulon Trail is more technical and narrower than other trails in the area. As such, users of this trail may be limited. On-street parking is provided near the Toulon Drive trailhead. No amenities are provided on this trail.

All images sourced from Fehr & Peers

TRAIL 19

Warm Springs Trail

Uses
Walking/Jogging

Trail Material
Concrete/ Native Soil

Trail Width
2-5 feet

Length
0.24 miles

Trail Type
Type 1

Difficulty

Warm Springs Trail is located in the central portion of the Murrieta with the trailhead originating in Warm Springs Park. This trail has narrow pathways which make it one of the more challenging trails in the trail network. Users of this trail are limited to those walking or jogging. Off-street parking is provided at Warm Springs Park and additional amenities such as benches and trash cans are also provided.

All images sourced from Fehr & Peers

Field Review & Maintenance Opportunities

The City of Murrieta supplied a list of trail segments for the consultant team to walk and collect field data. Data included geolocation tracking to validate the shape and alignment of the trails as well as geolocated pinpoints which provided location specific observations including trail width, surface conditions and material, access point/trailhead accuracy, and photographs. The fieldwork covered 10 miles of trails, representing approximately 42% of Murrieta's total trail mileage. Based on our field observations, we identified several key maintenance opportunities that the City could pursue to enhance the user experience for trail-goers. Below is a summary of our findings, accompanied by photographs taken during our fieldwork.

Erosion

Trail erosion, to varying degrees, was observed on several trails, including Copper Canyon, Falcon's View, Lincoln Ranch, Sycamore Ranch, and Mapleton Trail West. This erosion can likely be attributed to the unusually high rainfall the region experienced this past winter. The most significant erosion issue was found on Falcon's View Trail, where half the width of the trail has collapsed, posing a potential safety risk for users. Implementing improved drainage systems could help make these trails more resilient to future rain events.

All images sourced from Fehr & Peers

Trail Uplift from Tree Roots

Trail uplift caused by tree roots was observed on Pond Park, Rancho Acacias, Lincoln Ranch, and Las Brisas Trails. The resulting cracked and uneven paved paths can create significant accessibility challenges for users who rely on mobility devices, such as wheelchairs and walkers. Addressing these issues is crucial to ensuring that all trail users, regardless of physical ability, can safely and comfortably enjoy the trails.

Miscellaneous Repairs

The consultant team also identified several minor miscellaneous items in need of repair, including a footbridge and utility company junction boxes on California Oaks Trail, missing fence posts on Los Alamos Hills Trail, broken asphalt on Las Brisas Trail, and a damaged cement curb on Sycamore Ranch Trail. Although these issues do not necessitate immediate attention, addressing them would significantly enhance the overall trail user experience and contribute to the long-term maintenance and appeal of the trail network.

All images sourced from Fehr & Peers

Trail Usage

Trail usage data was collected at a sample of trails in the City of Murrieta to understand the typical trail user type (walking/jogging, biking, or equestrian use) as well as get a general idea of how often the trails are used. Data was collected at one of the trailheads for five (5) trails using a data collection vendor that utilized video data collection technology. The counts were conducted for four (4) consecutive days from Thursday April 25, 2024 – Sunday April 28, 2024 to represent both weekday and weekend trail usage. The five (5) trails and associated trailhead locations collected were:

- Rancho Acacias Trail at Whitewood Road
- Las Brisas Trail at Las Brisas Road
- Rancho Los Alamos Trail at La Alba Drive
- Cole Canyon Trail at Hayes Avenue
- Mapleton Trail West at Poinsettia Street

Trail usage data found that Type-1 trails generally had higher usage with the greatest usage observed on Saturday and Sunday. The exception to this generalization is that Las Brisas Trail (Type 5) had just as much usage as the Type 1 trails. The Las Brisas trail has a high number of residential communities nearby and its relatively easy, wide, and off-street path makes it a destination for recreational use by many residents in Murrieta. Standard bicycle versus electric bicycle (e-bike) usage was reviewed in the data collection and the field observations. While e-bike usage was found on the trails, the users were found to operate in a manner similar to standard bicyclists; however, it should be noted that e-bikes can achieve a higher speed than standard bicyclists so the restriction of e-bikes on some trails may be considered as a future recommendation.

Additional information about the trails sampled is provided.

Las Brisas Trail at Las Brisas Road

The Las Brisas trailhead had it busiest day on Sunday with 256 users, of which approximately 93% were pedestrians. Peak usage occurred on Saturday at 7:00 PM. Charts presenting the total daily usage and 15-minute intervals usage are provided in ***Appendix D***.

Cole Canyon Trail at Hayes Avenue

The Hayes Avenue trailhead of Cole Canyon Trail had it busiest day on Sunday with 532 users, of which approximately 89% were pedestrians. Peak usage occurred on Saturday at 4:45 PM. Charts presenting the total daily usage and 15-minute intervals usage are provided in ***Appendix D***.

Rancho Acacias Trail at Whitewood Rd

The Whitewood Road trailhead of Rancho Acacias Trail experienced its busiest day on Saturday, with 83 users, approximately 86% of whom were pedestrians. Peak usage occurred on Thursday at 10:45 AM and 11:30 AM. Detailed charts showing total daily usage and usage in 15-minute intervals are provided in ***Appendix D.***

Rancho Los Alamos Trail at La Alba Drive

The La Alba trailhead of Rancho Los Alamos Trail had it busiest day on Sunday with 244 users, of which approximately 94% were pedestrians. Peak usage occurred on Sunday at 2:00 PM. Charts presenting the total daily usage and 15-minute intervals usage are provided in ***Appendix D.***

Mapleton Trail West at Poinsettia Street

The Poinsettia Street trailhead of Mapleton Trail West had it busiest day on Thursday with 78 users, of which approximately 88% were pedestrians. Peak usage occurred on Thursday at 5:15 PM and 6:00 PM. Charts presenting the total daily usage and 15-minute intervals usage are provided in ***Appendix D.***

Section Four

Recommendations

Proposed Trail Connections and Additions

Improving the existing trails within the City's trail network can have a positive impact on both the users and the Murrieta community at large. The trail network not only operates as a transportation or recreation system, but also supports the continued growth and development of the City of Murrieta. The recommendations identified vary from the inclusion and development of new trail connections to the installation of uniform signage and improved data mapping. These recommendations represent a toolbox of strategies and ideas that can be implemented to continue to support the usage of the trail network.

Connections

Expanding connections between existing and/or proposed trails plays a crucial role in enhancing Murrieta's trail network, offering more opportunities for recreation and transportation throughout the City. By extending trails away from roadways, these connections create a safer, more enjoyable environment for residents and visitors. The City of Murrieta has identified numerous trail connection opportunities within the Circulation Element of its General Plan. These include both stand-alone trails and key connections to the existing network. Among these is the proposed Murrieta Creek Regional Trail Project, a significant regional effort that links the nearby cities of Lake Elsinore, Wildomar, Murrieta, and Temecula into a continuous, connected trail system. Other potential trail extensions and improvements have been outlined both in the General Plan and through recommendations by the City's consultant team, aiming to increase accessibility and enjoyment of Murrieta's trail system for all users.

It is important to note that the implementation of these proposed trails and trail connections may necessitate the City acquiring parcels of land or securing easements on properties not currently owned by the City. This process is essential to ensure that the trails are accessible, continuous, and effectively integrated into the trail network. For example, the City will need to secure easements on approximately 30 parcels, from Ivy Street to the City of Temecula boundary, to implement the Murrieta Creek Regional Trail.

New Trail Connections

The consultant team identified several trail connections based on field observations, many of which were already noted in the General Plan Circulation Element. The alignment between these field observations and prior studies underscores the significant value of these connections to the overall trail network. The identified connections are as follows:

- Warm Springs Trail to/from Pond Park Trail utilizing a new Type 1 trail through the creek valley connecting these two trails
- Warm Springs Trail to/from Rancho Los Alamos Trail utilizing a new Type 1 trail through the creek valley connecting these two trails.
- Copper Canyon Trail to/from Cole Canyon Trail utilizing the existing sidewalks along Calle Cipres and Oak Bluff Lane
- Sycamore Ranch Trail to/from Cole Canyon Trail utilizing a Type 2 trail through the creek valley connecting these two trails. This will require a roadway crossing of Calle Del Oso Oro.

Beyond the trails identified in the General Plan, additional potential connections were identified for further consideration. These new connections were categorized based on their ability to integrate with the existing trail network, improving connectivity and providing seamless, accessible routes for users:

- Murrieta Oaks Trail to Las Brisas Trail utilizing a variety of existing paths and new paths through the landscape area crossing Sweetspire Terrace Place, Las Brisas Road, and Calle San Vicente

The location of these planned trail connections can be found in ***Appendix E.***

New Sidewalk Connections

New sidewalk connections can be established between nearby trails located within or near residential neighborhoods by utilizing existing sidewalks along roadways. These connections are designed to extend the overall trail length by linking separate trails through off-trail travel.
Examples of these connections include:

- Los Alamos Hills Trail to/from Rail Rach Trail utilizing existing sidewalks along Sunlight Court, Summerglen Avenue, and Wintergrove Way .
- Mapleton Trail West to/from Mapleton Trail East utilizing existing sidewalks along Poinsettia Street, Whitewood Road and Mapleton Street.
- Mapleton Trail West to/from Mapleton Trail North utilizing existing sidewalks along Delphinium Lane.

The location of these new sidewalk connections can be found in ***Appendix E.***

Additions

As previously identified, the City of Murrieta's General Plan Circulation Element has highlighted various new trail opportunities, such as the Murrieta Creek Regional Trail Project. Additionally, the Circulation Element proposes new trails along Los Alamos Road and Whitewood Road, situated adjacent to and north of the Los Alamos Hills Trail. The Whitewood Road trail is envisioned to extend in a north-south direction parallel to Whitewood Road, eventually intersecting with a planned trail along Keller Road and the existing Mapleton Trail East.

New Trail Incorporation

Murrieta Hills, situated west of Interstate 215 along the northern edge of the City, has long been frequented by recreational users taking advantage of the natural beauty that Murrieta has to offer. While numerous pathways crisscross the Murrieta Hills area, two specific trails were identified through aerial review and verified via the trail app, AllTrails, as promising candidates for inclusion into the City's trail network. This expansion will not only increase the total trail mileage but also enhance access to nature-based destination trails for network users. The location of this new trail incorporation can be found in ***Appendix E.***

Future New Trails

While a good portion of the City of Murrieta has been developed, some areas of the southwest and northeastern portions of the City have long-term projections for additional residential growth. Specific details for development in these areas are unknown; however, the ability to add trails within these areas would be a beneficial feature to implement during buildout. These areas could also be connected to the existing trail network tough a combination of sidewalk connections and trail connections.

Murrieta Creek Regional Trail Connection

The Murrieta Creek Regional Trail (MCRT) is envisioned as a multi-purpose recreational corridor that weaves together the natural beauty of the region with a network of accessible trails. This trail will serve as a vital link between the cities of Temecula, Murrieta, Wildomar, and Lake Elsinore, following the natural flow of Murrieta Creek. Initially conceived to address flood management concerns, the MCRT has evolved into a multifaceted project that offers a host of benefits, including flood mitigation, promotion of healthy and active lifestyles, and strengthening of community connections. By creating new connections to existing city trails, the MCRT will form part of a much larger regional network, enhancing the overall accessibility of outdoor spaces for residents and visitors across the region. The Murrieta Creek Regional Trail Plan, prepared in 2014, provides a detailed conceptual alignment and recommendations for the trail's development. Within the City of Murrieta, the MCRT will add approximately 6.3 miles to the existing trail network, establishing connections to popular local trails such as Cole Canyon, Copper Canyon, and Sycamore Ranch (see ***Appendix F***). The southern section of the trail will extend into the City of Temecula, requiring multiple street crossings along key intersections, including Guava Street, Ivy Street, Kalmia Street, and Vineyard Parkway. In addition, a new mid-block crossing on Calle Del Oso Oro is proposed to link the Cole Canyon and Sycamore Ranch trails. To connect Cole Canyon with Copper Canyon, the plan recommends utilizing the existing sidewalk along Calle Cipres and the current crosswalk at the intersection of Calle Del Oso Oro. A proposed pedestrian and bicycle bridge will link Sycamore Ranch and Copper Canyon trails. This bridge will provide a safe, direct route between the two trails, further enhancing the City's connected trail system.

Refer to Murrieta Creek Regional Trail in ***Appendix E***.

General Trail Recommendations

Signage and Wayfinding

Signage and wayfinding are essential for ensuring a safe and enjoyable outdoor experience. Wayfinding encompasses signs, markers, maps, and other navigational aids that help hikers navigate trails effectively. These tools not only prevent hikers from getting lost, but also assist them in making informed decisions about route choices, points of interest, and potential hazards along the way. It also supports emergency response and trail maintenance activities and provides information to the public about trail conditions. Providing signage and wayfinding is one of the most cost-effective upgrades for a trail network, but it must be done thoughtfully and systematically to maximize the benefits. When done well, signage and wayfinding can:

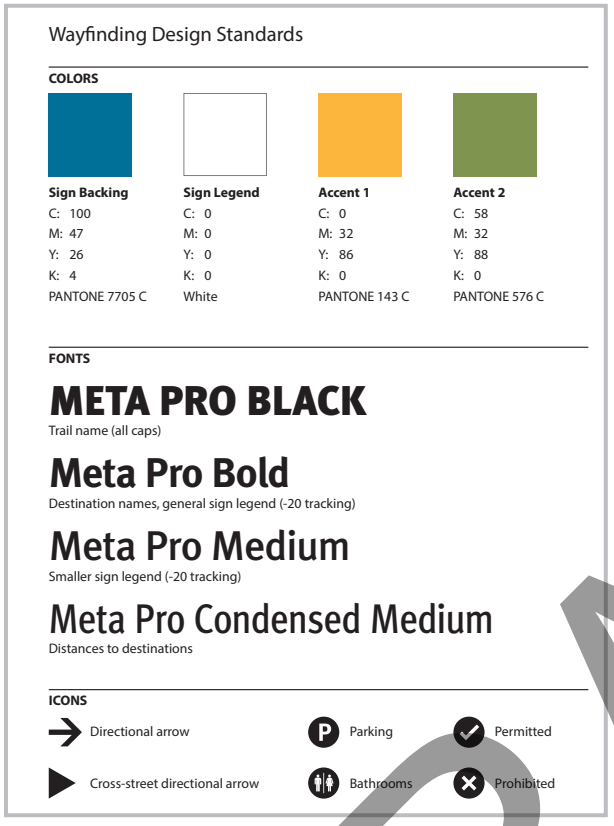
- **Encourage Trail Use**
  Enhancing the visibility of the trail network boosts users' confidence in navigating it, thereby improving their overall experience and potentially attracting new users.
- **Increase Trail Safety**
  Signage and wayfinding increases the visibility of the trail to non-users, particularly at road crossings. More importantly, it improves trail user knowledge of where they are, and can facilitate emergency response and coordination based on clearer communications about incident locations.

Adding more signs and maps alone will not produce the intended benefits. The wayfinding system must be thoughtfully designed and implemented to avoid visual clutter and confusion. There should be a consistent visual format and sign/marker layout, including symbols, logos, type styles and sizes, and colors that help users to quickly absorb key information about their location and route.

A complete wayfinding system includes:

- Trail network maps and information – digital and printed maps, brochures, and websites
- Park and staging area identification monument signs
- Trailhead regulatory and information signs
- On-trail junction, confirmation, and mile marker signs or posts
- Pavement markings – trail identification, intersecting roadways, mile markers, user designations, guide and warning striping
- Roadway crossing name and warning signs on the trail
- Trail crossing name and warning signs on the road
- On-street directional and guide signs to trailheads
- Sharing trail route data with a third party trail navigation provider (e.g., AllTrails)

The following represents specific recommendations for signage that can be incorporated in the City of Murrieta trail network:



Example Wayfinding Design Standards

Trailhead Signage

Trailhead signs are a collection of signs that identify the specific trail and any regulatory requirements or warnings. Few of the City's trails have trail name markers and many of the users are not aware of which trails they are using. The lack of identification can be frustrating to users who are trying to use specific trails.

Recommendation

It is recommended that all trails have their name marked with a consistent set of trailhead sign or monument designs. Combine trail name placards with maps and regulatory signs in an organized, consistent layout that makes it easier to discern the different messages.

Trail Sign Consistency

Consistent trail sign design can promote the recognition of the City of Murrieta Trail System and enhance the trail user experience. Trail signs should be consistent in design, color, and overall appearance to help users feel informed and safe. Consistency can be applied to a variety of signs, such as information and regulatory signs, to enhance the overall experience of trail users.

Recommendation

It is recommended that the City develop a trail signs guideline document to create cohesive signage throughout the trail network. The guideline should identify the specific set of standards (dimensions, colors, location, usage characteristics) of the different sign types so all existing and future trails within the trail network can have a comprehensive development.

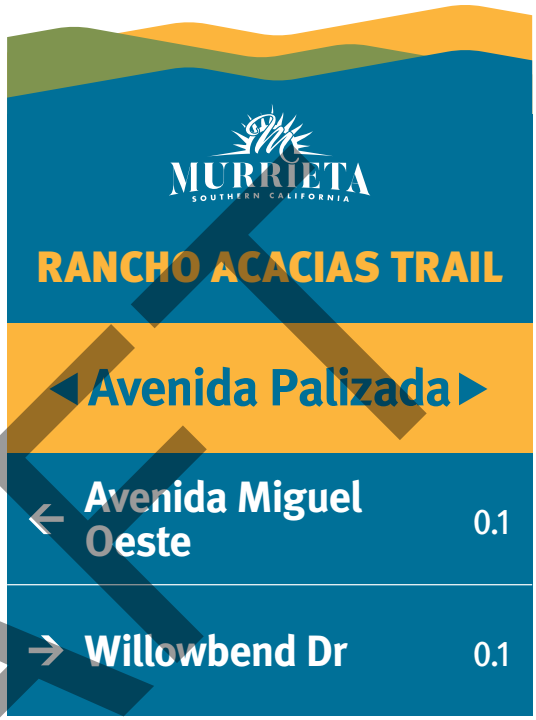
Example Trailhead Signage

Roadway Crossing Signs

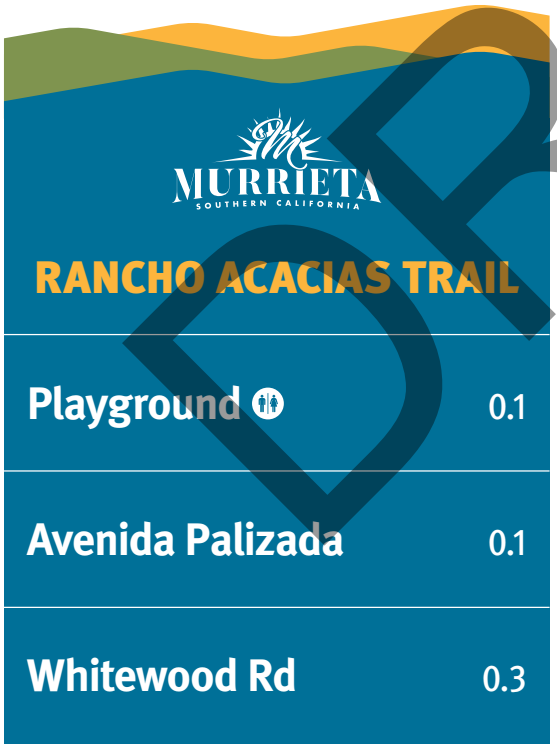
Roadway crossing signs identify the adjacent roadway, which can help trail users locate themselves within the trail network. In most places, there is no information about where a trail crosses a street. Currently, the Trail Fitness Maps provide information about which trail is being crossed and the continuation location to the trail; however, these maps are sporadically located and not near the trail entrances.

Recommendation

It is recommended that where trails and trailheads intersect streets, consistent street name signs on the trail, and trail name signs on the street, should be provided to help trail users orient themselves, and others to be aware of the location of the trail and the trail entrance or crossing.



Example Roadway Crossing Signs



Example Directional Signage

Travel Directional Signage

Trail directional signs provide routing information to aid trail users through complex trail systems. Directional signs can help users navigate splits in the trail and also prevent accidents and injuries by ensuring users stay on the intended route and avoid hazardous areas. Many of the existing trails did not have directional signage which made some trails, such as Warm Springs Trail, challenging to navigate.

Recommendation

It is recommended that trail directional signs be provided along trails and at junction points to clearly identify the trail routing. These signs should also include information such as dead-end trails and adjacent parks and roadways at the trail heads so users can determine which route they would like to take.

Travel Mile Markers

Trail mile markers are signs with locational information that provide recreation benefits and enhance safety. Trail users can utilize the sequentially numbered signs to track distances traveled. For safety, that same numbering system can be utilized by the 911 operators to better locate trail users in need of assistance and provide details on access routes to the emergency responders. No trail mile markers were identified during the field visit and data collection process.

Recommendation

It is recommended a consistent marker style be developed and implemented throughout the City's trail network. The distance between mile markers should be no greater than 0.25 miles to better track distances travelled and limit the search area for emergency responders. Mile markers should identify the respective trails. Mile markers should be installed at the trail head so users can identify the specific marker for use on that trail.

Example Trail Mile Marker

Example On-Street Trail Guide Sign

On-Street Trail Guide Signs

On-street trail guide signs provide information to motorists and other roadway users about the proximality of nearby trails. This type of sign increases the visibility of the trail network, encouraging use and increasing awareness for trail users. There were no on-street signs found that direct drivers, transit riders, pedestrians, or cyclists to nearby trails.

Recommendation

It is recommended that on-street guide signs be installed at all trail heads along roadways to identify the adjacent trail and provide distances and directions to other nearby trails.

Trail Design Standards

Each trail is designed to be a natural outdoor element that reflects the unique characteristics of its environment, offering consistency in overall design while allowing for variation in specific features. Though not exact replicas, trails should adhere to basic design principles such as appropriate width, surface materials, and safety standards. The following trail design standards have been reviewed from local and regional reference material including the U.S. Forest Service, Riverside County trail standards, and local municipality trail design plans. The modification, improvement, and future development City of Murrieta Trails Network should follow the appropriate design standards illustrated here and in concert with any adjoining trail segment. This process will ensure a cohesive sense of place, reflecting the character and values of the trails network.

Trail Classification

The current trail network does not differentiate between the various types of trails other than identifying the trail material type. As part of the data collection and field observation process for this master plan development, the existing trails were categorized based on their trail material type, overall width, recommended usage, and observed difficulty. Strict standardization among multi-use trails or even segments of the same trail is impractical because of physical constraints resulting from vast differences in topography, soil type, vegetation, and dissimilarities in the type of trail use. Standards are good, but flexibility is necessary. Therefore, design may vary among different trails or segments of trails according to development constraints and various special conditions. Actual trail widths need to be determined according to the level of use or projected level of use. Nevertheless, certain basic standards allowing for flexibility and for the safety and maintenance of the trail and its related facilities should be followed. The following categories identified were inspired by the United States Forest Services trail classification but are augmented to account for the types of trails that are present in the City of Murrieta trail network.

Recommendation

It is recommended that the City of Murrieta adopt a trail classification system to easily identify the various types of trails present in the trail network. This classification system can be utilized to create a consistent system of rating trails so users understand the differences associated with the trails they wish to use. The classification should be incorporated in trail maps and other means of identifying the trails in the City of Murrieta. The following classifications and design standards are recommended for use in the City of Murrieta.

Trail Classifications Table

	Type 1 Nature Trails	Type 2 Recreational Trails	Type 3 Wide Dirt or Utility Roadbed	Type 4 Greenbelt Concrete Path	Type 5 Paved Multi-use Trail: Asphalt or Concrete
Trail Tread Width	2-12 feet wide	8-14 feet wide	20-30 feet wide	5-8 feet wide	8-14 feet wide
Minimum Trail Easement	16 feet wide	16 feet wide	40 feet wide	16 feet wide	16 feet wide
Vertical Clearance	12 feet	12 feet	16 feet	16 feet	16 feet
Optimum Grade	1-8% (may vary depend on topography)	< 5%	1-8% (may vary depend on topography)	< 5%	< 5%
Surface	Mix of soil and finely to coarsely broken rock	Packed local soils, decomposed granite	Decomposed granite	Concrete sidewalks	Asphalt or concrete

Additionally, the City of Murrieta maintains the Get Fit routes which encompasses five trails within the trail network. These routes should be noted within the classification system so users know which trails would be better options for a fitness focused activity.

Trail User Classification

The current trail network only classifies users by walking/jogging, biking, and horseback riding. Field observations suggested that a more refined user classification could better inform users of each trail's intended purposes. These are not necessarily new classifications, but rather additional distinctions in the existing user types.

While the recommended user classifications align with general trail characteristics, user types for specific trails may be constrained based on the context and location of the trail.

Recommendation

It is recommended that the City of Murrieta consider further distinguishing trail user types and specifying the intended users for each trail. Additionally, trail maps should clearly indicate these user types. These user types should include, but are not limited to:

- Walking/Jogging
- Bicycles/Electric Bicycles
- Mountain Bikes
- Family-Friendly
- Equestrian
- Mobility Assist Devices

The following identifies potential trail user types to the trail classifications previously presented.

Type 1
Nature Trails

Suggested Use:

Walking / Jogging

Mountain Bike

Equestrian

Type 2
Recreational Trails

Suggested Use:

Walking / Jogging

Mountain Bike

Equestrian

Type 3
Wide Dirt or Utility Roadbed

Suggested Use:

Walking / Jogging

Mountain Bike

Equestrian

Type 4
Greenbelt Concrete Path

Suggested Use:

Walking / Jogging

Biking / E-Biking

Family Friendly

Mobility Assist Device

Type 5
Paved Multi-use Trail: Asphalt or Concrete

Suggested Use:

Walking / Jogging

Biking / E-Biking

Family Friendly

Mobility Assist Device

Trail Drainage

Drainage is the most important item in trail construction. It requires a special study of the precipitation, runoff, springs, and streams in the area. Surface water must be diverted from the trail's surface before it builds up to an erosive force. The method used to drain the trail will depend on the quantity and speed of the water and the type of soil in the area. The best and simplest drainage is to slope the trail surface, 1 to 3 percent, to allow the water to sheet off, rather than run in a stream. Low grades help prevent drainage problems; steep grades allow the water to run faster building up erosive force.

Recommendation

Trail drainage damage should be reviewed on a scheduled basis to determine where drainage improvements could be made to existing trails. Future trails should be constructed with appropriate drainage based on the local conditions.

Trail Fencing

Fencing should be constructed of materials that blend with the surrounding community, are in character with the recreational nature of the trails, and that weather well. Suggested materials include wood such as cedar or redwood, however, alternative materials and design may be allowed when consistent with adjacent developments including 3 rail polymer fencing. Plantings such as trees, hedges, or large rocks can also serve as trail fencing or barriers.

Recommendation

Existing trail fencing should be reviewed on a scheduled basis to determine if any fencing needs improvements. Any construction of new fencing should be done in coordination with City of Murrieta staff and a licensed engineer.

Utilities

Development of trails may conflict with existing utility lines or corridors. While the use of these corridors can be beneficial to trail development, coordination with the utility provider mush be completed to ensure appropriate use and access of the utility.

Recommendation

The City of Murrieta should coordinate with local utility providers regarding any trail that utilizes a utility corridor. To the extent possible, utility boxes and vaults, manholes, pole, lines or other above grade utilities should be located outside the trail easement.

Environment

The trail system should be designed in such a manner as to respect the natural environment of the immediate area. Trail alignments should preserve existing native and ornamental vegetation by removing only as much as necessary to accommodate the trail. Trail buffer widths may be limited in sensitive areas in order to preserve scenic amenities and valuable habitat. Where trail alignments include existing trees, particular attention to preservation should be incorporated into design plans. Trail alignments should respect natural landforms and not require significant grading to implement. Trail improvements should be minimal and respect the natural terrain and vegetation in the immediate area.

Recommendation

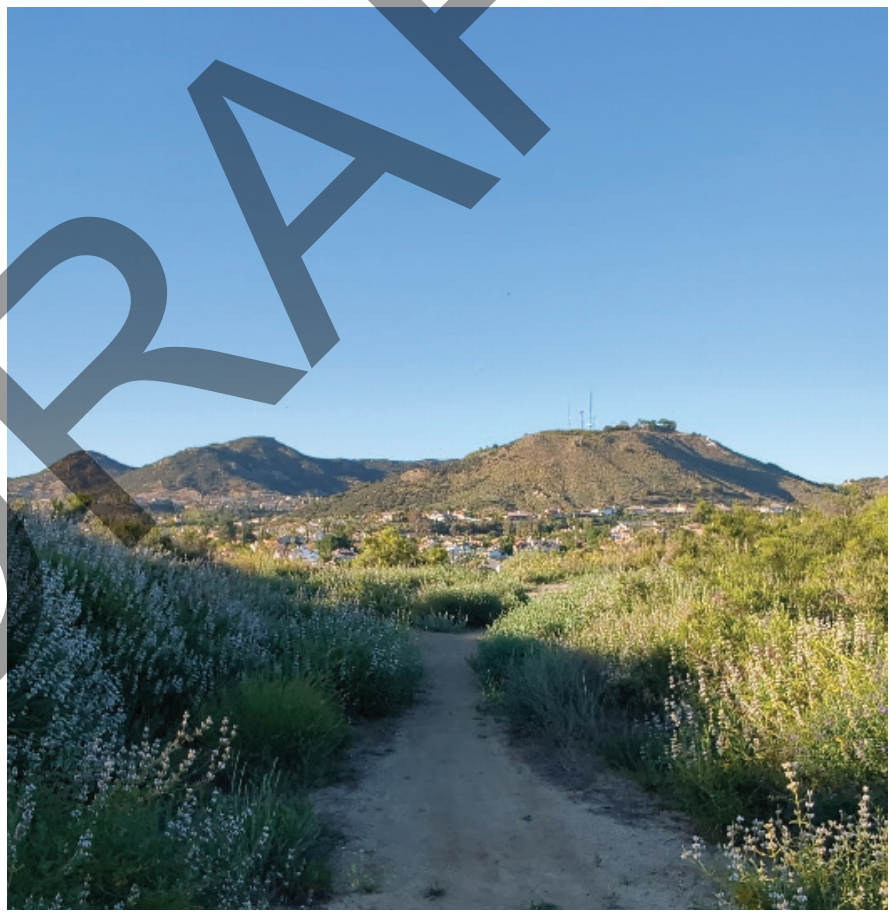
The City of Murrieta should coordinate the development or redevelopment of any trails with a trail designer to limit the impact trail development has on the existing environment.

Views

Trails should be designed to maximize scenic opportunities by aligning routes to capture natural vistas, such as mountains, rivers, or unique geological features. Careful consideration should be given to trail placement to offer viewpoints or rest areas at key locations with unobstructed, panoramic views. In areas with dense vegetation, selective clearing may be used to frame views, but only to the extent necessary to preserve the natural environment.

Recommendation

The City of Murrieta should coordinate the development or redevelopment of any trails with a trail designer to identify potential view opportunities.



Falcon's View Trail

Trail Amenities

Trail amenities are essential components that enhance user access and elevate the overall experience. While often unnoticed unless absent, they play a crucial role in ensuring a positive trail experience. These amenities generally fall into two main categories: those situated at trailheads and those distributed along the trail itself. At trailheads, amenities can vary depending on the size of the trailhead or staging area. Additionally, different amenities may be appropriate at smaller access points scattered throughout the City. The following represents specific recommendations associated with different types of trail amenities on the City of Murrieta trail network:

Trailhead Amenities

Trailheads include all the access points to a given trail. In many cases, these are simply points where the trail meets a roadway or parking facility. At a minimum these locations should each provide the following amenities:

- Trail signage including a map of the trail, trail specific information, and rules
- QR code to website with trail map
- Dog waste stations

Recommendation
It is recommended that all trails in the City of Murrieta trail network include the identified amenities at each trailhead.

Example Trailhead Supplemental Trail Map QR Code

Staging Area Amenities

Staging areas are the major access points to a trail system or a popular trail. These locations should provide the same amenities at the trail head and when possible, provide additional amenities such as:

- Adequate parking
- Bike racks
- Restrooms
- Drinking water
- Picnic tables
- Benches
- Shade structures
- Dog waste stations

Recommendation
It is recommended that large trails such as the Rancho Los Alamos Trail System and Cole Canyon Trail provide staging areas that attempt to incorporate these types of amenities.

Sample of Educational Information Sign

Example Street Light Banner

On-Trail Amenities

The need for specific amenities along trails varies greatly depending on the type and location of the trail. The only elements recommended for every type of trail are:

- Trail directional signage
- Mileage markers

Other amenities that should be considered along trails include the following:

- Benches
- Picnic tables
- Dog waste stations
- Educational information signs

Recommendation
It is recommended that every trail have trail directional signage and mile markers. Other amenities identified should be considered for implementation depending on perceived use and applicability.

Trail Maintenance Operations

Maintaining the trails within the City of Murrieta is crucial for the overall success of the trail network. These trails serve multiple uses from outdoor recreation to alternative transportation routes. Ensuring trails are well-maintained promotes safety and security, makes them accessible spaces for all to enjoy, and ultimately contributes to an improvement in quality of life for all users. The following represents specific recommendations that can be incorporated in the City of Murrieta trail network maintenance operations:

Adopt-A-Trail Program

The City of Murrieta has an existing Adopt-A-Trail program for some trails within the network. The City's Adopt-A-Trail Program allows individuals, families, organizations and businesses the opportunity to help the community by assisting with removal of litter and reporting maintenance concerns.

Recommendation
It is recommended that the City of Murrieta continue the Adopt-A-Trail program. City staff should meet with current program sponsors to determine what aspects of the program may dissuade others from participating. The program should be reviewed to determine which of the policies of the program could be altered to increase participation.

Murrieta Fix It App

The Murrieta Fix It app allows persons to report local issues like potholes and graffiti or damaged trees, playground equipment, street signs, and sidewalks. The app integrates on both Android and Apple smartphones along with an internet portal for reporting issues. The City tracks requests and assigns staff to address issues as they arise.

Recommendation
It is recommended that the City of Murrieta continue to use the Murrieta Fix It app and provide information about the program and identify how to download the app at all trailhead signage. This could be done using a QR code on regulatory signs. The app can be used for trail users to report problems to City staff on an ongoing basis.

Trail Volunteer Program

Currently, the City does not have an established trail volunteer program.

Recommendation
It is recommended that the City develop and promote a trail volunteer program utilizing volunteers and assigning individual trails for trail maintenance projects. Engage Eagle Scouts, Girl Scouts, or high schoolers to encourage and provide community service hours.

Identifying Trail Routes

Some of the trails within the City of Murrieta trail network have poorly defined paths and are misaligned with the existing data utilized by the City. This inaccuracy can make the utilizing of these trails less safe due to uncertainty about trail route, length, and terrain. While directional signage installed along trails will be helpful to alleviate the wrong turns along the route, having an accurate route before starting a trail would be beneficial for the user and emergency responders, if needed.

Recommendation

It is recommended that the City of Murrieta coordinate with a professional firm, or consider coordination with the California Conservation Corps, to develop accurate mapping and distances of all trails within the network. This data should be incorporated on the trail maps produced by the City, placed on their external Geographic Information System (GIS) interface, and shared with emergency responders.

Review Out-of-Service Trail Access Points

During site visits, it was discovered that some trails have access points which have been closed using a gate or other barrier. Closed access points were identified on Cole Canyon Trail at Willow Court and Rancho Los Alamos Trail System at Pictor Avenue and Ariel Street. At this time, there is no information as to why the access points have been closed. Accessibility is important for the continued use and enjoyment of the trails.

Recommendation

It is recommended that the City of Murrieta consider reopening the closed access points to increase access to the trails.

Traffic Calming and Improved Visibility

Implementing traffic calming measures and improving visibility around trailheads can improve the experience for trails users and enhance safety in the area. Slowing down vehicular traffic can reduce the risk of injuries associated with traffic collisions. Increasing visibility of trail users can provide vehicles and other roadway users the opportunity of more time to react to avoid a collision. Improving the interaction between trailheads and roadways will have a positive effect on all trail users throughout the network. The following represents specific recommendations that can be incorporated in the for improving traffic calming and visibility on the trail network.

Increase Trail User Visibility at Trailheads

Improving visibility of trail users around roadways can be an important aspect of improving safety around trailheads. The more visible a person is to a driver, the higher enhancement to safety in that area. The increase of visibility can come from a mix of providing a large enough area for trail users to wait or trimming vegetation to increase the stopping sight distance of vehicles.

Recommendation

It is recommended that the City of Murrieta coordinate with the Public Works Department to conduct a review of sight triangles for stopping sight distance at all trailheads to appropriately accommodate the stopping distance if a trail user were to enter the roadway. In addition, trailhead entrances should be reviewed to determine if the storage space is sufficient for typical trail user conditions.

Lowering Roadway Speeds Adjacent to Trailheads, Staging Areas, and Crossings

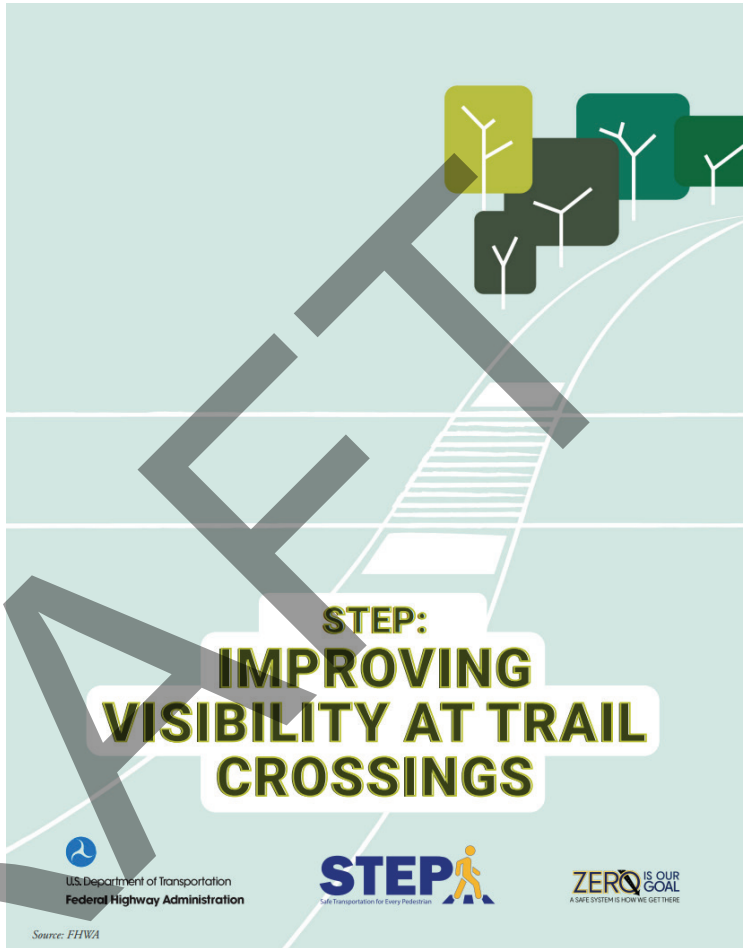
California Assembly Bill (AB) 43 allows local governments the ability to lower speed limits by five miles per hour of the 85th percentile speed in proximity to areas of high concentration of pedestrian and bicycle activity. Trailheads and staging areas could be considered areas of high pedestrian and bicycle activity within the City of Murrieta. Research has shown that reductions in vehicle speed can reduce injuries in collisions. Reduction in vehicle speed around trailheads, staging areas, and crossings can help reduce injuries due to potential collisions.

Recommendation

It is recommended that the City of Murrieta consider the use of AB 43 regarding setting speed limits around trailheads, staging areas, and crossings.

Improved Trail Roadway Crossings

Similar to the increased trail user visibility at trailhead, improvements to trail roadway crossings can enhance safety on specific trails. Many of the existing trails that require a roadway crossing currently lack crossing treatments. The Federal Highway Administration (FHWA) Office of Safety prepared the report STEP: Improving Visibility at Trail Crossings FHWA-SA-21-123 (FHWA, 2021), which presents a systemic approach to reviewing crossings to improve the crossing experience by identify engineering countermeasures, such as enhanced signs and traffic controls. Furthermore, the document describes safety issues and countermeasures for several most frequent types of trail crossings and introduces a process for reviewing trail crossing locations for opportunities to reduce the chances of fatal or severe injury crashes



Source: Federal Highway Administration

Recommendation

It is recommended that the City of Murrieta utilize the methodology presented in FHWA-SA-21-123 to identify and implement potential roadway crossing treatments to all existing and future trail crossings. These treatments could include, but are not limited to, installation of warning signs and crosswalk markings, implementation of traffic control devices, or altering the physical features of the area to reduce speed and improve visibility.

Trail Mapping and Data Management

The mapping of the City of Murrieta trail network can be a benefit to the users, operators, and emergency responders of the network. Accurate maps can identify distances associated with specific trail segments, trailhead locations, parking, trail amenities, and other aspects that may not be readily available to first time visitors. The City of Murrieta has had a trail map system developed on a Geographic Information System (GIS) database that has been utilized for previous trail-related material and studies. Throughout this master planning effort, many of the trails were mapped with Geographic Positioning Service (GPS) devices to improve the trail route identification and layout in this GIS database. Based on the work done to date, the following are a series of recommendations for the mapping of the City of Murrieta trail network:

Trail Citywide Map

The existing citywide trail map has been updated based on the work completed as part of this MTMP. This map has updated many of the trail routes and includes information such as restroom and parking availability along with trail length, trail material type, and width. It is intended that this map be provided on the City of Murrieta website, for residents and visitors to access, to help users determine where trails are generally located within the City. Additionally, this map should be downloadable via a QR code presented at the trailhead.

Recommendation

It is recommended that the City of Murrieta continually update this map when new trail route data is collected or when new trails or amenities are developed.

Trail Cut Sheets

Each existing trail within the City's trail network was mapped on a single page to provide additional amenity information beyond the citywide map. This includes parking locations, trail roadway crossing locations, access points, restroom locations, segment lengths, and trail difficulty. It is intended that these maps be provided on the City of Murrieta website for residents and visitors to access to determine the specific location and amenities of each trail. Additionally, the associated map should be downloadable via a QR code presented at the trailhead.

Recommendation

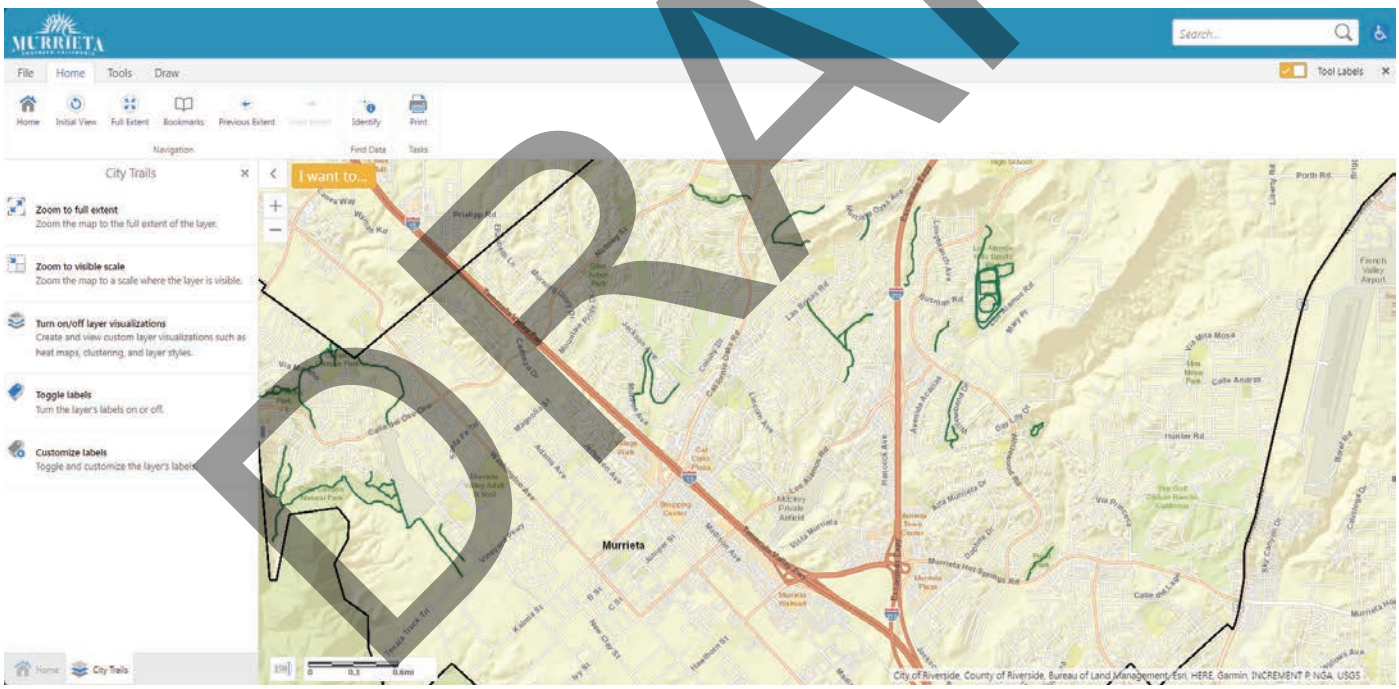
It is recommended that the City of Murrieta continually update these maps when new trail route data is collected or when new trails or amenities are developed.

Trail GIS Data

The trail route data collected as part of this trails master plan has been stored in a GIS database for future use in the development of the maps identified above or for providing information to City staff when needed, regarding the trail network. This GIS data should be kept up to date with new information regarding the addition of new trails, amenities, or connections. Additionally, this data could be used to identify and catalog maintenance needs for specific trails.

Recommendation

It is recommended that the City of Murrieta maintain the GIS database of the trail network to provide trail-based data when needed and keep maps up to date. Community Services Deapartment (CSD) staff will provide updates to the GIS team via internal communication avenues. It is also recommended that the City verify the GIS database corresponds with information on open-source platforms such as AllTrails.



City of Murrieta Public GIS Hub Displaying City Trails
Source: City of Murrieta

Example Trail Amenity Improvement Maps

The following section presents a selection of example trail amenity enhancements that could be implemented on a selection of City trails. The trails included in this section were identified in coordination with the City for field review and data collection. The review process outlined here identifies example improvements that could be considered for all trail segments within the City.

To implement trail improvements, the City will have to regularly evaluate and capitalize on opportunities as they become available. To accomplish this the following trail review process should be implemented on a regular basis.

- Regularly assess trail conditions for required maintenance improvements,
- Regularly assess community input and recreational needs concerning trail system,
- Foster cooperative partnerships with local private communities / new developments, Riverside County and neighboring municipalities to promote trail connectivity,
- Develop and maintain public trail programming and information campaigns,
- Develop a multi-department collaborative effort that meets annually to review and update trail improvement funding strategies based on established priorities.

Amenities featured on the following maps include signage and wayfinding, trail amenities, and proposed trail connections. These maps are not intended to dictate the exact locations for new or upgraded amenities but to highlight potential areas where such amenities could be strategically placed to significantly improve the overall user experience. This flexible approach allows for adaptability based on further community input and site-specific considerations.

TRAIL #1

California Oaks Trail

Trail Width: 5-8 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

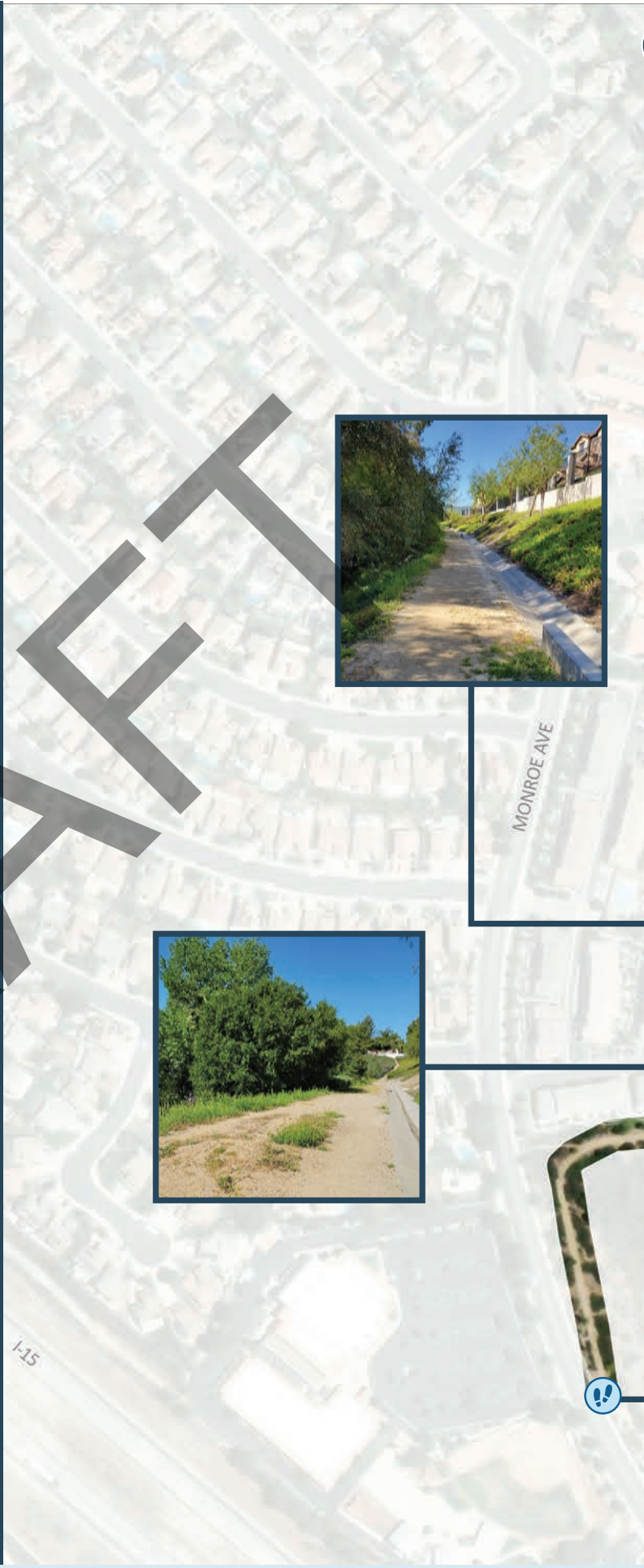
- Trail Access Point

Recommended Signage

- Trailhead signage
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Dog waste station
- Picnic tables/benches




JACKSON AVE
DRAFT
N

TRAIL #2

Cole Canyon

Trail Width: 4-12 feet
Trail Difficulty: Moderate

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

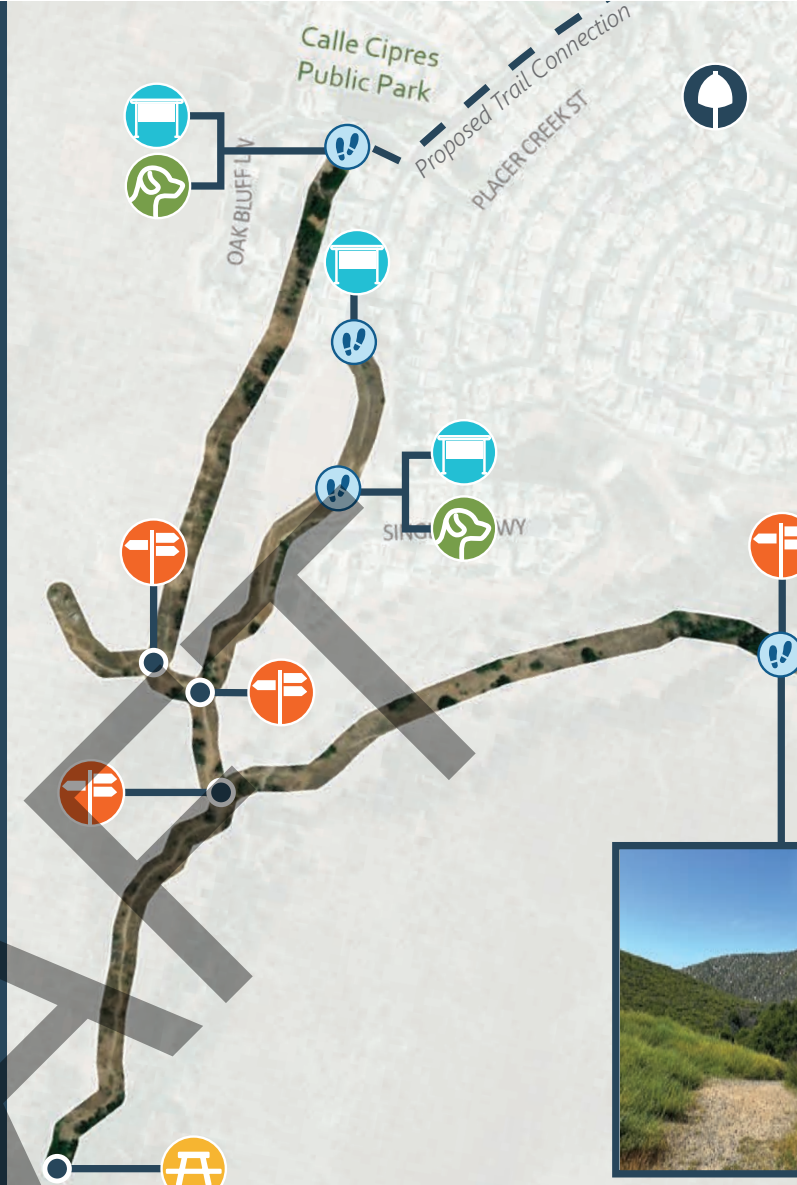
- Trail Access Point
- Out of Service Access Point
- Parking Lot

Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station
- Picnic tables/benches



Example Trail Amenity Improvement Maps

TRAIL #3

Copper Canyon Trail

Trail Width: 8-14 ft
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

- Trail Access Point
- Parking Lot
- Restroom

Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station
- Picnic tables/benches

Example Trail Amenity Improvement Maps

TRAIL #5

Falcon's View Trail

Trail Width: 4-8 ft
Trail Difficulty: Strenuous

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

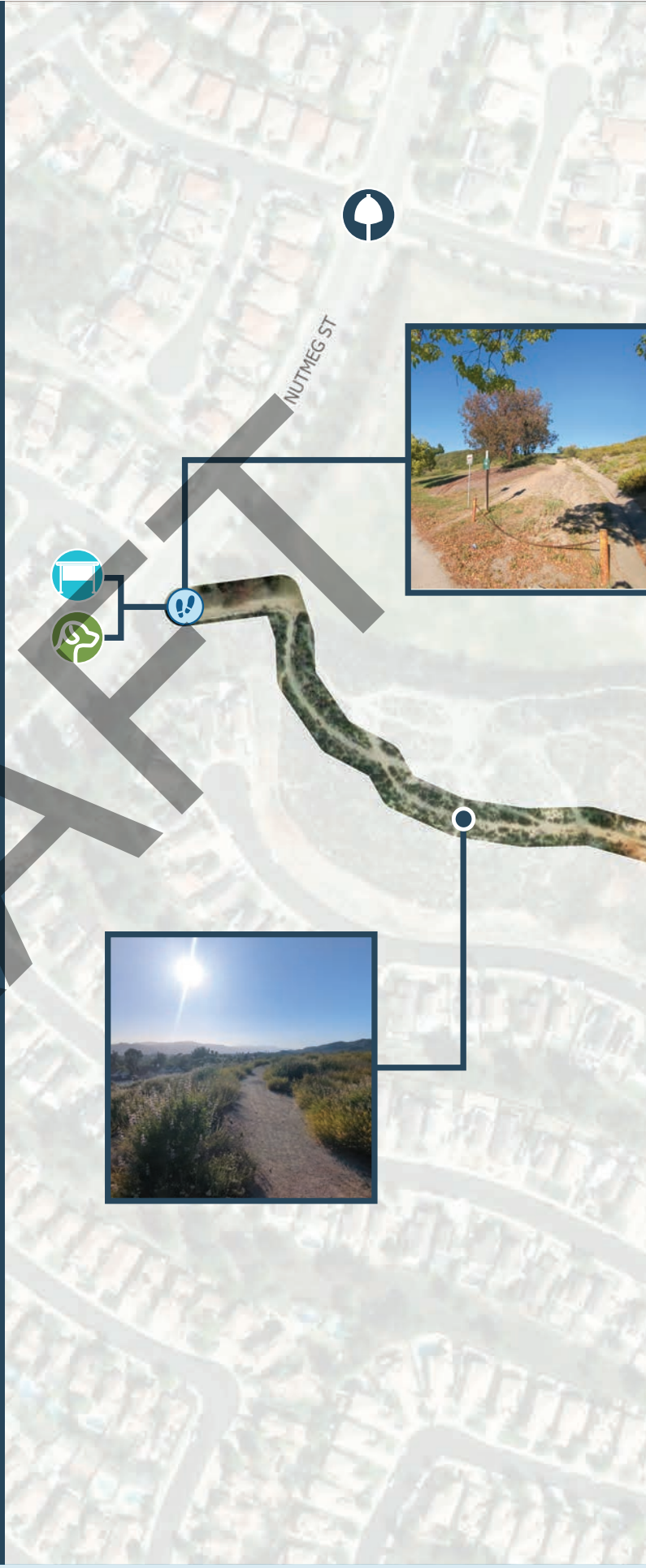
- Trail Access Point

Recommended Signage

- Trailhead signage
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station




ST RAPHAEL DR
Falcon's View Park
5 TRIBES TRAIL
FALCONER DR
CALIFORNIA OAKS RD
DRAFT
N

TRAIL #6

Las Brisas Trail

Trail Width: 8-14 feet
Trail Difficulty: Easy

Walk or Jog | *Bike or E-bike* | *Mountain Bike* | *Family Friendly* | *Equestrian*

Existing Amenities

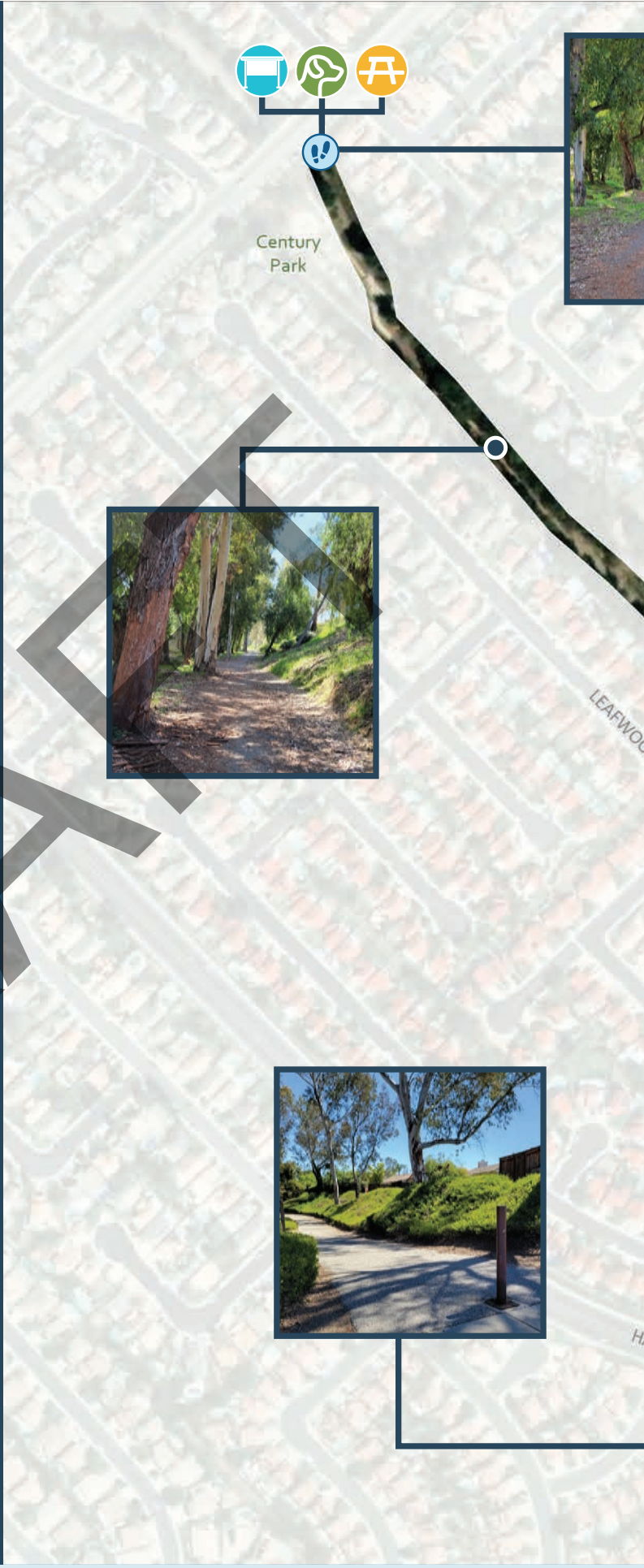
- Trail Access Point

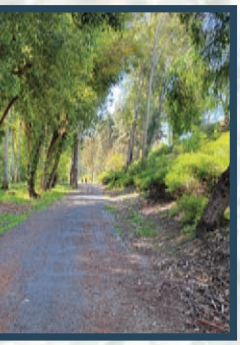
Recommended Signage

- Trailhead signage
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station





CALLE SAN VICENTE
Murrieta
Barratt Park
CORTE GATA
LAS BRISAS RD
SUNROSE DR
I-215
N

TRAIL #7

Lincoln Ranch Trail

Trail Width: 8-14 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

- Trail Access Point

Recommended Signage

- Trailhead signage
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Dog waste station


MANGROVE ST
LONGBRANCH AVE
BRENTSTONE WY
RANCH HOUSE ST
WHITEWOOD RD
CARMEL HILL CT
SUNSET WY
DRAFT
N

TRAIL #8

Los Alamos Hills Trail

Trail Width: 8-14 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

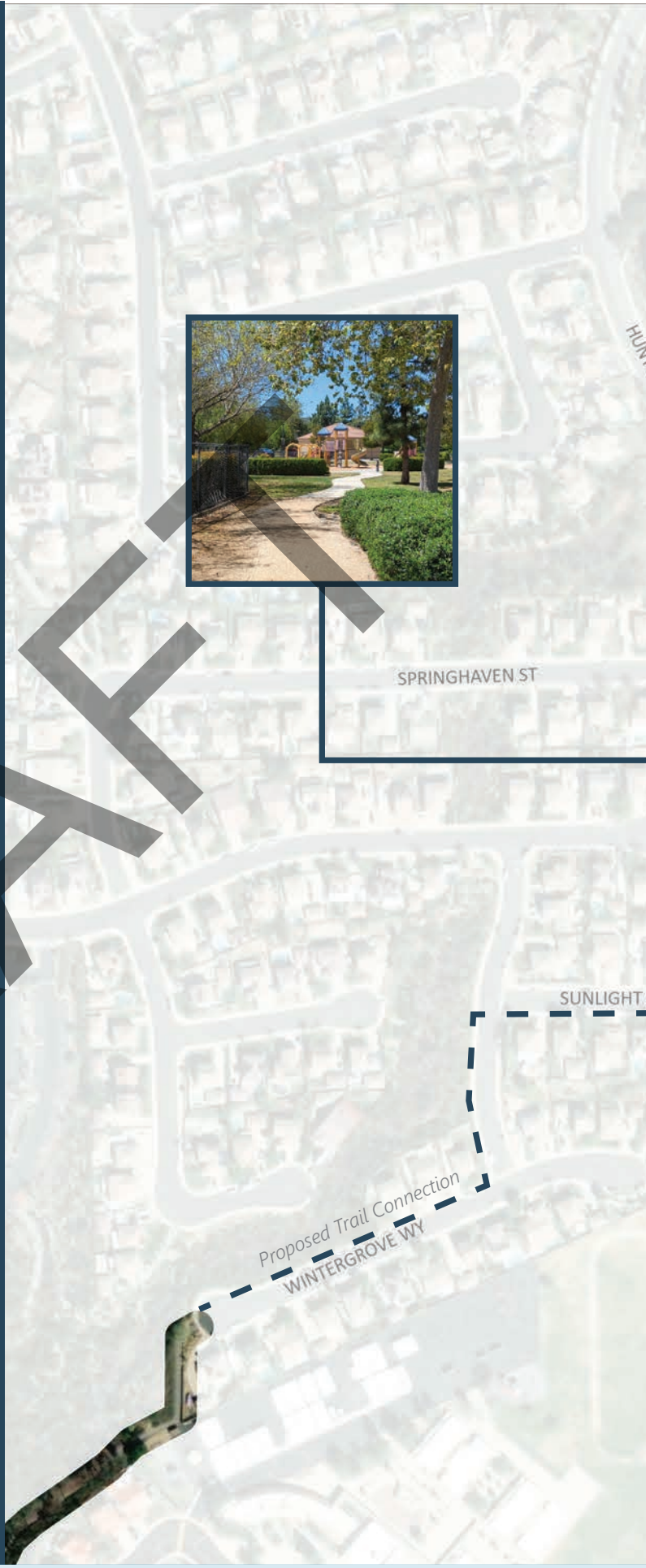
- Trail Access Point
- Parking Lot
- Restroom

Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station



Example Trail Amenity Improvement Maps

TRAIL #11

Mapleton Trail West

Trail Width: 5-8 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

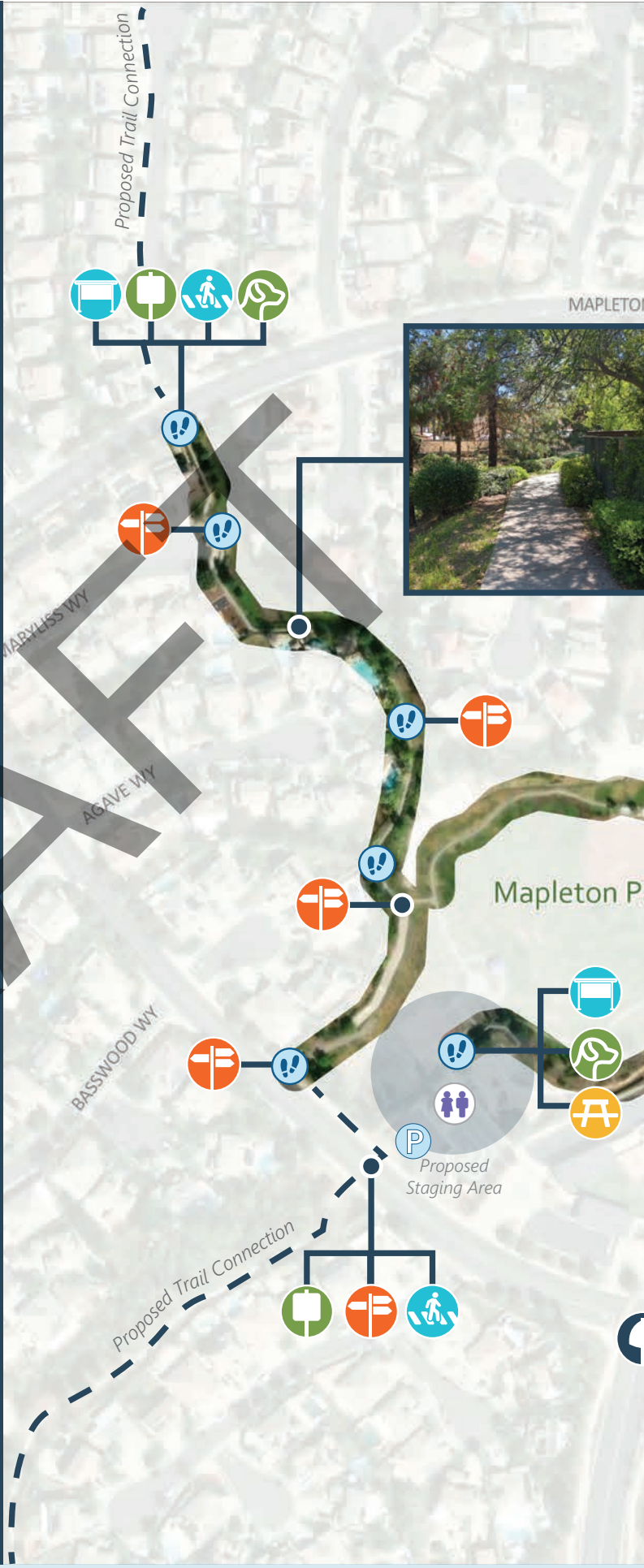
- Trail Access Point
- Parking Lot
- Restroom

Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station
- Picnic tables/benches




NANDINA LN
SHAMROCK LN
POINSETTIA ST
N
DRAFT

TRAIL #13

Pond Park Trail

Trail Width: 5-8 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

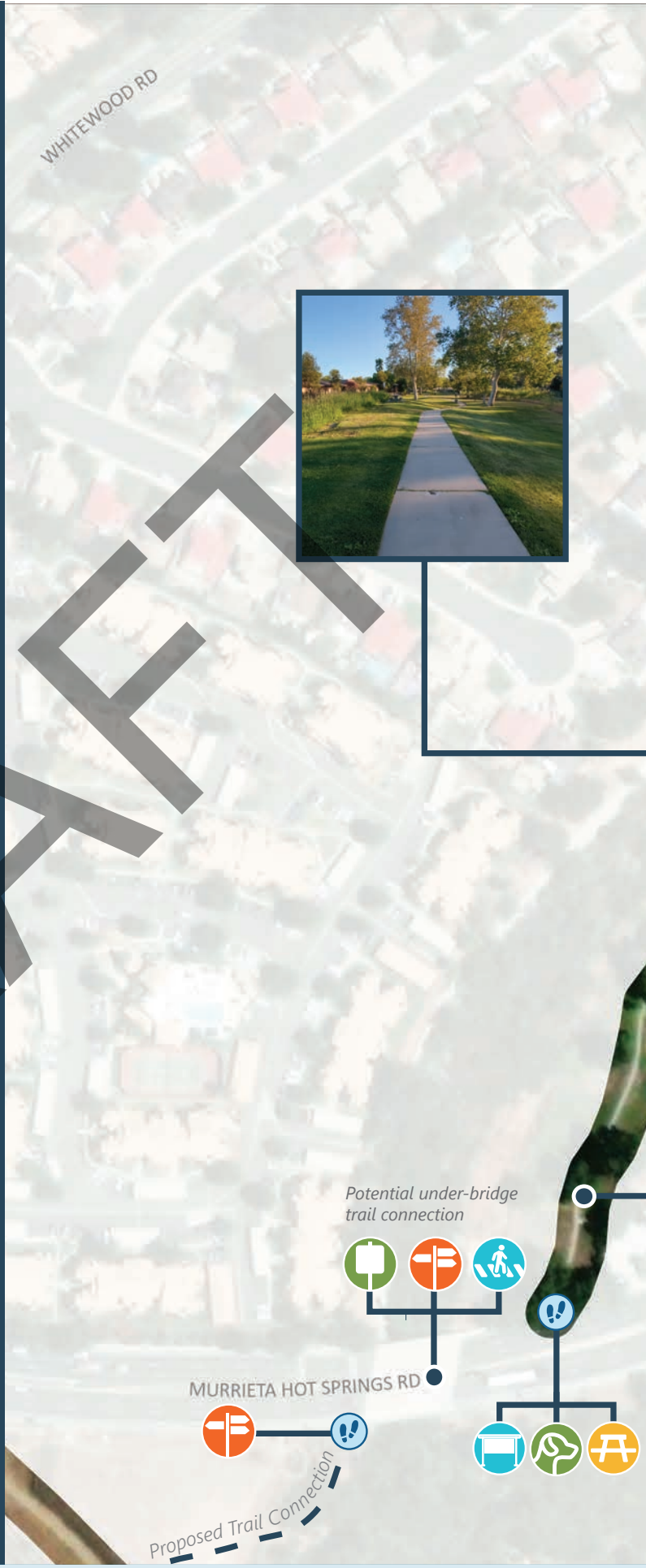
- Trail Access Point

Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station
- Picnic tables/benches



TRAIL #15

Rancho Acacias Trail

Trail Width: 8-14 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

- Trail Access Point

Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station
- Picnic tables/benches

AVENIDA ACACIAS

AVENIDA MIGUEL OESTE


WILLOWBEND DR
WHITEWOOD RD
AVENIDA PALIZADA
BLACKHORNE DR
Rancho
Acacias Park
RANCHWOOD DR
DRAFT
N

TRAIL #17

Sycamore Ranch Trail

Trail Width: 8-14 feet
Trail Difficulty: Easy

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

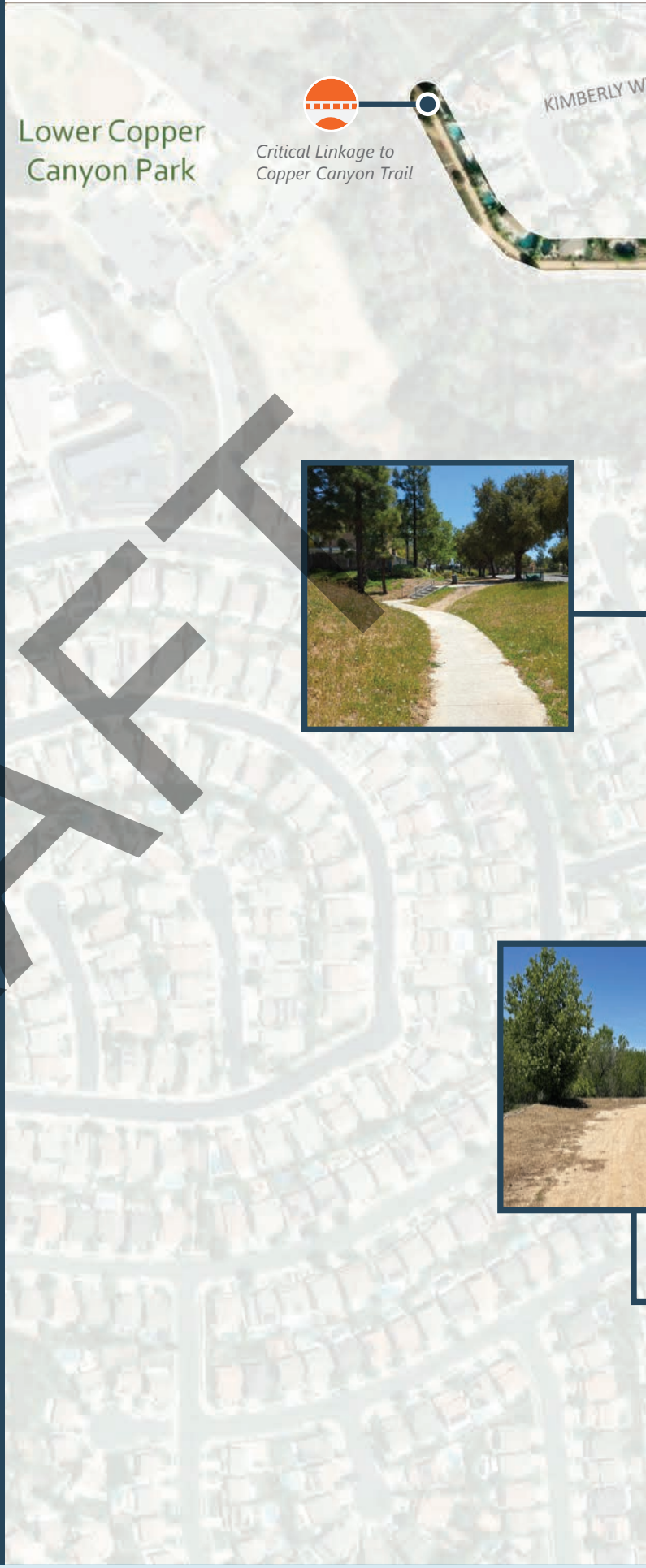
- Trail Access Point

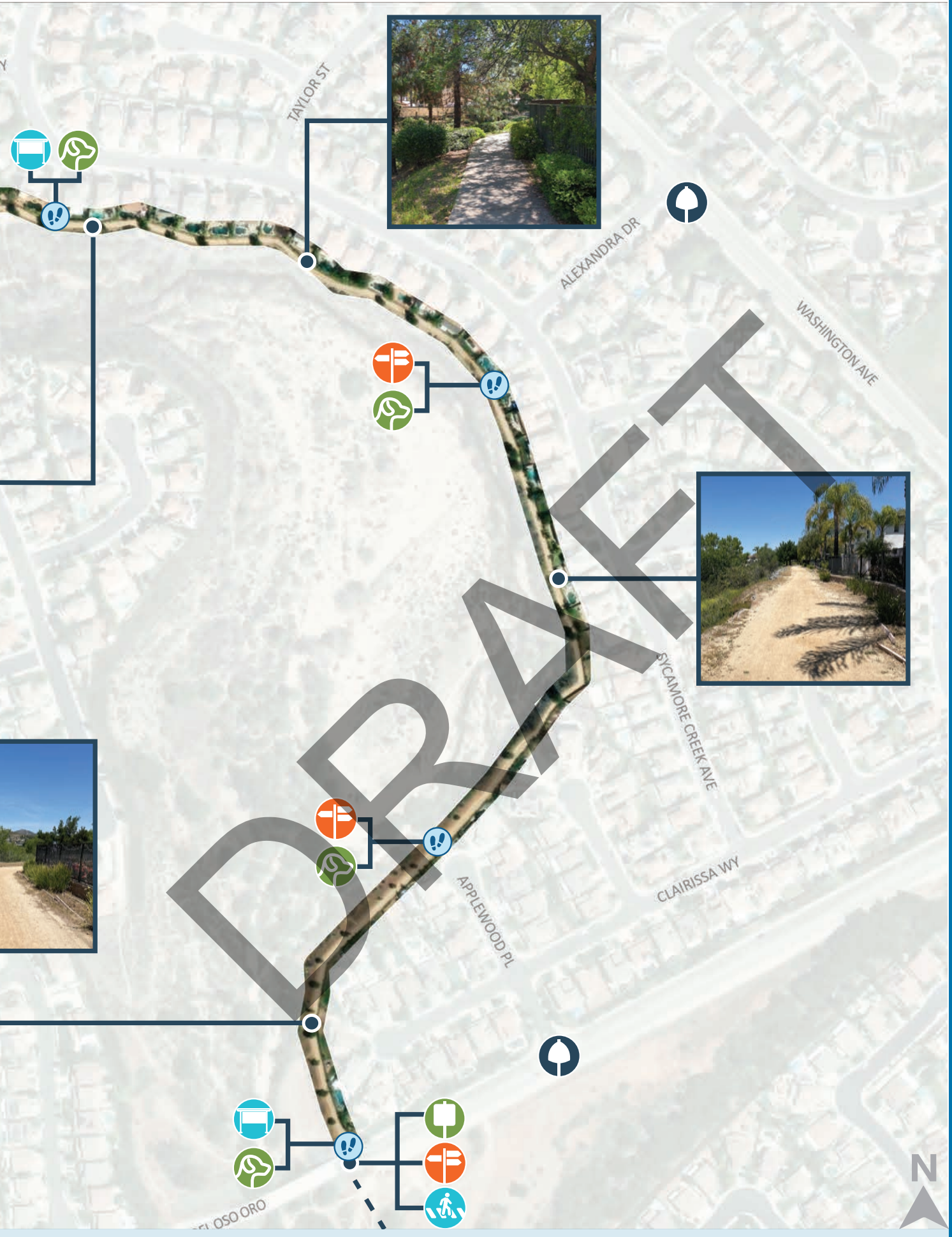
Recommended Signage

- Trailhead signage
- Roadway crossing signs
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station
- Pedestrian/bicyclist bridge




TAYLOR ST
ALEXANDRA DR
WASHINGTON AVE
SYCAMORE CREEK AVE
CLAIRISSA WY
APPLEWOOD PL
DRAFT
N

TRAIL #18

Toulon Trail

Trail Width: 4-12 feet
Trail Difficulty: Moderate

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

- Trail Access Point

Recommended Signage

- Trailhead signage

Recommended Amenities

- Roadway crossing treatments
- Dog waste station


CONTIGNAC DR
TOULON DR
Toulon Park
JACARTE DR
DRAFT
N

TRAIL #19

Warm Springs Trail

Trail Width: 2-5 feet
Trail Difficulty: Moderate

Walk or Jog | Bike or E-bike | Mountain Bike | Family Friendly | Equestrian

Existing Amenities

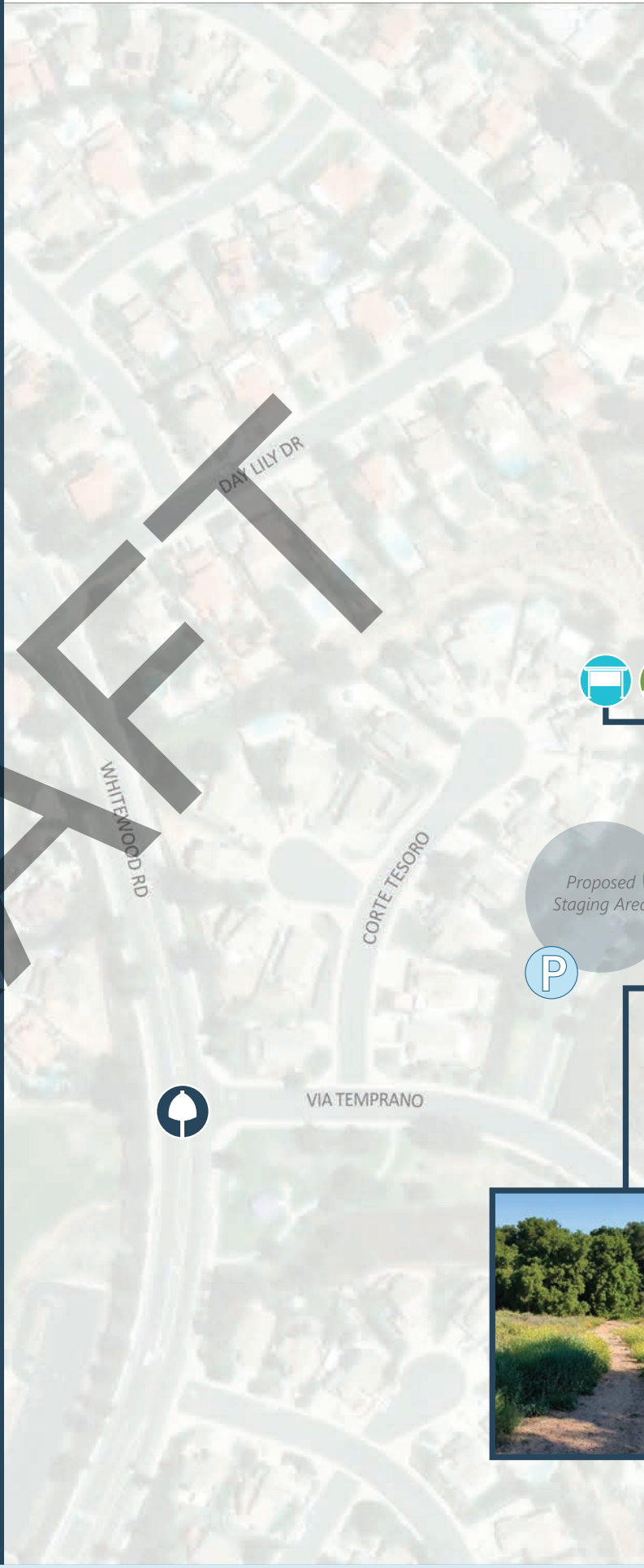
- Trail Access Point
- Parking Lot

Recommended Signage

- Trailhead signage
- Trail directional signage
- On-street Trail guide signs

Recommended Amenities

- Roadway crossing treatments
- Dog waste station




Proposed Trail Connection
Warm Springs
Park & Reserve
DRAFT
VIA DEL LARGO
VIA LA COLINA
Proposed Trail Connection to Pond Park Trail
N

Implementation

The ability to implement the recommendations identified will be important in the continued development of the trail network. The recommendations can be implemented in isolation or combined as part of a larger improvement strategy. **Table 1** identifies the relative costs as dollar signs and time to implement as clocks to the right.

Table 1 (Right)- Recommendation Cost and Time to Implement

$:	≤$25,000
$$:	$25,000-$50,000
$$$:	$50,000 - $75,000
$$$$:	$75,000 - $100,000
$$$$$:	≥$100,000

1 clock	≤3 mos.
2 clocks	3 mos.– 6 mos.
3 clocks	6 mos.– 1 year
4 clocks	1-2 years
5 clocks	≥2 years

Recommendation	Relative Cost	Relative Time to Implement
Proposed Trail Connections		
New Sidewalk Connections	$	1 clock
New Trail Connections[1]	$$$$$	1 clock
Proposed Trail Additions		
New Trail Incorporation[2]	$$$$$	1 clock
Future New Trails[3]	$$$$$	5 clocks
Signage and Wayfinding		
Traffic Sign Consistency	$$	3 clocks
Trailhead Signage[4]	$	2 clocks
Roadway Crossing Signs[4]	$	2 clocks
Trail Directional Signage[4]	$	2 clocks
On-Street Trail Guide Signs[4]	$	2 clocks
Trail Amenities		
Trailhead Amenities[5]	$$	3 clocks
Staging Area Amenities[6]	$$$$$	4 clocks
On-Trail Amenities[5]	$$	3 clocks
Trail Mainenance Operations		
Adopt-A-Trail Program	$	1 clock
Murrieta Fix It App	$	1 clock
Identifying Trail Routes	$$	2 clocks
Traffic Calming and Improved Visibility		
Increase Trail User Visibility at Trailheads	$$$	2 clocks
Lowering Roadway Speeds Adjacent to Trailheads, Staging Areas, and Crossings	$$	1 clock
Improved Trail Roadway Crossings[7]	$$$$	4 clocks
Traffic Classification System		
Trail Classification System	$	1 clock
Trail User Classification		
Trail User Classification	$	1 clock
Trail Mapping and Data Management		
Trail Citywide Map	$	1 clock
Trail Cut Sheets	$	1 clock
Trail GIS Data[8]	$$	5 clocks

Note:
1: Assumed as the Murrieta Oaks Trail to Las Brisas Trail connection identified in the recommendations section.
2: Assumes incorporation of new trail system and development of associated signage and other trail amenities.
3: The details of future new trails are based on potential development which is not yet known at this time. Associated costs and time are speculative to provide a general estimate of expectation.
4: Assumes an unpaved trail approximately 1 mile in length. Cost and time projections applies to one unpaved trail approximately 1 mile in length.
5: Trailhead and on-trail amenities can vary depending on the type and quantity of amenities. Assumption is for a paved trail approximately 1 mile in length with bench and dog station at two trailheads and information signage along trail.
6: Staging area amenities can vary depending on the type and quantity of amenities. Assumption is for one staging area with restroom, water fountain, and bench.
7: Assumes one high visibility marked mid-block crosswalk with rectangular rapid flashing beacons (RRFB).
8: The maintenance of GIS data is considered an on-going need which has no definitive ending.

As the City of Murrieta continues to grow, trail usage and user needs will increase. While current needs may focus on specific trails or issues, implementing various recommendations now can help address future trail usage more effectively. Some recommendations can be applied universally across the trail network, while others may be specific to certain trails.

The City should prioritize implementing recommendations related to signage and wayfinding across all trails as these are relatively low-cost and quick to execute. Additionally, trail maintenance, mapping, and data management should either continue or be implemented promptly to maintain the physical condition of the trails and ensure accurate mapping of the trail network.

Although recommendations such as traffic calming measures and trail amenities are also important for various reasons, they come with higher costs and longer implementation times. It is crucial to balance the implementation of faster, cheaper recommendations with lower resource demands and the investment needed for more expensive recommendations.

City staff should continue collaborating with residents and trail users to identify the most appropriate recommendations for the trail network.

Next Steps

To successfully implement the recommendations outlined in the Murrieta Trails Master Plan (MTMP), a strategic approach to staffing, funding, and resource allocation will be essential. Ensuring that sufficient maintenance crews are available to care for the expanded and improved trail network is a top priority. This includes developing routine maintenance schedules, addressing issues such as erosion, trail uplift, and signage upkeep, and potentially expanding staffing levels to meet these new demands.

Securing funding is critical for both immediate and long-term implementation of the MTMP. A diverse approach to funding should include leveraging capital improvement funds, applying for State and Federal grants, and exploring public-private partnerships. Allocating these resources strategically will allow for phased development and ensure that priority projects are addressed first. Additionally, establishing an ongoing funding mechanism for trail maintenance will help preserve the integrity of the trail network for future generations.

Coordination between City Departments and community stakeholders will be vital to maintain momentum and address any challenges that arise during implementation. The following graphic outlines each recommendation and the time to implement.

Recommendation	Short-Term (FY 2025-2030)	Mid-Term (FY 2030-2035)	Long-Term (FY 2035-Beyond)
KEY RECOMMENDATION #1: TRAIL CONNECTIONS AND ADDITIONS*			
New Trail Connections			
Warm Springs Trail to Pond Park Trail		X	X
Warm Springs Trail to Rancho Los Alamos Trail		X	X
Copper Canyon Trail to Cole Canyon Trail		X	X
Sycamore Ranch Trail to Cole Canyon Trail		X	X
Murrieta Oaks Trail to Las Brisas Trail		X	X
New Sidewalk Connections			
Los Alamos Hills Trail to Rail Ranch Trail	X		
Mapleton Trail West to Mapleton Trail East	X		
Mapleton Trail West to Mapleton Trail North	X		
New Trail Incorporation			
Develop Murrieta Hills Specific Plan Trails		X	
Future New Trails			
Develop Whitewood Road Trail			X
Develop Murrieta Creek Regional Trail		X	X

Recommendation	Short-Term (FY 2025-2030)	Mid-Term (FY 2030-2035)	Long-Term (FY 2035-Beyond)
KEY RECOMMENDATION #2: SIGNAGE AND WAYFINDING*			
Develop and implement of uniform signage for all 19 city trails including trailhead signage, roadway crossing signage, directional signage, travel mile markers, and on street trail guide signs	X	X	
KEY RECOMMENDATION #3: TRAIL CLASSIFICATION AND DESIGN STANDARDS			
Adopt trail classification standards	X		
Adopt trail user standards	X		
Adopt trail design standards	X		
KEY RECOMMENDATION #4: TRAIL AMMENITIES*			
Add trailhead amenities	X	X	
Add staging area amenities	X	X	
Add on-trail amenities	X	X	
KEY RECOMMENDATION #5: TRAIL MAINTENANCE			
Promote Adopt-A-Trail program	X		
Promote Murrieta Fix It app for trails	X		
Identify trail routes and access points	X		
Develop trail network maintenance program	X	X	X
KEY RECOMMENDATION #6: TRAFFIC CALMING AND IMPROVED VISIBILITY*			
Increase trail visibility at trailheads		X	
Evaluate and research roadway speed adjacent to trailheads, staging areas, and crossings and implement as needed		X	
Research and prioritize which trail roadway crossings need improving and implement as needed		X	
KEY RECOMMENDATION #7: TRAIL MAPPING AND DATA MANAGEMENT			
Develop and promote citywide trail map	X		
Develop trail cut sheets (digital, printed, and QR code to place on trail signage)	X	X	
Maintain and update trail GIS data	X	X	X

**Recommendation will have a capital cost impact and will require capital funding to implement.*

Funding

Each year, billions of dollars are invested by federal, state, and local agencies to improve the transportation system. Some of that money is specifically identified for planning, developing, and improving pedestrian and bicycle facilities. While securing funding can be competitive, various opportunities exist. It is important to note that funding from agency programs is not guaranteed and is subject to availability. The following section identifies funding opportunities that may be available for the City of Murrieta trail network.

Federal Fundiing Opportunities

Federal Highway Administration (FWHA) Recreational Trails Program (RTP)

The Active Transportation Infrastructure Investment Program (ATIIP) is a new competitive grant program created by the Bipartisan Infrastructure Law to construct projects to provide safe and connected active transportation facilities in active transportation networks or active transportation spines. ATIIP projects will help improve the safety, efficiency, and reliability of active transportation networks and communities, improve connectivity between active transportation modes and public transportation, enhance the resiliency of on- and off-road active transportation infrastructure, help protect the environment, and improve quality of life in disadvantaged communities through the delivery of connected active transportation networks and expanded mobility opportunities. ATIIP grants are administered by the FHWA. Local governments are eligible to apply for funds as long as planning and design grants requests have planning and design costs of at least $100,000 and construction grants have construction costs of at least $15 million. Eligible projects include trails, pedestrian facilities, bikeways, and other routes that serve as backbones to connect two or more communities with no funding match required.

State Funding Opportunities

Active Transportation Program (ATP)

The Active Transportation Program (ATP) was created to encourage increased use of active modes of transportation. The ATP consolidates existing federal and state transportation programs, including the State Highway Account, Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SRTS), into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of State Programs. Local governments are eligible to apply for ATP funds. Eligible projects vary from planning-based projects to development of new infrastructure with no funding match required; however, the ATP does advise that trail projects that are primarily recreational should meet the

federal requirements of the Recreational Trails Program, as such projects may not be eligible for funding from other sources; however, trails that serve active transportation purposes (such as multi-use paths, Class I bikeways, etc.) are fully eligible in the ATP and need not meet the Recreational Trails Program requirements.

California Natural Resources Agency Urban Greening Grant Program

The California Natural Resources Agency Urban Greening Grant Program was developed to fund projects that provide a wide variety of benefits such as environmental, health, and community revitalization throughout the State. The proposed 2024 – 2025 state budget has the fund being appropriated from the Greenhouse Gas Reduction Fund (GGRF). Eligible urban greening projects will reduce GHG emissions, mitigate the effects of extreme heat, and provide multiple additional benefits. Local governments are eligible to apply for Urban Greening Grant funds. The grant is administered by the California Natural Resources Agency. Eligible projects include the development of recreational trails. No funding match is required.

California State Parks Habitat Conservation Fund (HCF)

The Habitat Conservation Fund (HCF) is intended to provide grants to local entities to protect fish, wildlife, and native plant resources, to acquire or develop wildlife corridors and trails, and to provide for nature interpretation programs and other programs which bring urban residents into park and wildlife areas. The fund allocates approximately $2 million each year to seven unique categories. Eligible projects include nature interpretation programs to bring urban residents into park and wildlife areas, protection of various plant and animal species, and acquisition and development of wildlife corridors and trails. The HCF is administered by OGALS and local governments are eligible to apply. The fund does require a dollar-for-dollar match.

Local Funding Opportunities

Developer Impacts Fees

As a condition for development approval, local agencies can require developers to provide certain infrastructure improvements, which can include active transportation projects. These projects have typically provided bicycle and pedestrian facilities on or along the roadway near the associated project; however, these fees could be utilized to develop a trail facility in proximity to the project. Care should be taken to demonstrate a clear nexus between the project and the mandated improvement to avoid legal challenges.

New Construction

With the City of Murrieta still growing, there is ample opportunity for new residential and commercial development. This growth presents the potential for further expansion of the trail network. New construction could be conditioned to require the development of new trails or connections to existing ones, enhancing the trail network in currently underserved areas.

Incorporating Trail Installation and Connectivity in New Developments

To ensure that new developments contribute to the city's trail network, coordination between the Planning Department and the Community Services Department (CSD) is essential. As part of the development review process, these departments can collaborate to identify opportunities for new trail installations or connections to existing trails.

This practice is already in place to some extent, with CSD reviewing project plans to determine where trail connections would be most beneficial. Formalizing this process by incorporating clear trail connectivity requirements into development conditions will strengthen the city's commitment to expanding and enhancing its trail network, improving access to recreation and active transportation for all residents.

Establishing Trail Connectivity as a Development Requirement

To ensure continuous and well-integrated trail connections throughout the city, a more formalized approach to requiring trail connectivity in new developments is necessary. Currently, trail planning relies on the General Plan and designated areas where trails have been pre-approved. However, incorporating explicit trail connectivity requirements into zoning codes or development standards would provide a more consistent framework for implementation.

By integrating these requirements into the development review process, City staff can systematically evaluate proposed projects and identify opportunities to condition trail connections as part of project approvals. This approach will help create a comprehensive and interconnected trail network that supports active transportation, recreation, and community mobility.

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