FREQUENTLY ASKED QUESTIONS

Why is safety and security important on trails?
Many of San Jose's trails are in remote locations or not easily viewed by neighboring roadways. The annual Trail Count survey indicates that only 25% of users are females and concern about public safety appears to be a discouraging factor. Providing a mechanism for 911 Center staff to quickly identify a precise locaton along a trail, and the best means to acccess it, can support quicker deployment of resources. Development of the marker system and companion signage and striping can help persons clearly identify their location, and better understand hazards, destinations and safety rules.

How was the idea of marking and addressing trails initiated?
The San Jose Police Department is an active member of the Technical Advisory Committees (TAC) that are formed when master planning new trail systems. For the past 8 years, an officer has been specifically assigned to advice the TAC on issues pertaining to CPTED (Crime Prevention through Environmental Design). Staff from PRNS and the Police have discussed and partnered in data collection regarding a mechanism for addressing trails and having that knowledge known to our 911 Center, with the goal of speeding emergency response and permitting site-specific record keeping.

Are markers necessary if Smart Phones can provide location data?
Smart phones do provide location data that can support 911 dispatching – but they do not resolve all issues:

1. Some users turn off location services due to battery usage, privacy or international calling plans (an issue for tourists).
2. Line of site is critical for accurate location by GPS-enabled smart phones. Trees prevent accurate signals to satellites and can create a ¼-mile error. This could lead to a misdirected dispatch.
3. Cellular phones depend on triangulation between towers. A three-tower signal does provide accuracy – but it is not uncommon for a phone to catch only two towers which yields error in location as well.

4. Precise Smart Phone location data doesn't inform 911 Center Operators how to reach someone along a trail.
5. When near a State highway facility, a cellular phone call may be routed to Caltrans' Vallejo 911 Center where local knowledge of trails is unavailable. Branding of the individual trail systems on each markers a call to be directed back to San Jose 911 Center with a basic understanding of the trail system. At that point, San Jose 911 staff can identify the precise location with the marker number and possibly the phones GPS coordinates.

Why aren't markers installed all at once?
The Milestone Marker project is being installed in two phases as a test deployment. The project follows the logic used by Caltrans for State highways but is unique to the trail environment. As a first of its kind project, staff is obtaining lessons learned from this approach and amending its guidelines to document best practices.

How is the project funded?
In January 2003, the City Council directed staff to submit grant applications for State of California funds under the Roberti-Z'Berg-Harris Urban Open Space and Recreation Program under the 2002 Resources Bond Act. The City was successful in securing $451,000 for development of an integrated signage and marker system to support more rapid emergency services.

What has the City done to support emergency response along trails?
Public safety along trails has been supported with deployment of Call Boxes at 1 mile increments and having Park Rangers visit trails on a limited basis.

How are markers installed?
Images and video of the installed markers can be found on the trail program website:
http://www.sjparks.org/Trails/MilestoneMileageMarkers.htm

How effective is the reflective striping?
The specifications for centerline striping use glass beads commonly found at airport runways. The linked video show the dramatic difference in visibility provided by reflective striping. Caltrans has visited San Jose to study our application.

Installation of striping: http://www.sjparks.org/Trails/ReflectiveStripingInstallation.htm
Visibility of striping: http://www.sjparks.org/Trails/AFTER.mov

What were the City's goals in developing an integrated marker and signage system?
Staff studied existing markers, signage and striping found in San Jose, as well as along trails in the United States and in Europe. It found shortcomings with most systems and defined the following objectives for the guidelines:

- Provide a tool that supports more efficient use of existing technical and staff resources.

- Create a highly durable marker system.
- Link precise location data to the 911 Center.
- Create an addressing system and incorporate trails as part of the roadway network.
- Create logical and memorable graphics to facilitate calls for service from the 911 Center.
- Define state-of-the-art practices because few models for integrated trail marker systems exist.
- Develop a project that is consistent with the City's mission of being a national leader in trail development.
- Provide a heavy duty coating to reduce the occurrence of graffiti so less maintenance staff time is required
- Seek commercially available products but pursue custom designs if necessary to secure infrastructure that is not easily stolen or damaged.
- Use memorable graphics that are unique to each trail system so that there was better recollection when reporting an incident.
- Use reflectivity to address the lack of lighting along trails and offer visibility for trail users and emergency responders.

How are markers integrated with the 911 Center?
Staff studied operations in San Jose's 911 Center and elsewhere and defined a common issue in that trails are not depicted on roadway maps.

1. Over the past several years, we have worked closely with 911 staff to provide trail maps to the 911 Center staff and emergency personnel, but they are not integrated in the dispatch computers and must be accessed as a secondary reference. This effort has permitted 911 Center personnel to better understand the trail alignments but the maps aren't merged on the screen used during dispatching process.
2. The above first step did not resolve a primary issue for dispatchers. They do not know when a trail is accessible by vehicle. Locked bollards, vertical obstructions, pavement conditions, and other issues can slow or prevent access. Each marker installation includes a data collection process to provide the dispatcher the vital data necessary to confidently dispatch resources and guide them through the best point of entry and exit.

Why do markers have an animal, plant or other object identified?
Staff conducts many community meetings annually and responds to community inquires about trails. From this interaction, it is not uncommon for many residents and visitors to be unaware of a trail system's accurate name. As a recent example, a life-long San Jose resident insisted that Coyote Creek Trail meanders from east San Jose to downtown's Arena. The creek does not follow this path and was being confused with either the Los Gatos Creek or Guadalupe River which travel in this area. The inability to accurately define the trail system can cause an error in dispatch when cellular phone data may not be available or could be inaccurate.

Why are markers custom designed?
Durability was a design objective so the markers are patterned after a standard steel bollard but delivered in a rectangular format. This approach provides three visible surfaces for trail users and

a horizontal surface for visibility of a reflective surface to support policing. The application of anti-graffiti coating reduces the possibility of graffiti tags. The coating is superior to past products used and allows removal of graffiti with packing tape or by being wiped off without chemicals. This reduces chemical exposure for employees and the environment and secondary costs related to supplies.

What are the project's anticipated benefits?

- Emergency response times should be quicker because we offer a means of precise location and associated routing directions.
- Customer service is being improved with existing resources (no new 911 Center software or hiring of new emergency services personnel.)
- The high-quality graphics provide San Jose with a marketable product. An Airport Retailer has expressed interest in a cost sharing arrangement for use of the graphics on product.
- San Jose secured the American Trails Symposium's State of the Art Award for its Marker and Signage Guidelines.
- San Jose staff has presented the project at the American Trails, CPRS and California Trails & Greenways conferences over the past 6 months. They have found a lot of interest from trail developers around the country because of the innovative approach and design aspects of the project. Several agencies reported exploring the issue and would look to San Jose as a model.
- The City of Santa Clara has expressed interest in deploying markers based on the San Jose system.

Why are markers posted so frequently?

Installing the markers at ¼ mile increments was determined in consultation with the Police Department as a reasonable frequency for visibility. Many of our trail systems meander along rivers which result in obstructed views. A ½ mile increment is common along many trails but that distance serves predominantly recreational needs. The project's primary intent was to support public safety so accurate positioning drove the decision to increase frequency.

Where can I find more information about the markers, signage and striping?

San Jose's guidelines are posted on the trail program web site at:
http://www.sjparks.org/Trails/Reports/TrailSignageGuidelines_low-res.pdf

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San José Trail Program
www.sjparks.org/trails