

Appendix D: Public Access Opportunities Memorandum

MEMORANDUM

TO:	Grace Le, PE	FROM:	Robin Graham
CC:	Camille Bandy, PE, QSD		
DATE:	November 15, 2024 (Rev.1)		
SUBJECT:	Pulgas Creek Watershed Plan Public Access Opportunities Memo		

1.0 INTRODUCTION

The City of San Carlos (City) is preparing a watershed plan that aims to provide guidance on improving the hydrology and flood resilience of Pulgas Creek and its tributaries. The headwaters of these creeks originate in the upland open spaces and undeveloped areas in San Carlos where Pulgas Creek and its tributaries exist as ephemeral natural channels. Downstream, the creeks are channelized or piped underground primarily through private property. The upland open spaces in San Carlos have steep slopes and soils which are prone to erosion which when combined with residential construction and winter rains on slopes of non-native annual grasslands result in landslides, sedimentation of stormwater infrastructure, and flooding. The Pulgas Creek Watershed Plan (Plan) will develop potential solutions for reducing the risk of these hazards.

1.1 Purpose and Need

To support the Plan, this memo has been prepared to identify potential public access and recreation improvements that can be paired with recommended watershed improvements. This memo supports multi-benefit public access, watershed and community health.

1.2 Planning Context

This memo and subsequent Plan are being prepared to support and align with existing City plans and municipal code. The following plans have been utilized in the preparation of recommendations discussed in the following section.

CITY OF SAN CARLOS BICYCLE AND PEDESTRIAN MASTER PLAN (2020)

Adopted in 2020, the Bicycle and Pedestrian Master Plan (BPMP) completed an inventory of existing bikeways, and sidewalks within the City which were analyzed on their level of safety, connectivity to public facilities including transit and schools, and user experience (City of San Carlos, 2020). A suite of goals, objectives, and policies were identified through a public and stakeholder outreach process. Recommendations for improvement of the bicycle and pedestrian access network were developed to address the policies identified and reflect the progress made since the previous Bicycle and Pedestrian Master Plan from 2012.

SAN CARLOS HILLSIDE TRAILS PLAN (2012)

The Hillside Trails Plan proposes new trail alignments with the City's open space areas, Big Canyon and Eaton Parks (City of San Carlos, 2012). One trail in each park is looked at in detail with regard to stream crossings and biological resources. Both trails have been constructed since the adoption of this Plan. The Plan provides best practices for minimizing biological, cultural, hydrological and air quality impacts. In addition, the Plan provides design guidelines for trail construction.

PARKS, OPEN SPACE, BUILDINGS, AND OTHER RECREATIONAL FACILITIES MASTER PLAN 2009-2029 (2008)

This Parks and Recreation Master Plan (PRMP) for San Carlos provides a holistic view of all the City's parks, open spaces, and community facilities such as libraries and museums (City of San Carlos, 2008). The PRMP includes community engagement to perform a needs assessment of the entire system of facilities. The PRMP describes how these needs are addressed through an action plan, and prioritization and implementation considerations.

EAST SIDE INNOVATION DISTRICT VISION PLAN (2021)

The ESID Vision Plan describes a future for an existing industrial area of the City that incorporates multi-modal transportation, public access along Pulgas Creek, and economic development (City of San Carlos, 2021). While this plan provides a broad range of goals for this area, salient to this memo, a key part of the vision is to restore the creek and create a new park and trail along its banks and provide additional trails that access the creek at multiple points. The ESID Vision Plan also incorporates nature-based flood resiliency design.

2.0 PULGAS CREEK WATERSHED PUBLIC ACCESS

Public access and recreation related opportunities for improvement were identified based on primary drainage improvement needs in the upper watershed of Pulgas Creek. Lower watershed opportunities are limited due to waterways being underground and largely on private property. Opportunities that are programmatic in nature may include signage or workdays at upper watershed sites but can be implemented City-wide. General constraints regarding site specific opportunities include surrounding private properties and existing development, as well as steep hill slopes.

In general, the constraints of expanding or improving public access and outdoor recreation include the steep, hilly topography, limited public land, and existing development. Opportunities include expanding public access to creeks, providing education on concepts of flood resiliency and low-impact design, and improving existing recreation opportunities.

2.1 Programmatic Opportunities

Key opportunities that can be implemented City-wide include programs related to educating the public about concepts of flood resiliency and low-impact design (LID), as well as volunteer opportunities to improve watershed health. Recommended program opportunities are discussed below and constraints related to these are discussed in Section 2.3 Feasibility Assessment.

- **Expand the existing Adopt-a-drain program** to include volunteer clean up days for park and open space ditches and drains. While the Public Works department maintains these, engaging the public and creating an ownership mentality on what causes problems and the challenges associated with maintenance can help raise awareness about how the watershed functions.
- **Create a program to educate property owners** about watershed related risks and how treatments on their property can impact or improve overall watershed health. Property owners adjacent to parks, open space areas, and stream corridors would be ideal participants where improving drainage and vegetation conditions could reduce landslide risk and improve water quality. This program could provide online information to all residents available via QR code at parks and open space sites. This program could also include specialized workshops and engagement for open space and stream corridor adjacent properties. These property owners could be engaged to learn how to make their property more resilient to landslides, prevent downstream sedimentation, improve drainage, as well as protect against wildfire hazards. This type of program could also offer incentives to property owners to take steps on their own property, such as a free property assessment.
- **Develop interpretive signage and programs** around drains, ditches, LID features, and stream crossings throughout the parks, open spaces, and City-wide to educate residents about flood resiliency, stormwater management, hydrology of the watershed, and other related topics. This can help raise awareness around resilient infrastructure.

2.2 Opportunity Sites

The following public access opportunity sites were identified through discussions around hydrologic needs and improvement areas. These areas typically focus on the upper watershed in Arguello, Big Canyon, Eaton, and Vista Parks, to reduce both immediate and downstream impacts. There are also opportunities in the lower watershed at road intersections such as the intersection of San Carlos Avenue and Alameda de las Pulgas where existing stormwater LID needs improvements. These locations and recommended improvements and constraints are discussed below with sites organized beginning with upper watershed areas moving east to end with lower watershed areas. General locations of recommendations can be found in Appendix A.

Another lower watershed site for public access improvement related to watershed improvements includes the section of daylighted creek between El Camino Real and Highway 101. However, the ESID Vision Plan describes detailed public access improvements in the lower watershed east of El Camino Real and builds off of the proposed bike and pedestrian improvements in the BPMP which are included here by reference rather than repeating the recommendations. Considerations for the restoration of this reach of Pulgas Creek include installing a detention basin within the proposed community open space adjacent to the creek. The creek trail and creek restoration should be designed as one to ensure proper functionality of the creek and riparian habitat while minimizing potential flooding of the creek-side trail. Additional considerations for this section of Pulgas Creek include management of potential use by individuals experiencing homelessness.

2.2.1 Vista Park

Vista Park contains flat paths with picnic tables and benches interspersed with native vegetation along Crestview Drive. There is a drainage basin along the eastern side of the park that is covered with grass turf.

RECOMMENDATIONS

Improve pedestrian and bike access

Improvements to pedestrian access to the park can be achieved by installing a crosswalk to connect Vista Park to North Crestview Park west of Crestview Drive. The BPMP calls for the installation of bike lanes along Crestview Drive which should be implemented, and bike racks should be provided at all parks.

Expand native vegetation

Native vegetation could be expanded into the drainage basin and the grass turf removed. Additional interpretive signage could discuss the design as a native vegetation, no pesticide park.



Grass drainage basin

Add seating and trail connections

Benches and accessible picnic tables could be added as identified in the PRMP. Additional opportunities discussed in the PRMP and Hillside Trails Plan would need to incorporate drainage needs into their design as they are proposed to overlap with the existing drainage basin including, an off-leash dog area and a trail connecting Vista Park to the “Top of the World” site via a trail easement.

CONSTRAINTS

Vehicle traffic on Crestview Drive is fast moving and should be mitigated through appropriate traffic calming around crosswalks and intersections. Maintaining the drainage basin may constrain the expansion of native vegetation into this area. Proposed uses in the PRMP including an off-leash dog park and trail connections should include considerations for minimizing potential visitor conflicts with existing picnic and landscape viewing uses.

2.2.2 Big Canyon

Big Canyon Park is located in the western hillside areas of San Carlos north of Brittan Avenue and contains natural surface trails. There are two designated trailheads and trails making up two loops and one out-and-back trail. During a site visit on April 12, 2024, WRA staff noted three landslides, none of which affected trails. There was evidence that recent trail repairs may have occurred. The trails were generally in good condition, contain many stream crossings, and few visitor created trails, limited to shortcuts and spurs leading onto private property.



Representative example of recent landslide and treatment at Big Canyon Park.

RECOMMENDATIONS

Improve trail stream crossings

Stream crossings could be improved by stabilizing the stream banks and installing hardened materials in the stream channel across the trail tread or puncheons or bridges over the stream. The Hillside Trails Plan provides best practices for trail construction including stream crossings.

While not a stream crossing, the drainage pipe crossing the Oak Meadow Trail can also be upgraded to improve visitor experiences. Alternative drainage options can be considered to remove the pipe. If removal is not feasible, adding educational signage explaining the importance of the pipe can improve experiences.



Left: example of existing stream crossing. Right: steps over drain pipe.

Expand volunteer opportunities

As soil stabilization through revegetation is implemented, volunteer programs can help monitor plant health, invasive species encroachment, and perform additional planting.

Improve trail conditions and pedestrian access

In coordination with a recommendation in the Flood Mitigation Evaluation Memorandum, as a detention basin is proposed near the Brittan Ave trailhead, the proposed ADA compliant trail from the Hillside Trails Plan can be implemented in the same construction effort. This trail will need to be delineated to limit off-trail travel and hardened to prevent muddy conditions that currently exist. This ADA trail and flood plain also provide an opportunity to create an interpretive area that explains the function of the detention basin or similar topics. Clear wayfinding signage identifying trail names and lengths is also needed in this area. A crosswalk across Brittan Avenue can also be installed to highlight the connection between Big Canyon and Eaton Parks, as well as allow visitors to park on both sides of the street and cross more safely.

Improve Oak Meadow Trail end point

There is an opportunity to create a vista point destination at the end of the Oak Meadow Trail. The end point could include fencing to limit off-trail travel onto private property, seating, and interpretive signage.



End of Oak Meadow Trail

CONSTRAINTS

Constraints include potential for special status species as noted in the Hillside Trails Plan, and wide variations in hydrologic conditions of ephemeral streams. Steep slopes and unstable soils are also present.

Parking may act as a constraint for implementation of an ADA compliant trail. High speed vehicle traffic on Brittan Ave should be mitigated with appropriate traffic calming around crosswalks.

2.2.3 Eaton Park

Eaton Park is located in the western hillside areas of San Carlos south of Brittan Avenue. There are four designated trailheads with trails connecting these points. This park currently has one major landslide which washed out a trail that has been rebuilt.

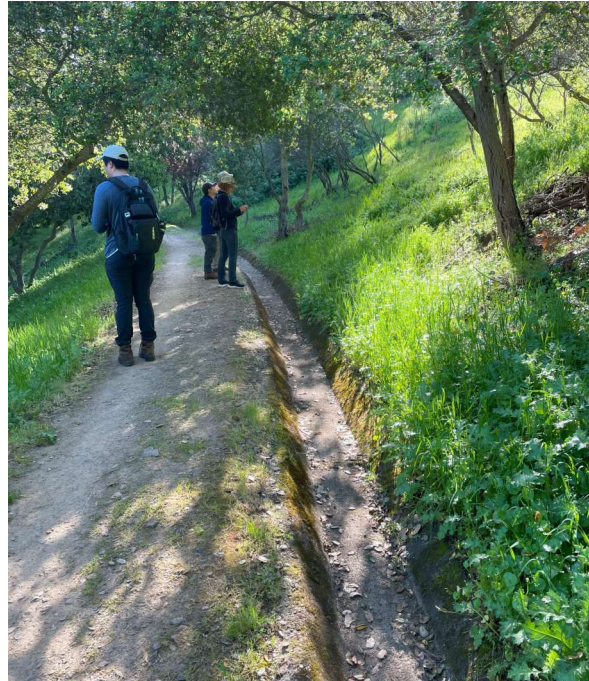
RECOMMENDATIONS

Implement City-wide programs including installing interpretive and informational signage at landslide areas and drainage ditches to inform visitors about the purpose of drains and ditches as

well as provide safety information at landslides. The City could also host ditch cleaning days as part of a volunteer program for the ditch following Eaton Trail.

CONSTRAINTS

Constraints include steep hill slopes that limit space for signage and interpretive areas.



Drainage ditch on Eaton Trail

2.2.4 Arguello Park

Arguello Park is located in the northern hillside area along Wellington Drive. This park contains four tennis courts and one ball diamond in the lower elevations, while the upper elevations contain natural surface roads and trails. There are many visitor-created trails in the upper elevations of the park and a picnic area at Dartmouth Avenue. There is currently one landslide that washed out a trail that has not been rebuilt.

RECOMMENDATIONS

Improve trails and wayfinding signage

Reduce the proliferation of visitor-created trails to reduce soil erosion and improve slope stability. This can be accomplished through decommissioning visitor-created trails including decompacting and revegetating, delineating designated trails, and installing and maintaining additional wayfinding signage indicating trail closures, rehabilitation areas, and designated trails. Special attention should be paid to decommissioning visitor-created trails and improving wayfinding signage around the stream directly upslope from the ball field. A designated trail exists in this area but is unsigned and visitor-created trails following the stream channel are unstable.



Designated trails with absent or missing wayfinding signage

As part of the effort to improve trails and signage, the City could establish a volunteer trail maintenance program aimed at rehabilitating visitor-created trails and educating the public on the hazards that result from visitor-created trail erosion. The City has historically used neighborhood volunteers and county work furlough program to perform fire fuels reduction at Arguello Park which could be expanded to include trail maintenance. Hillside stabilization and erosion reduction work completed as part of park renovations in 2006 could be used as a baseline for ongoing erosion monitoring and maintenance.



Left: visitor-created trail on unstable stream bank. Right: visitor-created trails.

Add new facilities

The northern and highest point in Arguello Park near Northam Avenue and Dartmouth Avenue presents an opportunity to add new recreation facilities. This area currently has a picnic area on one side, and a drainage area on the other with a flat empty space in the middle. As improvements are made to the drainage area, it could also become an interpretive site as mentioned in the Arguello Park Master Plan (City of San Carlos, 2002). The PRMP calls for implementation of Phase 2 of the Arguello Park Master Plan which included renovation of a visitor-created BMX course located in the drainage area. It is unclear if creating a designated BMX course remains an option or a desire for this part of Arguello Park given current watershed management goals but activating this space with new facilities is recommended.

Improve pedestrian access

In coordination with recommendations in the Flood Mitigation Evaluation Memo, implementation of a detention area below the ball field can be paired with construction of a path to connect the ball field with the tennis courts. Currently, there is only road access and access via a visitor-created trail. Given the lack of dedicated pedestrian access between these facilities, an ADA compliant path would ensure equitable access.

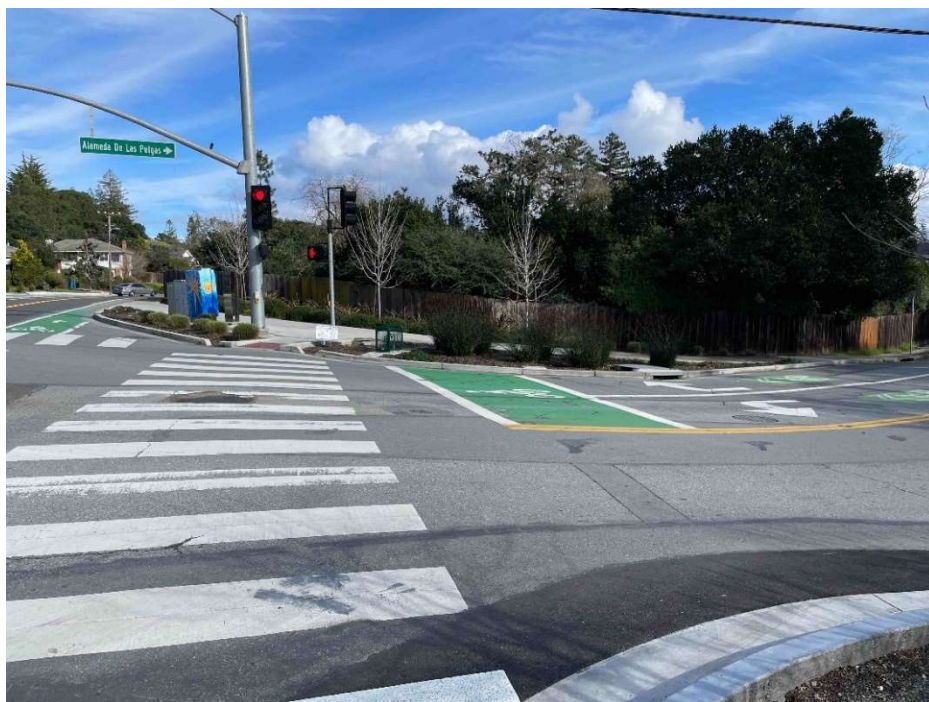
CONSTRAINTS

Constraints related to trails and pedestrian access include steep hillslopes, and unstable soils making trail construction and maintenance challenging. If slopes are too steep for implementation of an ADA compliant path, a steeper hiking trail should still be considered to provide pedestrian

access between the tennis courts and ball field. There is also limited parking, transit, bike and pedestrian access to the northern upper elevation of the park where new facilities are recommended. Additional constraints throughout the site are drainage and slope stability needs.

2.2.5 San Carlos Avenue + Alameda de las Pulgas

This intersection contains vegetated drainage swales that are meant to divert stormwater off the street and filter it through the vegetation and soil before the water drains to the creek which flows roughly parallel to San Carlos Ave in this location. Around these swales are pedestrian and bicycle intersection improvements. The BPMP called for medium priority sidewalk projects and several pedestrian spot improvements along the San Carlos Ave corridor (these spot improvements were listed as in progress in the BPMP and are assumed to have been implemented). The BPMP also included several high priority bikeway improvements in this corridor. However, there are opportunities for enhancements of the existing pedestrian infrastructure.



One of two LID treatments at San Carlos Ave and Alameda de las Pulgas with bike and pedestrian infrastructure.

RECOMMENDATIONS

Improve pedestrian access

Widen the sidewalk or provide a parkway strip east of the intersection along the south side of San Carlos Ave. The existing fence along the south side of San Carlos Ave appears to be beyond the boundary of the private parcels and with appropriate coordination with property owners could be removed to provide a much wider space for pedestrians with a vegetated buffer between the sidewalk and the road. Removal of this fence could also provide pedestrians with glimpses of the creek.



Fencing along San Carlos Ave sidewalk

Add signage

Provide wayfinding and interpretive signage around the intersection and LID. Once the LID is functioning properly, interpretive signage explaining the purpose and processes could be installed to educate the public about green infrastructure, local creeks, and resiliency. In addition, pedestrian and bicycle wayfinding signage could be added to this intersection to direct the public along the best routes, provide direction and distances to destinations like downtown Laurel Street. The BPMP includes recommendations and guidelines for wayfinding signage.

CONSTRAINTS

Constraints in this area include maintaining privacy for the properties that back on to San Carlos Ave and the creek. In addition, minimizing sign clutter and maintaining visibility for all road users should be a priority

2.3 Feasibility and Risk Assessment

2.3.1 Operations and Maintenance

Maintaining trails, widening and potentially building new trails were recommended in the PRMP noting attention to soil erosion and trail drainage. However, trails are not listed under items that maintenance staff manage. While more technical trail improvements, like stream crossings should be performed by specialist contractors, ongoing trail maintenance can be performed by City staff. Increased Operations and Maintenance (O&M) time and resources will need to be dedicated to trail maintenance. Trail maintenance work can also be performed by trained volunteers. The PRMP indicated that most of the existing trails in the City's open space areas were built by local Sierra Club volunteers. O&M time and resources would be needed in this scenario to manage volunteer groups and perform volunteer program administration.

The PRMP includes limited discussion of vegetation management in open space areas, citing fire fuels management as a priority. A vegetation management program is likely needed to perform volunteer program administration for restoration or monitoring efforts, removing invasive species and revegetating slopes for soil stabilization. O&M time and resources would be relied on to balance the need for soil stability, native vegetation and fuels management.

2.3.2 Resiliency

Implementation of physical improvements to parks and open spaces will improve the resiliency of trails and vegetation regarding erosion, landslides, and wildfire. Public engagement programs aimed at improving drainage systems can reduce downstream flooding and reduce the likelihood of landslides on private property adjacent to open spaces.

2.3.3 Safety

Risks associated with performing trail maintenance and vegetation management typically include personal injury from cuts or falls. Working on the steep slopes of Big Canyon, Eaton, and Arguello parks increase this risk. However, lack of vegetation and trail maintenance increases risk of personal injury including cuts and falls to visitors using the trails.

Lack of vegetation and trail improvements also increases the risk of future landslides, wildfire, and flooding, compromising the safety of staff, visitors, and properties adjacent to the parks and open spaces.

Risks to public and staff safety along roads, including at crosswalk and sidewalk recommendations, are high and can be reduced through upgrading road designs to slow vehicle speeds.

2.3.4 Funding

Increased funding will be needed to implement vegetation, trails, and signage improvements across all opportunity sites. As these elements require ongoing maintenance, it is recommended that these tasks be performed by trained City staff. However, some initial trail work may require contractors at higher rates.

Implementation of public engagement and other programs will require increased and ongoing program administration costs. While pilot programs can often be funded with grants, ongoing implementation requires dedicated funds. Public engagement programs, through raising awareness for watershed management issues can also increase the likelihood of public support for program and project funding.

Funding public access improvements solely on an as-needed basis after landslides, flooding, or wildfire is not recommended as ad hoc improvements are less likely to reduce the potential for hazards long term compared with preemptive and ongoing maintenance. The proactive improvements recommended here can also reduce the risk of emergency funding needed.

3.0 REFERENCES

City of San Carlos. (2002). *Arguello Park Master Plan* [Plan]. RRM Design Group.

City of San Carlos. (2008). *Parks, Open Space, Buildings, and Other Recreational Facilities Master Plan* [Plan]. Harris Design.

City of San Carlos. (2012). *San Carlos Hillside Trails Plan* [Plan]. The Planning Center | DC&E.

City of San Carlos. (2020). *Bicycle and Pedestrian Master Plan* [Plan]. Alta Planning + Design.

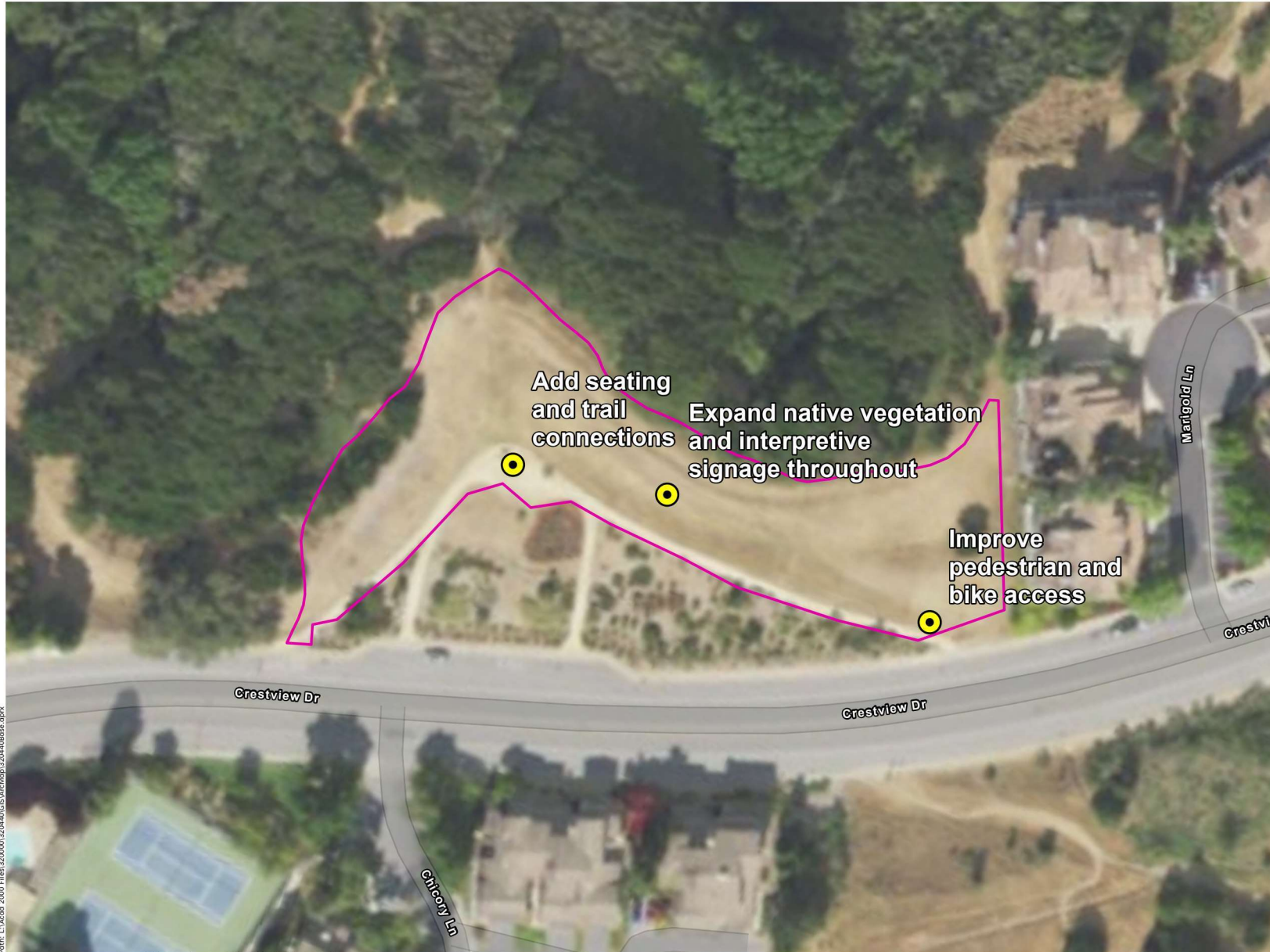
City of San Carlos. (2021). *East Side Innovation District Vision Plan* [Plan]. Perkins & Will.



Appendix A.

Opportunity Site Recommendation Locations

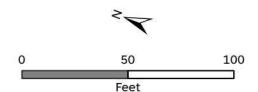




**Figure 1.
Vista Park**

Pulgas Watershed Study
Publics Access Opportunities Memo
City of San Carlos, San Mateo, CA

- Public Access
Opportunities
Region
Recommendations



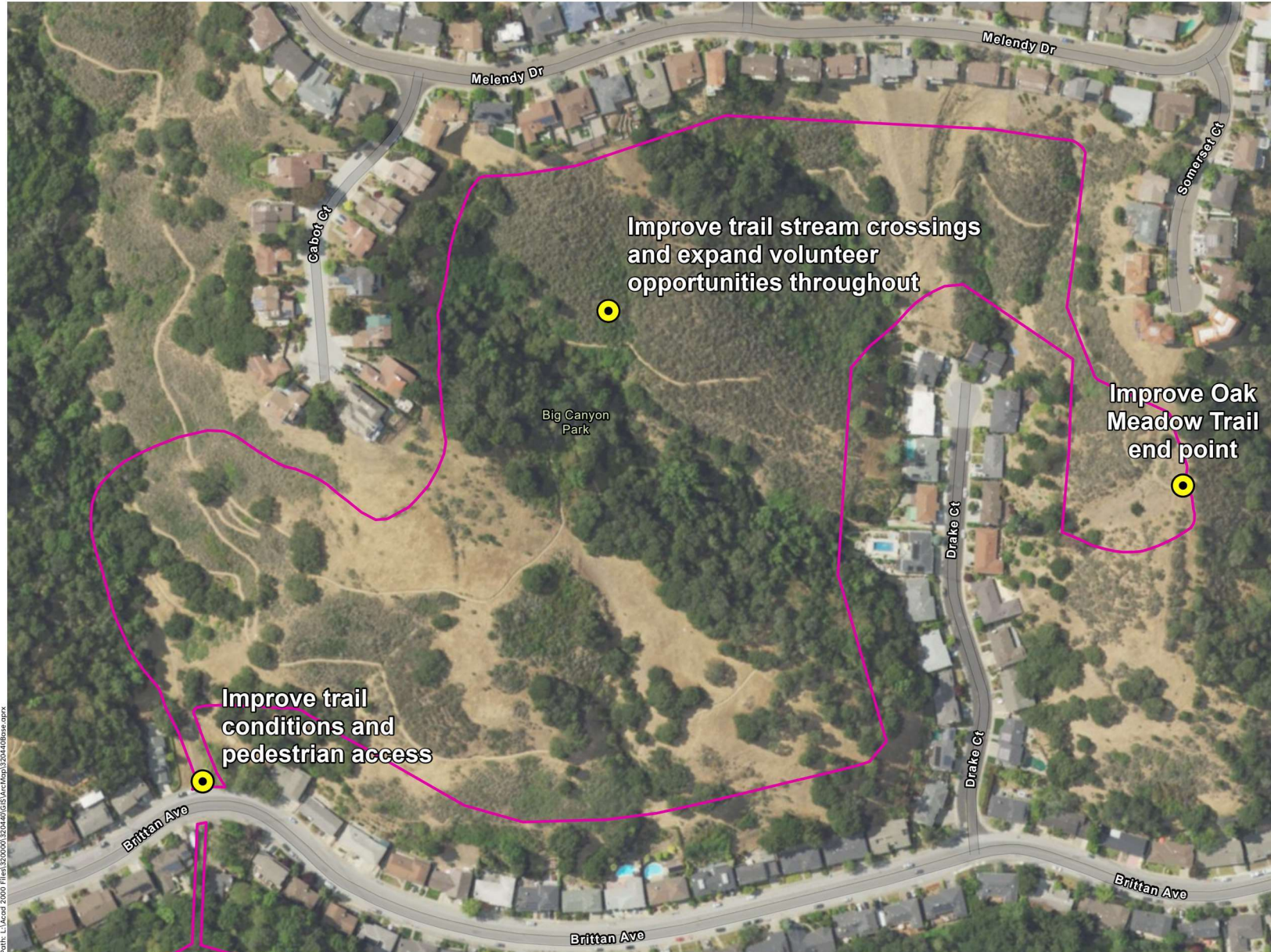
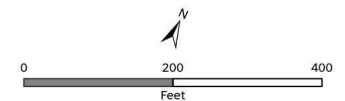
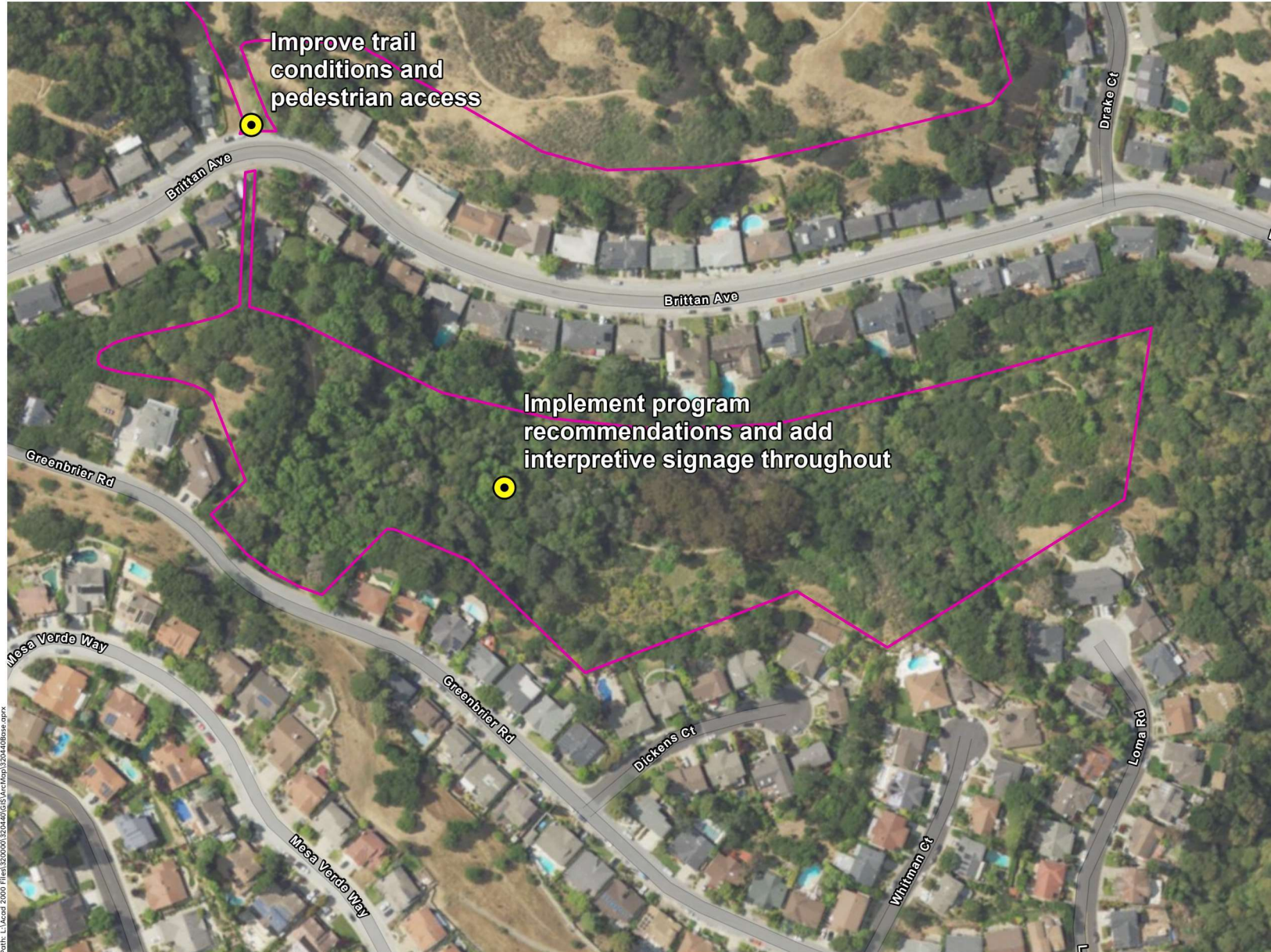


Figure 2.
Big Canyon Park

Pulgas Watershed Study
Publics Access Opportunities Memo
City of San Carlos, San Mateo, CA

- Public Access
- Opportunities
- Region
- Recommendations

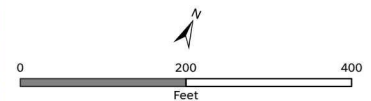




**Figure 3.
Eaton Park**

Pulgas Watershed Study
Publics Access Opportunities Memo
City of San Carlos, San Mateo, CA

- Public Access
- Opportunities
- Region
- Recommendations



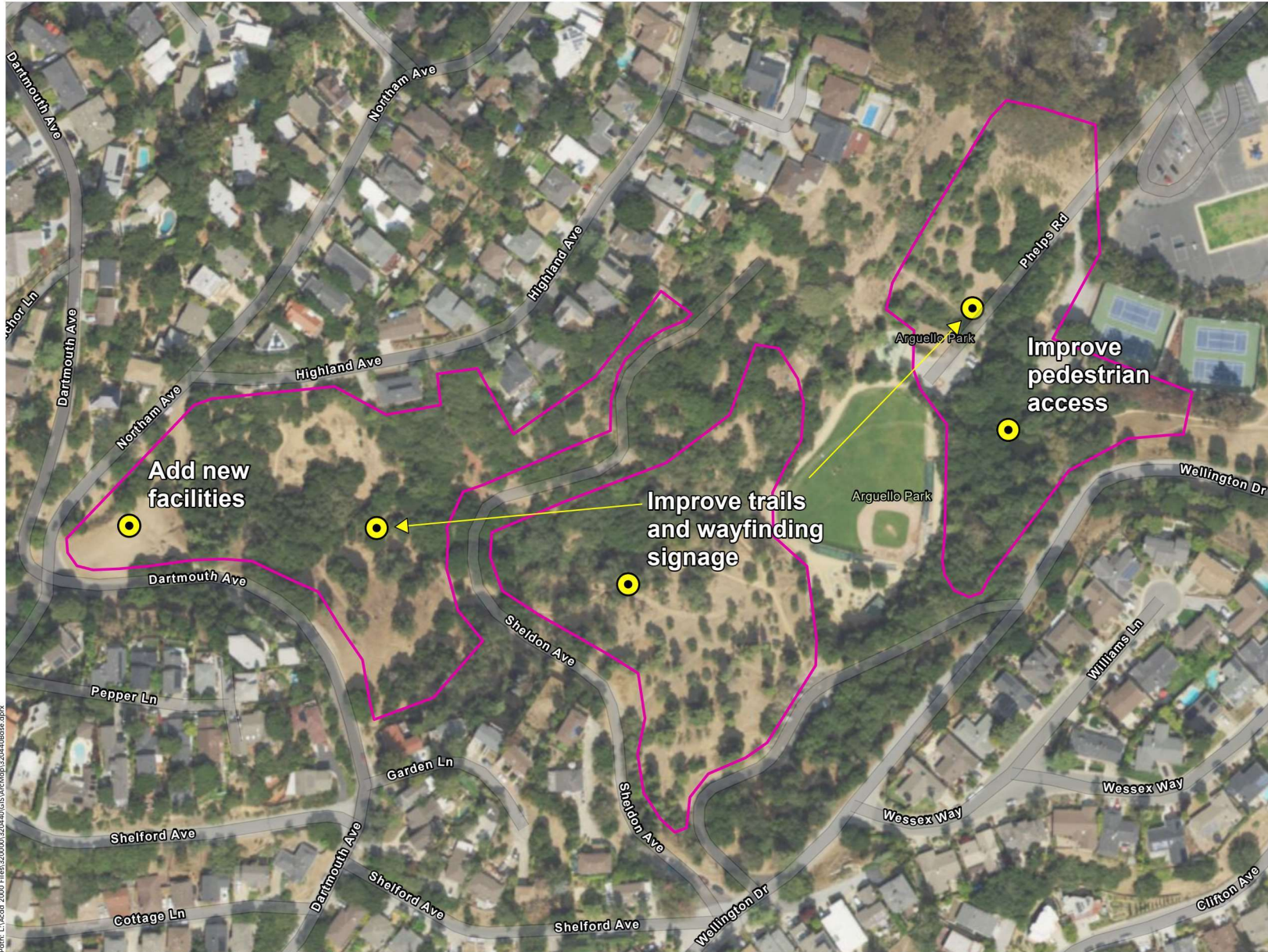


Figure 4.
Arguello Park

Pulgas Watershed Study
Publics Access Opportunities Memo
City of San Carlos, San Mateo, CA

- Public Access
- Opportunities Region
- Recommendations

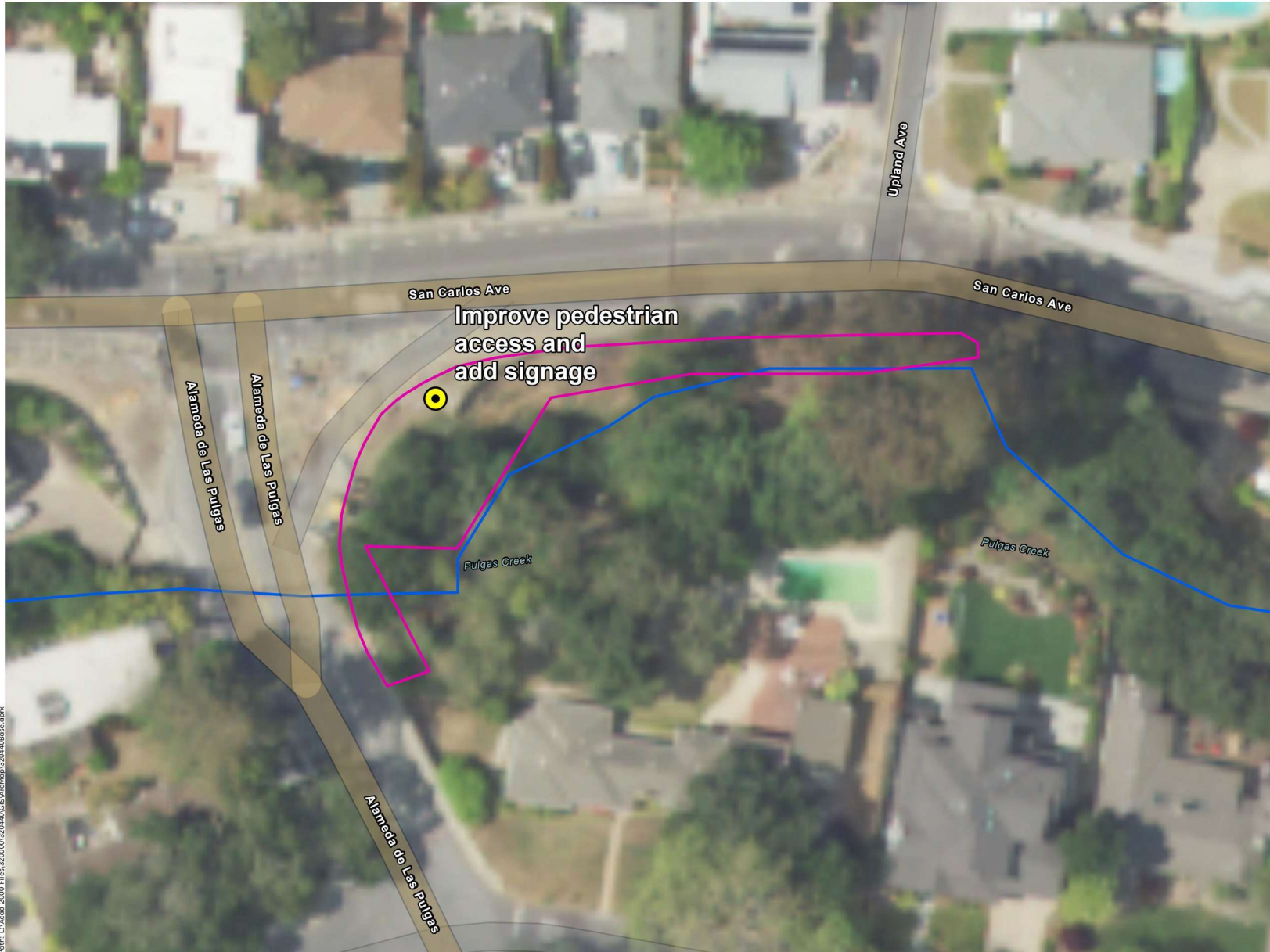


Figure 5.
San Carlos Ave

Pulgas Watershed Study
Publics Access Opportunities Memo
City of San Carlos, San Mateo, CA

- Public Access Opportunities Region
- Recommendations
- PulgasCreek

