

Appendix F

Traffic Study for the Escondido Canyon Park to Murphy
Way Connector Trail

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Since 1978

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June 26, 2018

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TRAFFIC STUDY FOR THE ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR TRAIL, CITY OF MALIBU, CALIFORNIA

Associated Transportation Engineers (ATE) has prepared the following traffic study for the Escondido Canyon Park to Murphy Way Connector Trail (the "Project"). It is understood that Wood Environment & Infrastructure Solutions (Wood) will use the traffic study for environmental review.

PROJECT DESCRIPTION

The Project site is located adjacent to Escondido Canyon Park in Malibu, as shown on Figure 1 (attached). Escondido Canyon Park is currently served by one hiking trail, known as the Escondido Falls Trail, which is accessed via a trailhead located on East Winding Way. The Project would develop an 0.8-mile section of new trail extending between the Escondido Falls Trail and Murphy Way. The western trail terminus would be located at 5713 Murphy Way.

SCOPE OF STUDY

The new connector trail is not anticipated to increase the use of or visitation to the Escondido Falls Trail or Escondido Canyon Park, or the existing traffic volumes on the study-area roadways since access to Escondido Canyon Park is already provided via the trailhead on East Winding Way. Instead, the new trail would provide an alternative hiking route along the Murphy Way trail easement between the Winding Way Trail parking lot located on the Pacific Coast Highway (PCH) and Escondido Falls; or could be used to provide a loop trail for hikers returning to the parking lot from Escondido Falls. The following analysis therefore reviews the potential diversion of hikers from East Winding Way to Murphy Way.

EXISTING CONDITIONS

Figure 2 illustrates the existing route used by hikers from the Winding Way Trail parking lot to the Escondido Falls Trail trailhead on East Winding Way. As shown, hikers park in the lot (or on the adjacent sections of PCH during peak periods) and then hike northeasterly along East Winding Way to the trailhead. East Winding Way is a private street and the trail is accommodated via a pedestrian trail easement. Pedestrians walk along the shoulders of the roadway for this portion of the trail; no sidewalks are present. The shoulders have been improved with a decomposed granite (DG) path that is approximately 5 feet wide and trail signs have been installed along the route. The Escondido Falls Trail continues within the park boundary and leads to the Escondido Falls. The current access route from the parking lot to the East Winding Way trailhead traverses an elevation gain of approximately 210 feet over a total route length of 0.73-mile.

The Project would allow park visitors to use the existing 40-foot wide trail easement over Murphy Way and the proposed connector trail as secondary access to Escondido Falls, or to complete a clockwise loop back to the parking lot. Figure 3 illustrates how visitors would access the western trail terminus from the Winding Way Trail parking lot. As shown, the route starts at the parking lot (or adjacent sections of PCH during peak periods), proceeds north on East Winding Way to a connector road that extends westerly to Murphy Way. The route then proceeds north to the western trail terminus on Murphy Way. The access route from the Winding Way Trail parking lot to the western trail terminus on Murphy Way traverses an elevation gain of approximately 725 feet over a total route length of 1.35 miles. No trail improvements are proposed along these roads. The eastern trail terminus would be along the Escondido Fall Trail, providing visitors the option to hike an approximately 3.5-mile-long loop using the existing Winding Way Trail, Escondido Falls Trail, Escondido Canyon Park to Murphy Way Connector Trail and the existing trail easement on Murphy Way. Future users of the proposed trail are anticipated to split access to the trail by both routes, and continue from either direction in a loop back to public parking areas located at the parking lot on East Winding Way or along PCH.

Figure 4 shows the location of photographs taken along the route illustrating the typical roadway sections along Murphy Way from the south end at the East Winding Way connector and the western trail terminus at 5713 Murphy Way (see Photos 1–10). Murphy Way is generally 20-22 feet wide between the lower end and 5801 Murphy Way, just south of the western trail terminus. The roadway narrows to 12-14 feet along the 370 feet of Murphy Way that extends between 5801 Murphy Way and the western trail terminus. There are numerous areas along the route where shoulders are available for hikers and other areas where no shoulders are available.

The first segment of the connector road that extends between East Winding Way and Murphy Way is about 225 feet long and is a paved driveway that is 12-15 feet wide and serves the single-family residence at 27725 East Winding Way. The remaining segment extends for about 650 feet and as an unpaved dirt road that is 10-15 feet wide.

The segment of Murphy Way that provides access to the western trail terminus serves 19 single family residences. Figure 5 illustrates the existing Weekday and Weekend average daily traffic (ADT) volumes along Murphy Way. The southern segment of Murphy Way (just north of the East Winding Way connector) carries 200 ADT on Weekdays and 140 ADT on Weekends. Traffic volumes decrease along the route as one travels north along Murphy Way. The ADT volumes decrease to 110 ADT on Weekdays and 80 ADT on Weekends about midway along the route. The volumes further decrease to 10 ADT on Weekdays and 7 ADT on Weekends adjacent to the western terminus of the trail, as this narrow section provides access to one residence. The paved section of Murphy Way ends at the Rancho del Cielo Malibu, an event venue that can accommodate 200 guests with shuttle service required. Volumes on the paved section of the connector road are 10 ADT on Weekdays and 7 ADT on Weekends. The existing traffic volumes along the Murphy Way equate to LOS A operations (low volumes with minimal delays for traveling along the route).

ATE drove the segment of Murphy Way from the south end at the East Winding Way connector and the north end at the new connector trail. Floating vehicle surveys found that reasonable and prudent vehicle speeds are in the 15-20 MPH range along the route to 5801 Murphy Way just south of the western trail terminus. Speeds are limited by the width of the road (20-22 feet), speed humps present along the route, poor pavement conditions, and horizontal and vertical curves (see Photos 1-9). Vehicle speeds were measured at 5-10 MPH between 5801 Murphy Way and the western trail terminus at 5713 Murphy Way where the roadway is 12-14 feet wide (see Photo 10).

EXISTING + PROJECT CONDITIONS

The new connector trail would provide an alternative route between the existing parking lot located adjacent to PCH (or the adjacent on-street parking on PCH) and Escondido Canyon Park. Additionally, the new connector trail would provide the opportunity for hikers to walk a loop system between the PCH parking facilities and the Escondido Falls (hikers would use the existing trail to Escondido Falls and then hike the new connector trail on return; or visa-versa).

As stated, the new connector trail is not anticipated to increase traffic volumes on the area roadways since access to Escondido Canyon Park is already provided via the existing trailhead on East Winding Way. Instead, the new connector trail would provide an alternative hiking route via Murphy Way between the PCH parking lot and Escondido Falls. In other words, some hikers that currently use the East Winding Way trailhead would instead use the Murphy Way connector trail.

The new connector trail is not anticipated to draw a significant percentage of the existing hikers using the trail system given the distances and elevation changes along the two routes. The new connector trail route between the PCH parking lot and the western trail terminus is much steeper and longer (elevation change of 725 feet over 1.35 miles) compared to the existing trail

route along East Winding Way (elevation change of 210 feet over 0.73 miles). The new trail would also require hikers to travel an additional 0.8 miles on the connector trail to access the Escondido Falls Trail.

Surveys found 65 to 100 vehicles parked in the Winding Way Trail parking lot and along PCH adjacent to the parking lot on peak weekend days of use (surveys attached for reference). Based on the observed parking demands, it is estimated that approximately 400 to 600 hikers use the trail system on peak days (assuming vehicles turnover 3 times per peak day and 2 people per vehicle = 600 hikers). Based on the comparative elevation changes and distances for the 2 routes, it is estimated that 10-20% of the peak day number of hikers would use the new Murphy Way route. This results in 60 to 120 hikers using the new route on peak days.

The addition of 60-120 hikers (and lesser on non-peak days) using the Murphy Way route would not significantly impact traffic operations on Murphy Way between the East Winding Way connector and the new trailhead at 5713 Murphy Way given the low traffic volumes (140 ADT or less) and the low vehicle operating speeds. The Caltrans and AASHTO minimum stopping sight distance standards for roads with 15 mph speeds is 80 feet and the standard for roads with 20 mph speeds is 125 feet. The sight distances provided along the sections of Murphy Way with horizontal and vertical curves generally meet these standards. Potential impacts to traffic operations and hikers along Murphy Way would be reduced with implementation of the improvements outlined in the Recommended Improvements section of this report.

POTENTIAL IMPACTS TO PCH

As noted, the new trail connector is not anticipated to increase traffic volumes on the study-area roadways, including PCH. Parking for the existing and proposed trail is provided in the Winding Way Trail parking lot adjacent to PCH. The parking lot, which has recently been converted to paid parking, accommodates the existing vehicle demands during non-peak periods and no changes are proposed for the parking lot. Parking occurs along the shoulder of PCH during peak periods when the designated parking lot becomes full. Since the new trail connector would not significantly increase use of the park, the existing parking along the PCH shoulder would continue to occur at the same rate. Thus, the Project would not impact traffic operations along PCH.

The City of Malibu commissioned a study that evaluated safety along PCH.¹ That safety analysis included review of accident data for the 2012, 2013, and 2014 time period. The safety study found that there were 0 accidents at the PCH/East Winding Way intersection during the 3-year period. Thus, the safety study did not identify any accident pattern at the intersection or any deficiencies in the roadway geometry at the intersection. Further, ATE performed field review at the intersection and found that adequate sight distances are present for drivers turning to/from East Winding Way at the intersection.

¹ Pacific Coast Highway Safety Study, Final Report, Stantec, May 2015.

Review of Rifkin Transportation Planning Group Traffic Study

A traffic study was prepared by the Rifkin Transportation Planning Group for the Santa Monica Mountains Safe Trails Association.² The “Rifkin Study” reviewed the potential impacts of the Escondido Canyon Park to Murphy Way Connector Trail Project on West Winding Way and Murphy Way. A summary of findings presented in the Rifkin Study is presented below:

1. After studying the road conditions on Murphy Way/West Winding Way, I’ve concluded that these private residential streets, are unsafe to be used as public hiking thoroughfares. This is based on conducting a number of field studies on Murphy Way/West Winding Way, collection of technical data, interviews, plus observation of Winding Way East and Pacific Coast Highway in proximity to West Winding Way.
2. Critical Traffic Speed surveys were conducted on a February weekend along Murphy Way and West Winding Way with a recorded critical (85th percentile) vehicular speed of 35 mph. A minimum 24-foot roadway and a 500-foot sight distance would be necessary to provide safe access for hikers in the roadway. In general, Murphy Way, which was not built to normal safety standards, cannot satisfy the above criteria in the majority of its alignment.
3. Considering the above two criteria, there are several locations along Murphy Way and West Winding Way, where the existing conditions of traffic speeds and roadway alignment would make it a safety hazard from an estimated 240 hikers per day to return to Pacific Coast Highway and/or the existing parking lot at East Winding Way.
4. In sum, these private residential streets, which are narrow in several sections, with blind curves, areas of limited sight distance, changes in elevation, deteriorated road surface, no street lights, or sidewalks, are clear hazards from both vehicles and an unsupervised hiking public.
5. In addition, as described in my report, Pacific Coast Highway will be further impacted in both directions from its approach to West Winding Way. Hazardous conditions existing at the intersection of West Winding Way and Pacific Coast Highway present a danger for both pedestrians and vehicles.

ATE reviewed the Rifkin Study and found that it includes incorrect information and assumptions. First and foremost, the Rifkin Study assumes that hikers would hike along West Winding Way between PCH and the new trail connector on Murphy Way. Instead, as outlined above, the new connector trail would provide an alternative hiking route from the Winding Way Trail parking (and on-street PCH parking) via East Winding Way. Hikers are not anticipated to use the segment of West Winding Way between PCH and Murphy Way.

² TECHNICAL REPORT REGARDING THE APPLICATION FOR A COASTAL PERMIT BY THE MOUNTAINS RECREATION CONSERVATION AUTHORITY (MRCA) TO BUILD A PORTION OF THE COASTAL SLOPE TRAIL IN THE CITY OF MALIBU – THE MURPHY WAY TRAIL SAFETY AND PROJECT REPORT, Rifkin Transportation Planning Group, March 2018.

The Rifkin Study includes traffic count and vehicle speed data for Murphy Way north of Winding Way. The Rifkin Study states that the 85th percentile speed recorded for this segment was 35 MPH, and that the stopping distance for this speed is 500 feet. The actual Caltrans stopping distance for a 35-mph design speed is 250 feet. The Rifkin study then applies the incorrect 35-mph/500-foot design criteria to the entire length of Murphy Way.

Review of the speed data found that it is incorrectly applied to the entire section of Murphy Way. For reference, ATE drove the segment of Murphy Way between the western trail terminus at 5713 Murphy Way and the Winding Way Trail parking lot, and found that reasonable and prudent vehicle speeds are in the 15-20 MPH range. Speeds are limited by the width of the road (20-22 feet), speed humps present along the route, poor pavement conditions, and horizontal and vertical curves. Speeds are even slower around the horizontal and vertical curves that are present on the roadway. The stopping sight distance standard for roads with 15 mph speeds is 80 feet and the standard for roads with 20 mph speeds is 125 feet. The sight distances provided along the sections of Murphy Way with horizontal and vertical curves generally meet these standards.

The Rifkin Study estimates that 240 hikers per day would use Murphy Way and West Winding Way. As noted, the new connector trail is not anticipated to increase the number of hikers using the trail system. Instead, it is estimated that 60-120 hikers (peak days) would use the new Murphy Way route instead of the existing route along East Winding Way; and no additional hikers are anticipated on West Winding Way.

The Rifkin Study concludes that the private residential streets are narrow in several sections, with blind curves, areas of limited sight distance, changes in elevation, deteriorated road surface, no street lights, or sidewalks, are clear hazards from both vehicles and an unsupervised hiking public. Given the low vehicle speeds and volumes observed on the upper sections of Murphy Way, adequate vehicle and pedestrian operations could be achieved by implementing the improvements recommended below.

Finally, the Rifkin Study concludes that PCH will be further impacted in both directions from its approach to West Winding Way given the hazardous conditions for pedestrians and vehicles at the PCH /West Winding Way intersection. As noted, the new connector trail is not anticipated to increase the number of existing vehicles on the area street network or increase the number of hikers using the trail system since access to Escondido Canyon Park is already provided via the trailhead on East Winding Way.

RECOMMENDED IMPROVEMENTS

The following improvements are recommended to reduce potential impacts to traffic flows

Implement Signage and Shoulder Improvement Plan. As an alternative to providing a separate roadside trail, hikers could walk along the edge of Murphy Way with implementation of a signage plan to alert vehicles of hikers using the route. Most areas along Murphy Way have a walkable shoulder. Should this option be selected, it is recommended that vegetation be cleared along the side of Murphy Way in order to provide a walking area for hikers that

encounter vehicles as part of their hike; and to improve sight distances on the roadway. Figure 6 illustrates the typical signs that may be selected for use along the new hiking route. Or, the applicant could select other appropriate signage to mark the new route.

This concludes our traffic analysis for the Escondido Canyon Park to Murphy Way Connector Trail Project.

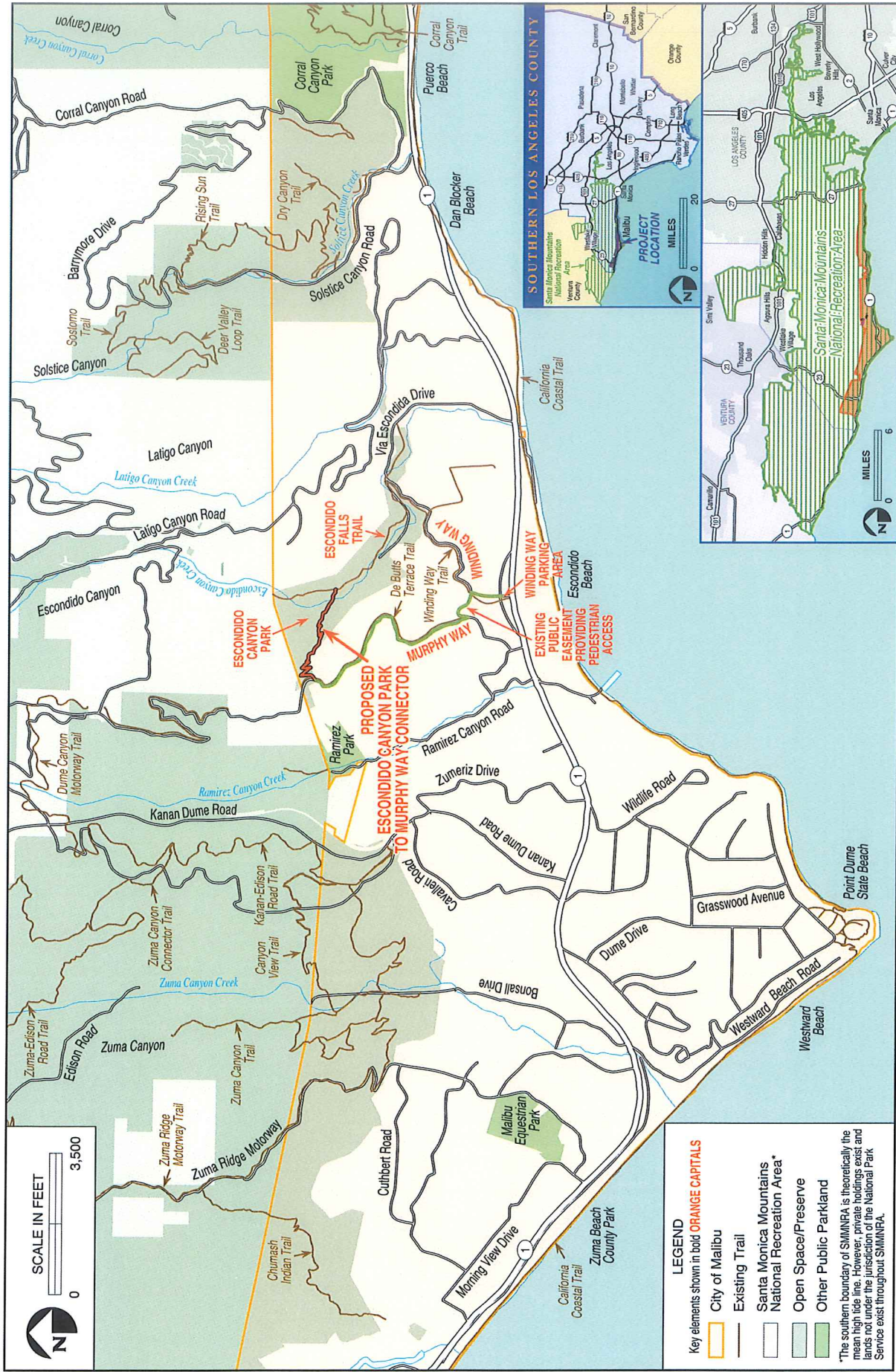
Associated Transportation Engineers

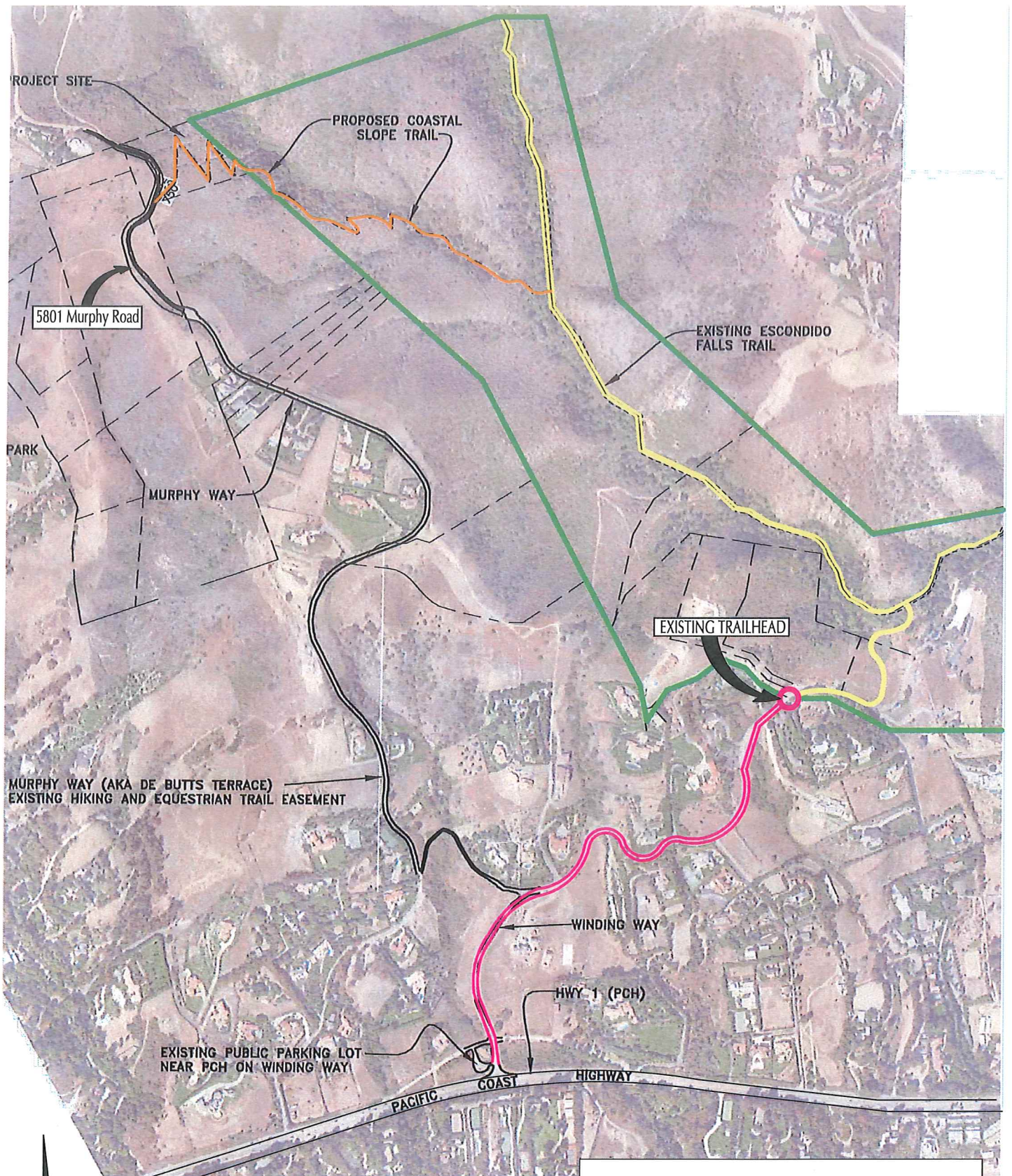
A handwritten signature in black ink, appearing to read 'SAS', followed by a stylized flourish.

Scott A. Schell, AICP, PTP
Principal Transportation Planner

SAS/DLD/EKM

Attachments



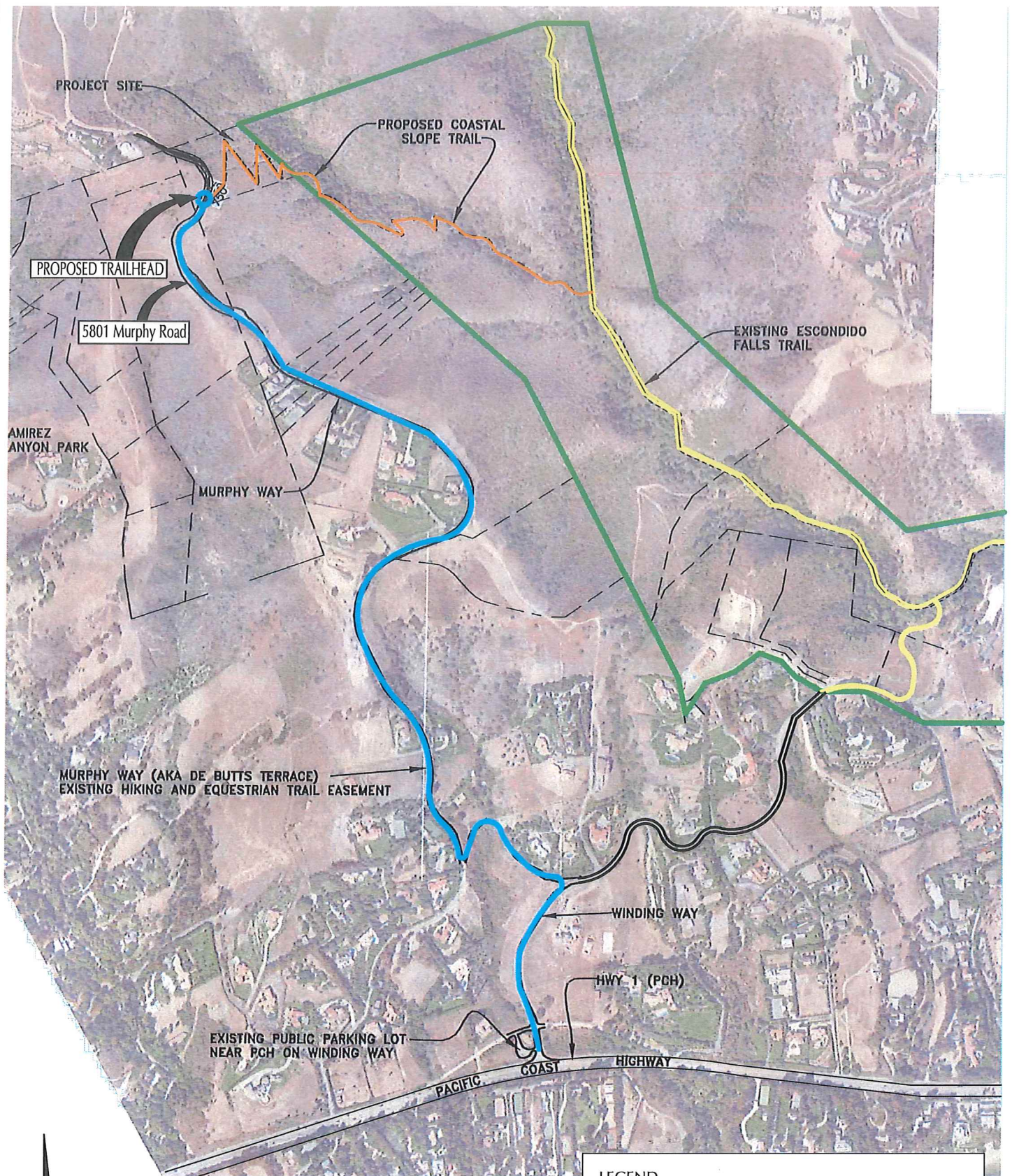


LEGEND

— Existing Trailhead Access Route

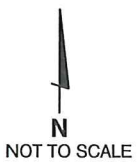
EXISTING TRAILHEAD ACCESS ROUTE





LEGEND

—— - Proposed Trailhead Access Route

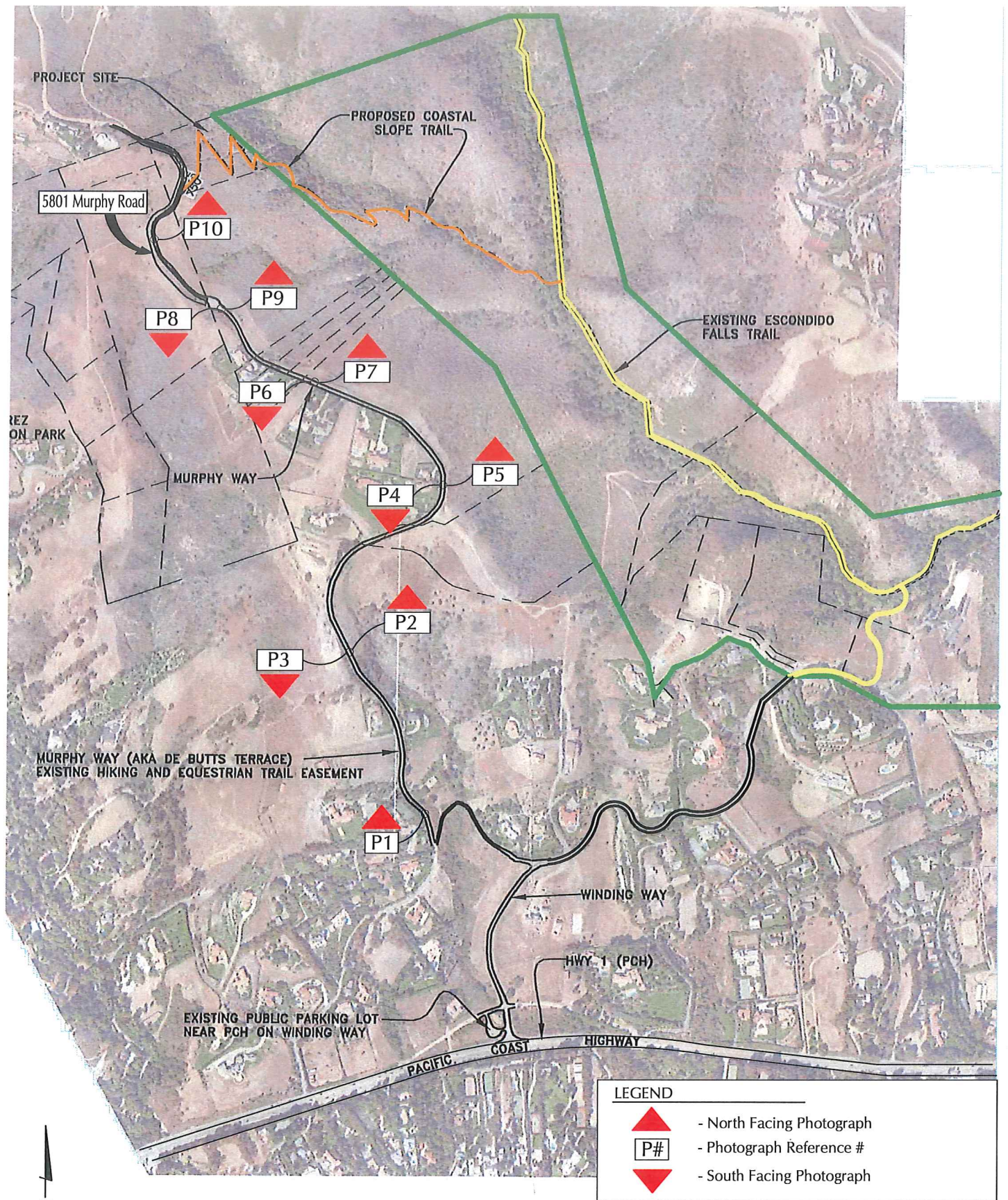


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PROPOSED TRAILHEAD ACCESS ROUTE

FIGURE 3

EKM - ATE#18022



TRAIL PARKING AND ACCESS FROM PACIFIC COAST HIGHWAY TO MURPHY WAY AND TO ESCONDIDO CANYON

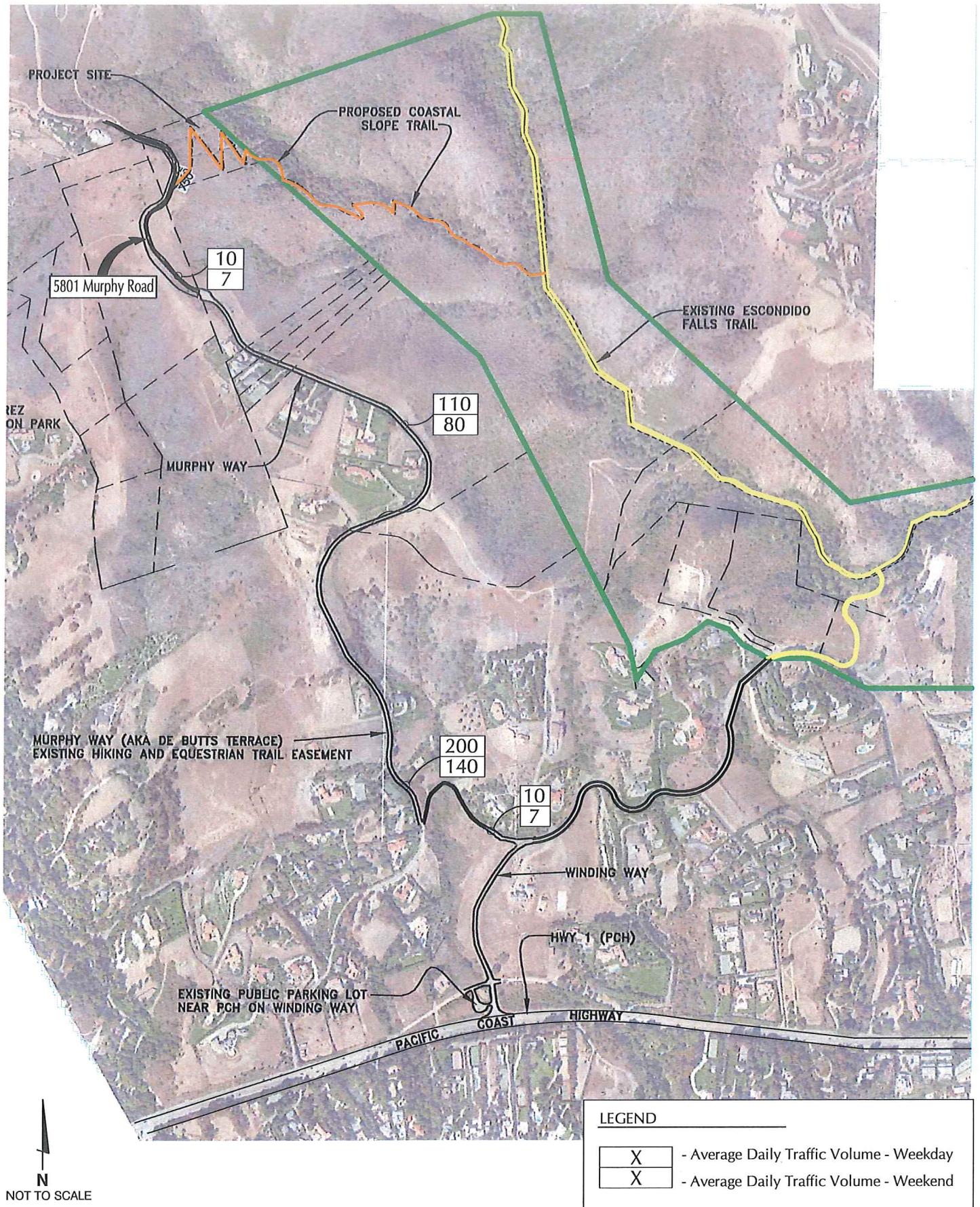


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PHOTO LOG - KEY MAP

FIGURE 4

EKM - ATE#18022



EXISTING AVERAGE DAILY TRAFFIC VOLUMES



W11-2*



W16-1P*



RS-068*

*California Manual on Uniform Traffic Control Devices Sign Chart, California Department of Transportation, 2014.

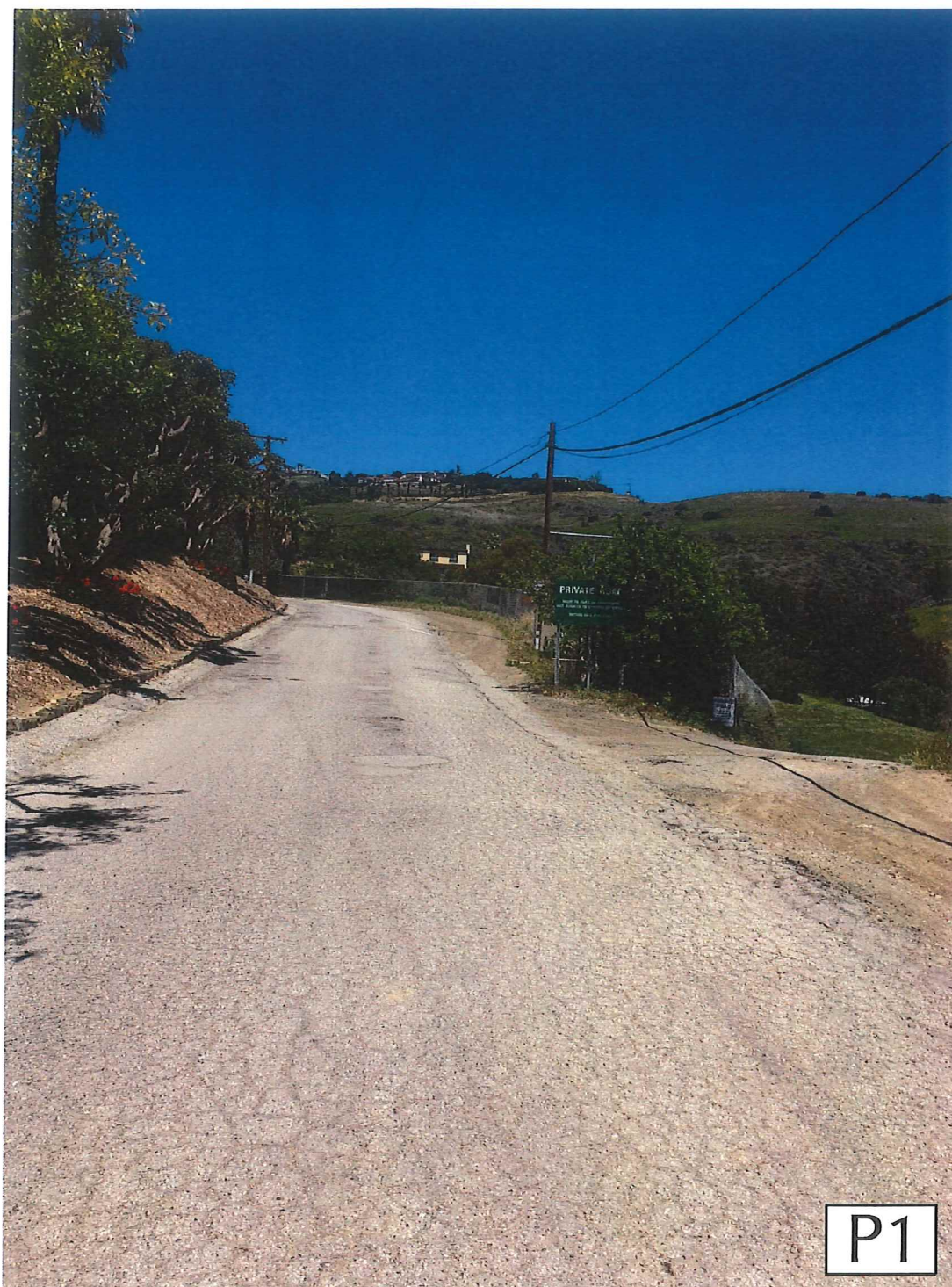


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RECOMMENDED SIGNAGE

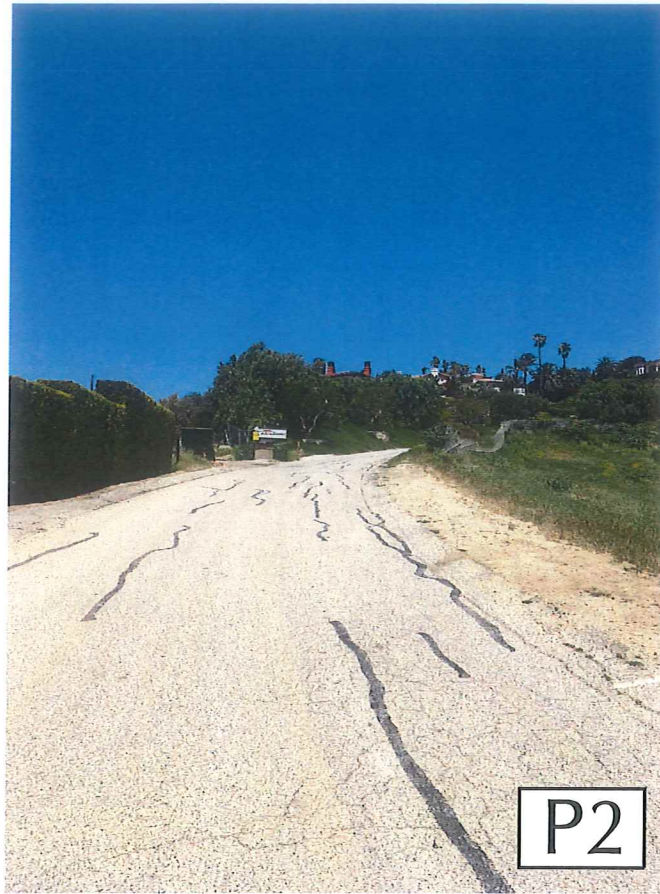
FIGURE 6

EKM - ATE#18022



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PHOTO #1



P2



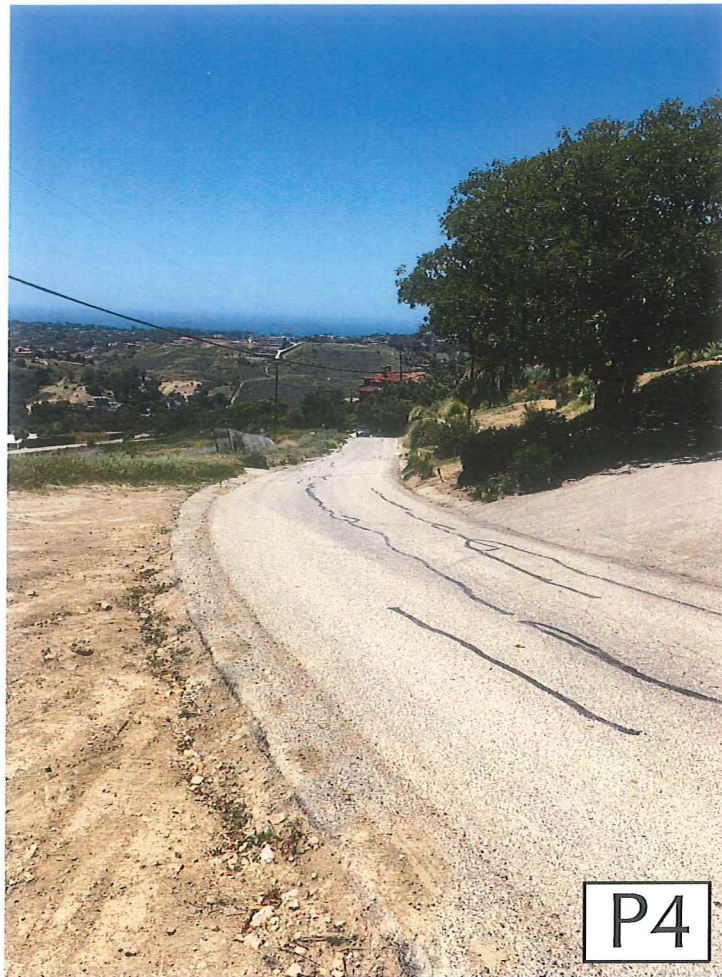
P3



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PHOTO #2 & #3

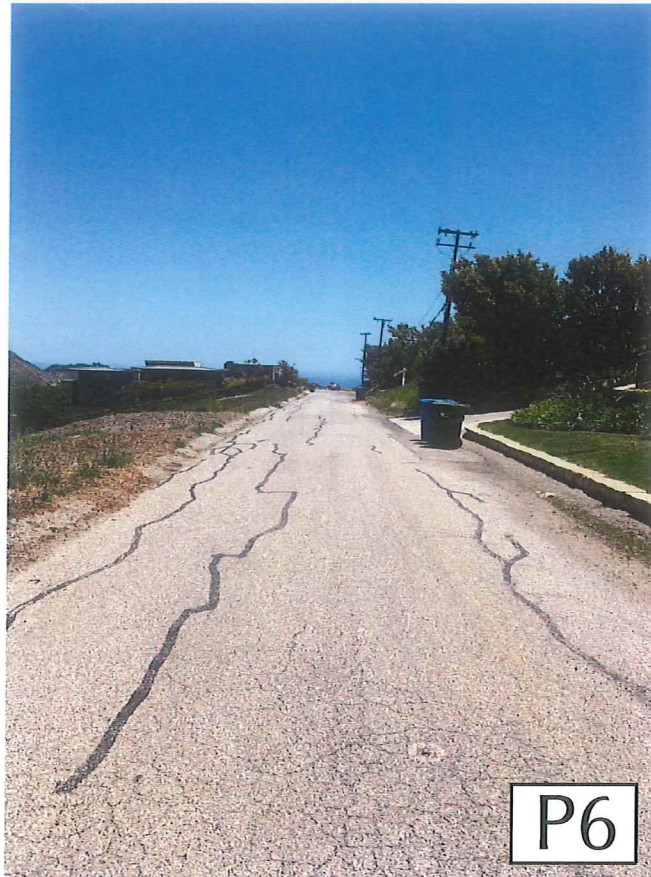
EKM - ATE#18022



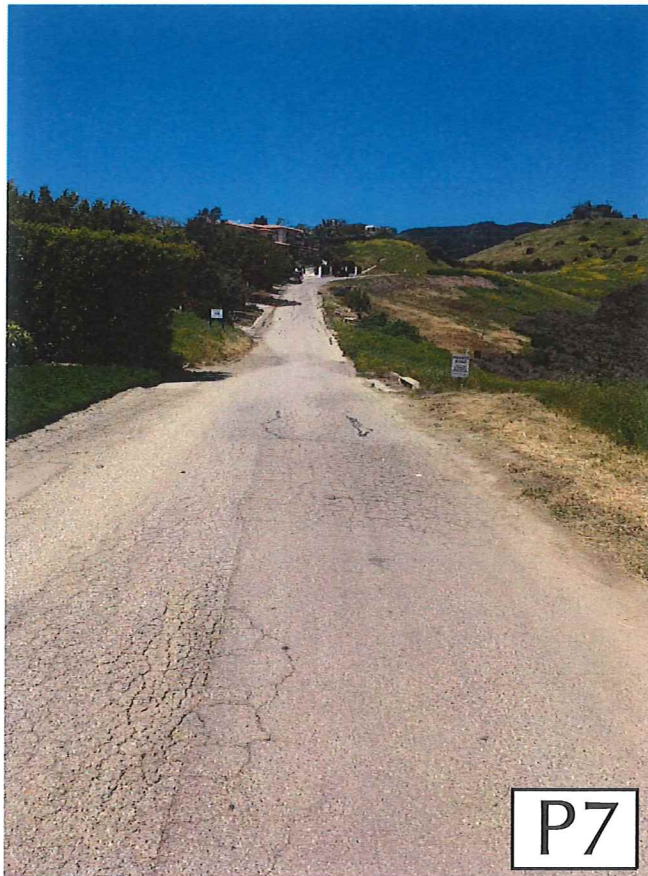
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PHOTO #4 & #5

EKM - ATE#18022



P6



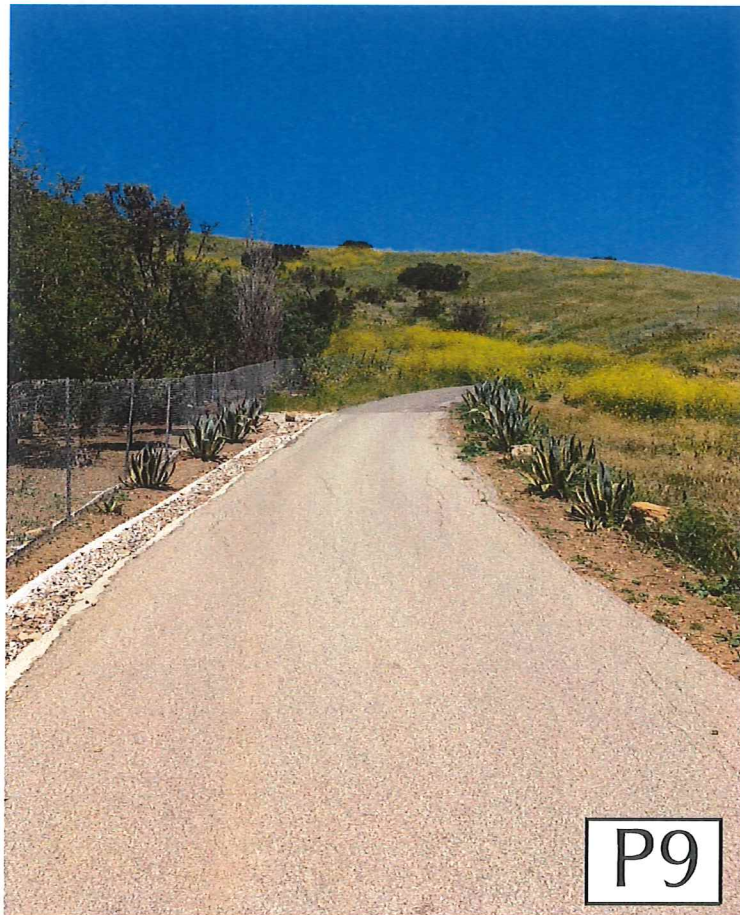
P7



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PHOTO #6 & #7

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PHOTO #8 & #9

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PHOTO #10

EKM - ATE#18022

Malibu Parking Study




Project # 11-5366-001



Location: Pacific Coast Hwy & Winding Way


City: Malibu

Day: 9/22/11

Date: Thursday

TIME	Old Rd w/o Winding Way		Old Rd e/o Winding Way		Winding Way n/o Old Rd		Winding Way s/o Old Rd		TOTAL
	Reg.		Reg.		Reg.		Reg.		
12:00 PM	1		0		0		0		1
12:30 PM	0		0		0		0		0
1:00 PM	0		0		0		0		0
1:30 PM	1		0		0		0		1
2:00 PM	0		0		0		0		0
2:30 PM	0		1		0		0		1
3:00 PM	0		0		0		0		0
3:30 PM	0		0		0		0		0
4:00 PM	0		0		0		0		0
4:30 PM	0		0		0		0		0
5:00 PM	0		0		0		0		0





TIME	PCH w/o Winding Way		PCH e/o Winding Way		TOTAL
	Reg.		Reg.		
12:00 PM	0		0		0
12:30 PM	0		0		0
1:00 PM	0		0		0
1:30 PM	0		0		0
2:00 PM	0		0		0
2:30 PM	0		0		0
3:00 PM	0		0		0
3:30 PM	0		0		0
4:00 PM	0		0		0
4:30 PM	0		0		0
5:00 PM	0		0		0



Parking Lot		TOTAL
Reg.		
9		9
9		9
9		9
8		8
9		9
7		7
6		6
4		4
5		5
5		5
4		4


Malibu Parking Study

Project # 11-5366-001
 Location: Pacific Coast Hwy & Winding Way
 City: Malibu

Day: 9/24/11
 Date: Saturday

TIME	Old Rd w/o Winding Way		Old Rd e/o Winding Way		Winding Way n/o Old Rd		Winding Way s/o Old Rd		TOTAL
	Reg.		Reg.		Reg.		Reg.		
11:00 AM	0		0		0		0		0
11:30 AM	0		0		0		0		0
12:00 PM	0		0		0		0		0
12:30 PM	0		0		0		2		2
1:00 PM	0		0		0		2		2
1:30 PM	0		0		0		2		2
2:00 PM	0		0		0		2		2
2:30 PM	0		0		0		1		1
3:00 PM	0		0		0		2		2

TIME	PCH w/o Winding Way		PCH e/o Winding Way		TOTAL
	Reg.		Reg.		
11:00 AM	11		0		11
11:30 AM	11		0		11
12:00 PM	11		2		13
12:30 PM	10		0		10
1:00 PM	11		0		11
1:30 PM	11		0		11
2:00 PM	11		0		11
2:30 PM	10		0		10
3:00 PM	11		0		11

Parking Lot		TOTAL
Reg.		
18		18
18		18
18		18
17		17
19		19
17		17
18		18
17		17
17		17

Malibu Parking Study

Project # 11-5366-001



Location: Pacific Coast Hwy & Winding Way


City: Malibu

Day: 9/25/11

Date: Sunday

TIME	Old Rd w/o Winding Way		Old Rd e/o Winding Way		Winding Way n/o Old Rd		Winding Way s/o Old Rd		TOTAL
	Reg.		Reg.		Reg.		Reg.		
11:00 AM	1		0		0		0		1
11:30 AM	3		0		0		0		3
12:00 PM	3		0		0		0		3
12:30 PM	3		0		0		0		3
1:00 PM	4		0		0		1		5
1:30 PM	4		0		0		2		6
2:00 PM	4		0		0		2		6
2:30 PM	2		0		0		2		4
3:00 PM	0		0		0		2		2

TIME	PCH w/o Winding Way		PCH e/o Winding Way		TOTAL
	Reg.		Reg.		
11:00 AM	5		0		5
11:30 AM	7		0		7
12:00 PM	9		0		9
12:30 PM	10		0		10
1:00 PM	11		0		11
1:30 PM	9		0		9
2:00 PM	9		0		9
2:30 PM	9		0		9
3:00 PM	9		0		9

Parking Lot		TOTAL
Reg.		
16		16
16		16
18		18
18		18
18		18
16		16
17		17
14		14
15		15