## Technical Memorandum

June 29, 2022

| To | Mr. Dan Dawson - County of Marin |  |
| :--- | :--- | :--- |
| From | Frank Penry, PE, PTOE |  |
| CC | Ms. Carey Lando - County of Marin | Project |
| Subject | Bolinas On-Street Parking Inventory | Project no. |

## 1. Introduction

This technical memorandum prepared by GHD presents the findings of the On-Street Parking Space Inventory study for select streets in Bolinas as requested by Marin County. The study identified existing available parking curb lengths and restrictions for each street, in order to determine the number and type of street parking spaces available.

The study evaluated street parking on the following three streets within the downtown vicinity:

- Wharf Road (extends between Brighton Avenue and end-of-road at Bolinas Beach)
- Brighton Avenue (extends between Wharf Road and end-of-road at Cliff Avenue/Bolinas Beach)
- Park Avenue (extends between northern and southern connections with Brighton Avenue)

A map/aerial showing the location of each street is attached for reference as shown in Figure 1.1.

## 2. Study Background and Purpose

The purpose of the study is to identify and map the existing curb (or edge of pavement) distances along the study streets in order to determine the number of available parking spaces, accounting for factors such as driveways, side roads, physical objects (i.e., fire hydrants), prohibited parking areas (i.e., red zones), time limits (i.e., green curbs,), and any posted parking restrictions. Based on the inventory, the amount of street frontage available for parking (along with any associated parking restrictions) has been identified in order to determine the potential number of on-street parking spaces available. The findings are provided in an ArcGIS database which identifies the curb front characteristics and parking related information for each street segment.

Figure 1.1 Study Area Map - Project Vicinity


## 3. Study Parameters and Methodologies

### 3.1 Roadways

A brief description of each roadway is provided as follows:
Wharf Road forms a semi-circle approximately 0.32 mile in length, extending northeast from Brighton Avenue through the commercial district of Bolinas, then curves east, then curves south until terminating at Bolinas Beach. Beginning from Brighton Avenue, vehicle parking is allowed on both sides of Wharf Road for about half the street length, then parking is only allowed on the inland side (southbound direction) for the remaining half of the street to the terminus at Bolinas Beach. (The northbound section is posted "No Stopping, Fire Lane".) At the southern terminus, parking is prohibited on both sides of Wharf Road in order to provide a turn-around area for vehicles.

Brighton Avenue is oriented in a primarily north-south direction extending south from Wharf Road for approximately 0.32 mile, where it terminates near the intersection of Cliff Avenue and Bolinas Beach. Adjacent land uses along Brighton Avenue consist mainly of residential homes, but on the west side there are some commercial properties (U.S. post office, retail building, church) located approximately $1 / 10^{\text {th }}$ mile south of Wharf Road, and Bolinas Park is located approximately $2 / 10^{\text {th's }}$ mile south of Wharf Road at the southern intersection of Park Avenue. Almost all parking along Brighton Avenue consists of parallel spaces, but there are 16 striped diagonal spaces, and one striped Accessible parallel space, fronting Bolinas Park. At the southern terminus near the beach, parking is prohibited on both sides of Brighton Avenue to provide a turn-around area for vehicles.
Park Avenue is a semi-circular road approximately 0.18 mile in length that extends southwest from Brighton Avenue then curves southeast and reconnects with Brighton Avenue further south. Park Avenue is a two-way street north of the Terrace Avenue intersection (located at the approximate midpoint of Park Avenue) but is one-way northbound from the south Brighton Avenue intersection to Terrace Avenue. Bolinas Park is located along the east side and residential homes are located along the west side. Parking is prohibited along most of Park Avenue. Street parking is prohibited on the entire west side. Parking is allowed on the east side near the northern Brighton Avenue intersection, and shoulder parking is allowed in front of Bolinas Park near the southern Brighton Avenue intersection.

### 3.2 Data Collection

The data collection and analysis consisted of initially identifying the curb-frontage characteristics for each street segment (curb lengths, driveways, physical objects, parking restrictions, time limits, etc.) using online visual analysis (Google Earth Pro). A GIS map and database using ArcGIS software was then created to input the parking information. A comprehensive field visit was then conducted to verify the physical street characteristics and formalize the distance measurements using sub-meter GPS location equipment. (The field surveys were conducted on Tuesday, April 19, 2022.) Finally, the GIS mapping software was recalibrated based on the field survey data, from which the available parking distances were identified and the parking supply was calculated.

The GIS database provides a detailed inventory of the available parking lengths for each segment between prohibited parking locations (such as driveways, fire hydrants, etc.), as well as any parking restrictions and time limits.

### 3.3 Analysis

For guidance on the stall length which was applied to this study, several sources were reviewed. The Marin County Municipal Code, Section 24.04.380 [Dimensional Standards], provides the following minimum size for private developments/off-street parking for parallel parking spaces: "Parallel spaces shall be a minimum eight feet by twenty feet." And "A parallel space may be reduced to eighteen feet in length when it abuts an area where no parking space exists such as a driveway or fire hydrant." These are minimum lengths and it is recognized that factors specific to the study area should also be considered in order to account for realworld conditions when calculating the parking space supply. In recognition of this, the County also utilizes different lengths, such as 22 feet per stall ( 20 feet for end spaces)

One of the particular factors related to parking in this area of Bolinas is the proximity and access to the beach and nearby wilderness areas, which attracts outdoor-oriented vehicles such as recreational vehicles (campers, vans, trailers, etc.), as well as vehicles with attached bike racks or other external carriers. These types of vehicles are longer than regular automobiles and may occupy greater distance than a 20-22 foot stall length. For further reference, the State of California Transportation Department (Caltrans) policies regarding stall length were reviewed. Caltrans recommends 24 -feet stall lengths be applied. In the Manual on Uniform Traffic Control Devices (Section 3B.19), the following guidance is provided: "The desirable dimensions of parking meter stalls are 8 feet by 24 feet with a minimum length of 20 feet". Using 22 feet as the standard base length, adding a one-foot buffer on both ends equates to 24 feet, which conservatively provides extra space for longer vehicles and also matches Caltrans desired length. Therefore, based on the prevalence of larger vehicles and the recommendations toward longer stall length, the parking supply for each street was calculated using 24 feet stall lengths ( 22 feet for end spaces), while also allowing for consideration of small variations to best accommodate parking.

To remain conservative, locations where a pedestrian path or staircase connects directly from a property to the roadway edge (where there is no sidewalk), the path or staircase width was considered to be prohibited parking and was excluded from the available curb length distances.

Camping vehicles and similarly large vehicles or trucks are capable of parking for extended periods of time including camping overnight. To prevent overnight parking of these types of vehicles, all three study streets have signs prohibiting overnight parking of large vehicles ("No Parking 11 PM to 5 AM, Except Autos, Pickups, \& Motorcycles"). [Note: The field surveys identified one section of Wharf Road (the northbound curb frontage near the Bolinas Rod \& Boat Club) where the overnight parking regulation signs are not present, therefore overnight parking is currently unrestricted in that section.]

It is noted that while most spaces on Wharf Road are parallel spaces, there are three sections where vehicles park diagonally or perpendicularly (unmarked spaces). One section is located in front of the Bolinas Super Market, which accommodates approximately 5 diagonal spaces (green curb - 20 minute time limit). Another section is located immediately to the east, fronting the Coast Café, which also accommodates approximately 5 spaces. The last section is located on the north side of Wharf Road across from the supermarket, accommodating approximately 6 perpendicular spaces. These parking alignments ( 16 spaces) were used in calculating the supply of spaces on Wharf Road. (If calculated as parallel spaces, the three curb frontages equate to 2 parallel spaces ( 57 feet) fronting Bolinas Super Market, 3 parallel spaces ( 68 feet) fronting Coast Café, and 2 parallel spaces ( 50 feet) on the north side across from the supermarket. Therefore, the supply on Wharf Road would be 69 spaces, or 9 spaces fewer than the total calculated in the next section.)

Finally, the property at \#68 Wharf Road (College of Marin - Marine Biology Laboratory) is currently being redeveloped and, as a result, the future curb frontage available for parking spaces is unknown at this time. Therefore, any future parking spaces along this property frontage would be in addition to parking totals provided for this study

## 4. Summary of Findings

Based on the survey of curb-fronts for each street, which identified available parking sections and nonparking sections (driveways, fire hydrants, red curbs, posted parking prohibitions, etc.), the number of existing parking spaces was calculated. The GIS database provides the detailed parking-related information for each street. A summary of the overall parking supply is provided in Table 4.1 below.

Wharf Road has 78 spaces. (The supply lowers to 69 spaces if the current angled parking sections are considered parallel spaces.) Brighton Avenue has 91 spaces. And Park Avenue has 12 spaces. The three study streets combined have 181 total existing street parking spaces.

Table 4.1: Existing Parking Supply for the Evaluated Streets in Bolinas

| Wharf Road | Type |  |
| :---: | :--- | :--- |
| \# Spaces | Notes |  |
| 50 | Unmarked Parallel | "No Parking 11pm-5am, except Autos, Pickups \& Motorcycles" |
| 3 | Unmarked Parallel | Currently no overnight restrictions. (Near Bolinas Rod \& Boat Club) |
| 6 | Marked Parallel | "No Parking 11pm-5am, except Autos, Pickups \& Motorcycles" |
| 2 | Unmarked Parallel | 20 Minute Time Limit Green Curb. (Near \#6 Wharf Road Building) |
| 5 | Unmarked Diagonal | 20 Minute Time Limit Green Curb. (Fronting Bolinas Super Market) |
| 5 | Unmarked Perpendicular | (Fronting Coast Café) <br> "No Parking 11pm-5am, except Autos, Pickups, \& Motorcycles" |
| 6 | Unmarked Perpendicular | (Across the street from Bolinas Super Market) <br> "No Parking 11pm-5am, except Autos, Pickups \& Motorcycles" |
| 1 | Accessible Parallel |  |
| $\mathbf{7 8}$ | Total |  |


| Brighton Avenue |  |  |
| :---: | :--- | :--- |
| \# Spaces | Type |  |
| 72 | Unmarked Parallel | "No Parking 11pm-5am, except Autos, Pickups \& Motorcycles" |
| 2 | Unmarked Parallel | 20 Minute Time Limit Green Curb. (Fronting Post Office) |
| 16 | Marked Diagonal | "No Overnight Parking" (all vehicles) (Bolinas Park spaces) |
| 1 | Accessible Parallel |  |
| $\mathbf{9 1}$ | Total |  |


| Park Avenue |  |  |
| :---: | :--- | :--- |
| \# Spaces | Type | Notes |
| 6 | Unmarked Parallel | "No Parking 11pm-5am, except Autos, Pickups \& Motorcycles" |
| 6 | Unmarked Parallel | "No Overnight Parking" (all vehicles) (Bolinas Park spaces) |
| $\mathbf{1 2}$ | Total |  |

## 5. Additional Attachments

1. Title: Curb Segment Attribute Table

Filename: GHD_ParkingStudy_20220629 Table - Revision A.xlsx
Summary: This is the attribute data for each curb segment for use outside of a GIS environment. Included is each curb segment type, length, and any parking restrictions associated with the segment. The ObjectIDs are labeled in the .pdf map figures that will be included with this memo, noted below.
2. Title: Curb Segment Map Figures

Filenames:
CurbSegments_01_BrightonParkAve_Flat.pdf
CurbSegments_01_BrightonParkAve_Color.pdf
CurbSegments_02_WharfRd_Flat.pdf
CurbSegments_02_WharfRd_Color.pdf
Summary: These pdf figures can be used to locate each curb segment listed in the Curb
Segment Attribute Table. Each segment is labeled by the ObjectID to its corresponding segment in the attribute table. The _Flat files show the curb segments as a single color, with parcel boundaries and attributes displayed. The _Color files show the curb segments symbolized by the curb type.
3. Title: Curb Segments Shapefile

Filename: GHD_ParkingStudy_20220630.zip
Summary: This compressed shapefile is the updated GIS data from which the study was conducted. It was made using a combination of available aerial imagery and submeter GPS ground-truthing.

The project is "NAD 1983 HARN StatePlane California III FIPS 0403 (US Feet)".





County of Marin
Bolinas On-Street
Parking Study
Project No. 12559470 Revision No.

Date May, 2022 Grid: NAD 1983 HARN StatePlane California III FIPS 0403 Feet

Brighton and Park Ave
Curb Segment IDs
FIGURE 1



Project No. 12559470 Revision No.

Date May, 2022
Brighton and Park Ave
Curb Segment IDs
FIGURE 1


Project No. 12559470

Wharf Road Curb Segment IDs

FIGURE 2

