

## FIRE RESPONSE TECHNICAL MEMORANDUM

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**To:** Johanna Crooker – Meritage Homes  
**From:** Dudek Fire Protection Planning Team, Noah Stamm, Fire Protection Planner and Michael Huff, Principal  
**Subject:** Fire and Emergency Response Modeling – Pacifica Project, City of Oceanside, California  
**Date:** March 15, 2023  
**cc:** N/A  
**Attachment(s):** Figure 1 – Project Location Map  
Figures 2 and 3 - Response Travel Time Exhibits – Oceanside Fire Stations 5 and 6  
Figures 4 and 5 – Coverage Service Area Exhibit – Oceanside Fire Stations 5 and 6

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This memorandum documents preliminary fire response analysis regarding the Pacifica Project, based on the two closest existing Oceanside Fire Department (OFD) fire stations. This analysis considers response time and call volume as primary factors for determining appropriate timing for on-site fire service. Geographic information system (GIS) based road network analysis was used to conservatively simulate emergency response times from the two closest existing OFD fire stations to the Project's townhomes. This analysis also considers the current per capita call volume for OFD's service area and utilizes this per capita call generation factor to determine the Project's anticipated call volume at build out and whether there would be a significant impact on OFD's response resources.

The results of this analysis inform a recommended proposal for fire service to the Pacifica Project. This analysis provides an analysis of the conducted fire department response modeling and map preparation depicting response distances and times as well as response coverage areas for the two closest existing OFD station locations. This proposal for the two closest OFD fire station's availability is based on a variety of factors including: 1) modeled response travel times, 2) current fire station call volumes, 3) projected Pacifica Project call volumes, and 4) maintenance of existing service to residents.

### 1 Proposed Pacifica Project

The proposed site consists of the former Pacifica Elementary School located at 4991 Macario Drive (APNs 122-190-19, -22 & 157-070-42) and encompasses 14.55 acres (Figure 1, Project Location Map). The project site has been previously impacted by the former Pacifica Elementary School. The school was built in 1972, and closed in 2002 after the buildings were found to be unsafe to withstand an earthquake. The school was then demolished in 2004. There is a large asphalt pad remaining, which was the former playground area. Disturbed habitat makes up the majority of the site including the slopes around the perimeter, as well as the western portion of the site.

The proposed project consists of development of 164 three-story attached townhomes. Of the 14.55-acre site, 10.16 acres would be developed and would have a density of 11.3 dwelling units per acre. The approximately 4 acres that would not be developed consist of 20 to 30-foot-tall slopes along the southeastern and western portions of the project site. Townhomes would range in size from approximately 1,200 square feet to 1,800 square feet with two, three, or four bedrooms and an attached two-car garage (see building summary below in Table 1). Each townhome would include private open space in the form of a patio and/or deck. Common recreational spaces, consisting of approximately 53,700 square feet, would be designed with amenities such as tot lots, an off-leash dog park, pickle ball courts, bocce ball areas, barbecue areas, and a space for a variety of outdoor games.

**Table 1. Proposed Building Summary**

Plan Types	Square Footage	Number of Units	Percentage of Total Units	Floor Plan Type	Private Open Space	Garage Spaces <sup>1</sup>
1	1,210 square feet	16	9%	2 bed/2.5 bath	83 square feet	2
2	1,497 square feet	75	46%	3 bed/2.5 bath	107 square feet	2
3	1,791 square feet	73	45%	3 bed/1 flex room/ 2.5 bath	110 square feet	2
<b>Totals</b>		<b>164</b>	<b>100%</b>	-	-	-

<sup>1</sup> An additional 56 spaces (uncovered) would be provided for guest parking.

The proposed residential development would be set back 15 feet from Monica Circle, approximately 74 feet from the northern and southern boundary, and approximately 65 feet from the eastern boundary. The western boundary is bordered by open space and a habitat setback and stormwater basin would buffer the development from the adjacent open space area. This buffer area would be a minimum of 100 feet.

Primary access to the site would utilize the existing driveway at the corner of Monica Circle and Macario Drive. This main entrance would be enhanced with decorative paving, landscaping, and signage. A secondary emergency vehicle access only driveway would be provided via an extension of Malaga Drive on the eastern boundary of the project site.

The approvals required for the project include a General Plan land use amendment and a change in zoning. The project proposes a General Plan land use of MDB-R – Medium Density Residential - B (10-15 du/ac), and a zone of PD – Planned Development. The proposed Planned Development District would provide zoning, use regulations, and development standards for future development of the site. A Planned Development Plan (The Pacifica Planned Development Plan) has been prepared in accordance with the City of Oceanside Zoning Ordinance – Article 17, and is included within the project’s EIR as Appendix B. The Planned Development Plan provides direction for the assignment of land uses, development intensities, development regulation, as well as, design guidelines that will provide a framework for the specific development of the site

As mentioned above, primary access to the site would utilize the existing driveway at the corner of Monica Circle and Macario Drive. A secondary emergency vehicle access only driveway would be provided via an extension of Malaga Drive on the eastern boundary of the project site. The proposed residential buildings would be connected by a private loop road within the project site with two internal drive aisles that connect the northern and southern portions of the loop road. Circulation and emergency access drives have been designed in consultation with Oceanside Fire staff to provide 28-foot minimum widths with designated truck turnarounds and key staging areas throughout the project site. And the project would provide a total of 328 garage parking spaces for each residence (two spaces for each

residence). The project would also provide an additional 56 guest parking spaces; guest parking is provided at the community entry point.

## 2 Existing Stations and Response Times

The Proposed Project site is located within the City of Oceanside's responsibility area and the OFD jurisdictional response area. The following section analyzes the Project in terms of current OFD Fire Service capabilities and resources to provide Fire Protection and Emergency Services to the Oceanside communities. The analysis that follows examines the ability of the two closest existing OFD fire stations, to adequately serve the Proposed Pacifica Project. Response times were evaluated using Project build-out conditions. It was assumed that phased construction would include access roads to the newly constructed structures and that the shortest access route to those structures would be utilized.

The Oceanside Fire Department houses eight firehouses and provide emergency services to every neighborhood throughout the 41 square miles of the City of Oceanside. The OFD serves over 180,000 residents and visitors 24 hours per day, 365 days per year with 115 full-time fire personnel, 34 full- and part-time emergency medical technicians (EMTs), seven full-time lifeguard personnel, 76 part-time lifeguard personnel, and an additional eight staff members providing support. Initial emergency response for the Project would be provided by OFD Fire Station 5, with OFD Fire Station 6 within 2.5 miles of the Project site and would be available to provide secondary response to the Project site, as necessary.

OFD Fire Station 5, located at 4841 N. River Road, Oceanside, California, is the closest responding OFD station to the Project site and would provide initial response. OFD Fire Station 5 is staffed 24/7 by a one Fire Captain, one Engineer, and three Firefighter Paramedics. Station 5's apparatus includes one Type 1 Medic Engine and one Medic Ambulance. Station 5 is approximately 0.5 miles from the secondary access entrance off Roja Drive to the Project site off Macario Drive and approximately 0.7 miles to the most remote portion of the Project site with a calculated travel time of approximately 1 minute and 52 seconds throughout the entire development<sup>1</sup>, which would fully conform to OFD's five-minute response time goal to 100% of the Project.

The next closest OFD Fire Station is Station 6, located at 895 N. Santa Fe Ave., Oceanside, California. Oceanside Fire Station 6 is staffed by one Fire Captain, one Engineer, and three Firefighter Paramedics. Station 6's apparatus includes one Type 1 Medic Engine and one Medic Ambulance. Station 6 is approximately 2.5 miles from the secondary access entrance off Roja Drive to the Project and approximately 2.7 miles to the most remote portion of the Project site with a calculated travel time of approximately 5 minutes and 25 seconds throughout the entire development. The OFD indicates "the minimum response standard for 911 medical emergencies in the City of Oceanside is to arrive within five minutes, 90% of the time." Further, the Oceanside General Plan (Public Safety Element) indicates a goal of maintaining an Insurance Services Office (ISO) rating of Class 5 City wide. This equates to having no structures over five road miles from the nearest fire station.

Travel time modeling from the two closest OFD fire stations was conducted utilizing an industry standard Network Analyst model. The results indicate that the entire Project site can be responded to within approximately 1 minute and 52 seconds response travel time from OFD Fire Station 5 and within approximately 5 minutes and 25 seconds

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<sup>1</sup> Calculated using the nationally recognized RAND Corporation formula used by the Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard:  $(T=0.65 + 1.7D)$ , where T=time and D=distance).

travel by the next closest OFD Fire Station 6. 100% of the Project can be responded to within OFD's five-minute response time goal from Station 5 and approximately 72% of the Project can be responded to within OFD's five-minute response time goal from Station 6. Per Figures 2 and 3, the following response travel times are achieved:

- OFD Fire Station 5: 100% of the townhomes can be responded to within 2 minutes travel and up to 4 minutes 30 seconds total response time.
- OFD Fire Station 6: Approximately 72% of the townhomes can be responded to within 5 minutes travel and up to 7 minutes 30 seconds total response time and 100% of the townhomes can be responded to within 5 minutes and 30 seconds or up to 8 minutes total response time.

It should be noted that the service area analysis (different than the ISO analysis) tends to be more generalized and shows better coverage than the ISO approach; the entire Project site can be responded to under 5 minutes travel time from both OFD Fire Stations 5 and 6 (see Figures 4 and 5).

Response time is evaluated to determine if a community's residents will receive response within a reasonable time frame. Most fire agencies establish response time goals based on national guidelines or locally generated timelines that are suitable for the response area given area-specific characteristics. For example, the National Fire Protection Association (NFPA 1710) provides guidelines for response times that are best suited for urban areas where they prefer a fire station within 1.5 miles and a response time of 7 minutes 90% of the time. The example response time would include approximately 4 minutes travel time and 3 minutes for dispatch and turnout, which occur prior to "wheels rolling". This would not be an appropriate response goal for a developing suburban or rural setting where the population is spread over larger areas and the tax base for funding fire stations is not sufficient to include fire stations at higher densities. These areas are, therefore, commonly provided longer acceptable response times. For example, in San Diego County, urban and denser suburban areas are provided a 5-minute travel time which with dispatch and turnout, would equate to up to 7 to 8 minutes. For less dense suburban areas, 10 minutes travel time is provided. For rural areas, 20 minutes or more travel time is considered adequate. OFD has established internal goals for emergency response to all priority Level One or Emergency type calls within 5 minutes (3 minutes travel), 90% of the time. This is a more stringent response than suggested by the National Fire Protection Association (NFPA) which publishes a national guideline stated above. This analysis indicates that the first arriving engine from Station 5 can respond within OFD's five-minute response goal to 100% of the Project site and 4 minutes 30 seconds total response time, well within OFD's standards.

### 3 Call Volume

Additional analysis was conducted to determine when the Project would generate up to one call per day. This threshold is a commonly used metric for determining when a fire station should be constructed to serve a new community that will, at build out, generate more than one call per day and exceeds fire authority response time standards.

Dudek evaluated the latest available call volume information for the OFD. To represent the socioeconomic conditions in the City of Oceanside that may impact call volumes, the number of calls for OFD Fire Stations 5 and 6 were combined and compared against the City's population. Emergency call volumes related to typical projects, such as new residential developments, can be reliably estimated based on the historical per-capita call volume from a particular fire jurisdiction. The OFD documented 24,173 total incidents for 2022 generated by a City-wide,

service area total population of approximately 180,000 persons throughout the 41 square miles of the City of Oceanside (Oceanside Fire Department – About Us, 2023)<sup>2</sup>. Based on the City’s total population of approximately 180,000 people and a total of 24,173 incidents, the City’s per capita annual call volume is approximately 134 calls per 1,000 persons. The resulting per capita call volume is 0.134. Using the OFD’s estimated call volume, the Project’s estimated population is calculated to generate up to 63 calls per year (approximately 1.2 calls per week). The population includes approximately 469 residents for the proposed up to 164 three-story townhomes (including 2.86 persons per unit x 164 DU=469 persons) (U.S. Census Bureau, 2021). The Project’s estimated 469 population would generate roughly 63 calls per year, most of which are expected to be medical-related calls; consistent with typical emergency call statistics (see Table 3). The estimated incident call volume at buildout from the Project is based on a conservative estimate of the maximum potential number of persons on site at any given time (considered a “worst case” scenario).

The OFD call volume analysis is provided in Tables 2 and 3.

**Table 2. Calculated OFD Calls/Capita**

	Calls 2022	Population 2022	Calls/1,000	Calls/capita
<b>Oceanside Fire Department (All Stations)</b>	24,173	180,000	Approx. 134	0.066 <sup>1</sup>

<sup>1</sup> Should the current call volume and/or population totals require update based on OFD review, the calls/capita may require updating and could adjust the Project’s call generation.

**Table 3. Pacifica Project Calculated Call Volumes**

	No. Units	Estimated Per Unit Population	Total Est. Residential Population	Anticipated Annual Calls at Build Out	Calls/Day
<b>Anticipated Calls</b>	164	2.86	469	Approximately 63	0.17

The results of Dudek’s OFD call volume analysis indicate that the current Oceanside population generates approximately 134 calls per 1,000 persons per year (Table 2). When applied to the Pacifica Project, at build out, the Project would potentially generate up to 63 additional calls per year (roughly 5 calls per month or 0.17 call per day (Table 3), with medical emergencies representing the most common call type. Service level requirements are not expected to be significantly impacted with the increase of approximately 5 call per month/0.17 calls per day for the local fire response system. For example, OFD’s Station 5’s Engine currently responds to roughly 6 to 7 call per day in its primary service area. For perspective, 5 calls per day is considered average for a suburban fire station and 10 calls per day would be considered a busy fire station. Adding 0.17 calls per day to an existing fire station that is running approximately 6 calls per day may be considered to impact the ability of that fire station to continue meeting its internal response goals. More extensive study would be required whether the 0.17 calls would be a significant

<sup>2</sup> <https://fire.ci.oceanside.ca.us/departments-overview/about-us>

impact on any of the responding fire stations if they were relied on to service the Project at build out to make that determination and is beyond the scope of this analysis.

The primary focus of this call volume analysis is determining the number of Project residences (i.e., population), based on the City's per capita call volume generation factor, that would generate one call per day. Per Table 3 and based on the City's estimated 2.86 persons per residence, the Project is calculated to generate less than one call per day when all 164 townhome units are occupied, and the community is at full capacity.

## 4 Recommendations/Conclusions

The Pacifica Project would introduce a new population to the OFD Fire Station 5's service area over the course of its build out; the Project is located within 1-mile of OFD career Fire Station 5 and within approximately 2.5 miles of OFD Fire Station 6. There are two primary factors when determining whether a project's population would impose an impact on the fire service capabilities of the fire authority having jurisdiction or have an impact on existing or future residents, 1) call volume and 2) response times. The analysis conducted herein concludes that the closest existing fire station (OFD Station 5) can provide adequate response times of less than 2 minutes, with a total response time to all 164 townhomes within the Project site under 5 minutes. Given the Project is within the City's General Plan goal of providing fire stations within five miles of all structures and all units can be responded to within 5 minutes total response time (including dispatch and turnout times), we believe it is appropriate to propose coverage from Station 5.

The Pacifica Project and its proposed 469 residents represents a slight increase in potential service demand of approximately 63 calls per year. Without additional resources, this total would add to an existing moderately busy service obligation for OFD Stations 5 and 6. The additional call volume from the Project is considered minimal and would not be anticipated to result in an impact on the OFD's response resources, particularly due to the funding through taxes and fees that would be generated by the Project for the OFD to enhance and improve its capabilities.

This proposal is prepared for consideration by the OFD. Where calculations require revisions due to more recent call volumes or other factors not readily available at the time of this analysis, Dudek will update this report based on comments and information provided.

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# Figure 1

## Project Location Map

## Figure 2

### Fire Response Modeling Results – OFD Station 5

## Figure 3

### Fire Response Modeling Results – OFD Station 6

## Figure 4

### Coverage Service Area Modeling Results – OFD Station 5

## Figure 5

### Coverage Service Area Modeling Results – OFD Station 6