

To the members of the:
CITY COUNCIL
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Council Memorandum

January 4, 2024

To: Honorable Mayor Blackburn and Members of the City Council
From: Jeff Murphy, Community Development Director
Via: Geoff Patnoe, Assistant City Manager 
Re: **2023 Parking Survey Results, Updates to the Parking Management Plan and Village & Barrio Master Plan, Parking In-Lieu Fee Program and Right of Way Use Permit Fee Program (District 1)**

This memorandum provides the results of the annual 2023 Parking Survey conducted in the Village, Barrio, and beach areas; the status of the update to the Village, Barrio, and Beach Area Parking Management Plan; and, the status of the update to the parking in-lieu fee and right of way use permit fee programs.

Background

In 2017, the city completed the Carlsbad Village, Barrio, and Beach Area Parking Management Plan (Parking Plan). Among other things, the Parking Plan includes a requirement to complete a parking survey on an annual basis to evaluate the current parking situation in the Village, Barrio, and beach areas. The results of the 2022 Parking Survey were provided to City Council via Council Memorandum on February 16, 2023 (Attachment A).

On July 11, 2023, the City Council authorized a professional service agreement with Chen Ryan Associates, Inc. to prepare a parking survey for 2023, as well as an update to the Parking Plan, Village & Barrio Master Plan (VBMP) and a report on options to update the Parking In-Lieu Fee program and Right-of-Way (or Curb Café) Fee program (Attachment B).

The timing for these updates is motivated by the passage of recent state legislation (e.g., Assembly Bill 2097 which prohibits certain local parking requirements) and the end of temporary COVID allowances for sidewalk and curb cafés. This Council Memorandum includes the 2023 Parking Survey results conducted in summer 2023 (Attachment C).

Discussion

2023 Parking Survey Results

In July 2023, Chen Ryan Associates, Inc., conducted fieldwork commensurate with previous Village, Barrio, and beach area parking surveys to examine and document parking conditions within the study area. The 2023 Parking Survey was conducted during a summer weekday on Thursday, July 20, 2022, and a weekend on Saturday, July 22, 2022, consistent with the requirement in the Parking Plan. The 2023 Parking Survey results (Attachment C) identified an overall increase in parking demand within the study area as compared to last year. The highest increases occurred in the Barrio and Beach Area neighborhoods. The study also identified high parking demand for on-street parking west of the

Community Services Branch

Community Development Department

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railroad tracks, for portions of Grand Avenue, portions of Carlsbad Village Drive, portions of State Street and within the Village Faire parking lot. However, the study revealed that the current and estimated future parking supply could be adequate to meet future demand if the parking system, as part of the larger transportation system, is actively managed. Refer to section below for more information.

Update to the Parking Plan, VBMP, Parking In-Lieu Fee and Right-of-Way (Curb Café) Fee Program

Staff from Community Development, Public Works, Police and Finance are currently working with the consultant to update the Parking Plan, VBMP, Parking In-Lieu Fee and Curb Café Permit Fee programs. The update to the Parking Plan will include further analysis on the existing and future parking needs of the study area and will provide a suite of recommendations to improve parking availability for the City Council to consider. Included will be a recommendation to increase the interval between future parking surveys from annually to between three to five years since parking conditions are unlikely to change significantly on a yearly basis. The team has completed documentation of existing conditions and policy frameworks and is preparing recommendations and potential updates for consideration by stakeholders and the community. This information will then be prepared for presentation to the Traffic & Mobility Committee and Planning Commission for recommendation and then to the City Council for action.

Next Steps

No further action is needed for the 2023 Parking Survey. Staff will continue to work with the consultants to prepare the updates to the Parking Plan, VBMP, Parking In-Lieu Fee and Right-of-Way (Curb Café) Fee Program. It is anticipated that these documents will be presented to the Traffic & Mobility Committee and Planning Commission by February/March 2024 and then to City Council by April/May 2024.

- Attachment: A. City Council Memorandum, dated February 16, 2023
<https://records.carlsbadca.gov/WebLink/DocView.aspx?id=6394477&dbid=0&repo=CityofCarlsbad>
B. City Council Staff Report, dated July 11, 2023
<https://records.carlsbadca.gov/WebLink/DocView.aspx?id=6439162&dbid=0&repo=CityofCarlsbad>
C. 2023 Carlsbad Parking Study

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Council Memo – 2023 Parking Survey Results and Updates (District 1)

January 4, 2024

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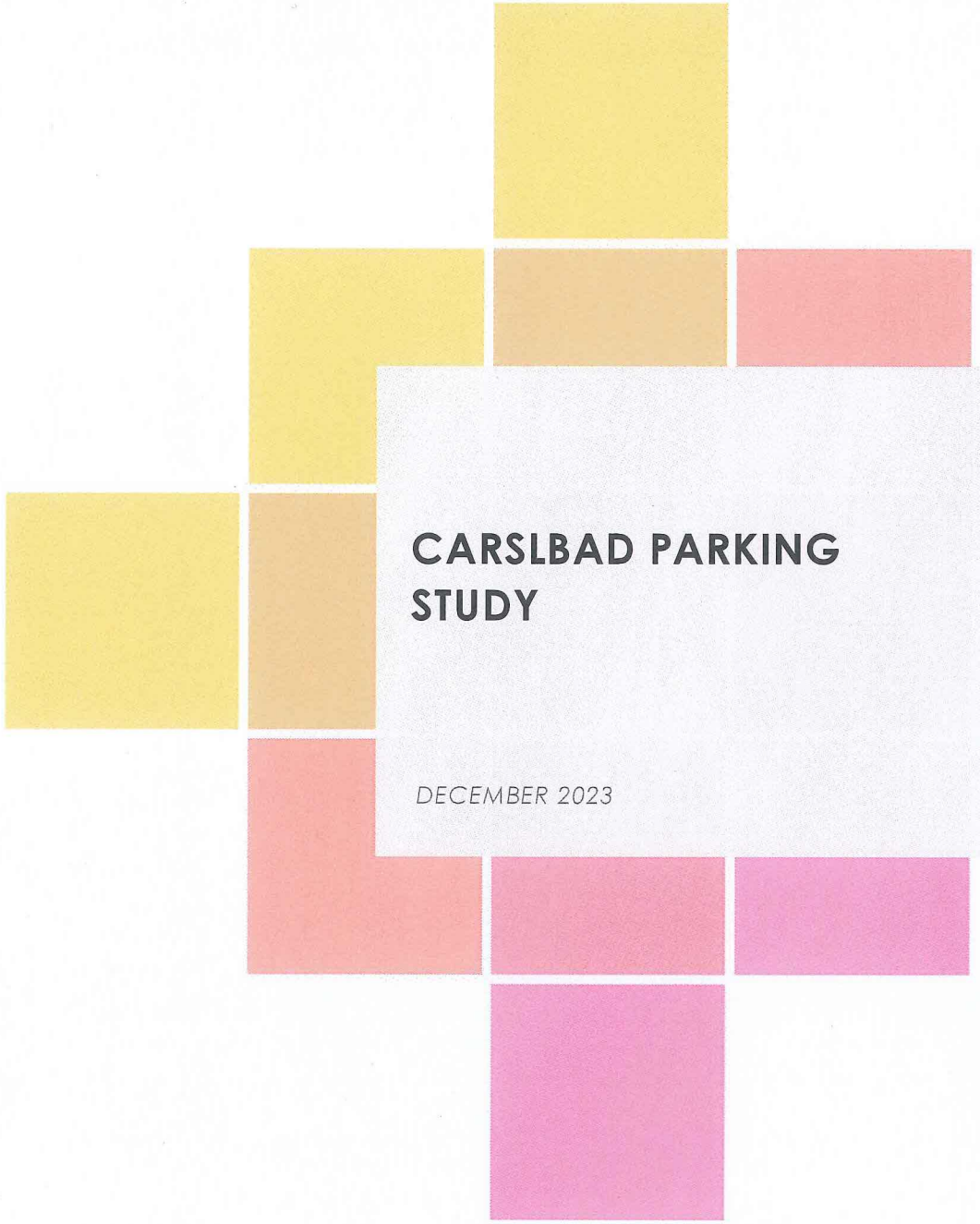
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CARLSBAD PARKING STUDY

DECEMBER 2023

Prepared For



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Prepared By



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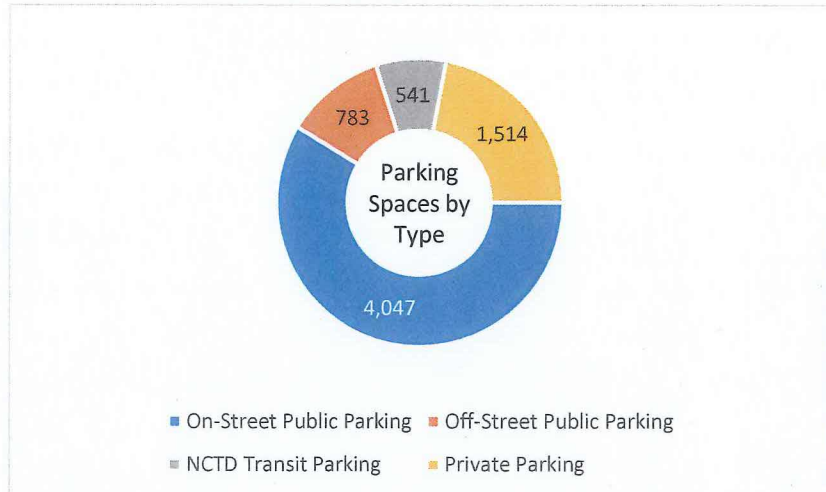
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Key Findings

The study produced an inventory of all available public and private (privately-owned and dedicated to a specific property) parking spaces in the study area which totaled 6,885 parking spaces, excluding parking associated with single-family homes and properties with controlled access. **Figure A** displays a summary of the parking inventory.

Figure A – Summary of Parking Inventory



Additionally, the study analyzed the availability and use of the parking system during the peak season. Results determined that during the week, the Barrio and Beach Area neighborhoods peak during the evening period while the Village neighborhood peaks during the midday period. During the weekend, the Barrio and Beach Area neighborhoods peak during the midday period, while the Village neighborhood peaks during the evening period.

There are pockets of high demand where parking occupancy reaches effective capacity, leading to difficulty finding parking in those areas. High-demand areas include on-street facilities west of the railroad tracks, Village Faire parking lot, and on-street facilities in the Village center on Grand Avenue, Carlsbad Village Drive, and State Street. However, the study revealed that the current and future parking supply is adequate to meet demand if the parking system, as part of the larger transportation system, is actively managed.

Given the adequate supply of parking within the parking system to meet current and future projected parking demand, it is not recommended that the city invests in construction of additional parking supply at this time. Rather, to address the observed parking demand imbalance and maximize the efficient use of the parking system, the draft updated Parking Management Plan recommends that the city implements a comprehensive Parking Management Program.

1.0 Introduction

This parking analysis covers the Carlsbad Village and Carlsbad Barrio neighborhoods, and the adjacent coastal areas in the northwest part of the city, collectively referred to as the "study area." It offers a report on the current conditions for the area covered in Carlsbad's Village, Barrio, and Beach Area Parking Study – Parking Management Plan (CPMP). The currently adopted CPMP, authored by Kimley Horn in 2016, was followed by parking assessments in 2017, 2019 (both by Kimley Horn), 2021, and 2022 (both by CR Associates). Changes in California's Government Code, socio-economic shifts, and parking inventory have led to variations in parking occupancy data compared to the PMP's projections. Consequently, this 2023 revision will set the foundation for updating both the PMP and the Carlsbad Village & Barrio Master Plan (VBMP).

Following the introduction, which describes the study area, presents the inventory of parking supply, and describes data collection methods, the report follows with chapters analyzing weekday and weekend parking occupancy conditions.

1.1 Project Study Area

Figure 1.1 shows the geographic extent of the Study Area. The extents of the Study Area are generally confined between Laguna Drive and Tamarack Drive, from north to south, and the coast and Interstate 5, from west to east. On-street public parking, and off-street public and private parking supply within this area were inventoried and parking occupancies were collected and analyzed. This Study Area encompasses a larger territory than the VBMP area.

1.2 Parking Inventory and Data Collection Methods

Parking was inventoried by a combination of aerial imagery review and field data collection. Where parking was delineated with markings (in parking lots and some on-street locations), technicians inventoried the parking supply through aerial imagery review with confirmation in the field. In locations where on-street parking was not marked, technicians in the field measured and documented the segments of curb where parking is allowed, accounting for areas where parking is not permitted such as along curb cuts and other restricted areas. To estimate supply where it was unmarked, a length of 20 feet per parking space was assumed for on-street parallel parking. The curb lengths measured in the field were divided by 20, rounding the remainder to the nearest whole parking space. On-street parking supply was summarized to the block level, with a few exceptions where extra short blocks were consolidated to adjacent blocks. Parking supply along four lane roadways, such as Carlsbad Boulevard (north-south) and sections of Grand Avenue (east-west) were summarized by block on each side of the street.

Figure 1.2 shows the quantity of on-street and off-street parking (public and shared-use private) within the study area. The data displayed is summarized per block or parking lot.



Figure 1.1 - Project Study Area

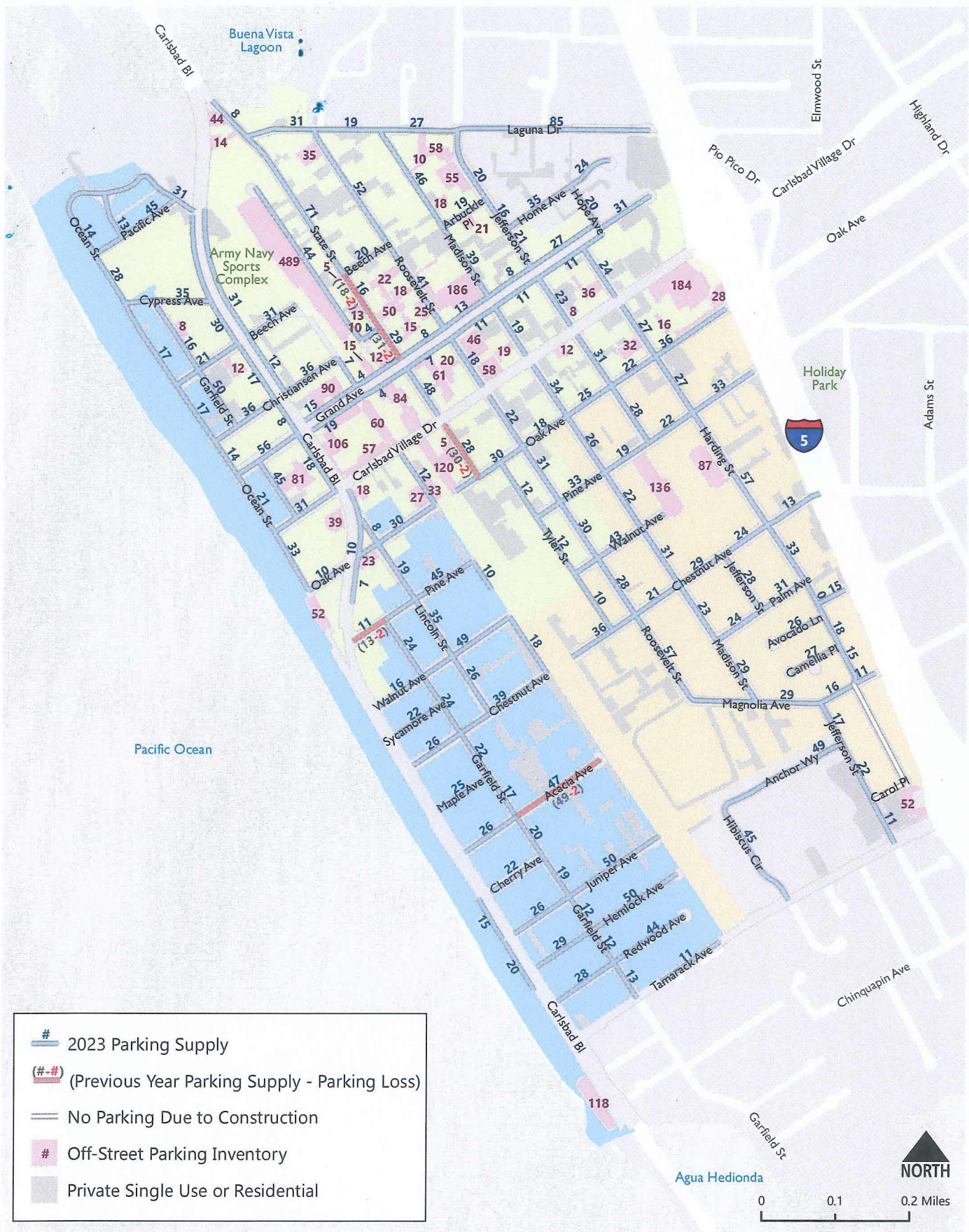


Figure 1.2 - Existing Parking Supply

Private residential parking and off-street parking properties with a single occupant (single use) were accounted for when analyzing existing data for the report. However, they were not inventoried or considered to contribute to the total parking supply of the study area because they are reserved exclusively for the users of the associated property. In addition to these parking lots not contributing to the overall result of the study, many of the presented private lots are out of public reach and only function under restricted access. Occupancy counts, later presented in the report, only account for the collected public parking and shared-use private parking. **Table 1.1** summarizes the total parking supply within the study area (not including private residential parking and off-street parking properties with a single use).

Table 1.1 - Total Parking Supply

Parking Type	Total
On-Street Parking	4,047 ¹
Off-Street Public Parking	783
NCTD Transit Parking	541 ²
Total Public Spaces	5,371
Private Parking	1,514
Total Spaces	6,885

Source: CR Associates (2023)

There is an estimated total of 6,885 parking spaces. Out of the total parking spaces provided within the study area, an estimated 5,371 are public parking spaces and approximately 75% of the public supply is on-street. The remaining 1,514 spaces inventoried are private off-street parking spaces, which account for 22% of the study area.

1.3 Parking Occupancy Data Collection Methods

Parking occupancy in the study area was collected on one weekday (Thursday, July 20, 2023) and one weekend day (Saturday, July 22, 2023) during three time periods: morning (6 a.m. to 9 a.m.), midday (10 a.m. to 1 p.m.) and evening (6 p.m. to 9 p.m.), similar to previously conducted studies. Technicians collected parking occupancy in the field by driving through the study area with high-resolution video equipment mounted to a vehicle. The video was reviewed by technician supervisors after each run to verify all the segments within the study area had been collected. Video footage was processed in an office environment through an automatic license plate recognition (ALPR) program and converted to occupancy counts for each unit of on-street parking. Off-street parking occupancy was manually collected during the data collection process.

¹ A reduction of 10 on-street parking spaces as a result of new red curbs. Additionally, a reduction of 65 on-street parking spaces as a result of construction activities at Carol Place, east of Jefferson Street. However, the reduction of these 65 on-street parking spaces is assumed to be temporary until the construction activities are completed.

² It is important to note that there was a fence at the northern area of Parking Lot A, which accounts for 110 parking spaces. The inventory was not reduced because the parking spaces are not removed, however, it was assumed that these 110 parking spaces were occupied.

1.4 Changes in Parking Supply Due to Outdoor Dining

Curb Cafés enhance business revenue by expanding seating capacity within adjacent streets (most commonly within parking stalls) and attracting more customers. They contribute to vibrant streetscapes, pedestrian activity, improving the ambiance and encouraging community interaction. During the COVID-19 pandemic, the city allowed businesses to use private and public outdoor spaces for dining and retail operations through no-cost temporary permits. These permits let businesses expand into private properties like parking lots (with the owner's consent), public parking spaces, and public areas like sidewalks. Temporary permits for public areas expired on February 28, 2023, when the COVID-19 State of Emergency was declared over by Governor Newsom. However, permits for private property areas were extended to January 2024 by the State of California. Businesses that utilized public areas had until May 31, 2023, to either make their setups permanent according to the Carlsbad Municipal Code or remove and restore the space to its original condition. Assembly Bill 61 from 2021 mandates local governments to reduce parking space requirements, allowing businesses to maintain their setups in private parking lots till the end of 2023. Once the program expired, existing Curb Café would have to follow the regulation in the Carlsbad Municipal Code (CMC). In 2021, there were a total of eight (8) Curb Cafés within the Village area, this number has since reduced to four (4) permitted Curb Cafés within the Village area, with their respective permit expiring between December 2023 and July 2024.



Curb Cafés and sidewalk cafés have been envisioned since at least 2012/2013 with the adoption of the Curb Café pilot program (Ordinance 2013-061 & 2013-062). These were further explored and included in section 2.6.5.A of the VMBP in 2017. As of July 2023, there are currently 15 outdoor dining spaces, out of which five (5) are on private property, taking up 44 number of parking spaces. The remaining four (4) outdoor dining areas are Curb Cafés, which use 20 on-street parking spaces.

Table 1.2 documents the quantity of parking supply removed from circulation to accommodate the curb cafes.

Table 1.2 – Parking Spaces Used as Outdoor Structures

Parking Type	Total ¹
On-Street Parking	20
Private Parking	44
Total Spaces	64

Source: CR Associates (2023)

Note:

¹Based on existing outdoor cafes as of November 7, 2023.

2.0 Weekday Parking Occupancy

Parking occupancy – the percentage of parking supply being used at a given time, was analyzed in two ways: occupancy by supply and destination-based occupancy. Occupancy by supply is the conventional way of conceptualizing parking demand, where the occupancy percentage is attributed to the source of parking (either the block or parking lot). While supply-based occupancy is adequate for understanding the demand of a particular parking source, it is a limited way of describing parking conditions in urban settings because public parking is scattered into many small sources throughout the studied area and is shared by numerous destinations which compete for the same supply.

Destination-based occupancy is an improved way of conceptualizing parking demand in urban settings where many destinations are close together and compete for public parking supply that is provided by many small sources of parking. The conceptualization adjusts for the varied size and spatial distribution of parking supplies in the study area that is not well captured by supply-based occupancy and recognizes that most visitors are unable to park directly in front of their destination and may have to walk a short distance. Also, it is common in walkable urban settings like Downtown Carlsbad for visitors to ‘chain’ trips – parking once in a centralized area and visiting multiple destinations within walking distance, thus making destination-based occupancy a suitable performance measure to assess parking conditions. Encouraging trip chaining (often called ‘Park Once’) is a parking demand management strategy employed in many urban settings.

To calculate destination-based occupancy, parking occupancy data collected and initially presented by block and parking lot is post-processed and accessibility-based measures are then used to estimate the parking occupancy within 1/8 of a mile network distance of each parcel in the study area by weighting the parking occupancy of the catchment area of the destination. An eighth of a mile (660 feet) approximates two block lengths of short city blocks.

To facilitate comparisons, both ways of presenting the occupancy data on the forthcoming exhibits use the same four occupancy category ranges and color symbols: 100% occupancy (maroon), 85.1% to 99.9% occupancy (red), 70.1% to 85% (orange), 50.1% to 70% (yellow) and 50% or less (green). Eighty-five percent occupancy is considered by the parking industry to be the threshold for when parking is being utilized most efficiently, with the number striking a balance between maximizing usage and having some spare capacity. Locations symbolized in red are above that optimal threshold and may be considered to have burdensome parking conditions.

The sections below describe weekday parking conditions initially by supply and then by destination, for the morning, midday, and evening time intervals.

2.1 Occupancy by Supply

Morning (6 a.m. to 9 a.m.)

Figure 2.1 displays weekday parking occupancy for the morning period between 6 a.m. and 9 a.m. As shown, occupancy is well below capacity in most parts of the study area. Most off-street parking and private off-street parking were below half capacity. Table 2.1 summarizes public parking occupancy by the three neighborhoods during weekday morning.

Table 2.1 - Weekday Morning Public Parking Occupancy by Neighborhood

Area	Parking Type	Weekday Morning (2023)	Weekday Morning (2022)
Barrio	On-Street Parking	65.9%	57.1%
	Off-Street Public Parking	41.3%	41.3%
	Total Public Parking	61.7%	54.1%
Beach Area	On-Street Parking	62.5%	61.7%
	Off-Street Public Parking	44.1%	38.8%
	Total Public Parking	60.2%	58.9%
Village	On-Street Parking	58.1%	53.2%
	Off-Street Public Parking	60.7%	59.4%
	Total Public Parking	58.6%	54.1%
Village (Other Parking Sources)	Off-Street NCTD Parking	47.2%	44.0%
	Off-Street Private Parking	41.4%	39.7%

Source: CR Associates (2023)

While neighborhood-wide parking occupancies were generally around 60%, some scattered locations reached occupancies above 85%, with a few reaching 100% occupancy such as Oak Avenue, between Jefferson Street and Harding Street and Chestnut Avenue, east of Harding Street. Most segments that were heavily occupied were primarily in residential areas with the Barrio area and a few along Ocean Street. Comparatively, higher parking utilization at this time was expected to occur in residential dominated areas and this was generally confirmed by the occupancies observed during this period (65.9% on-street occupancy in the Barrio and 62.5% on-street occupancy in the Beach Area neighborhood). Residential parking demand peaks at night and overnight, and this collection period overlaps with the morning commute peak period, which is when residential parking demand initially begins to decrease. Three public parking lots displayed occupancy greater than 85%, including the Ocean Street Public Parking with full occupancy in the morning (3093 Ocean Street), 2630-2698 Garfield Street, and Village Faire east lot. The high parking occupancy at these public parking lot are likely due to a combination of factors, including early morning recreational and coastal usage at the Garfield Street and Ocean Street lots, and early morning activities (breakfast, employees, Coasters) at the Village Fair east lot.

Compared to 2022, an overall increase in parking demand was observed throughout the study area, with the most significant increase observed (from 38.8% to 44.1%) among off-street public parking in the Beach Area neighborhood.

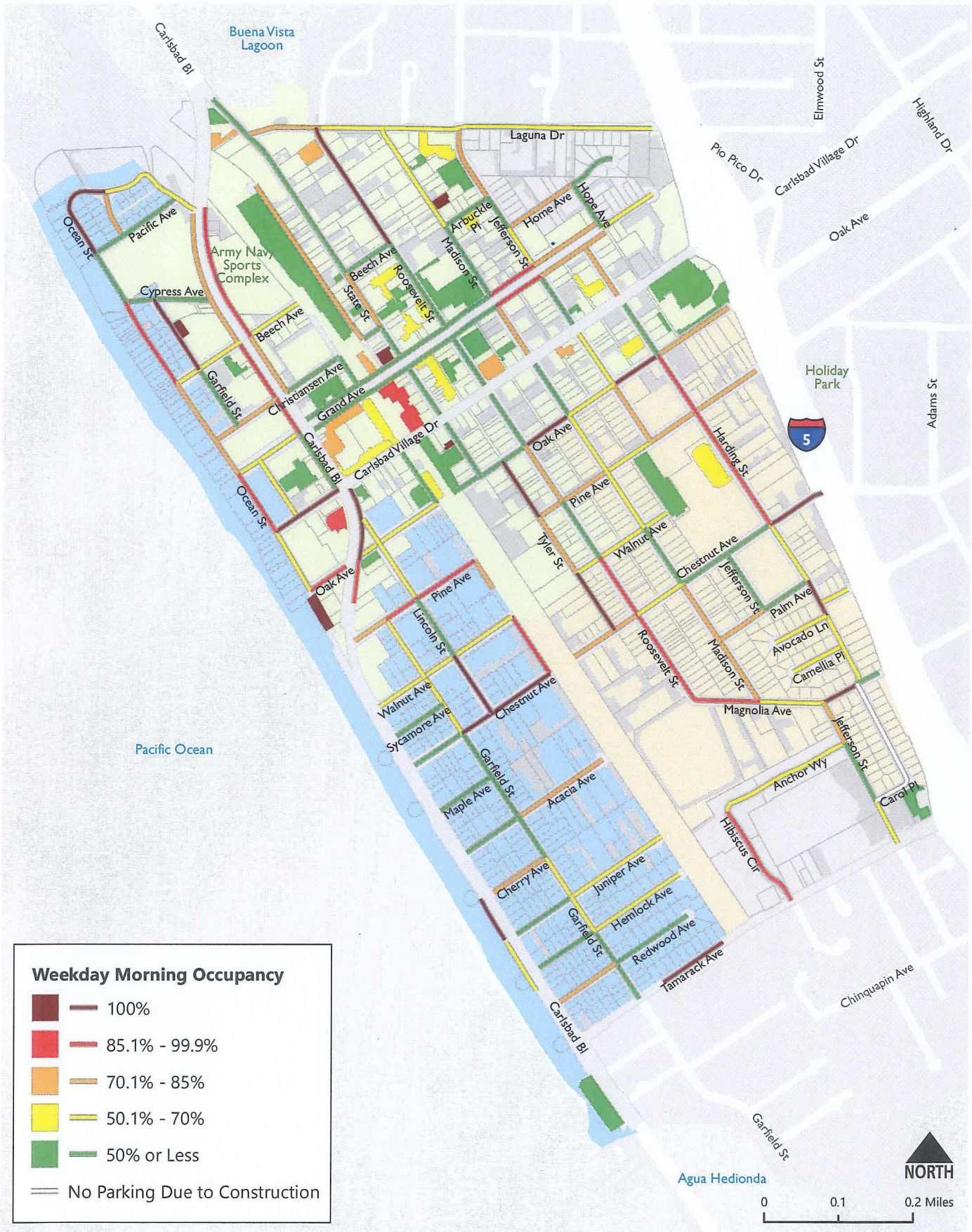


Figure 2.1 - Weekday Parking Occupancy Morning (6 a.m - 9 a.m.)

Midday (10 a.m. to 1 p.m.)

Figure 2.2 displays weekday parking occupancy for the midday period between 10 a.m. and 1 p.m. Occupancy during midday surges in the Beach Area neighborhood and many sections of the Village from the morning period, with an increasing number of on-street and off-street parking sources reaching greater than 85% occupancy up to 100% occupancy. At the same time occupancies decrease in the residential dominated areas in the southern half of the study area. **Table 2.2** summarizes public parking occupancy by the three neighborhoods during a typical weekday midday.

Table 2.2 - Weekday Midday Public Parking Occupancy by Neighborhood

Area	Parking Type	Weekday Midday (2023)	Weekday Midday (2022)
Barrio	On-Street Parking	61.0%	55.8%
	Off-Street Public Parking	50.0%	35.0%
	Total Public Parking	59.1%	51.8%
Beach Area	On-Street Parking	79.0%	72.1%
	Off-Street Public Parking	93.1%	87.1%
	Total Public Parking	80.8%	74.0%
Village	On-Street Parking	79.2%	76.2%
	Off-Street Public Parking	89.4%	88.6%
	Total Public Parking	81.0%	78.2%
Village (Other Parking Sources)	Off-Street NCTD Parking	57.8%	55.1%
	Off-Street Private Parking	67.1%	57.7%

Source: CR Associates (2023)

Commercial parking, which is confined mostly to the Village, begins to peak during business hours, which overlap entirely with the midday period. Off-street private parking occupancy increases to over 60% during weekday midday than weekday morning. Public parking occupancies (including NCTD parking) throughout the Village exceed 50% during midday, with a few public parking lots located off of Carlsbad Village Drive reaching 100% occupancy. Occupancies are even higher in the Beach Area neighborhood. Both on-street and off-street see occupancy increases of 6.9% and 6%, respectively, when compared to 2022.

Additionally, there was a slight 2.7% occupancy increase in the off-street NCTD parking lots. Finally, many on-street parking locations in the northwest portion of the study area (west of the LOSSAN rail corridor and north of Chestnut Avenue) reach occupancies higher than 85% and up to 100%.

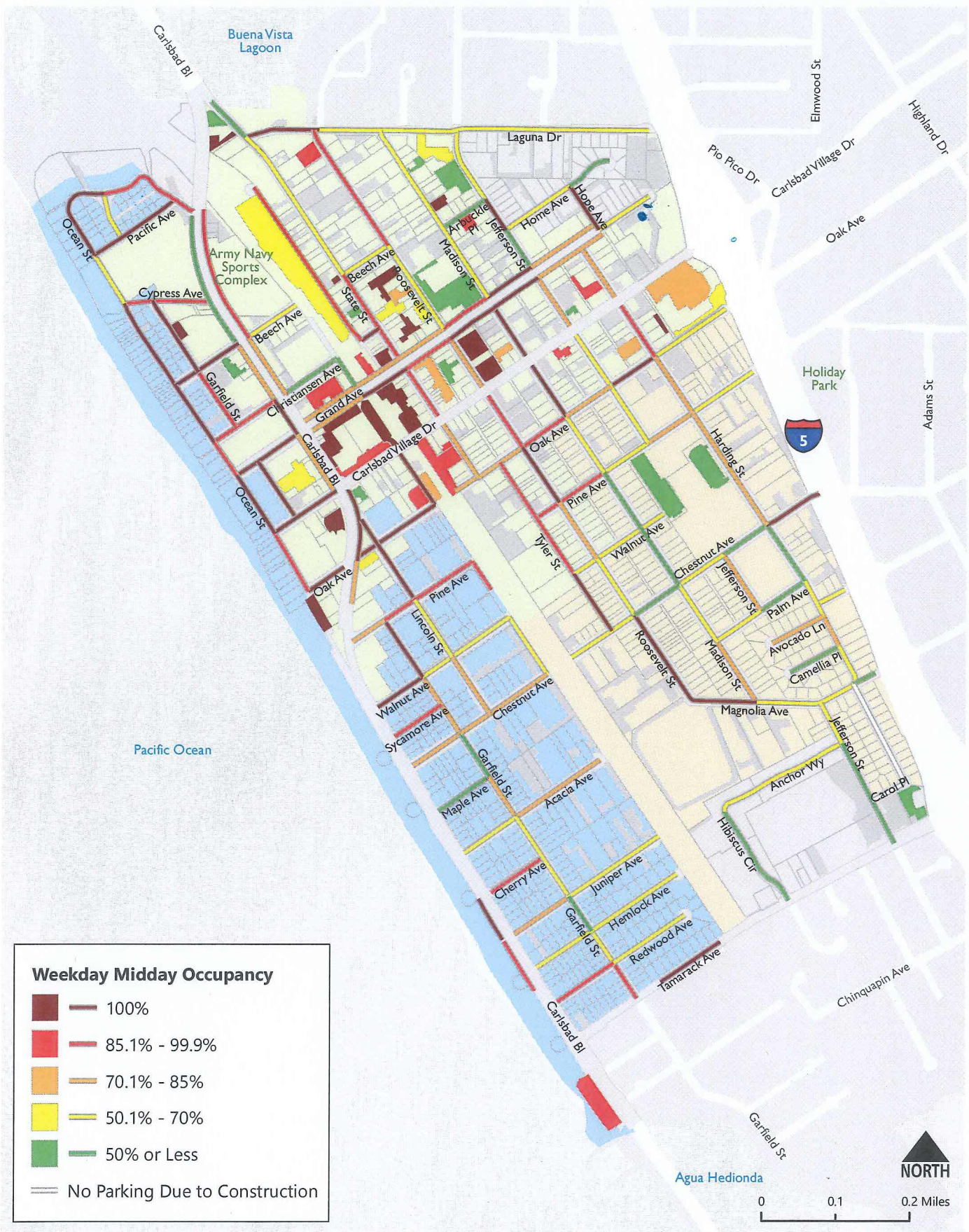


Figure 2.2 - Weekday Parking Occupancy Midday (10 a.m. - 1 p.m.)

Evening (6 p.m. to 9 p.m.)

Figure 2.3 shows weekday parking occupancy for the evening period. The exhibit confirms the sharp increase in off-street public parking demand in the Village, as numerous lots in the core of the Village are displayed at 100% capacity and an increase in on-street occupancy is displayed in the Beach Area neighborhood. Table 2.3 summarizes weekday evening (6 p.m. to 9 p.m.) occupancies by neighborhood along with the occupancies of the earlier periods to facilitate comparison. As shown, neighborhood-wide (Barrio, Beach Area and Village) occupancies overall increase from midday to evening in the Barrio (59.1% to 70.8%), Beach Area (80.8% to 86.8%), and Village (81.4% to 77.7%). The Village’s on-street parking had a slight decrease from midday to evening, but the Village off-street parking increased from 90.9% to 94.6%, which also is the highest overall weekday public parking occupancy by neighborhood identified this year.

Table 2.3 - Weekday Public Parking Occupancy by Neighborhood (All Periods)

Area	Parking Type	Weekday Morning		Weekday Midday		Weekday Evening	
		2023	2022	2023	2022	2023	2022
Barrio	On-Street Parking	65.9%	57.1%	61.0%	55.8%	74.3%	73.5%
	Off-Street Public Parking	41.3%	41.3%	50.0%	35.0%	53.8%	53.8%
	Total Public Parking	61.7%	54.1%	59.1%	51.8%	70.8%	69.8%
Beach Area	On-Street Parking	62.5%	61.7%	79.0%	72.1%	89.2%	81.0%
	Off-Street Public Parking	44.1%	38.8%	93.1%	87.1%	69.4%	68.2%
	Total Public Parking	60.2%	58.9%	80.8%	74.0%	86.8%	79.4%
Village	On-Street Parking	58.1%	53.2%	79.2%	76.2%	74.0%	69.4%
	Off-Street Public Parking	60.7%	59.4%	89.4%	88.6%	92.9%	91.9%
	Total Public Parking	58.6%	54.1%	81.0%	78.2%	77.3%	73.0%
Village (Other Parking Sources)	Off-Street NCTD Parking	47.2%	44.0%	57.8%	55.1%	69.8%	63.4%
	Off-Street Private Parking	41.4%	39.7%	67.1%	57.7%	57.1%	45.1%

Source: CR Associates (2023)

While commercial-based parking demand tends to decline during this period, there are exceptions for some businesses like dining and drinking establishments, where the evening represents their peak demand period. The Beach Area’s parking supply continues to be in high demand, as many on-street block occupancies reach 100% occupancy, and the occupancies of its off-street parking lots remain well above 85% and up to 100%. This period also captures increasing parking demand in the residential areas to the east and south of the study area. This is consistent with the peak temporal patterns of residential generated parking demand. Residential parking demand begins to peak in the evening and continues overnight. Except for the Beach Area, where residential densities are higher and its supply co-mingles with beach visitors, the other residential portions of the study area can absorb the increased parking demand without strain.

Compared to 2022, the study area experienced an increase in parking demand, with the most significant increase observed in the Beach Area, with 79.4% occupancy in 2022 increasing to 86.8% occupancy in 2023.

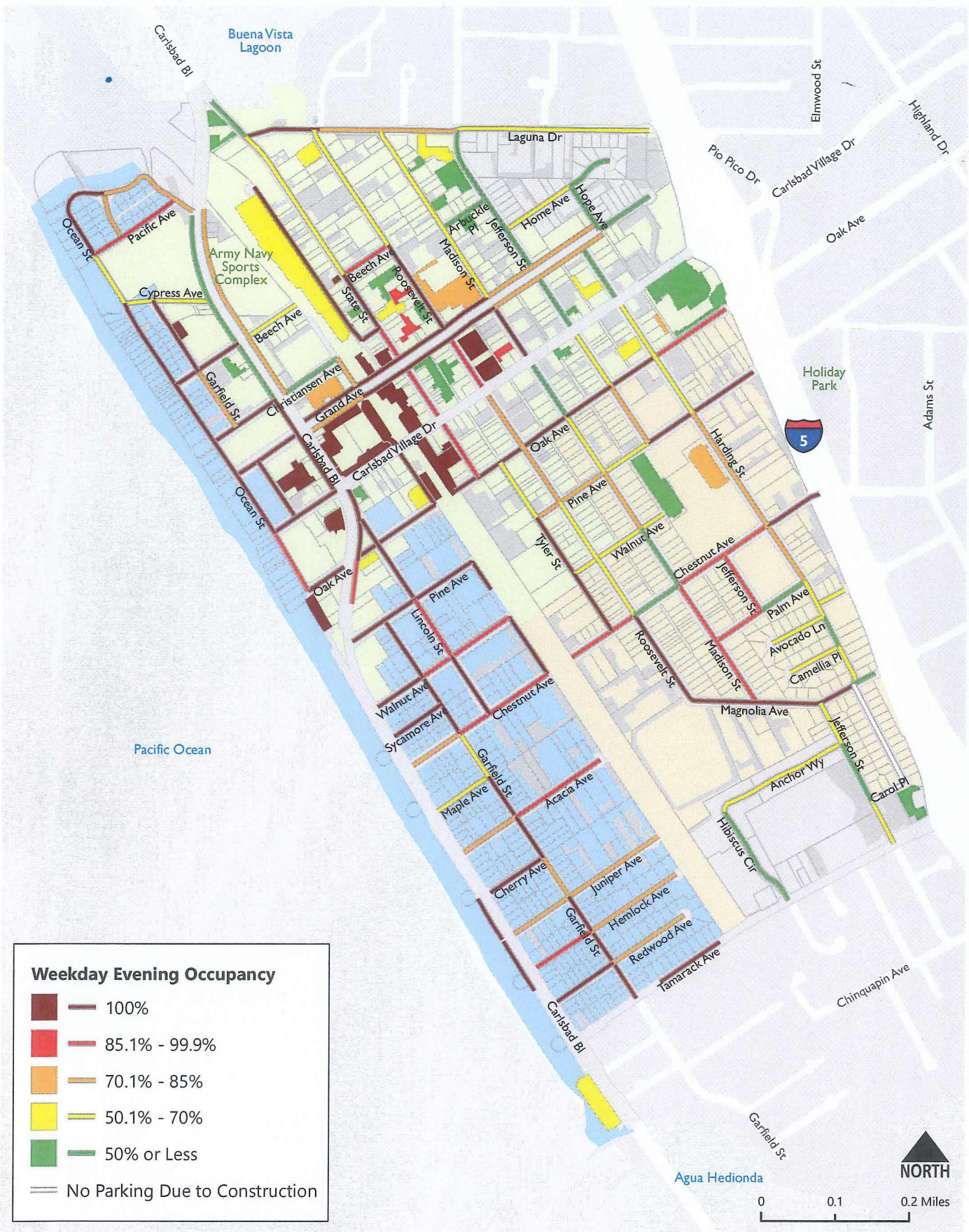


Figure 2.3 - Weekday Parking Occupancy Evening (6 p.m. - 9 p.m.)

2.2 Destination-Based Occupancy

Within urban settings such as the Village and Barrio, reliance on on-street parking and numerous small-supply parking lots scattered in various locations is typical. When an area's collective parking supply is composed of fragmented and scattered sources, it can often be difficult to conceptualize how many parking spaces are within a close walking distance of specific destinations. To overcome that limitation, an analysis approach was used for this report which summarizes the parking supply for each parcel (destination) within a 1/8 of a mile distance. An eighth of a mile approximates one long-sided block length or two short-sided block lengths in a typical street grid.

Since parking demand is typically not evenly distributed throughout a neighborhood, this analysis will also more effectively reveal hotspots within neighborhoods otherwise not captured by the neighborhood-wide summarized occupancies. For example, within the Beach Area which had a weekday morning occupancy neighborhood-wide of 31%, there are numerous destinations within the neighborhood where the occupancy conditions experienced were much higher, in the 70.1% to 85% and 85.1 to 99.9% ranges.

Figure 2.4 summarizes public parking supply to within 1/8 of a mile of every destination within the study area. The destination-based occupancy analysis and accompanying exhibits excludes NCTD parking and private parking occupancies despite being displayed in the preceding supply-based occupancy exhibits, because those sources are not available for the general use public parking and thus their inclusion does not contribute to an accurate representation of visitor public parking availability.

Morning (6 a.m. to 9 a.m.)

Figure 2.5 shows the parking occupancy within 1/8 mile of each destination inside the study area during the morning period. During this period, nearly all destinations within the study area were below 85% occupancy.

The Village area has very few businesses operating during this period, which largely explains the general abundance of parking and lower demand for parking (70% or less). The parts of the study area where occupancy is the highest (50% or higher) were in the Barrio residential areas with higher residential densities (east of LOSSAN rail corridor). Commercial and single-family residential concentrated areas were generally unburdened during this period.

Midday (10 a.m. to 1 p.m.)

Figure 2.6 shows the parking occupancy within 1/8 mile of each destination inside the study area during the midday period. Parking occupancies exceed 85% during this period within some parts of the Beach Area, primarily along Ocean Street and portions of Carlsbad Boulevard. Approximately half of the destinations in the Village along Carlsbad Village Drive, Grand Avenue, and Oak Avenue reaching capacities greater than 85%. Overall, a significant increase in demand when compared to 2022. Parking demand in primarily residential portions to the south and east of the study area range between 50% and 70%, with an 85% and greater area located along Magnolia Avenue in the Barrio.



Figure 2.4 - Public Parking Supply within 1/8 Mile from Destinations (Excluding NCTD Parking)

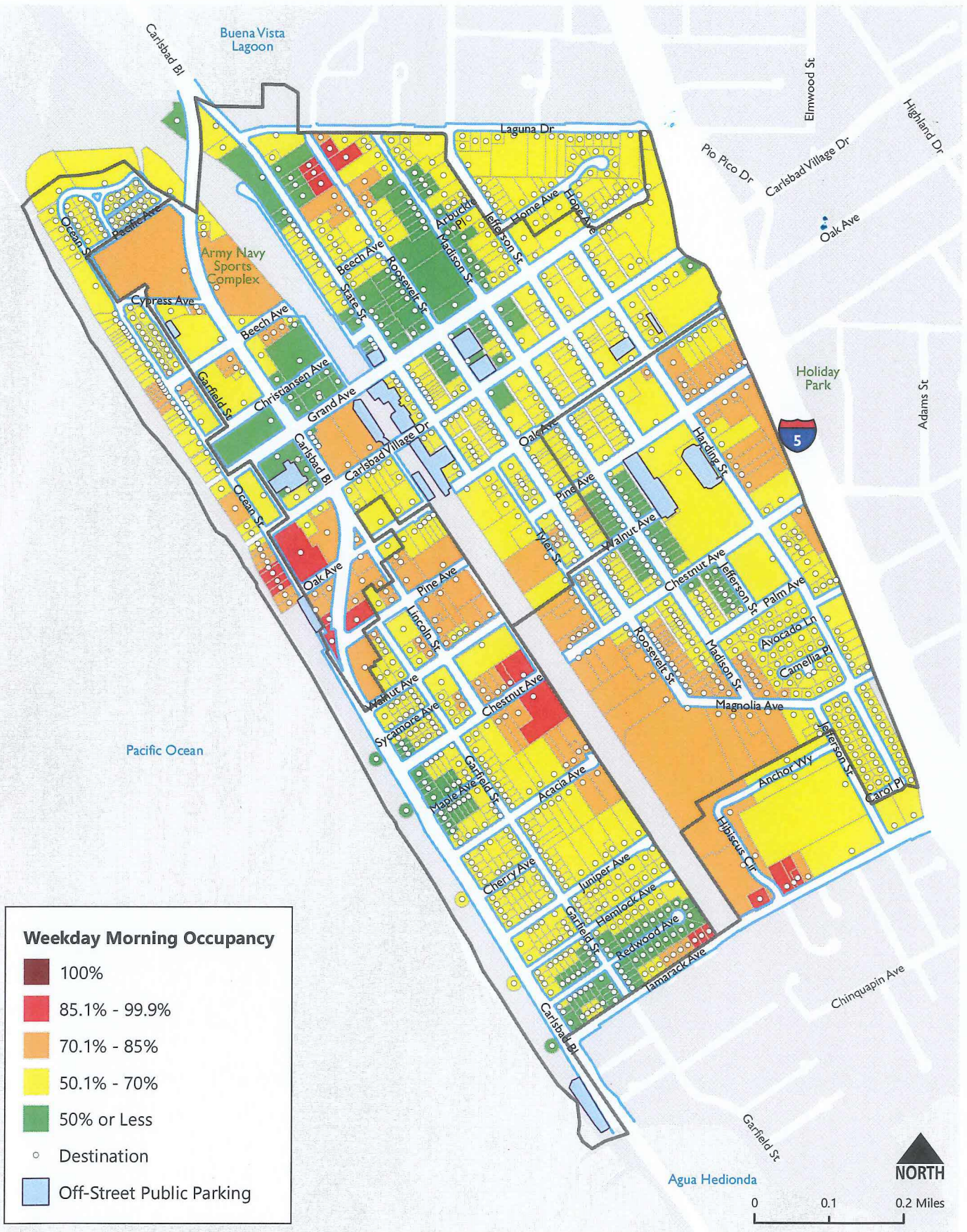


Figure 2.5 - Weekday Parking Occupancy by Destination Morning (6 a.m. - 9 a.m.)

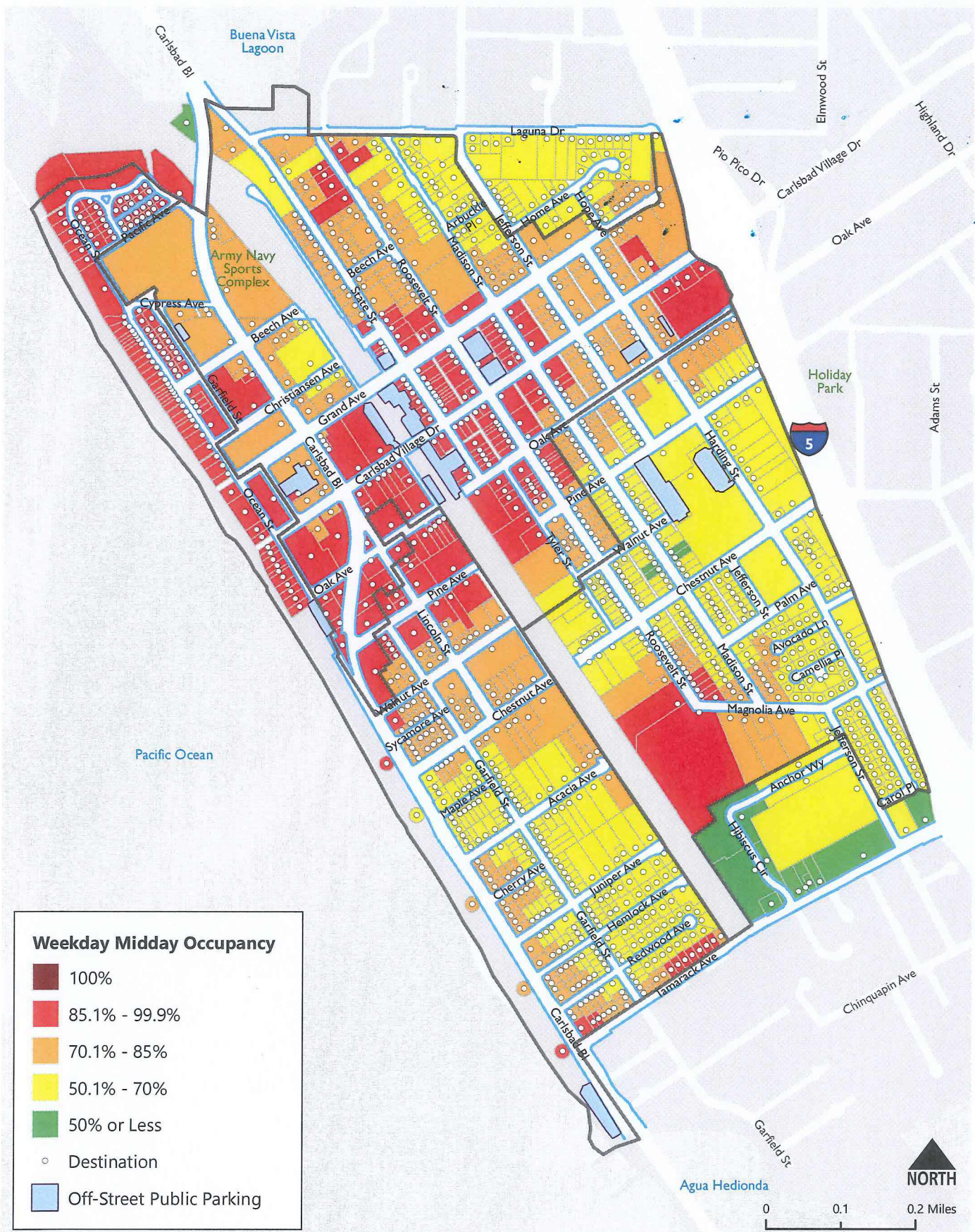


Figure 2.6 - Weekday Parking Occupancy by Destination Midday (10 a.m. - 1 p.m.)

Evening (6 p.m. to 9 p.m.)

Figure 2.7 shows the parking occupancy within 1/8 mile of each destination inside the study area during the evening period. Parking demand during this period is the highest of the three weekday periods observed. Parking occupancy is greater than 85% throughout much of the Beach Area, with 100% occupancy conditions clustered between Grand Avenue and Oak Avenue. Parking occupancy increases in the Barrio neighborhood-wide by 11.7% from midday to evening. As shown, some areas within the Barrio (along Magnolia Avenue-Roosevelt Street junction) reach 100% occupancy conditions, while some areas within the Barrio Perimeter reach greater than 85% occupancy conditions.

Of the three periods analyzed, the evening period is unique in that captures both residential generated parking demand and commercial generated parking demand (in the evening, commercial-related parking demand is primarily generated from dining and drinking establishments and typically not from retail). The demand converging from these two sources is most likely to impact areas where residential land uses are adjacent to commercial land uses, such as in the Village core and the adjacent surrounding blocks.

When compared to 2022, the Barrio and Beach Area neighborhoods experience the greatest increase in parking demand. These increases follow the same trend observed in the neighborhood-wide data.

Temporal Peak by Destination

Figure 2.8 shows the peak parking period of each destination based on its parking occupancy within 1/8 mile during the three weekday time periods. As shown, the evening period is the peak throughout most of the study area. The morning period is the peak period north of the study area along Laguna Drive and to the south along Tamarack Avenue in the Barrio Area, while the midday period is the peak period predominantly in the Village Area, predominantly along Carlsbad Village Drive and Jefferson Street.

While the Beach Area peaks during midday and in the evening with occupancies above 85% for many destinations. Multiple destinations within the Village core also peak in the evening, with many of these destinations reaching 85% occupancy.

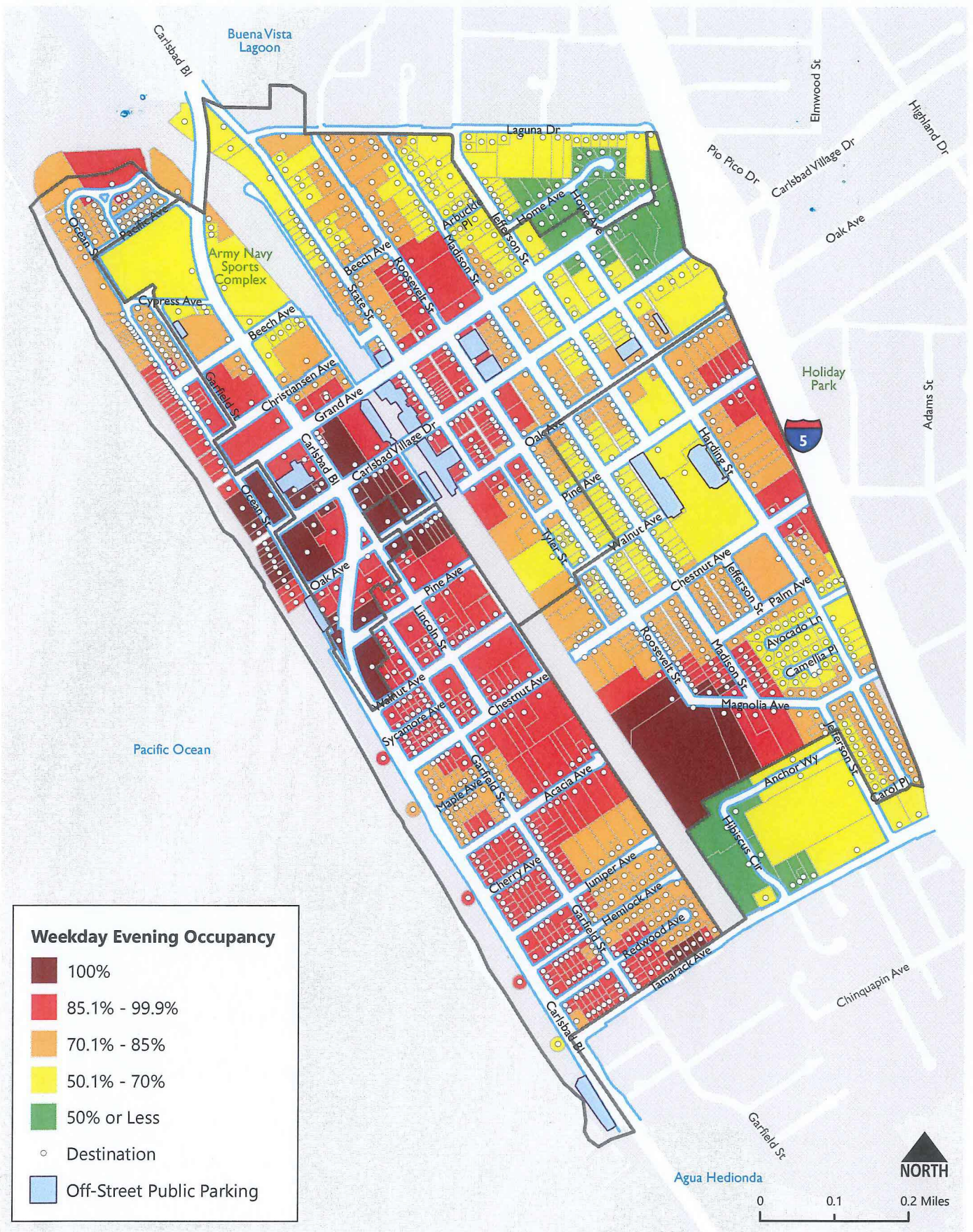


Figure 2.7 - Weekday Parking Occupancy by Destination Evening (6 p.m. - 9 p.m.)



Figure 2.8 - Weekday Peak Period

3.0 Weekend Parking Occupancy

3.1 Occupancy by Supply

Morning (6 a.m. to 9 a.m.)

Figure 3.1 shows the weekend parking occupancy for the morning period. Occupancies are generally below half throughout the study area. Table 3.1 summarizes public parking occupancy by neighborhood for the weekend morning period.

Table 3.1 - Weekend Morning Public Parking Occupancy by Neighborhood

Area	Parking Type	Weekday Morning (2023)	Weekday Morning (2022)
Barrio	On-Street Parking	70.8%	66.9%
	Off-Street Public Parking	42.6%	42.6%
	Total Public Parking	65.9%	62.3%
Beach Area	On-Street Parking	69.3%	67.4%
	Off-Street Public Parking	71.8%	71.2%
	Total Public Parking	69.6%	67.8%
Village	On-Street Parking	48.3%	44.1%
	Off-Street Public Parking	56.2%	59.7%
	Total Public Parking	49.7%	46.6%
Village (Other Parking Sources)	Off-Street NCTD Parking	51.8%	44.4%
	Off-Street Private Parking	35.0%	34.5%

Source: CR Associates (2023)

Morning occupancies neighborhood-wide in the Barrio and Beach Area neighborhoods are 65.9% and 69.6%, respectively, which for both areas represent an increase of 4.2% and 9.4%, respectively, when compared to its weekday morning occupancy, while for the Village Area represents a decrease of 8.9% when compared to its weekday morning occupancy.

There are a few scattered blocks with higher occupancies within the Barrio and Beach Area neighborhoods with a few segments on the eastern portion of Pine Avenue reaching occupancy higher than 85% and up to 100%. Some reasons behind this have to do with residential parking demand tends to peak at night/overnight and is low turnover, on weekends fewer people work which means residual demand from overnight is expected to linger deeper into the weekend morning collection period. The 3093 Ocean Street parking lot reaches 100% occupancy once again during this period, reflective of beach-related parking demand.

The decrease in weekend morning parking demand within the Village during this time is expected, as it is off-peak for most retail establishments, with only the Village Faire parking lot experiencing a demand greater than 50%. On-street parking occupancy increased in all areas when compared to 2022 data, while off-street parking occupancy stayed the same or decreased slightly. However, overall, the study area experienced a slight increase in parking demand when compared to 2022 data.

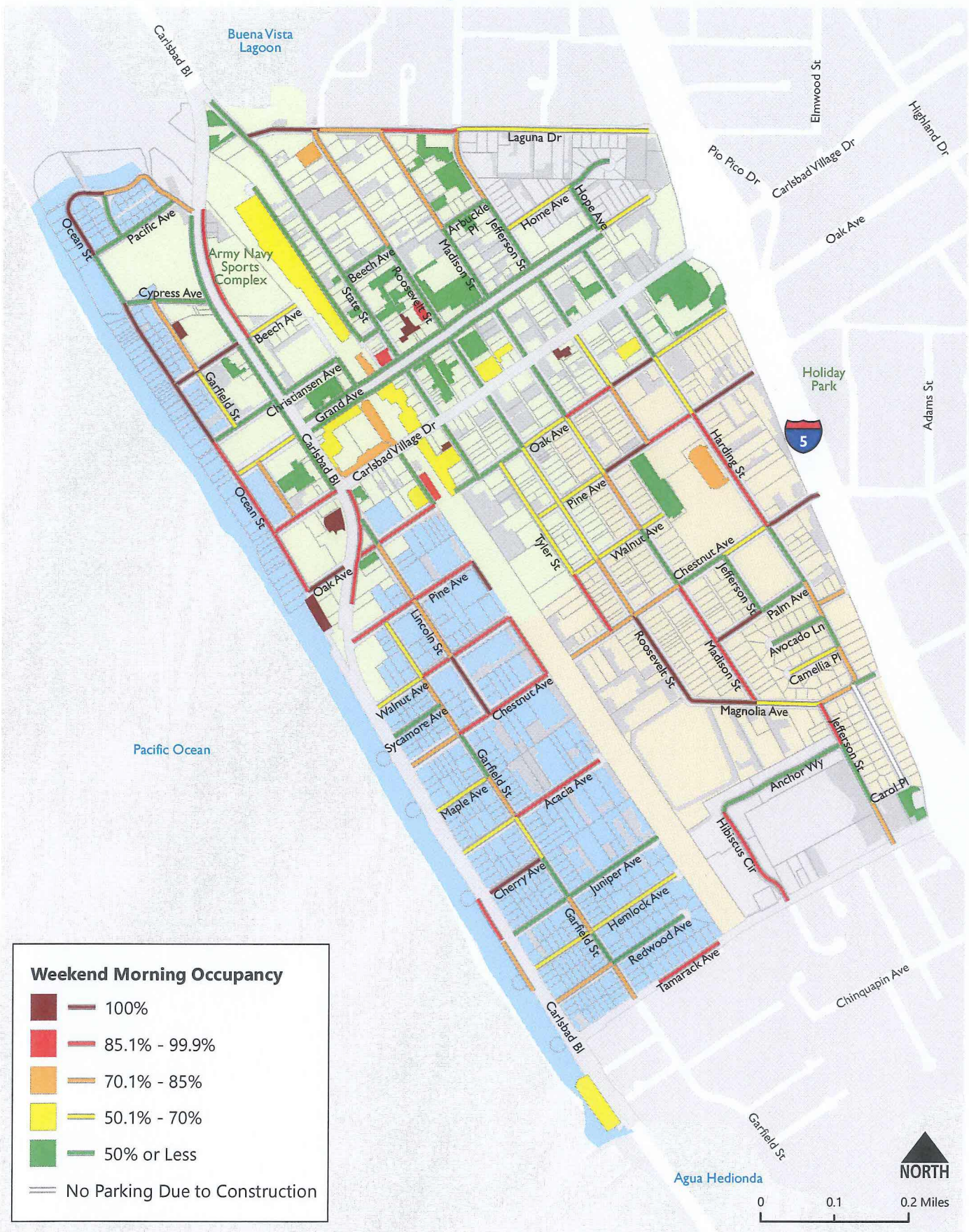


Figure 3.1 - Weekend Parking Occupancy Morning (6 a.m. - 9 a.m.)

Midday (10 a.m. to 1 p.m.)

Figure 3.2 shows the weekend parking occupancy. Table 3.2 summarizes public parking occupancy by neighborhood for the weekend midday period. Parking demand sharply increases across the study area, with the highest increase observed at the Village Area (28.6% increase) when compared to the morning period.

Table 3.2 – Weekend Midday Public Parking Occupancy by Neighborhood

Area	Parking Type	Weekend Midday (2023)	Weekend Midday (2022)
Barrio	On-Street Parking	80.8%	63.7%
	Off-Street Public Parking	81.7%	30.0%
	Total Public Parking	80.9%	57.2%
Beach Area	On-Street Parking	90.9%	86.2%
	Off-Street Public Parking	100.0%	98.8%
	Total Public Parking	92.1%	87.7%
Village	On-Street Parking	75.3%	70.3%
	Off-Street Public Parking	90.9%	94.3%
	Total Public Parking	78.1%	74.1%
Village (Other Parking Sources)	Off-Street NCTD Parking	69.8%	59.7%
	Off-Street Private Parking	63.6%	49.5%

Source: CR Associates (2023)

More public parking lots experience full occupancy during this period, with the majority being on the Village area. Parking demand throughout the Barrio Area experiences an increase when compared to the weekday period, with more on-street segments having occupancy greater than 70%, specifically along Harding Street, Pine Avenue, and Chestnut Avenue.

Additionally, the increase in on-street parking demand within the Village and Beach Area neighborhoods at blocks west of the LOSSAN rail corridor reach 85% or greater and up to 100% capacity along Ocean Street, Oak Avenue, and the public parking lots off of Grand Avenue and Carlsbad Village Drive.

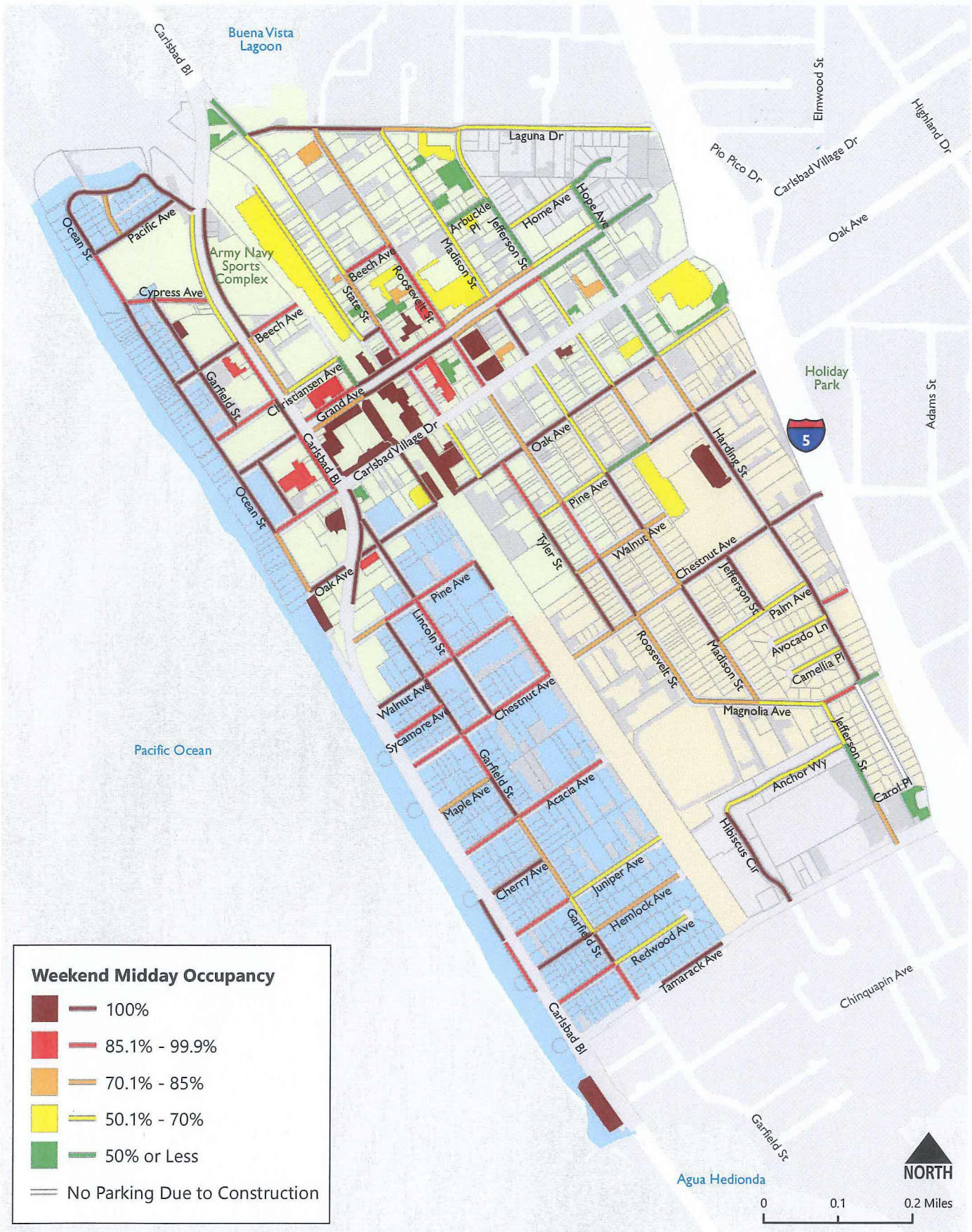


Figure 3.2 - Weekend Parking Occupancy Midday (10 a.m. - 1 p.m.)

Evening (6 p.m. to 9 p.m.)

Table 3.3 summarizes weekend evening (6 p.m. to 9 p.m.) occupancies by neighborhood along with the occupancies of the earlier periods to facilitate comparison. As shown, neighborhood-wide occupancies in the Beach Area surpass the 85% threshold. Village on-street and off-street occupancies also peak, reaching over 80% (82.4%) with off-street public parking occupancy over 95% (96.1%). The noticeable spike in utilization of NCTD parking helps to manage the overall peak parking demand in the Village.

Table 3.3 - Weekend Public Parking Occupancy by Neighborhood (All Periods)

Area	Parking Type	Weekend Morning		Weekend Midday		Weekend Evening	
		2023	2022	2023	2022	2023	2022
Barrio	On-Street Parking	70.8%	66.9%	80.8%	63.7%	70.5%	69.9%
	Off-Street Public Parking	42.6%	42.6%	81.7%	30.0%	70.2%	43.5%
	Total Public Parking	65.9%	62.3%	80.9%	57.2%	70.4%	64.9%
Beach Area	On-Street Parking	69.3%	67.4%	90.9%	86.2%	90.9%	91.9%
	Off-Street Public Parking	71.8%	71.2%	100.0%	98.8%	100.0%	81.2%
	Total Public Parking	69.6%	67.8%	92.1%	87.7%	92.0%	90.5%
Village	On-Street Parking	48.3%	44.1%	75.3%	70.3%	79.4%	80.0%
	Off-Street Public Parking	56.2%	59.7%	90.9%	94.3%	94.5%	97.7%
	Total Public Parking	49.7%	46.6%	78.1%	74.1%	82.1%	82.8%
Village (Other Parking Sources)	Off-Street NCTD Parking	51.8%	44.4%	69.8%	59.7%	78.7%	86.0%
	Off-Street Private Parking	35.0%	34.5%	63.6%	49.5%	53.1%	48.8%

Source: CR Associates (2023)

The neighborhood-wide evening weekend peaks for each neighborhood were higher in magnitude than their weekday peaks, except for the following:

- Barrio – slightly decreases from 70.8% during the evening weekday peak to 70.4% during the evening weekend peak.
- Village – decreases from 58.6% during the morning weekday peak to 49.7% during the morning weekend peak and from 81.0% during the midday weekday peak to 78.1% during the midday weekend peak.

Figure 3.3 displays weekend parking occupancy for the evening period between 6 p.m. and 9 p.m. During this period, parking occupancy is high throughout the Beach Area and Village. Off-street parking facilities in both neighborhoods are at or near capacity. In the Village, NCTD-specific parking facilities, including the occupancy of the nearly 500-space Carlsbad Village Station parking facility, are close to 80%, and utilization increases overall when compared to all three weekday peaks. These parking lots, generally reserved for NCTD commuters, absorb some of the parking demand in the Village during the weekend evenings.

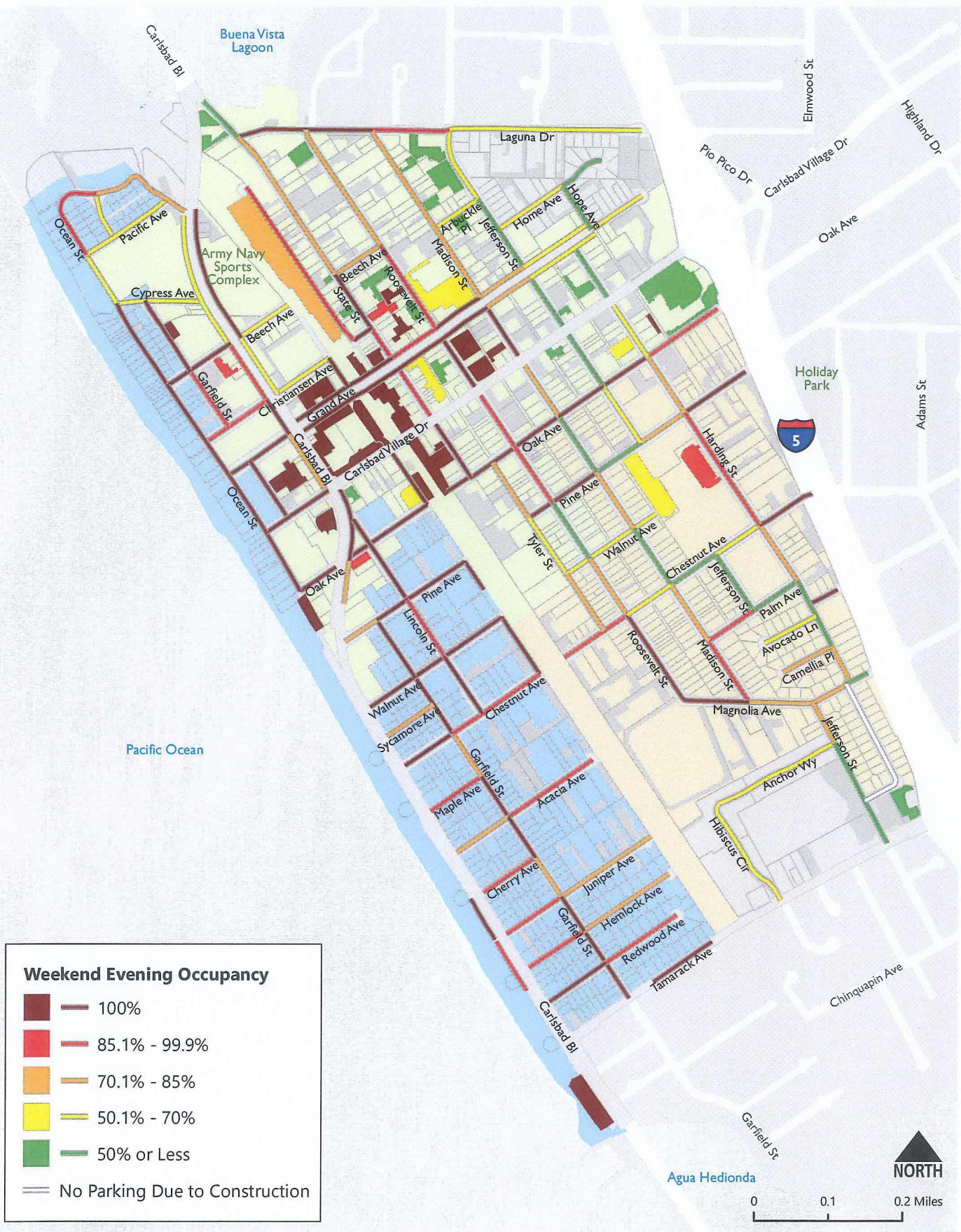


Figure 3.3 - Weekend Parking Occupancy Evening (6 p.m. - 9 p.m.)

3.2 Destination-Based Occupancy

Morning (6 a.m. to 9 a.m.)

Figure 3.4 shows the parking occupancy within a 1/8 mile of each destination inside the study area during the morning period. During this period, nearly all destinations within the study area were below 50% occupancy, with the core of the residential areas in the Barrio displaying between 50.1% and 85% occupancy, and some locations along Magnolia Avenue-Roosevelt Street with greater than 85% occupancies. In the Beach Area near the intersection of Oak Avenue and Ocean Street, some destinations display occupancies of 50.1% to 85% and greater.

Midday (10 a.m. to 1 p.m.)

Figure 3.5 shows the parking occupancy within 1/8 mile of each destination inside the study area during the midday period. Within much of the Beach Area (almost its entirety), occupancy conditions are greater than 85%. The Village core also shows high occupancies, clustered around Roosevelt Street and Grand Avenue. While in the Barrio Area occupancies along the properties fronting the LOSSAN rail corridor are between 70% and 85%, and some properties to the east along Harding Street and to the south along Tamarack Avenue are at 85% or greater and up to 100% occupancy.

Evening (6 p.m. to 9 p.m.)

Figure 3.6 shows the parking occupancy within 1/8 mile of each destination inside the study area during the evening period. During this period, the vast majority of the destinations west of the LOSSAN rail corridor between Beech Avenue and Tamarack Avenue experience an occupancy higher than 85% and up to 100%. The Village's cluster of 85% occupancy during weekend midday along Grand Avenue and Carlsbad Village increases in coverage in the weekend evening, and the cluster of destinations with 50% occupancy or above within the Barrio Area along Roosevelt Street and Magnolia Avenue, present during the weekend midday period, decreases to 50% or less during the weekend evening period.

Overall, the study area experienced an increase in parking occupancy during the weekend when compared to the data presented in the 2022 report, with the most significant increase observed in the Barrio Area, with 57.2% occupancy in 2022 increasing to 80.9% occupancy in 2023 as indicated in Table 3.3.

Temporal Peak by Destination

Figure 3.7 shows the peak parking period of each destination based on its parking occupancy within 1/8 mile during the three weekend time periods. As shown, the evening period is the peak within large portions of the study area analyzed, as was the case during the weekday. While the previous section pointed out the peak demand's magnitude is higher on the weekend, compared to weekday, the exhibit reveals more destinations within the study area experience 85% conditions on the weekend compared to weekday, and more destinations experience multiple observation periods where parking occupancy was above the 85% threshold.

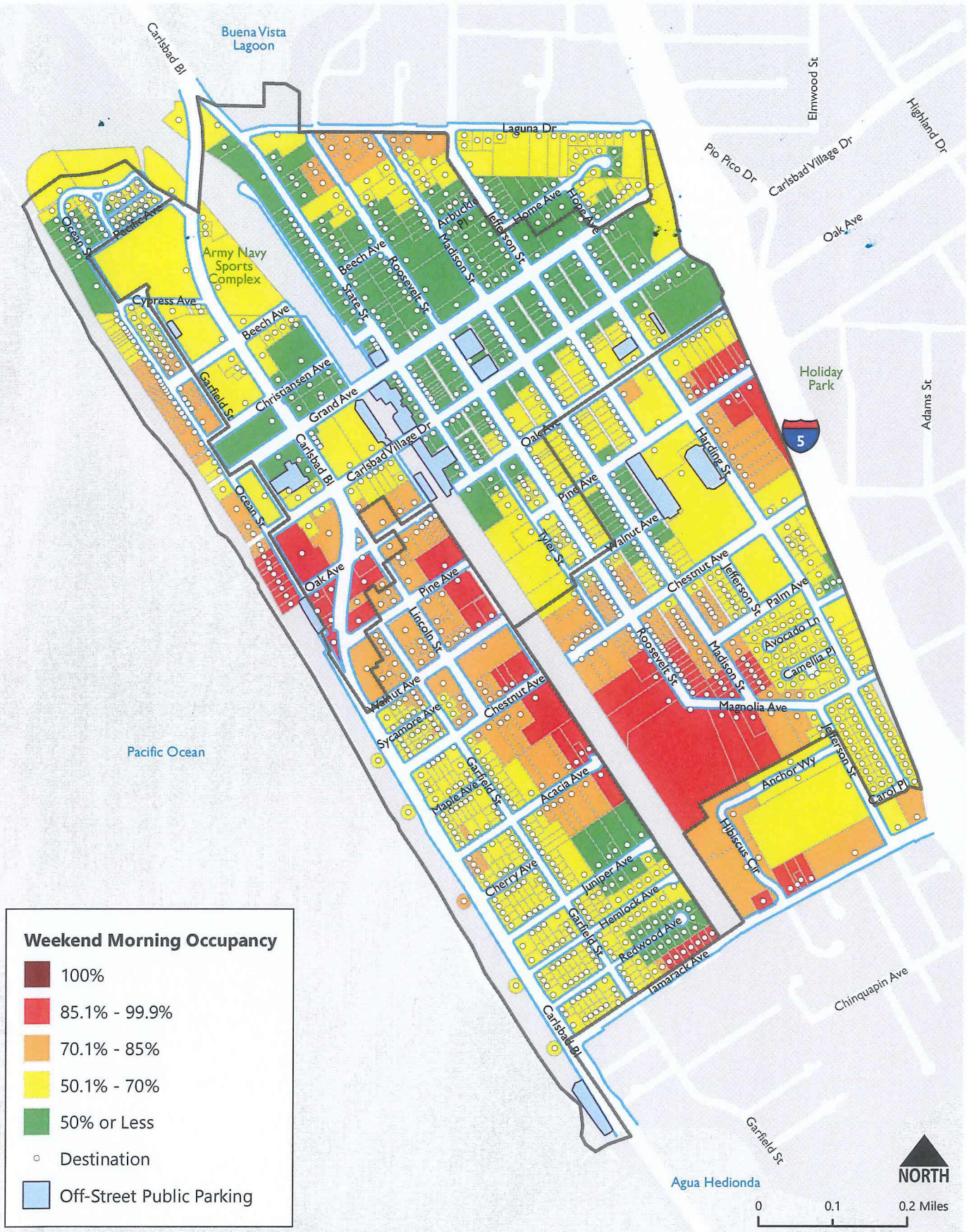


Figure 3.4 - Weekend Parking Occupancy by Destination Morning (6 a.m. - 9 a.m.)

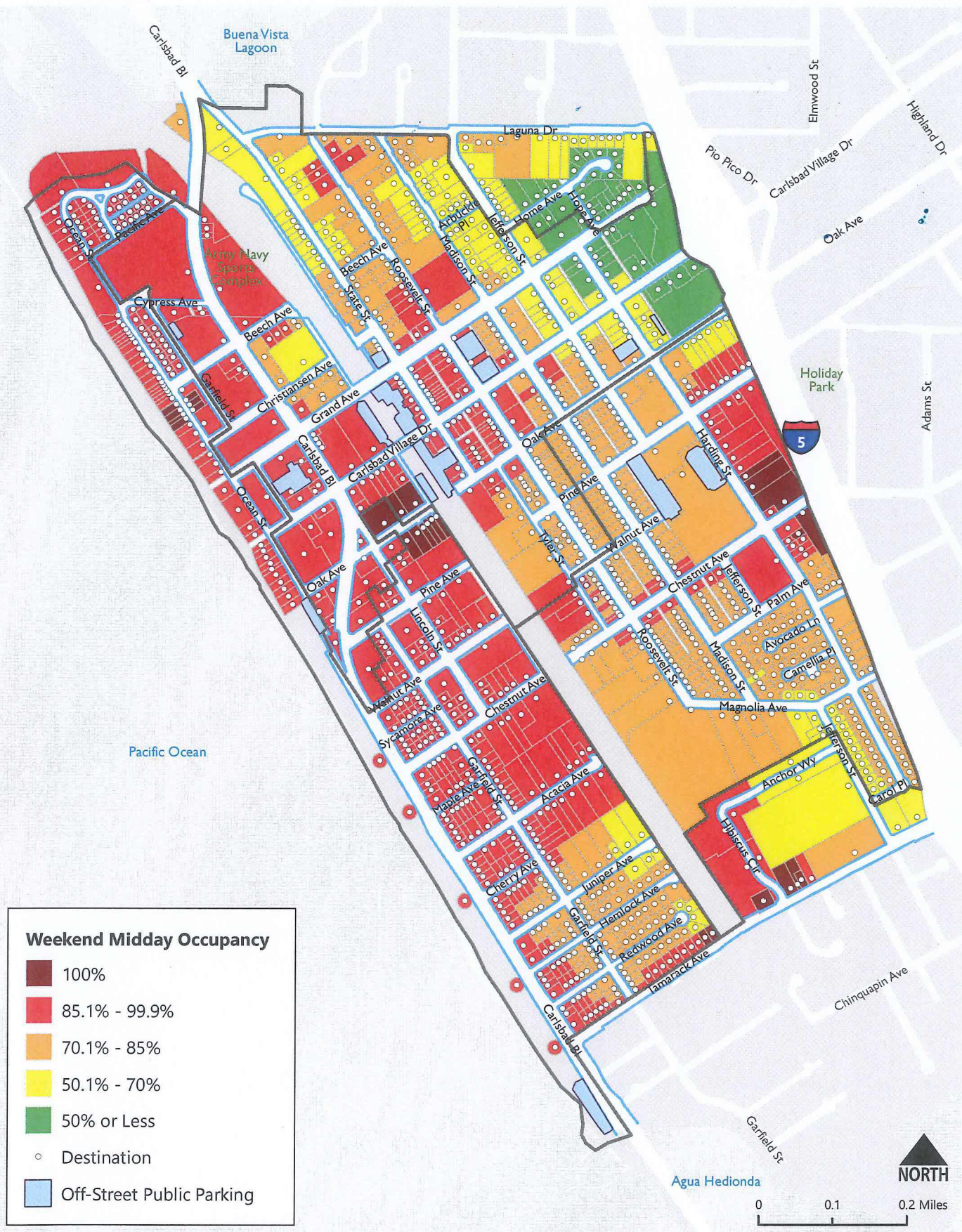


Figure 3.5 - Weekend Parking Occupancy by Destination Midday (10 a.m. - 1 p.m.)

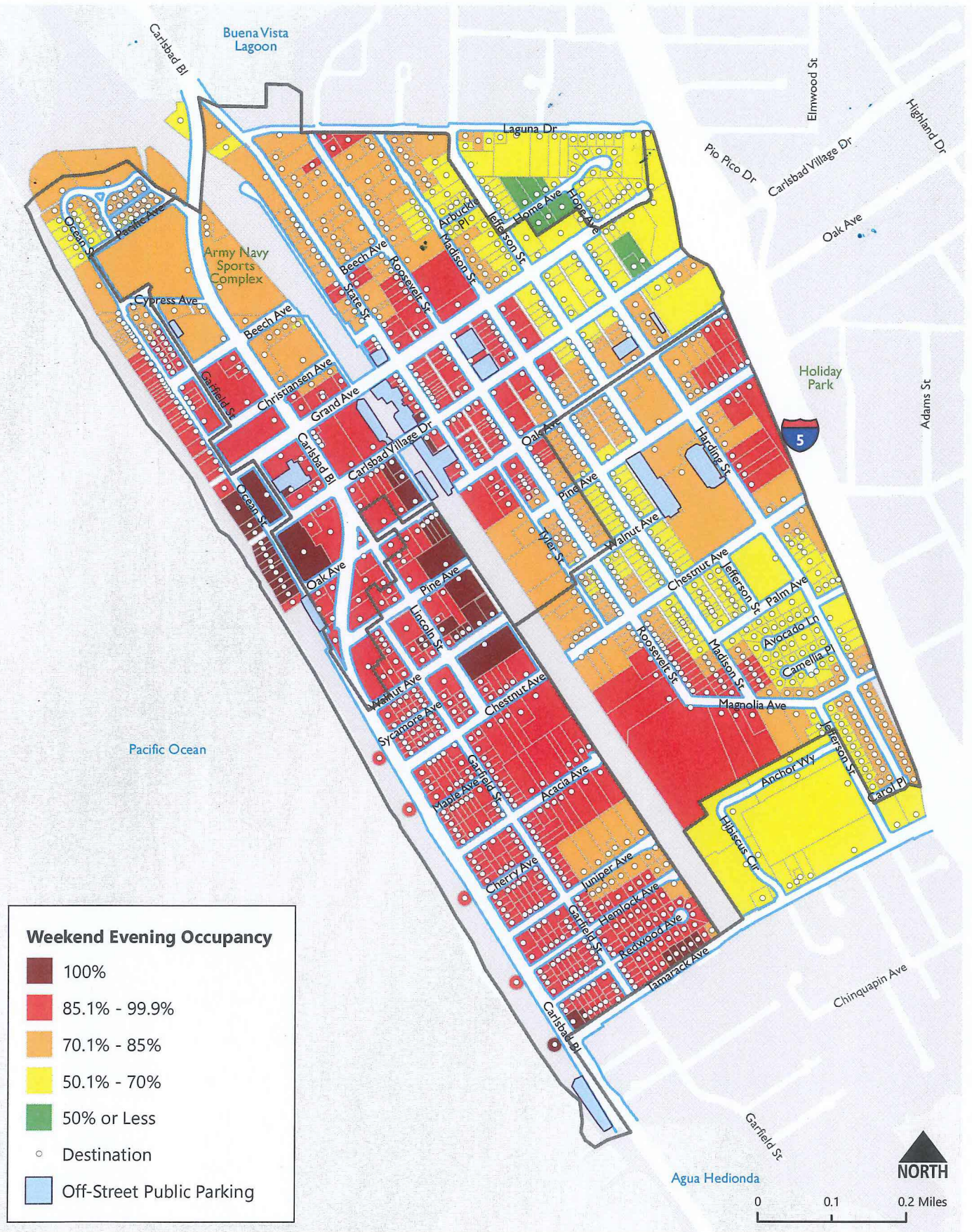


Figure 3.6 - Weekend Parking Occupancy by Destination Evening (6 p.m. - 9 p.m.)



Figure 3.7 - Weekend Peak Period

4.0 Parking Duration

Parking turnover is the typical duration vehicles stay parked in between trips. Turnover was estimated for the study area with the aid of ALPR technology applied to video footage used to collect parking occupancy. An ALPR machine reads the license plates of parked vehicles from the video footage that was used for parking occupancy collection and generates a geographically referenced data record for each parked vehicle coded by their vehicle make, model, and license plate. Due to the long periods of time necessary to complete a round of data collection in the entire study area, this is the most precise average parking duration that can be estimated. These records were post-processed for every time period (morning, midday, and evening), so that the data generated for every period was attributed to the common identification record of a parked vehicle. Each parked vehicle's duration of stay was estimated by counting the number of times that vehicle was captured in the data collection. The estimated duration a vehicle was parked for was determined by the length of time between data collection periods. For example, a vehicle captured in the morning, midday, and evening periods is parked for 12 hours or more. A vehicle captured during the midday collection (10 a.m. – 1 p.m.) but not observed during the evening collection (6 p.m. – 9 p.m.) would have a parking duration of less than 6 hours.

Each parked vehicle's duration was then summarized to the neighborhood (Barrio, Village, or Beach Area) where it was parked to estimate the average duration for a given neighborhood. This approach and resulting summarization would have missed any instances where a vehicle arrived and departed in between an interval (i.e., between 1 p.m. and 6 p.m.) of data collection without detection. These undetected trips (theoretically between zero and five hours in length), if they were captured, would have lowered the measured average duration of stay. In recognition of the bias, this summary is considered the average duration of stay for vehicles observed.

It is important to note that the parking duration data collected was generalized and secured to ensure privacy, and it will not be used for any purposes other than illustrating parking duration information.

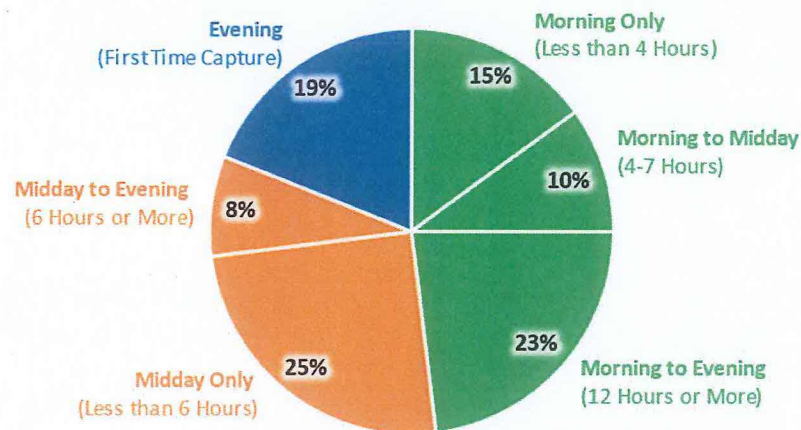
4.1 Existing Weekend Parking Duration

The previous chapters establish that parking occupancy was significantly higher on weekends. Given weekend parking occupancy was of a significantly higher magnitude than weekday parking occupancy, this section focuses on weekend parking as it was sufficient alone to represent the existing conditions worst-case scenario for parking need. This was confirmed in **Figure 4.1** through **Figure 4.3**, the respective peak conditions for weekday and weekend parking which show there are far more destinations with high parking occupancy (greater than 85%) in the surrounding area on the weekend compared to weekday. Also, parking occupancy in the entire study area is generally higher for most observation periods on the weekends.

Barrio Neighborhood

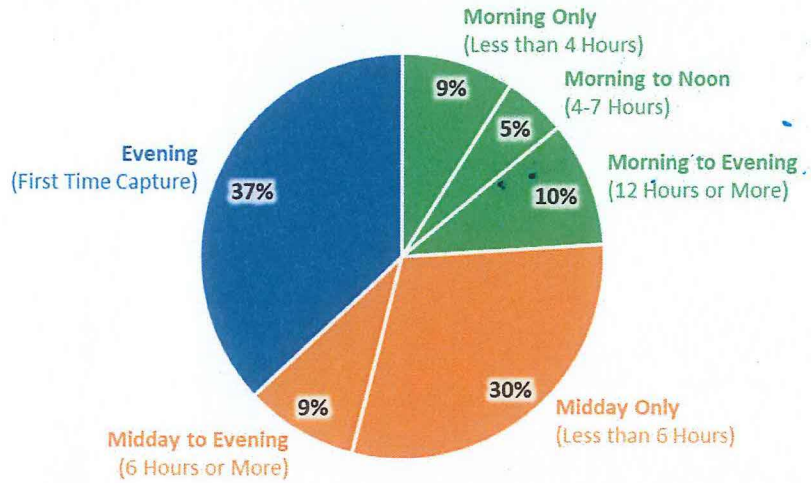
In the Barrio neighborhood, 23% of the vehicles observed to utilize on-street parking (vehicles observed) park 12 hours or more from the morning to the evening periods, indicative of the mainly residential development in that neighborhood as well as schools, and commercial establishments present. Additionally, 25% of vehicles observed park during the midday period and leave prior to the evening (less than 6 hours) and 19% of vehicles observed park for the first time during the evening.

Figure 4.1 – Average Length of Stay at Barrio Neighborhood for On-Street Facilities



In the Village neighborhood, morning parking is less than half (19%) of that observed in the Barrio neighborhood, with only nine percent of the vehicles observed park all day (12 hours or more). This is an indicative of the primarily commercial land uses which peak during the midday and evening periods. Additionally, 31% of the vehicles observed park during the midday period and leave prior to the evening, and 43% park for the first time in the evening. These trends are indicative of the mixed-use nature of the Village neighborhood, with most users utilizing on-street parking during midday or in the evening which coincides with the commercial business hours.

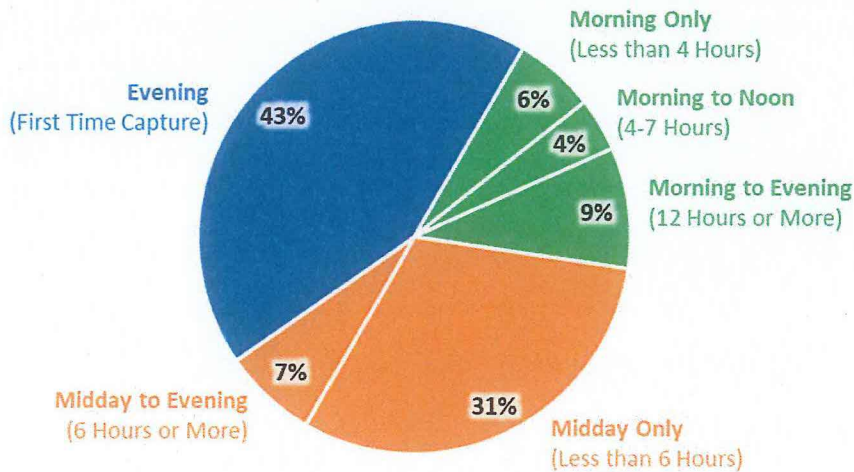
Figure 4.2 – Average Length of Stay at Village Neighborhood for On-Street Facilities



Beach Area Neighborhood

In the Beach Area neighborhood, a similar trend exists, with less than 25% of the vehicles observed park in the morning out of which ten percent park all day. Additionally, 30% of the vehicles observed park during the midday period and leave before 6 p.m. (less than 6 hours) and 37% of the vehicles observed park for the first time in the evening. The midday parking durations in the Beach Area neighborhood and Village neighborhood are almost identical, likely due to their shares of mixed-use, commercial, and retail land uses. Where the two neighborhoods contrast is between evening and morning parking duration, with the Beach Area neighborhood having longer durations in the morning due to the higher density of residential land uses in that neighborhood.

Figure 4.3 - Average Length of Stay at Beach Area Neighborhood for On-Street Facilities



The figures presented above depict varying parking demands across the study areas. In the Barrio neighborhood, the parking behavior aligns with its predominantly residential nature, as evidenced by the 51% of users who park for 4 hours or more. In contrast, the Village and Beach Area neighborhoods see only about 20% of users parking for this duration. This percentage suggests a balanced relationship between parking demand and turnover. Nonetheless, a notable portion of users in the Village and Beach Area neighborhoods arrive during the evening, likely attracted by the area's bustling dining scene and scenic coastal ambiance. To ensure parking availability in these high-demand areas, further parking management measures should be implemented and incorporated into the updated parking management plan.