PREPARED FOR THE TOWN OF TIBURON

DOWNTOWN CIRCULATION AND PARKING ANALYSIS

FINAL Report

AUGUST 2012

NELSON
NYGAARD

Cover image sources: Flickr User: cproppe, Creative Commons License (left), Nelson\Nygaard (top right), Flickr User: Bernt Rostad, Creative Commons License (bottom right)

Table of Contents

Table of Figures

EXECUTIVE SUMMARY

Downtown Tiburon serves as a primary destination for residents wishing to shop, eat, socialize, and perform other daily errands as well as being a prime tourist attraction. Local residents are crucial to the success of local businesses, especially given the dramatic seasonal variations. In short, the Town of Tiburon recognizes the value of Downtown for both its residents and visitors. In recent years, the Town has undertaken several efforts designed to make it more convenient and more attractive for residents and others to visit Downtown. The Town is currently in the process of implementing a Downtown Vibrancy initiative which has sought to comprehensively address how Downtown can be improved for all those that work, live, play, and visit in Tiburon.

Through extensive outreach to stakeholders and the community, inefficient parking and circulation of the transportation network emerged as one of the primary concerns. One of the major findings of the Vibrancy project was that there exists among local businesses and residents a perceived parking problem, namely inadequate supply and restrictive regulations, despite evidence that much of the parking in Downtown is underutilized. Circulation issues revealed by the Downtown Vibrancy project included a local desire for enhanced pedestrian and bicycle connections as well as more usable public open space, especially west of the Main Street area. Community members highlighted the need for better signage and wayfinding to local destinations such as Ark Row, the ferry terminal, and Main Street, as well as strategies that reduce the reliance on automobiles for circulation within and access to Downtown.

As a result of the Vibrancy effort, the Town prioritized a detailed and focused study of parking and circulation issues in Downtown. The primary goal of this study is to make parking and circulation more convenient for both residents and visitors, thereby making it easier for people to visit and enjoy Downtown businesses and attractions.

This report represents a system-wide study of current downtown parking and circulation conditions, which will help to guide both short- and long-term Town action, as well as inform future versions of the Vibrancy plan as “a flexible road map” for successful improvements in Tiburon. This report includes an analysis of parking supply and availability, and vehicular, pedestrian, and bicycle circulation. In addition, this report proposes strategies to manage both the supply and demand for parking, while also maximizing its efficiency and convenience. Furthermore, it presents options for implementing various “complete streets” policies and strategies within the study area, which will increase access and safety for all modes of travel. Finally, recognizing that wayfinding elements are crucial to a successful, vibrant downtown, this plan includes strategies for effective signage that will complement improved parking and circulation management, and instill a unique sense of place.

The contents of this report include:

Chapter 1: Provides an analysis of existing conditions for both parking and circulation. Also included is the summary of results from a motorist and bicyclist survey.

Chapter 2: Provides an analysis of current parking demand in Downtown Tiburon as it relates to existing land uses.

Chapter 3: Includes a detailed series of recommendations that comprise a Parking Management Plan for Downtown.

Chapter 4: Includes a detailed series of recommendations designed to improve vehicle, bicyclist, and pedestrian circulation.

SUMMARY OF EXISTING CONDITIONS

Parking

Key Finding #1: Downtown Tiburon contains a large amount of parking, occupying a large amount of land area.

A total of 1,608 parking spaces exist in Downtown Tiburon, most of which (1,468) are located in off-street facilities. These surface parking lots occupy large portions of the Downtown area, including storefront locations, dictating the urban form along Tiburon Boulevard and detracting from the pedestrian experience and the Downtown's ability to act as a walkable, "park once" district.

Key Finding #2: Downtown's existing parking supply, particularly the privately-owned parking, is underutilized.

As a whole, Downtown has more than enough supply to meet current levels of demand. Combined utilization rates never exceeded 50% during count periods, meaning that at any given time, 804 spaces *or more* are available in Downtown Tiburon. Peak summer demand is estimated to be 74% parking occupancy for the study area as a whole.

Key Finding #3: While parking Downtown is underutilized, demand is heavily concentrated along Tiburon Boulevard and Main Street (Ark Row), as well as in the off-street facilities closest to the waterfront.

The analysis of utilization and turnover data suggests that certain spaces in Downtown Tiburon are more desirable than others and that demand can be highly concentrated. This concentration of demand is likely due to a number of reasons, including the following:

- All on-street spaces are free while some off-street spaces are paid, meaning most motorists will seek on-street spaces before deciding to enter a paid off-street lot.
- Many of Downtown's largest attractions are concentrated along the waterfront and Main Street area.
- Wayfinding signage, if present, is inadequate in most of Downtown, meaning many visitors are unaware of the proximity and availability of additional non-"front door" spaces, both on-street and off-street.
- Some of the off-street parking near Main Street and the waterfront is reserved parking and not open to the public.
- The particular suburban form of Tiburon Boulevard and general lack of pedestrian connectivity makes parking facilities within a comfortable, five-minute walk of the waterfront seem further than they actually are.

Key Finding #4: During peak summer months, these utilization trends are exacerbated.

During peak summer months, the influx of visitors exacerbate the concentration of parking demand along Tiburon Boulevard and Main Street, and in waterfront off-street facilities, heightening the need for a coordinated parking management strategy that better distributes demand throughout Downtown's various existing on- and off-street facilities.

Key Finding #5: Average vehicle duration was within the two-hour time limit, but the amount of vehicle relocation reveals some problematic trends that are especially of concern during peak summer months.

The average turnover rate for on-street spaces in the study area is 1.37 hours. As such, it appears that most vehicles are obeying the posted time restrictions. However, the survey indicates that 11% of people admit to relocating their vehicle to avoid the time restriction. In reality, the amount is likely higher given the self-report nature of the parking survey. While the parking survey did not measure the number of employees parking on-street, it is likely that numerous employees working in the downtown area are parking on-street and moving their vehicles every two hours to avoid posted regulations. This represents an inefficient use of prime parking spaces, which should be reserved for visitors and shoppers. It is especially important to limit the use of prime on-street space by local employees during summer months, when the largest amount of visitors and shoppers frequent Downtown Tiburon and parking demand is at its peak.

More importantly, it is also likely that this two-hour limit discourages the potential for longer visits, as visitors decide to leave Downtown instead of moving their vehicles in order to stay and finding another available on-street space.

Key Finding #6: Certain parking restrictions may be unnecessarily limiting supply.

It should also be noted that some on-street parking regulations (such as loading zones) are leading to very low utilization rates, representing an inefficient use of valuable curb space. Changing the regulations to allow for longer stays could represent an easily implementable way to relieve pressure on the busiest blocks of Tiburon Boulevard and Main Street.

Key Finding #7: Demand for parking is mostly local, but during summer months non-local parking demand increases.

This project's windshield survey revealed that during non-summer months, those parking in on-street facilities in Downtown Tiburon are predominantly local, mostly coming to eat, drink, or shop. The typical motorist comes at least once per week and parks for less than two hours. During summer months, however, the typical motorist will most likely be a visitor or tourist unfamiliar with the area and its parking facilities. This will serve to increase demand for spaces closest to the Main Street and waterfront area, heightening the need for a coordinated parking management strategy that better distributes demand throughout Downtown's various existing on- and off-street facilities.

Key Finding #8: Bicycle parking utilization is also highly concentrated, and some parking facilities should be improved.

Utilization of bicycle parking facilities varies dramatically based upon location. The highest utilization rates are near the ferry terminal and near the cafes and restaurants along Main Street, where many bicyclists stop to eat and drink. Other facilities, specifically those along Tiburon

Boulevard, see very low utilization rates, either due to their inconvenient location, their "insecure" appearance, or rack design issues that leave bicycles vulnerable to theft.

Peak Parking Demand

Based on the observed occupancy rates, the study area is substantially oversupplied. For example, at peak occupancy on Thursday 805 parking spaces in the study area are occupied. If one were to assume that this was meeting the target occupancy rate, then the study area would only require 899 spaces. Current supply in the study area, however, is 1,608 spaces, which translates into a 79% "oversupply" of parking based on current demand. Similar trends are evident on both sides of Beach Road, although demand is higher east of Beach Road. In short, the study area has more than enough parking spaces to meet current demand.

An estimate of peak summer demand was also generated as part of this study. Figure ES-1 highlights the findings of this analysis based on adjusted occupancy rates. It is important to note that during the estimated peak, the study area is still "oversupplied," although far less so than non-summer months. In fact, the supply east of Beach Road would closely meet target occupancies, while there would still be more than enough supply west of Beach Road.

Figure ES-1 Occupancy, Inventory, and Level of Supply, Adjusted Saturday Peak

Area	Occupancy (a)	Necessary Supply (b) = (a / .85)	Existing Supply (c)	Over / Under Supply (d) = (c-b)	% Over / Under Supply (e) = (d / b)
Study Area	1,198	1,409	1,608	199	14%
West of Beach Rd.	298	351	512	161	46%
East of Beach Rd.	900	1,058	1,096	38	4%

The peak occupancies for the entire study area occurred on Thursday at 1 PM and Saturday at 2 PM. Parking demand ratio calculations reveal two different, but equally useful correlations:

- *Built Stalls to Built Land Use Ratio*. This represents the total number of existing parking stalls correlated to total existing land use square footage (occupied or vacant) within the study area. According to data provided by the Town, there is approximately 350,279 gross square feet (GSF) of land uses.
- *Combined Peak Demand to Occupied Land Use Ratio.* This represents peak hour occupancy within the entire study area combining the on and off-street supply. As such, actual parked vehicles were correlated with actual occupied building area (approximately 305,243 GSF). From this perspective, current peak hour demand stands at a ratio of approximately **2.6 occupied parking stalls per 1,000 GSF** of built land use for Thursday and **2.1 occupied parking stalls per 1,000 GSF** of built land use for Saturday. At this time, about **4.6 parking stalls per 1,000 GSF** of built land use have been developed/provided within the study area (combining the on and off-street parking supplies). In other words, parking supply substantially exceeds actual demand. See Figure 2-5 for a comparison with other cities and downtowns.

Figure ES-2 Parking Demand – Mixed Land Use to Built Supply

Peak Time Periods	A	B	C	D	E	F
	GSF (Built)	GSF (Occupied)	Total Supply Inventoried in Study Area	Built Ratio of Parking (per 1,000 GSF)	Total Occupied Spaces	Actual Ratio of Parking Demand (per 1,000 GSF)
Thursday, 1 PM	350,279	305,243	1,608	4.6	805	2.6
Saturday, 2 PM					627	2.1

Circulation

Downtown Tiburon is located at the tip of the Tiburon Peninsula, accessible only via Tiburon Boulevard on the West side of the peninsula, and Paradise Drive on the east side. Tiburon Boulevard is a wide street (close to 70 feet) with limited pedestrian crossings, large lane widths, suburban land uses, and numerous curb cuts, which limit the pedestrian experience and pedestrian connectivity. Traffic volumes are relatively low along Tiburon Boulevard, resulting in minimal congestion.

One of the most noticeable aspects of Downtown Tiburon is the stark contrast between the pedestrian oriented areas around Main Street and the more suburban areas along Tiburon Boulevard. Main Street and the waterfront area have wide sidewalks, narrow roadways, and buildings that meet the street. Conversely, along Tiburon Boulevard buildings are set back from the street and surrounded by surface parking lots, pedestrians must cross long distances and many lanes of traffic at intersections, and frequent curb cuts disrupt the bicycle and pedestrian network.

In general, directional access to parking resources is not readily visible, especially to visitors of the area, due to insufficient and inconsistent wayfinding. Wayfinding is not consistent throughout Downtown and fails to provide any strong visual cues for all user groups, but especially motorists searching for parking. As such, many motorists "cruise" for free on-street parking, when both on-street and off-street facilities have significant availability within a five-minute walk of Main Street. This contributes to unnecessary vehicular trips at various places Downtown.

Main Street is the biggest "draw" in Downtown, yet represents an underutilized pedestrian asset. While wide sidewalks, narrow lane widths, mid-block crossings, and attractive brick pavings make the area ideal for high pedestrian traffic, no elements exist that encourage pedestrians to linger and not just travel through Main Street on their way to their final destination. Ark Row is not as apparent as other Downtown areas and lacks transitions to and from other parts of Downtown.

Downtown Tiburon is located along a popular cycling route used by both residents (typically on road bikes) and tourists (often on bikes rented in San Francisco) alike, mostly recreationally. Many recreational road bicyclists stop in Downtown Tiburon to rest and eat, and many recreational tourist bicyclists come to Downtown Tiburon to catch a ferry back to San Francisco after having ridden across the Golden Gate Bridge. As such, bicycle traffic is relatively high Downtown, especially during summer months, creating a demand for bicycle parking facilities.

However, as noted above, utilization of bicycle parking facilities varies dramatically based upon location. Highest utilization rates are near the ferry terminal and near the cafes and restaurants along Main Street, where many bicyclists stop to eat and drink. Indeed, parked bicycles (whether in bicycle parking facilities or parked along the sidewalk) tend to clutter Main Street, especially during summer months, and can impact pedestrian travel. Other bicycle parking facilities, specifically those along Tiburon Boulevard, see very low utilization rates.

PARKING MANAGEMENT PLAN

The recommendations included as part of the Parking Management Plan below are designed to work together to meet the Town's parking management goals. While these recommendations could theoretically be implemented piece by piece, their effectiveness can only be ensured if they are implemented together. This parking management plan is designed to be "actionable" and "implementable," informed by successful strategies already in operation in similar jurisdictions. While some of the strategies described below may require additional analysis and planning, Nelson\Nygaard has sought to craft a plan that will allow the Town to respond to its parking challenges in Downtown Tiburon in a targeted, efficient, and cost-effective manner.

RECOMMENDATION #1: REMOVE "2-HOUR" ON-STREET TIME RESTRICTIONS, INSTALL METERS, AND UTILIZE DEMAND-BASED PRICING TO MANAGE DEMAND AND TURNOVER.

This recommendation proposes the elimination of all existing "2-hour" time limits for on-street spaces. Instead, it is recommended that the Town install "smart" parking meters and price on-street parking as a means to meet target occupancy levels and generate an appropriate level of turnover. Motorists would be allowed to park in an on-street parking space for up to five hours.

The rationale for parking meters in Downtown Tiburon is to ***make parking more convenient and accessible for residents and visitors.*** Finding an on-street parking space in many parts of Downtown, especially during the summer, can be very difficult because motorists will always attempt to seek out free on-street spaces rather than pay for parking in an off-street lot. By using moderate pricing signals, meters can effectively regulate demand and more evenly distribute vehicles among the other parking assets in Downtown.

Initial Hours & Pricing Structure

East of Beach Road

- 9 AM – 8 PM, 7 days a week
- Peak period (Memorial Day to Labor Day)
  - $1.50 per hour (0-2 hours)
  - $2.00 per hour (2-5 hours)
- Off-peak period (Labor Day to Memorial Day)
  - $1.00 per hour (0-2 hours)
  - $1.50 per hour (2-5 hours)
- 5-hour time limit

West of Beach Road

- 9 AM – 8 PM, 7 days a week
- Peak period (Memorial Day to Labor Day)
  - $.75 per hour
- Off-peak period (Labor Day to Memorial Day)
  - $.25 per hour
- 5-hour time limit

A 5-hour limit is thought to be most appropriate because it will deter commuters (i.e. ferry riders) from parking on-street all day and direct them to utilize off-street parking, while providing flexibility to people wishing to stay in Downtown for more than just a few hours. More importantly, meter pricing will improve convenience by helping to ensure turnover and parking availability for customers. Meter prices would be based on length of stay and also adjusted to respond to seasonal fluctuations in demand so that when parking demand is higher or lower, prices would increase or decrease accordingly.

Based on the analysis of parking conditions in Downtown and the needs of the Town, it is recommended that the Town install multi-space, pay-by-space meters (with wireless, pay-by-phone technology) for its on-street spaces.

RECOMMENDATION #2: IMPLEMENT A RESIDENT PERMIT PROGRAM.

A permit program would allow eligible residents to purchase a limited number of vehicle-specific parking permits. These permits would allow for free parking (up to two hours) at all metered on-street spaces. As part of cooperative parking agreements with private lot owners, the Town could also negotiate to allow permit holders to park for free in designated off-street lots for a limited time period. Residents wishing to stay longer than the free period would pay the posted meter rates.

Permits would be issued as stickers and would be vehicle specific in order to prevent permits from being transferred among different vehicles. Enforcement would be performed manually (i.e. chalking of tires) by parking enforcement staff.

RECOMMENDATION #3: WHERE FEASIBLE, EXPAND ON-STREET SUPPLY.

While the demand-based pricing program for on-street spaces seeks to more effectively manage existing supply, it is possible that the supply of on-street parking could also be expanded. In short, this recommendation proposes that the Town evaluate some of its existing curb space to determine if it might be possible to “open up” a number of additional curb spaces in Downtown Tiburon and designate them as metered spaces. These metered spaces could be gained through reallocation of some short-term parking spaces, as well as some current “red” curb areas. In addition, there is potential to gain additional on-street parking through future circulation changes.

RECOMMENDATION #4: CONSIDER COOPERATIVE PARKING ACCESS AGREEMENTS WITH WILLING OFF-STREET LOT OWNERS.

This recommendation seeks to better coordinate pricing and regulatory structures between on- and off-street supply as a means to achieve desired parking and circulation outcomes. In short, the Town should explore entering into cooperative agreements with willing private owners of key off-street lots to implement a demand-based pricing program. Such agreements would facilitate coordination between on- and off-street facilities.

It should be emphasized that this strategy seeks only to engage property owners that may be willing to cooperatively manage their parking assets with the Town.

RECOMMENDATION #5: IF NECESSARY, IMPLEMENT A PEAK PERIOD VALET PARKING PROGRAM.

This recommendation proposes the potential implementation of a Downtown valet parking program during peak periods of demand. The valet program should be designed to facilitate convenient drop-off and pick-up in the Downtown area, without impacting existing parking or traffic operations.

RECOMMENDATION #6: DEVELOP A PROACTIVE COMMUNITY OUTREACH PLAN AND ONGOING COMMUNICATION STRATEGY.

It is recommended that the Town be proactive in its communications with the greater Tiburon community and develop a formal outreach program that articulates the specifics, goals, rationale, and benefits of this Parking Management Plan.

An outreach and communications plan could include some or all of following elements:

- Community meetings, including small group or community-wide meetings
- Informational materials, such as brochures or Town newsletter
- Press releases
- Parking signage and wayfinding, as described in Circulation Recommendation #5
- Website
- Social media, such as Facebook and Twitter
- Smartphone applications
- Email distribution lists to inform subscribers of program updates

RECOMMENDATION #7: ESTABLISH AN ONGOING DATA COLLECTION, MONITORING, AND EVALUATION PROCESS.

In parking, it is only possible to manage what is measured. This Plan recommends that the Town periodically collect parking occupancy data for both on- and off-street parking facilities, and additional turnover data for on-street spaces. This data will be essential for evaluating whether the demand-based pricing policies recommended within this Plan are achieving their goals.

RECOMMENDATION #8: CONSIDER USING PARKING METER AND PERMIT REVENUE FOR DOWNTOWN IMPROVEMENTS.

This recommendation proposes that the Town should consider utilizing any net parking revenue generated from newly installed meters at curb spaces, meters in designated off-street lots, and resident permits for Downtown improvements. This revenue could be deposited in a new Downtown Reinvestment Fund, and could be spent on projects or programs specifically designed to improve the Downtown.

CIRCULATION PLAN

The Circulation Plan proposes a targeted set of recommendations related to circulation in Downtown Tiburon. The ultimate goal of these recommendations is to improve safety, accessibility, and mobility for all user groups in Downtown. The recommendations are organized by a rough distinction of "low-cost" and "high-cost," according to the relative projected costs and feasibility of implementation. This distinction is intended to provide an approximate phasing plan, as the short-term projects are relatively low-cost while long-term recommendations are more expensive and would require some difficult policy decisions. However, each recommendation should be assessed in the context of Town resources, cost-effectiveness, and priorities for Downtown.

"Lower-Cost" Recommendations and Shorter-term Concepts

Figure ES-3 Summary of Lower-cost Recommendations and Shorter-term Concepts

RECOMMENDATION #1: INITIATE NEGOTIATIONS WITH CALTRANS CONCERNING JURISDICTION OF TIBURON BOULEVARD IN THE DOWNTOWN AREA.

As a state highway (Highway 131), Tiburon Boulevard is currently a state-owned highway under the control of Caltrans. This designation potentially restricts future design and engineering changes to the roadway. The Town should initiate discussions with Caltrans about the transfer of

jurisdiction to the local government. Establishing jurisdiction over Tiburon Boulevard would free the Town to make its own decisions about the future of the roadway.

RECOMMENDATION #2: CLOSE A TARGETED NUMBER OF DRIVEWAYS ALONG TIBURON BOULEVARD IN THE DOWNTOWN AREA.

This strategy recommends the installation of planters to close a targeted number of driveways along Tiburon Boulevard in the Downtown area. These driveways include: two driveways along the south side of Tiburon Boulevard between Mar West Street and the Boardwalk Shopping Center, two on the south side of Tiburon Boulevard between Beach Road and Main Street, and one on the east side of Beach Road just south of Tiburon Boulevard. The planters could be large cast-in-place concrete planters, or a series of smaller, prefabricated planters of several possible materials.

RECOMMENDATION #3: INSTALL A NEW CROSSWALK ON TIBURON BOULEVARD. UTILIZE HIGH VISIBILITY CROSSWALK MARKINGS, ADVANCE YIELD LINES, AND APPROPRIATE SIGNAGE.

Install new high visibility crosswalks for all midblock crossings along Tiburon Boulevard and add a new mid-block crossing on Tiburon Boulevard between Beach Road and Main Street. Install advance yield lines and signs at each of the midblock crossings on Tiburon Boulevard.

RECOMMENDATION #4: TRANSITION LOWER MAIN STREET INTO A FORMAL "SHARED SPACE."

It is recommended that Lower Main Street be clearly defined as a space that is shared by all road users equally. Main Street already currently acts as an informal shared space with pedestrians often crossing at multiple points along the street while bicyclists and drivers share the limited roadway space. Officially formalizing these spatial interactions and arrangements will alert drivers to the fact that the space is used differently than other roadways in Tiburon. In addition, this recommendation can facilitate additional temporary street closures for special events. Finally, this effort would also initiate the possible transition to a full Woonerf[1] space (where the distinction between spaces for the different modes is completely blurred) at some point in the future.

RECOMMENDATION #5: DESIGN AND IMPLEMENT A COORDINATED DOWNTOWN WAYFINDING SYSTEM.

Wayfinding strategies seek to efficiently coordinate movement within a district, pointing users of all modes of travel to the best access routes for their destination. Wayfinding is an important part of a comprehensive circulation and parking management strategy, improving the customer-friendliness of a neighborhood or district while also better distributing parking demand throughout a variety of parking facilities and directing visitors to major destinations. This recommendation proposes various types of wayfinding signage and potential locations for their installation in Downtown Tiburon.

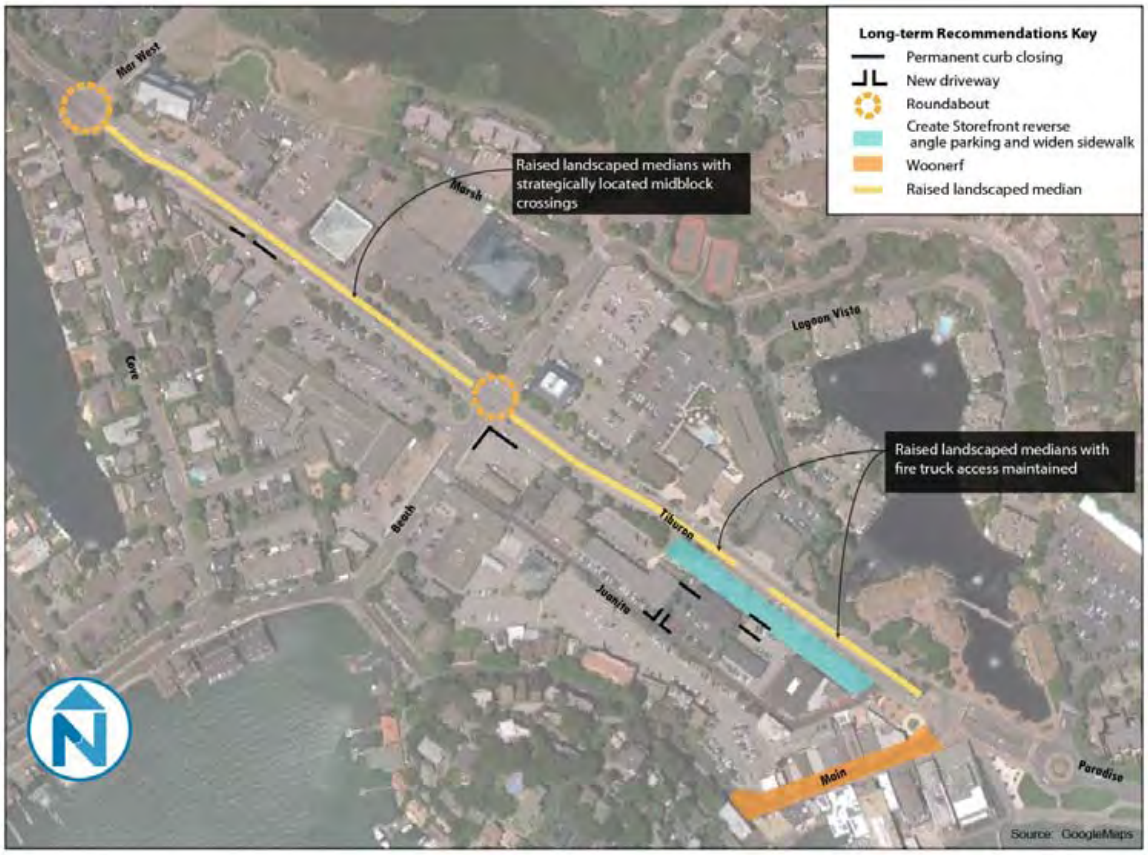
[1] Dutch term for a shared street.

RECOMMENDATION #6: EXPAND BICYCLE PARKING SUPPLY AND REPLACE SOME EXISTING BICYCLE PARKING FACILITIES.

While Downtown-wide bicycle parking was not fully utilized, there are various hotspots of demand and areas of concern. Furthermore, some existing racks are underutilized, in poor condition, and in need of replacement. This recommendation proposes various new rack locations, including some bicycle corrals in on-street parking spaces, and identifies facilities in need of replacement and/or relocation.

"Higher-Cost" Recommendations and Longer-term Concepts

Figure ES-4 Summary of Higher-cost Recommendations and Longer-term Concepts



RECOMMENDATION #7: PERMANENTLY CLOSE TARGETED DRIVEWAYS ON TIBURON BOULEVARD (SEE RECOMMENDATION #2).

Replace the planters with expansions of the existing curb and formally close the unnecessary driveways, as identified in Recommendation #2. This recommendation allows for the construction of sidewalks along these sections of roadway, thereby improving the pedestrian environment, improving traffic flow, and limiting potential points of conflict.

RECOMMENDATION #8: CONVERT THE EASTERN SECTION OF TIBURON BOULEVARD INTO A "MAIN STREET" WITH GENEROUS PUBLIC SPACE.

Install a continuous raised landscaped median on Tiburon Boulevard between Beach Road and Main Street with a median opening in front of the firehouse. Transition all driveways and minor roadways to right-in, right-out only and add new midblock crossings. Remove the access lane on the south side and convert pull-in parking to reverse angle (back-in) parking.

Widen the sidewalk on the southern side to replace the access lane, leaving the gutter intact. Several options could be considered for the bicycle facilities including standard bicycle lanes, buffered bike lanes (painted buffers), or cycle tracks located behind parked vehicles.

RECOMMENDATION #9: CONSIDER REALLOCATION OF ROADWAY SPACE ON TIBURON BOULEVARD BETWEEN MAR WEST STREET AND BEACH ROAD AND INSTALLATION OF A NEW MEDIAN.

This recommendation presents two different alternative concepts for Tiburon Boulevard as a means to enhance the streetscape, improve bicycle facilities, and increase parking capacity. Each alternative is designed to reallocate the right-of-way without involving significant construction costs, such as drainage system changes, moving or installing curbs, or widening the right-of-way. These options explore the potential for adding parallel parking on both sides or converting the bike lanes to a buffered bike lane.

In addition, this recommendation encourages the Town to install a raised, landscaped median on Tiburon Boulevard between Mar West Street and Beach Road, transition all driveways and minor roadways to right-in, right-out only and add new midblock crossings.

RECOMMENDATION #10: REPLACE MAJOR FOUR-WAY INTERSECTIONS WITH ONE-LANE ROUNDABOUTS.

Replace Tiburon Boulevard's intersections at Mar West Street and Beach Road with single-lane roundabouts. These intersections could operate more efficiently from a traffic perspective and result in fewer conflict points if replaced by roundabouts. The intersection at Mar West Street offers the greatest benefit as it would improve circulation and reduce vehicle speed as motorists enter Downtown. In addition, the roundabout at Mar West Street offers an opportunity to create a new Downtown "gateway" that identifies the area as a unique place in Tiburon.

1 EXISTING CONDITIONS

INTRODUCTION

In 2011, the Town of Tiburon released its findings from the Downtown Vibrancy project, which was commissioned to identify ways to revitalize Tiburon's downtown area. One of the major findings of this report was that there exists among local businesses and residents a perceived parking problem, namely inadequate supply and restrictive regulations, despite evidence that much of the parking in Downtown is underutilized. The report also found that stakeholders are concerned that the Town's on-street parking supply does not work well for reasons including insufficient wayfinding signage to off-street lots, restrictive time limits that discourage a "park once" experience in downtown, and limited on-street parking during the daytime due to employees "gaming" the system. Together, these perceptions have had detrimental effects on Downtown vibrancy, as this perceived lack of sufficient parking, or parking at affordable rates, discourages residents and visitors alike from coming to the area.

Circulation issues revealed by the Downtown Vibrancy project included a local desire for enhanced pedestrian and bicycle connections as well as more usable public open space, especially west of the Main Street area. Community members highlighted the need for signage and wayfinding to local destinations such as Ark Row, the ferry terminal, and Main Street, as well as strategies that reduce the reliance on automobiles for circulation within and access to Downtown.

As a result of the Vibrancy effort, the Town prioritized a detailed and focused study of parking and circulation issues in Downtown. The primary goal of this study is to make parking and circulation more convenient for both residents and visitors, thereby making it easier for people to visit and enjoy Downtown businesses and attractions.

This report represents a system-wide study of current downtown parking and circulation conditions, which will help to guide both short- and long-term Town action, as well as inform future versions of the Vibrancy plan as "a flexible road map" for successful improvements in Tiburon. It includes an analysis of parking supply and availability, and vehicular, pedestrian, and bicycle circulation. In addition, this work evaluates strategies to manage both the supply and demand for parking, while also maximizing its efficiency and convenience. Furthermore, it presents options for implementing various "complete streets" policies and strategies within the study area, which will increase access and safety for all modes of travel. Finally, recognizing that wayfinding elements are crucial to a successful, vibrant downtown, this plan includes strategies for effective signage that will complement improved parking and circulation management, and instill a unique sense of place.

In collaboration with Town staff and the Council's Downtown Committee, Nelson\Nygaard outlined a number of specific goals and objectives related to parking and circulation. These goals and objectives were articulated prior to data collection and analysis as a means to guide the development of final recommendations. These include:

Parking

- The parking supply should be a public resource that is convenient and easily accessible for all user groups.
- The Downtown parking supply (public and private) could be optimized as part of an integrated, district-wide system through collaborative management efforts.
- Parking facilities should be managed with a focus on making the most efficient use of all public and private parking facilities before increasing supply.
- Parking regulations should not deter visitors and residents from coming to (or staying in) Downtown.
- Specific measures should be evaluated that make it more convenient for local residents to park in Downtown.
- Parking policies should support the ability of local employees to get to work, but also discourage employees from parking in "prime" on-street spaces all day long.
- Evaluate pricing as a tool to manage parking supply and demand, and use any potential parking revenue to fund transportation programs that maintain adequate parking supply and enhance mobility in the Downtown area.
- Embrace new parking technologies to maximize customer satisfaction, as well as foster enhanced parking data management and analysis.
- Provide flexibility to local decision makers and Town staff to adapt to seasonal and long-term changes in parking demand and travel patterns, as well as make adjustments to parking policies to improve system performance.
- Be proactive in community engagement to ensure that local businesses, residents, and visitors understand any new parking policies and programs, and how those policies will improve parking in Downtown.

Circulation

- Circulation should be improved so that Downtown better serves all users, including pedestrians and bicyclists.
- The Downtown off-street parking supply should be easily accessible from all parts of Downtown.
- Connections between Main Street, Ark Row, and the rest of Downtown should be enhanced and simplified.
- The character and value of Main Street and Ark Row should be maximized.
- Visitor information and wayfinding signage should be improved.
- A "look" or "feel" that distinguishes Downtown from the rest of Tiburon and the rest of Marin County should be established.
- The Town should explore implementation of new design and traffic measures for Tiburon Boulevard.

This report responds to Tiburon's parking and circulation challenges within the context of the area's unique character and place within the Bay Area. Tiburon is not only a tourist and recreational destination, but also a place where people live, work, and conduct business. Our approach to this project takes into account all of these factors, and seeks to respond to them in a

manner that improves conditions while also maintaining the characteristics that define Tiburon. More specifically, this report's methodology included the following:

- Analyzing existing parking conditions and demand for the Town's diverse set of users by using existing data and collecting original parking data;
- Identifying best practices in parking management that balance the diverse needs of all modes of transportation and user groups;
- Developing guiding principles for parking in downtown Tiburon to provide a consistent basis for short- and long-term decisions related to parking;
- Developing comprehensive parking standards and management techniques tailored to Tiburon's unique community characteristics and goals;
- Analyzing and mitigating parking impacts on the surrounding residents and business owners; and
- Documenting existing circulation patterns and identifying potential improvements that will benefit all travel modes

The various types of strategies evaluated in the work respond to the unique needs and characteristics of the Tiburon area and include the following:

- Strategies to promote the most efficient use of scarce land while promoting economic prosperity
- Strategies to serve existing mobility needs and accommodate future changes or growth
- Strategies to manage both the supply and demand for parking
- Strategies to maximize the convenience of parking for both visitors and residents
- Strategies to better manage on-street parking to make it more available for patrons of downtown businesses and restaurants
- Strategies to better manage existing parking supply, including underutilized parking lots
- Strategies to improve access and circulation for all modes of travel

OVERVIEW OF STUDY AREA

Located at the tip of the Tiburon Peninsula, Downtown Tiburon is primarily comprised of various commercial uses, including hotels, retail stores, cafes, restaurants, and bars oriented to both local residents and the influx of tourists that frequent the area. Tourist traffic is particularly high during summer months, as visitors reach Downtown Tiburon primarily via ferry from San Francisco and via Tiburon Boulevard from other portions of Marin County.

The urban form of Downtown varies drastically from a decidedly village-type feel along Main Street, with generous sidewalks, buildings that directly front the street, and narrow, pedestrian-friendly streets, to a more suburban form along Tiburon Boulevard, where buildings are set back from the street, surrounded by off-street parking, and streets are wider and more oriented to vehicle travel.

Some office uses are located in buildings along Main Street and Tiburon Boulevard, while civic uses, including the Town Library and Town Hall, are located along Tiburon Boulevard at the western entrance to Downtown. Other major trip generators include the Corinthian Yacht Club off of Main Street, the Tiburon Playhouse movie theater, and the Tiburon Ferry Terminal, with ferries servicing Angel Island and San Francisco.

As mentioned above, downtown experiences a dramatic influx of visitors during the summer months, as the high tourist season exhibits higher traffic volumes and increased demand for parking facilities in the area. As a more recent trend, many visitors arrive via bicycle, having rented bikes in San Francisco. Many recreational road cyclists also travel to and through Downtown Tiburon, which forms part of the popular bicycle route known as the "Tiburon Loop." During the slower winter months, tourist traffic decreases, as mostly town and county residents frequent Downtown Tiburon's shops, bars, and restaurants.

PARKING ANALYSIS

Effective management of the area's parking is integral to maintaining and enhancing the ultimate success of the downtown area. By examining existing parking conditions for both automobiles and bicycles, this section facilitates a better understanding of how people are utilizing Downtown's current parking facilities, highlights parking challenges and inefficiencies, and provides a framework for developing a targeted parking management plan.

It should be noted that the parking utilization data collected as a part of this report likely do not represent Downtown's "true" peak period of parking demand since, as noted above, Tiburon experiences an influx of visitors during summer months, especially on weekends. As the counts were conducted in November, this peak was not captured. As described below, an adjustment factor was developed and applied to the study area's overall parking data in an attempt to better illustrate the peak summer demand.

However, it is important to emphasize that the data does show key trends that are likely present during every season, such as where demand is concentrated, which facilities are underutilized, length of stay tendencies, and turnover patterns. These patterns informed the parking recommendations found at the end of this document.

Parking Inventory and Regulations

An inventory of parking facilities was undertaken as part of this study. This section provides a brief overview of the parking inventory, which identified the type and amount of parking, as well as parking regulations, if any, by on-street block and off-street facility. Figure 1-1 shows all on- and off-street facilities analyzed in this document by off-street lot and on-street segment ID number.

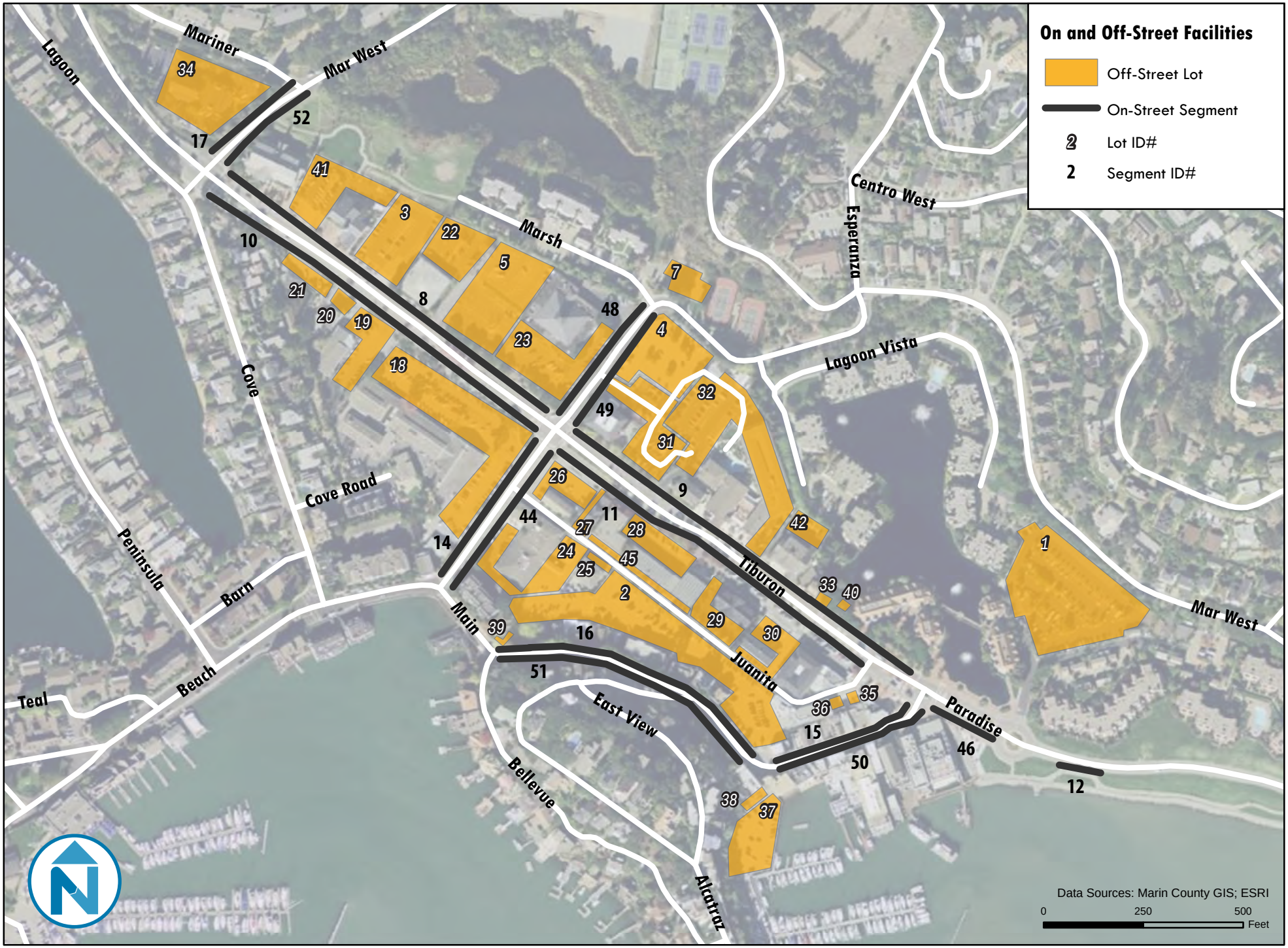
Methodology

Parking inventory and regulations were determined through field observations by Nelson\Nygaard staff, who walked the study area, counted parking spaces, and noted regulations on each block face and in each off-street facility. Along some blocks of the study area, the on-street inventory was not clearly delineated by striping. In these cases, surveyors made educated assumptions of inventory based on a common size for an on-street parking space, typically 20 feet, or observed utilization. Furthermore, only off-street facilities that were accessible (i.e. not gated or closed for construction) were counted. Therefore, the CVS Pharmacy lot at the corner of Tiburon Boulevard and Beach Road, under construction during the count days, was not included in this inventory.

Parking Regulations along Tiburon Boulevard

Source: Nelson\Nygaard

Figure 1-1 Surveyed Facilities



Parking Type, Amount, and Regulations

Figure 1-2 shows a map of the on-street regulations by block face for the entire downtown study area. On-street parking downtown is exclusively free of charge, which is unusual for a downtown that experiences such high rates of visitor use. The area also contains a mix of two-hour parking, loading spaces, 20-minute short-term parking spaces, and disabled parking spaces. In total, 140 of Downtown's 1,608 spaces are located on-street, mostly along Tiburon Boulevard, Mar West Street, Main Street, and Beach Road. The vast majority (91%) of Downtown parking spaces are located off-street, in various public and private lots. There are 1,468 total off-street parking spaces in Downtown Tiburon. Of the 1,608 spaces in Downtown roughly 77% are publicly accessible, while the remaining spaces are reserved or for tenants only. As shown in Figure 1-3, off-street facilities are located throughout the study area, including both public facilities and private facilities, and paid lots and free lots.

Parking regulations along Main Street (Ark Row)

20-minute, short-term parking along Beach Street

Ferry passenger loading along Paradise Drive

Figure 1-2 On-Street Parking Regulations

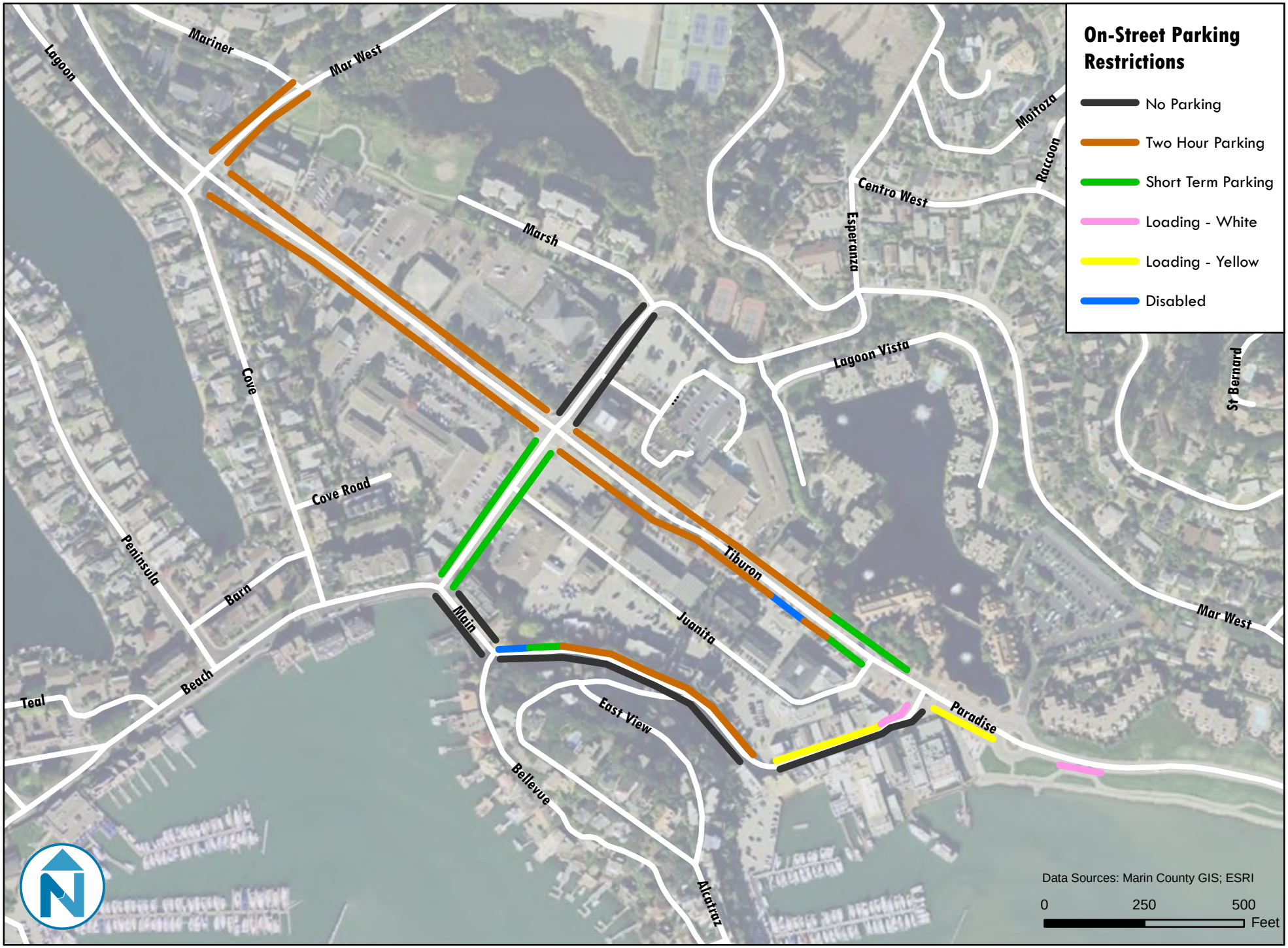
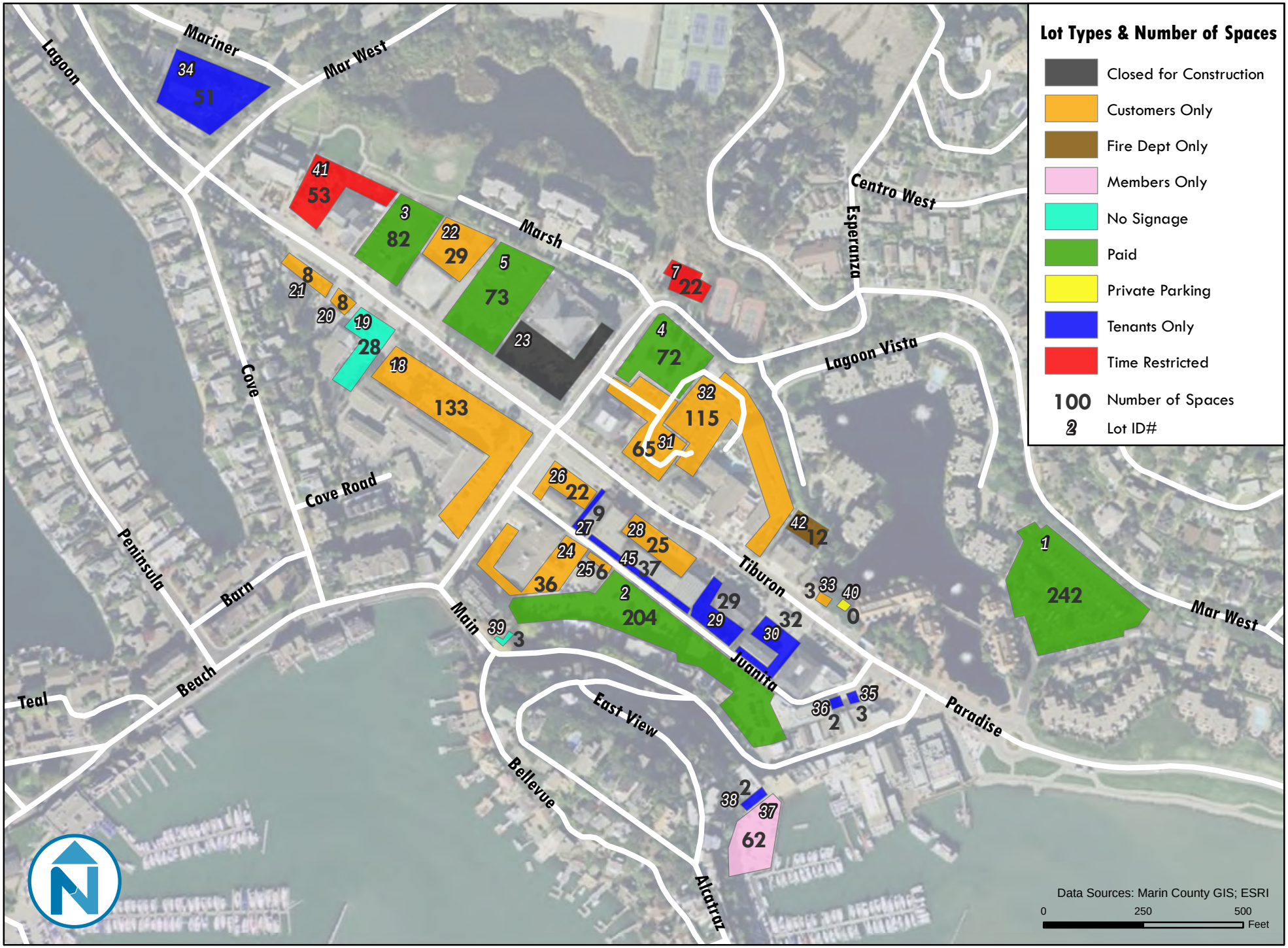


Figure 1-3 Off-Street Parking Regulations

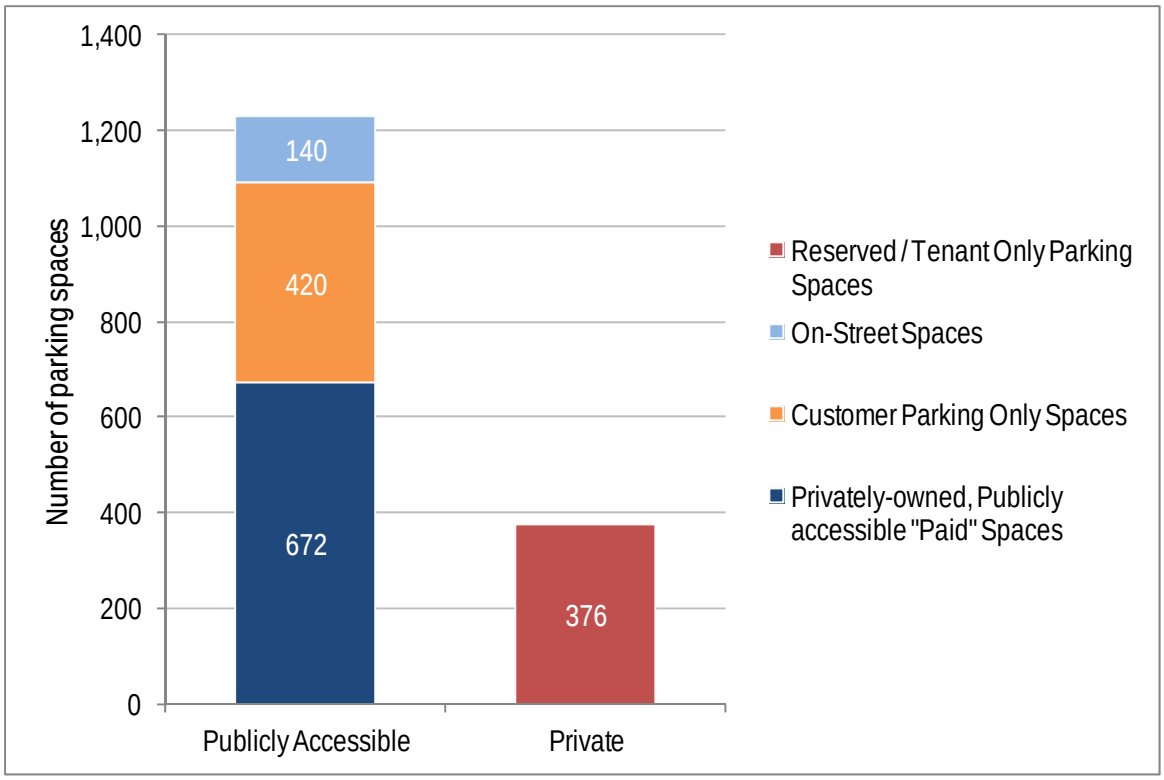


Figures 1-4 and 1-5 provide a more detailed breakdown of the type of parking in the study area for both on- and off- street facilities. Of the area's on-street facilities, the vast majority (71%) of spaces is free of charge, but exhibit a two-hour time limit. The rest of Downtown's on-street spaces are also free, but are limited to 20-minute parking (14%), for loading purposes (12%), or for the disabled (2%). Off-street spaces in the study area are mostly split between paid lots accessible to the public (44%) and parking reserved for customers of specific businesses (27%). Some parking is reserved for tenants only (26%), and other off-street spaces are reserved for loading or the disabled.

Figure 1-4 Study Area Parking Facilities, by Type

Location	Pay (Open to Public)	Customer Parking Only	Reserved / Tenants Only	2-hour	Loading (White/ Yellow)	20-minute (Green)	Disabled	Total	% of parking
On-Street	0	0	0	100	17	20	3	140	8.7%
	0.0%	0.0%	0.0%	71.4%	12.1%	14.3%	2.1%	100.0%	
Off-Street	648	392	376	0	5	0	47	1,468	91.3%
	44.1%	26.7%	25.6%	0.0%	0.3%	0.0%	3.2%	100.0%	
Total	648	392	376	100	22	20	50	1,608	100.0%
	40.3%	24.4%	23.4%	6.2%	1.4%	1.2%	3.1%	100.0%	

Figure 1-5 Publicly Accessible vs. Privately Accessible Parking



Pricing

While all on-street spaces are free, 648 "paid" spaces exist in five downtown off-street lots, including: the Point Tiburon Plaza Lot, the Main Street lot, 1525 Tiburon Boulevard, 1555 Tiburon Boulevard, and the Beach Road lot. These pay spaces represent approximately 44% of the off-street supply and 40% of total supply. The pricing structures of Downtown's paid lots are as follows:

- 1525 Tiburon Boulevard: flat $4 per day, 3 day maximum
- 1555 Tiburon Boulevard: flat $5 per day, 1 day maximum
- Beach Road Lot: flat $5 per day, 1 day maximum
- Point Tiburon Plaza:
  - 1st 20 minutes: Free
  - 20-40 minutes: $3
  - Each additional 20 minutes: add $1 (up to $9)
- Main Street Lot:
  - Weekday
    - 1st 20 minutes: Free
    - 20-40 minutes: $2
    - Each additional 20 minutes up to 3 hours: add $1
    - 3-5 hours: $11; 5-8 hours: $13; 8-12 hours: $15
  - Weekend
    - 1st 15 minutes: Free
    - 15-30 minutes: $2
    - 30-45 minutes: $3
    - Each additional 15 minutes up to 3 hours: add $1
    - 3-5 hours: $13; 5-8 hours: $15

Main Street Lot Weekday Regulations

Source: Nelson\Nygaard

Point Tiburon Plaza Lot Regulations

Source: Nelson\Nygaard

Bicycle Parking

Bicycle parking exists along Tiburon Boulevard at various public buildings and businesses. The vast majority of spaces are located at the Tiburon Ferry Terminal, but other racks are located at Town Hall, the public library, Chase Bank, and in front of various other Downtown businesses. In sum, 10 bicycle parking locations exist in Downtown that can accommodate a total of roughly 111 bicycles. Figure 1-6 shows the location of Downtown bike racks as well as the number of bikes each parking area can hold.

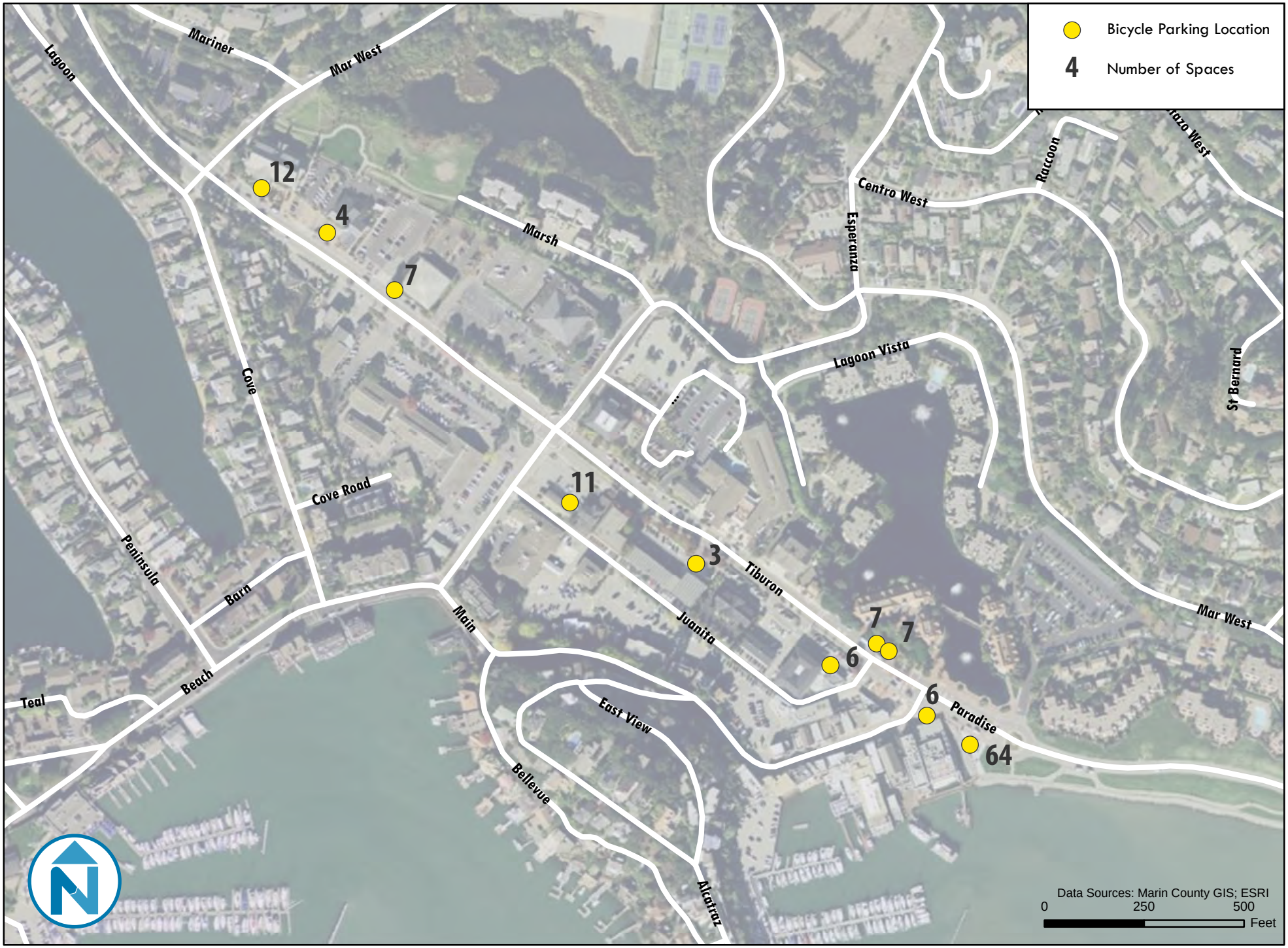
Bicycle Parking at the Tiburon Ferry Terminal
Source: Nelson\Nygaard

The quality and utility of Downtown bicycle parking facilities can vary dramatically. Newer facilities, including the "wave" racks in front of the Town Library, inverted U-racks in front of Town Hall, and the grid racks at the ferry terminal are in good condition. By contrast, older, private parking facilities at Shark's Deli, New Morning Café, and Point Tiburon Plaza are rusted, worn, and provide limited security. More specifically, the wheel-well racks at New Morning Café and adjacent to the bus stop at Point Tiburon Plaza are a parking type many bicyclists are reluctant to use. Only a single wheel can be locked to a wheel-well rack, leaving the bicycle frame and second wheel at risk of theft. Furthermore, grid racks such as those at the Ferry Terminal are consistently misused, as many bicyclists park parallel to the rack instead of perpendicularly, limiting capacity. This is a major problem during busy summer days when demand for bicycle parking is at its peak.

It should also be noted that many recreational road bicyclists do not bring bicycle locks, and typically do not park in racks. Instead, these cyclists rest their bikes in locations immediately adjacent to the downtown eateries and businesses they frequent, which can impact pedestrian traffic.

Bicycle Parking at Café Acri
Source: Nelson\Nygaard

Figure 1-6 Bicycle Parking Areas and Inventory



Parking Utilization and Turnover

This section provides an overview of the results from the parking utilization and turnover data collection effort. It includes a summary of the methodology and the key findings for both the complete study area, as well as various key areas of high demand.

Methodology

Nelson\Nygaard staff conducted a comprehensive utilization and turnover study for both on- and off-street spaces using trained data collection workers. The count days and times were:

- Thursday, November 17th, 2011 from 8AM – 6PM, every hour
- Saturday, November 19th, 2011 from 9AM – 6PM, every hour

Counts were conducted on these days in order to provide as wide a range of parking conditions as possible, as parking demand tends to fluctuate a great deal by day of week and time of day. The count periods specifically captured parking activity during a typical weekday and weekend. Each block face and off-street lot was counted every hour at approximately the same time of each counting period.

In addition to analyzing parking utilization, parking duration data (for on-street spaces only) was also collected to gauge how often each space experiences "turnover." This data was collected during the same periods as the utilization data and involved surveyors noting the last four digits of each license plate, which can be used to identify vehicles without collecting any personal information.

Finally, bicycle parking utilization data was also collected for all major downtown bicycle parking areas. These counts were also taken during the same days and times as car parking count periods.

Findings

Utilization – Study Area

Figure 1-7 highlights the utilization findings for the Downtown as a whole. In general, combined utilization for on- and off-street facilities was consistently low, peaking at 50% (1 PM Thursday) and exhibiting a low of 20% (9 AM Saturday). Thursday's lowest utilization rate occurred at 8 PM (27%), while Saturday's peak utilization rate occurred at 2 PM (39%). Overall utilization numbers were higher on Thursday than Saturday during all count times.

Taken *as a whole*, these overall utilization rates are far below target rates (although individual areas do experience high utilization rates). Target utilization rates of 85% and 90% are effective industry-standards for on- and off-street spaces, respectively.[2] In other words, maintaining 15% and 10% vacancy rates for corresponding on- and off-street stalls will help ensure an "effective parking supply." It is at these utilization levels that roughly one space per block is available, making searching or "cruising" for parking unnecessary and allowing off-street lots to maintain adequate maneuverability. Utilization rates much below these targets indicate a diminished economic return on investments in parking facilities. Once again, while these counts do not represent the overall summer peak utilization, they nevertheless indicate patterns of ineffective parking management, as discussed in the following sections.

[2] In some of the figures below, these target rates are indicated by a solid gray line.

Figure 1-7 Utilization Rates, Overall Study Area

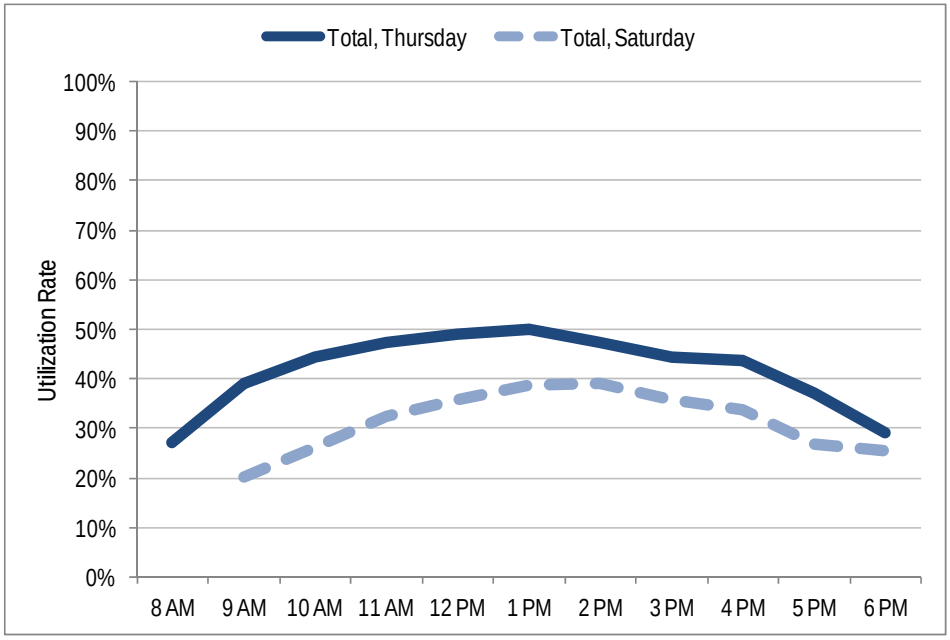


Figure 1-8 and Figure 1-9 show utilization rates for Thursday and Saturday by facility type. On Thursday, on-street utilization varied drastically from a low of 14% at 8 AM to a high of 54% at 1 PM. Off-street utilization peaked at 50% (noon and 1 PM) and was lowest at both 8 AM and 6 PM (28%). The on-street utilization rate was below the off-street utilization rate at all times except 1 PM and from 4 PM to 6 PM. Conversely, on Saturday the rate of on-street utilization was higher than the rate of off-street utilization during all count times. On-street utilization peaked at 54% (3 PM) and was at its lowest at 9 AM (33%). Off-street utilization peaked at 38% (1 PM and 2 PM) and was at its lowest at 9 AM (19%).

Low weekend utilization of ferry commuter lots
Source: Nelson\Nygaard

Based on the utilization data for the study area, a number of observations can be made. First, the amount of retail/commercial activity and/or jobs in the study area does cause some minor fluctuations of parking demand, most dramatically for on-street spaces during the lunchtime hour. Combined utilization also tends to peak during this hour, but does so more gradually. On-street utilization also increased on both count days towards the dinner time hour.

Secondly, the overall rate of off-street utilization was consistently lower at all times on Saturday as compared with Thursday, as many spaces that are typically occupied by employees or ferry commuters sit empty. This availability of parking represents a key opportunity during peak summer weekends, when available on-street spaces near the heart of Downtown fill and are hard

to come by. A coordinated wayfinding system, combined with demand responsive pricing of on-street spaces, could shift much of this demand from the "front door" spaces in the heart of Downtown, to both existing on-street spaces further from the waterfront and existing off-street facilities throughout Downtown. Figure 1-10 shows off-street utilization on both count days as compared to the target utilization rate of 90%. During both count days, utilization was far below this target. Figure 1-11 shows on-street utilization on both count days as compared to the target utilization rate of 85%.

Figure 1-8 Utilization Rates by Facility Type, Thursday

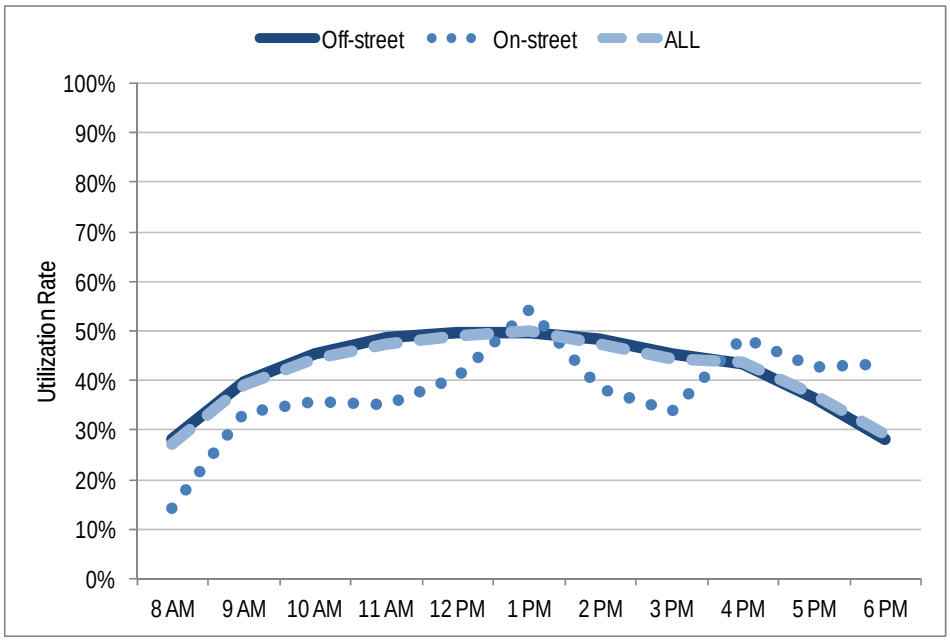


Figure 1-9 Utilization Rates by Facility Type, Saturday

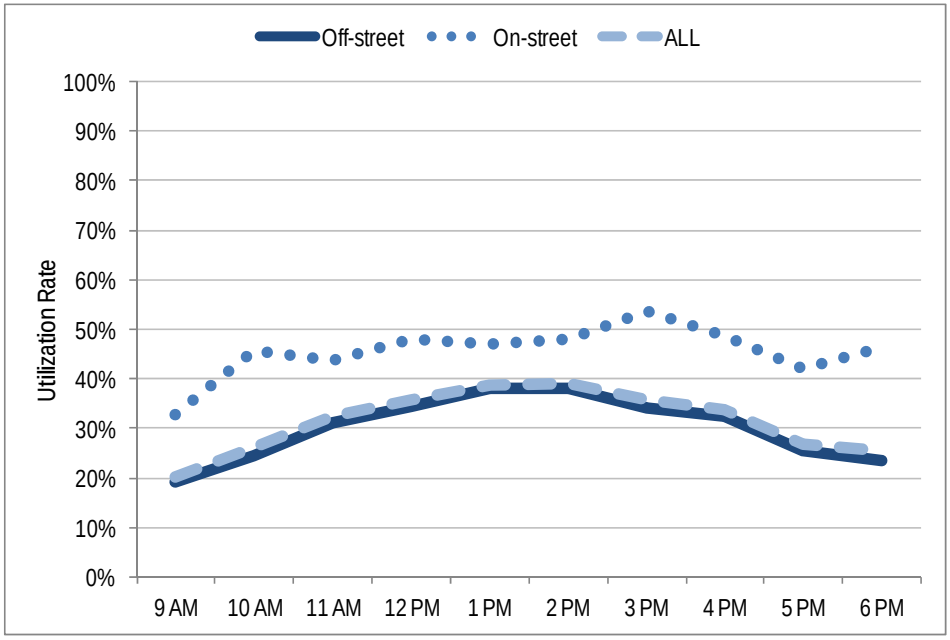


Figure 1-10 Off-street Utilization by Day

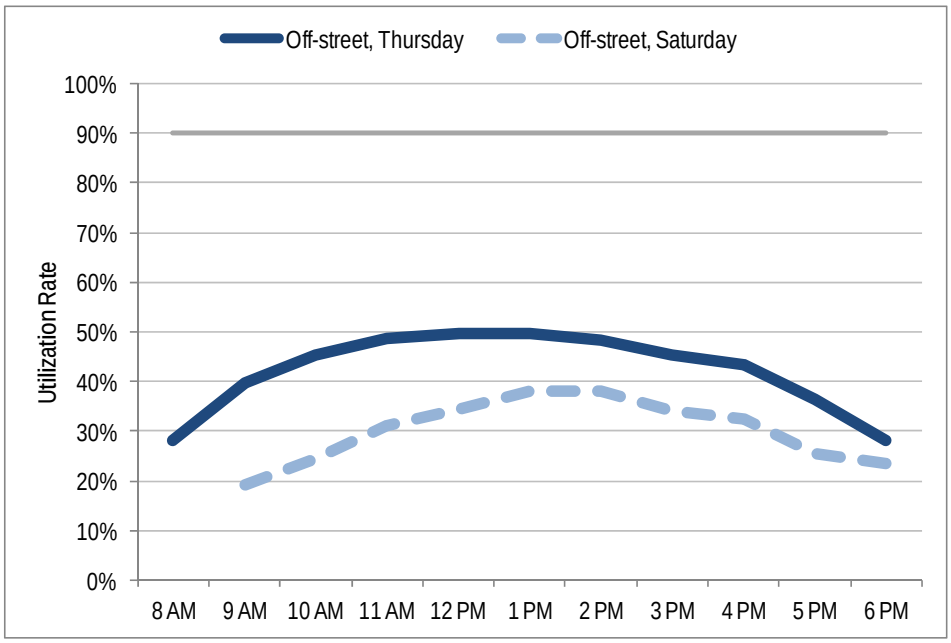


Figure 1-11 On-street Utilization by Day

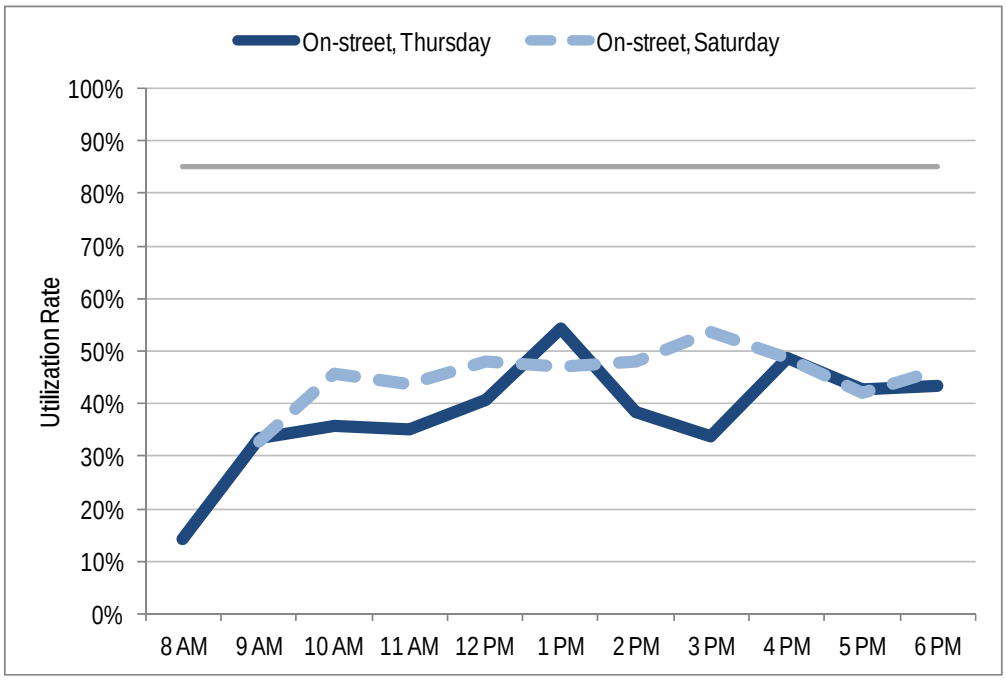


Figure 1-12 and Figure 1-13 show peak hour utilization for the study area for Thursday (1 PM) and Saturday (2 PM). These maps show the utilization level for each individual block face, and each individual lot during the peak hour of total parking demand. The maps reveal that there are some limited "pockets" of high demand on a few blocks and in some lots in the study area. For example, Tiburon Boulevard between Beach Road and Juanita Lane had occupancies above 75% on both sides of the street on Thursday and on the south side on Saturday. Utilization along Main Street (Ark Row) also surpassed 75% on Saturday. Various off-street facilities surpassed 75% utilization rates as well, including the Maritime Center front lot off of Tiburon Boulevard (Thursday and Saturday), the fire station lot (Thursday), the lot at 16-18 Main Street (Thursday and Saturday), and the lot at 55 Main Street (Thursday). Indeed, the highest utilization rates are concentrated in lots and blocks closest to Main Street and the heart of the commercial core.

Figure 1-12 Peak Hour Utilization, Thursday 1 PM

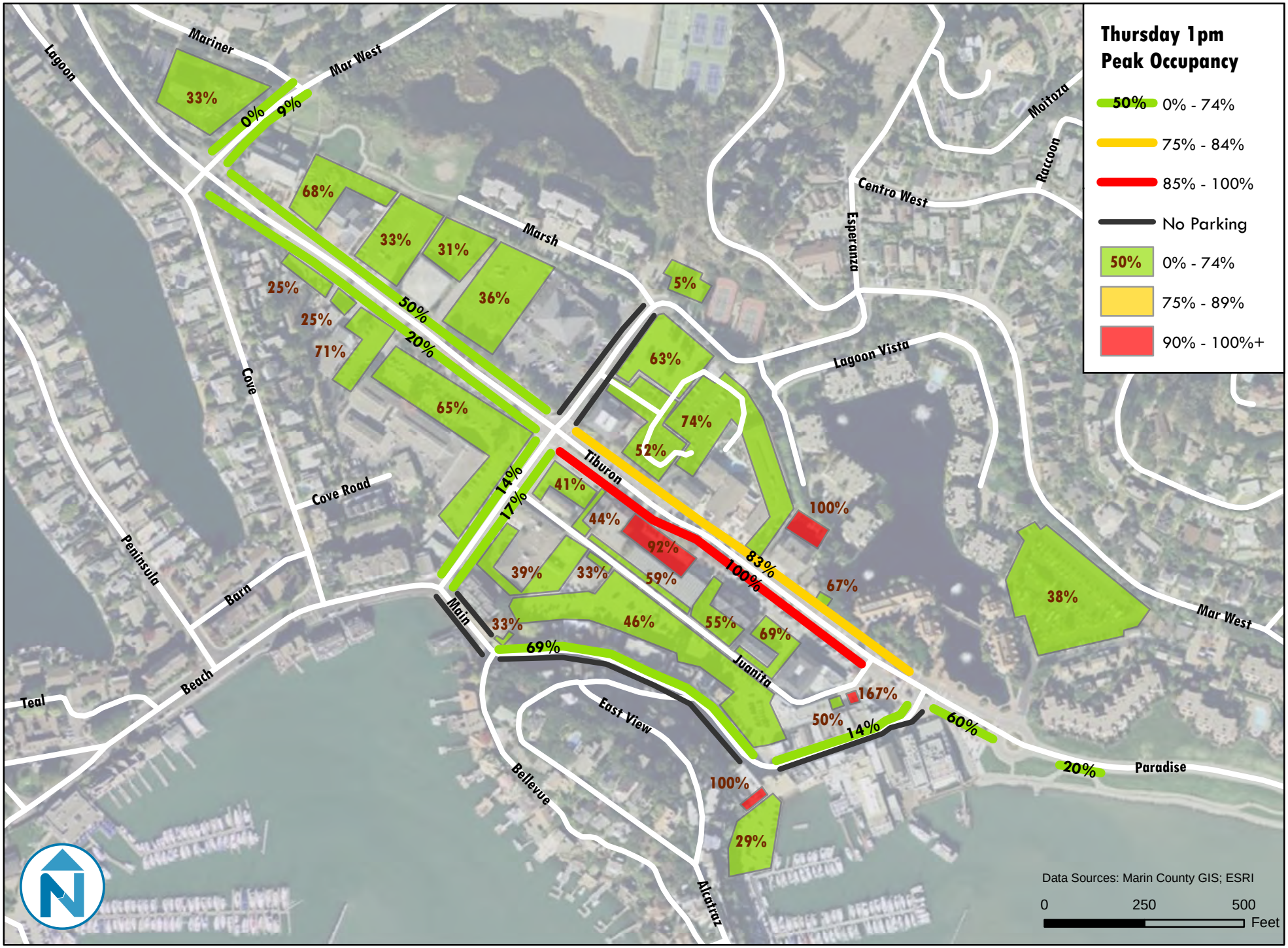
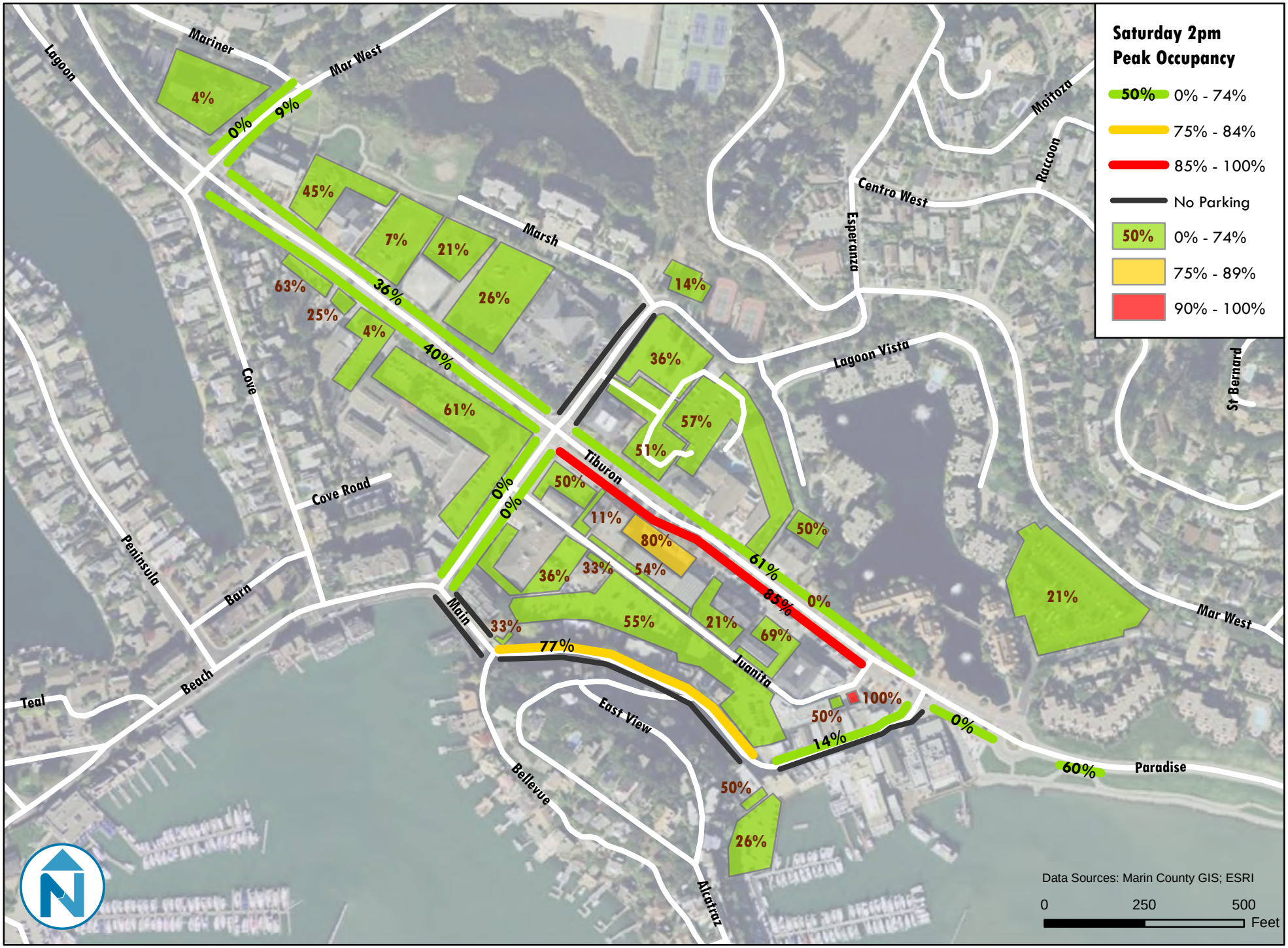


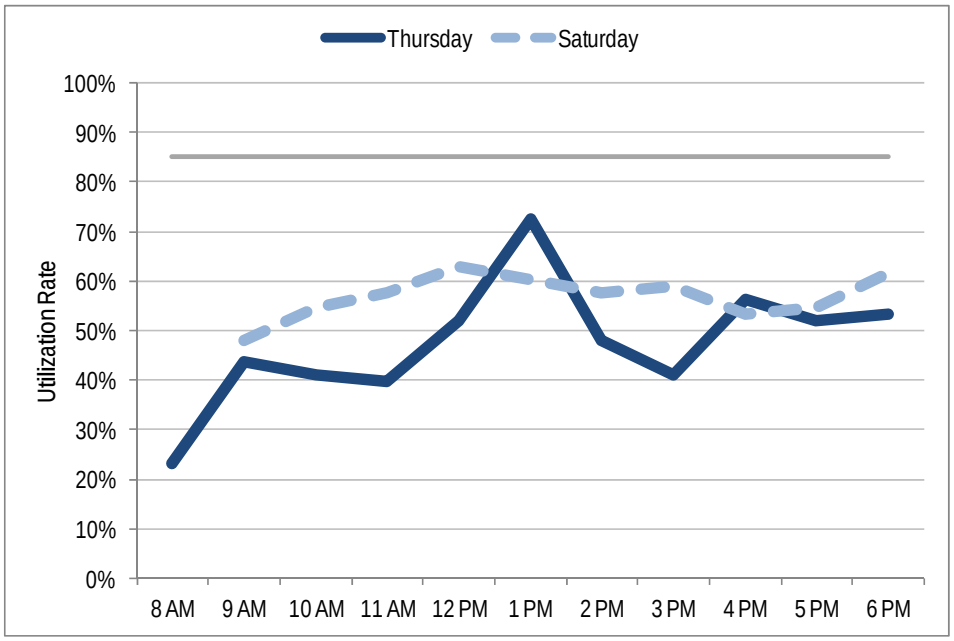
Figure 1-13 Peak Hour Utilization, Saturday 2 PM



Utilization – Tiburon Boulevard and Main Street

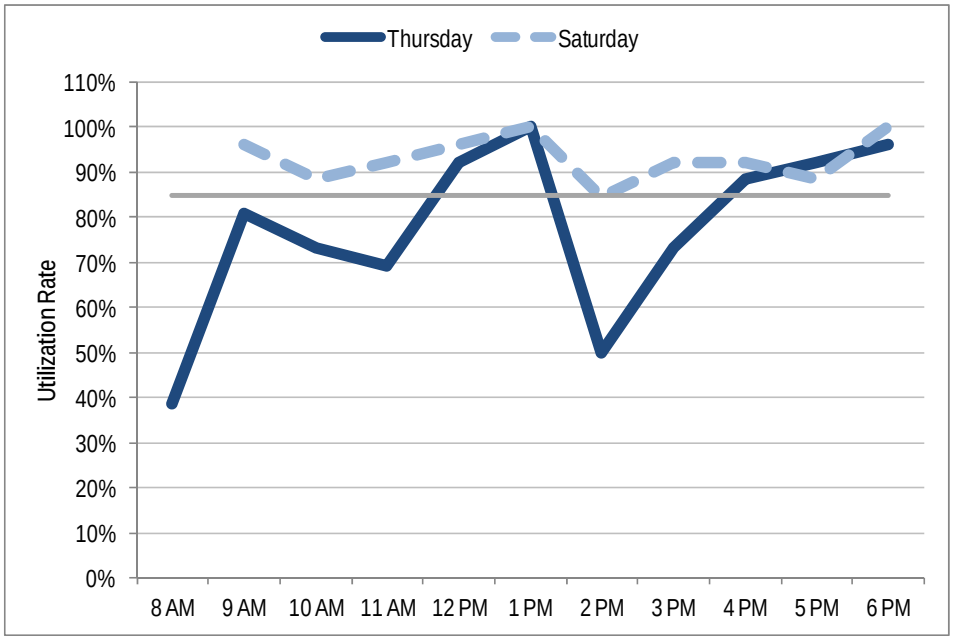
As seen in Figure 1-12 and Figure 1-13, various areas of concentrated demand do exist in the Downtown area where utilization rates approach, meet, or exceed target rates. In other words, a small number of on-street spaces are highly desirable. For example, 73% of the on-street spaces along Tiburon Boulevard were occupied at peak (Thursday 1 PM), and these facilities were consistently above 50% occupied during Saturday count times. Figure 1-14 shows utilization rates of Tiburon Boulevard's on-street spaces during all count times and days.

Figure 1-14 Utilization Rates by Day, Tiburon Boulevard



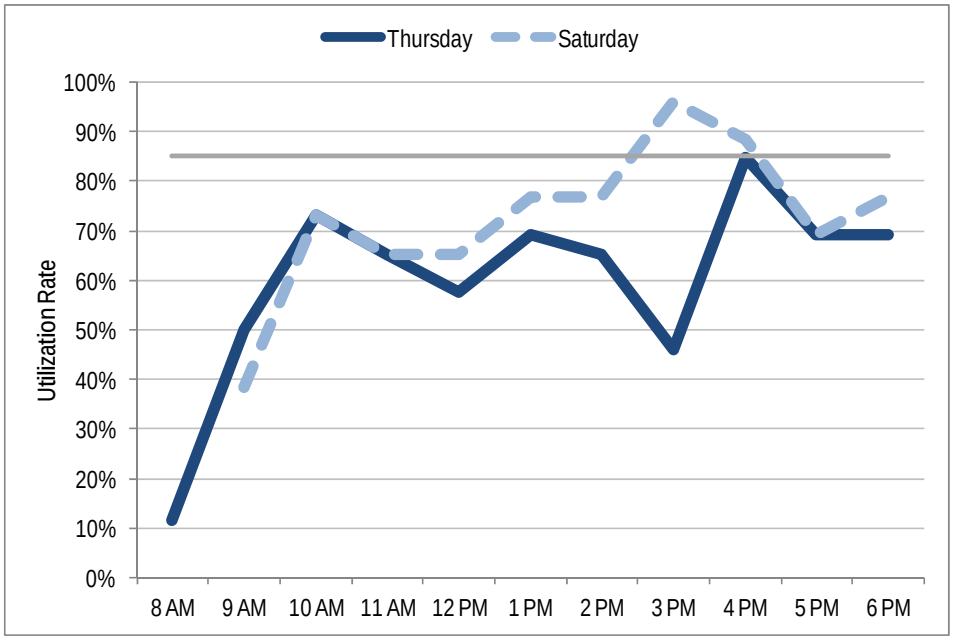
The south block face of Tiburon Boulevard between Beach Road and Main Street experienced even higher utilization rates, as shown in Figure 1-15. On Thursday, utilization along this block peaked at 100% at 1 PM, and as a result anyone wishing to park in those spaces at that time would have had to drive around and look for an available space. On Saturday, this block was consistently above the target rate and heavily utilized, reaching full utilization again at 1 PM and 6 PM.

Figure 1-15 Utilization Rates by Day, Tiburon Blvd South Block Face between Beach Road and Main Street



The Ark Row portion of Main Street also experienced high utilization rates during both count days, as shown in Figure 1-16. On Thursday, utilization of the spaces on this block reached 85% once (4 PM), while on Saturday, utilization exceeded 85% twice (3 PM and 4 PM at 96% and 88%, respectively).

Figure 1-16 Utilization Rates by Day, Main Street (Ark Row)



This data reveals that a certain number of on-street spaces in key locations are very popular and highly sought after. These three "pockets" of high demand approach, meet, or exceeded industry standards for on-street facilities where roughly one space per block is available, making searching or "cruising" for parking unnecessary. However, each of the three pockets of high demand lies immediately adjacent to off-street facilities with ample available parking. This data suggests that motorists are choosing to park in "front door" spaces due to one or more potential factors, such as imbalanced pricing incentives, a lack of awareness about nearby parking availability, or poor circulation patterns that discourage parking at more remote parking facilities.

Peak Period Utilization with Seasonal Adjustment Factor

The parking data collection for this study was not conducted during the peak period of demand in Downtown Tiburon, which typically falls on summer weekends. As mentioned above, however, Nelson\Nygaard believes that the data collected in November accurately reflects the dominant parking behaviors and trends within Downtown – highly concentrated demand for free, on-street spaces east of Beach Road and limited use of pay parking lots throughout the study area – which predominantly inform the recommendations outlined in Chapter 3.

Nevertheless, in an attempt to more accurately illustrate demand in the peak period, a "seasonal adjustment factor" has been calculated and applied to the parking data. Unfortunately, the latest summer parking data is from 2001, and it is limited in its scope. The 2001 analysis only includes occupancy counts from four off-street lots (Point Tiburon Plaza lot, Main Street lot, Beach Road lot[3], and 1525 Tiburon Boulevard lot) and no on-street data was collected. Given the data limitations, the adjustment of existing data is approximate, yet offers perhaps the best possible snapshot of peak parking demand in the summer months. As discussed in Chapter 3, it is recommended that the Town collect summer parking data on an annual basis to capture an accurate reflection of peak demand.

The following methodology was utilized in this analysis:

1. Occupancy counts from 26 weekend count periods were averaged to find average occupancy for each of the four surveyed lots in the summer of 2001.
2. An "escalation" factor was calculated to more accurately correlate 2001 data to 2011 conditions. This factor was based on two data points: population growth in Tiburon and sales tax receipts[4].

   Based on data provided from the Town, sales tax receipts in the summer quarter (July 1 – September 30th) declined substantially from 2001 to 2011. Because the decline in sales tax revenue far exceeded the corresponding growth in population, the final escalation resulted in a negative factor.
3. Using this factor, occupancy data from 2001 was adjusted to better reflect 2011 conditions.
4. The adjusted 2001 numbers were then compared with weekend data collected for these four lots in November 2011.

[3] The 2001 Town parking counts for the Beach Road lot included two lots that were counted separately in this study – the Beach Road lot (#4) and the Chase Bank lot (#31).

[4] Both of these data points were only available Town-wide and were not specifically available for Downtown.

5. Using these comparisons, an additional adjustment factor was developed and applied to the 2011 Saturday occupancy data. No adjustment factor was applied to the Thursday data because: 1) no 2001 data was available for weekdays; and 2) this analysis was intended to show the overall peak demand for Downtown, which falls on a weekend.

Figure 1-17 shows the results of this analysis. One can see that the peak occupancy for the study area as a whole for Saturday was 39%, while occupancies east of Beach Road were higher than those west of Beach Road. This is a finding that reinforces the trend showing concentrated demand near the Main Street commercial corridor. Based on the available data and approximate adjustments, it is estimated that during the summer months, peak utilization will increase to 74% for the study area, with more of that demand concentrated east of Beach Road[5].

While utilization is only 74% for the whole study area, it is likely that many of the on-street spaces are fully occupied and some of the off-street lots east of Beach Road are also heavily utilized. This high demand would likely be offset by low demand in many of the off-street lots outside of the commercial core.

Figure 1-17 2011 Saturday Peak Utilization, Unadjusted vs. Adjusted

Location	2011 Saturday Peak Utilization	
	Unadjusted	Adjusted
West of Beach Road	30%	58%
East of Beach Road	43%	82%
Study Area	39%	74%

Turnover

Parking duration data was also collected for on-street spaces during all count days and times. Turnover rates were relatively consistent between both count days. In fact, on both Thursday and Saturday, it was estimated that the average car stay parked in an on-street space for 1.37 hours.

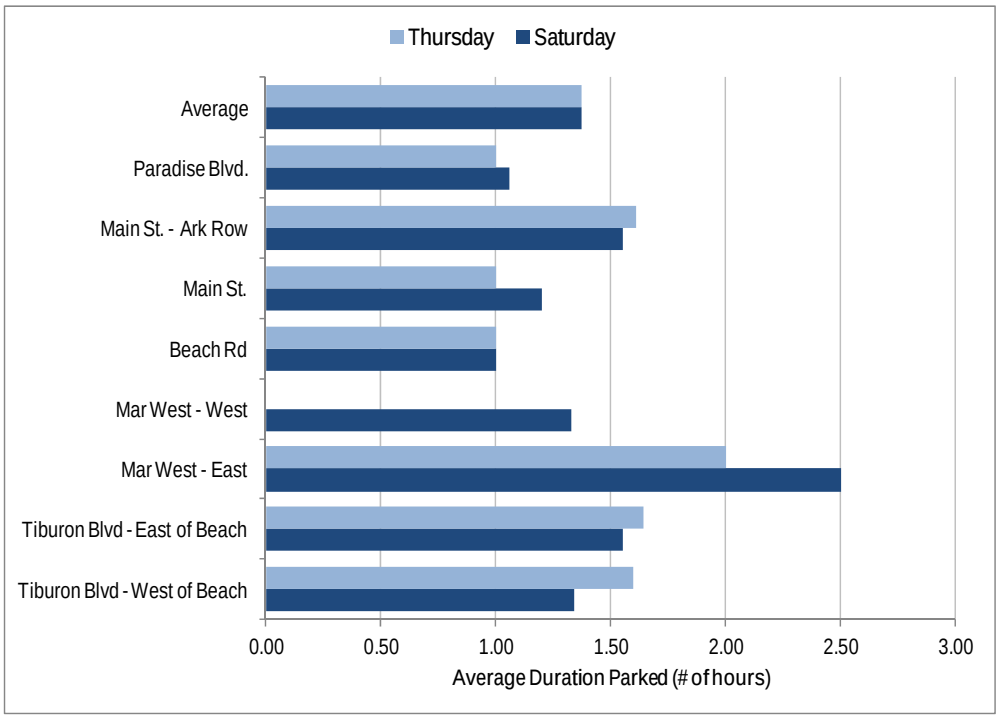
It is important to note that Figure 1-18 represents *average* parking duration *per space*. Therefore, while most vehicles appear to be observing posted parking restrictions, the data also shows that some vehicles were switching spots to avoid the posted time limits, and that others stayed well beyond the posted limits. It is possible that some employees of downtown businesses are parking in the free on-street spaces closest to their place of employment and moving their vehicles every two hours, representing an inefficient use of prime on-street parking. These types of spaces should be used by shoppers and visitors, not long-term parking for employees, which is better suited in off-street facilities.

On average, and across the study area, vehicles parked for less time than the posted limit. However, one block in the area exhibited average turnover rates higher than the posted time limit. The south side of Mar West Street has a two-hour time limit, yet the average vehicle stayed parked two hours on Thursday and 2.5 hours on Saturday.

[5] This assumes the status quo in terms of parking management and would not account for any of the key parking reforms outlined in Chapter 3, which seek to redistribute demand more evenly.

These parking restrictions are all enforced by parking control officers. While long-term parking in on-street spaces does not appear to be a major issue, some blocks may require more targeted enforcement in the future, especially during peak summer months.

Figure 1-18 Parking Duration by Block Face and Day



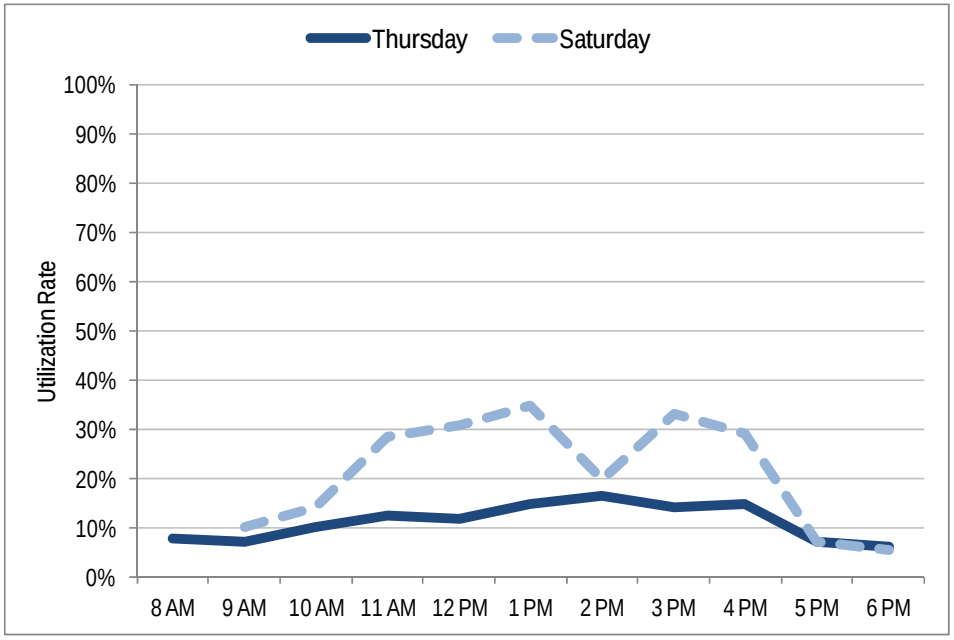
Bicycle Parking

Figure 1-19 shows bicycle parking utilization rates during all count days and times. Bicycle parking utilization rates were consistently below 40% during all count days and time periods. On Thursday, utilization was at its lowest (6%) at 6 PM and peaked at 2 PM (17%). Utilization rates were higher, on average, during Saturday's counts, reaching a low of 6% at 6 PM and a high of 35% at 1 PM. Saturday's rates also experienced more distinctive peaking during the midday and late afternoon hours.

It should be noted that some bicycle parking facilities were unused throughout all count times, while others were more consistently occupied. Spaces at the Ferry Terminal, in front of Café Acri, and at the Town Library exhibited the highest overall utilization rates, while spaces at Town Hall, Chase Bank, and at the bus stop at Point Tiburon Plaza exhibited the lowest utilization rates (0% occupied during all count times).

Like vehicle parking utilization, bicycle parking utilization rates during summer months are likely to be much higher than those captured in these counts. However, the hourly utilization trends and peaks are most likely consistent throughout the year.

Figure 1-19 Bicycle Parking Utilization Rate by Day



Windshield Survey

A windshield survey was conducted in tandem with the utilization collection efforts to gather information about motorist type (e.g. commuter, employee, etc.), trip purpose, parking behavior, and point of origin. Surveys were left on all cars parked in on-street spaces during count times. Bicycles parked Downtown during count times were given a separate survey. Surveys were distributed throughout the day to any car or bike without a survey on the windshield, so that cars and bikes coming later in the day were also surveyed. The survey was in the form of a postcard pre-addressed to Town Hall.

Approximately 577 vehicle surveys were distributed, and a total of 131 vehicle surveys were returned with responses, yielding a response rate of 23%. Approximately 70 bicycle surveys were distributed, and only seven bicycle parking surveys were returned, yielding a response rate of 10%. While this is not a scientific survey, and respondents self-selected to participate, the results do give a picture of parking activities on Downtown streets consistent with other studies and observations.

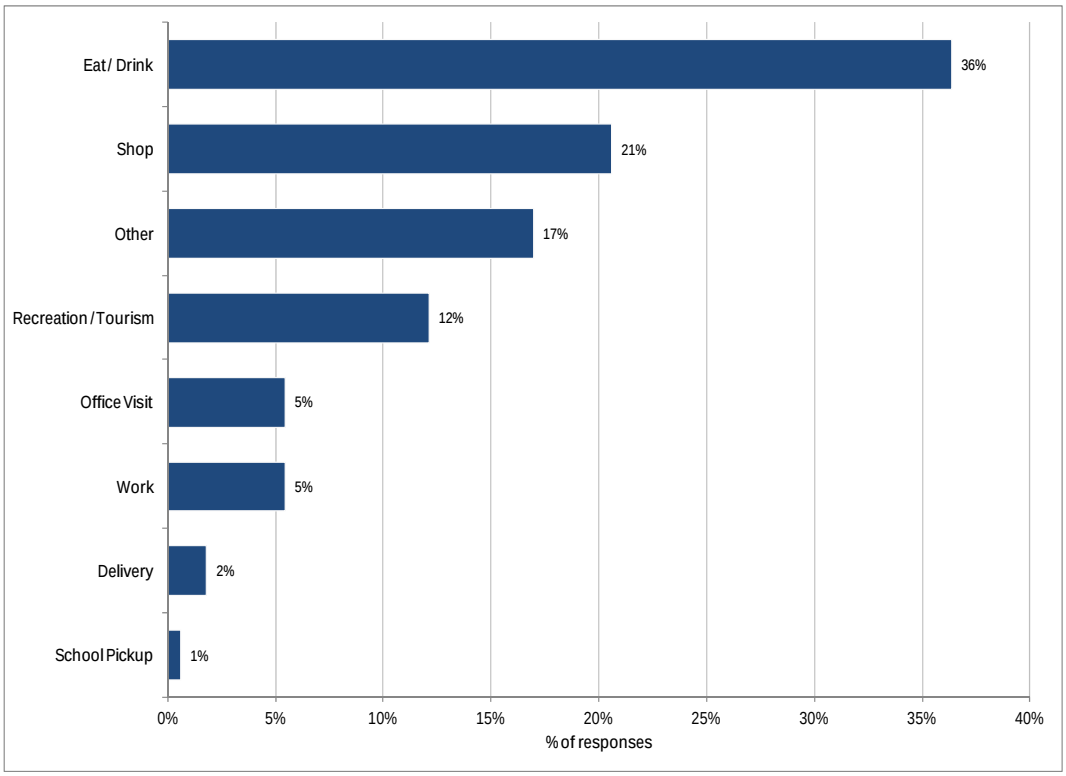
The vehicle survey consisted of six questions:

- Why did you park in Downtown Tiburon today?
- How far did you have to walk from your parking space to your destination?
- How often do you park in Downtown Tiburon?
- How long were you parked in this parking space today?
- At any point during your time Downtown, did you relocate your vehicle to avoid the posted parking restrictions?
- Where do you live or where are you staying?

Trip Purpose

As shown in Figure 1-20, the majority of automobile survey respondents traveled Downtown to either eat (36%) or shop (21%). Approximately 17% parked Downtown for some other reason, and 12% responded they came for recreation/tourism. Only 5% of respondents were parked on-street to go to work, and another 5% were parked for an office visit.

Figure 1-20 Trip Purpose of Survey Respondents



Distance from Parking Location to Destination

Approximately 27% of survey respondents were able to park right outside of their destination, while 34% were able to park within one block of their destination. About 23% parked within one to two blocks of their destination, while only 13% of survey respondents were forced to park over two blocks away from their final destination.

Frequency of Parking in Downtown Tiburon

The largest percentage of respondents (35%) park in Downtown Tiburon at least once per week, while 20% do so five times or more per week. 15% park Downtown four times per week, 11% do so at least once per month, 16% do so less than once a month, and for 3% of survey respondents, it was their very first time parking in Downtown Tiburon. In short, roughly 60% of those parking come at least once a week, indicating that the majority of those in Downtown are local or county residents. During the peak summer periods it is likely that there would be a shift to more infrequent or first-time visitors.

Length of Stay and Parking Relocation

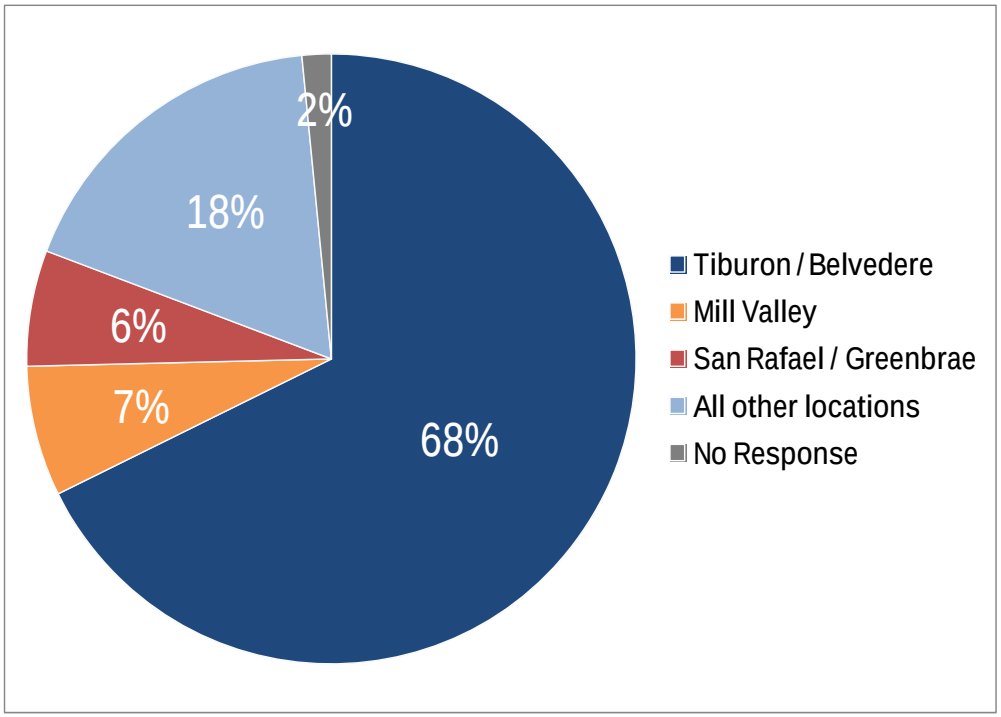
The majority of survey respondents (56%) stayed parked in an on-street space between one to two hours. About 27% parked for less than an hour, while 13% parked for between two and four hours. Some respondents parked for more than four hours; 2% of survey respondents parked for four to eight hours, while another 2% parked for more than eight hours. It should be noted that no on-street block within the study area allows parking for more than two hours, meaning approximately 17% of survey respondents were parked beyond the posted time limits.

Furthermore, about 11% of survey respondents indicated that they relocated their vehicle while parked downtown to avoid the posted regulations. Given that these surveys are "self-report," it would seem likely that some people who violated the posted regulations did not admit to doing so. Given limited available of data it is difficult to estimate if vehicle relocation is a larger problem in Tiburon than in other similar downtowns. However, it is probable that during the summer months, when people typically want to stay longer to eat or shop, demand for on-street spaces will increase, as well as incidences of time limit violations and vehicle relocations. As a result, popular on-street spaces will be even more constrained.

Origin

Of the responses collected, 68% came from residents or visitors staying in Tiburon/Belvedere. This figure is likely to be even lower during summer months, when the influx of tourists and visitors reaches its peak. About 7% of respondents came from Mill Valley, and another 6% came from San Rafael/Greenbrae. Approximately 18% of survey respondents came from other locations, which would include San Francisco or the East Bay.

Figure 1-21 Summary of Motorist Origin



Bicycle Survey

Comprised of only seven total responses, the bicycle survey data collected as a part of this effort does not provide enough information to draw definitive conclusions. Nevertheless, the results of this survey effort are as follows:

- Of the respondents, 43% parked their bikes in Downtown Tiburon for recreational reasons, while another 43% parked because they rode to work or commuted with their bicycle.
- The largest percentage of respondents (43%) parked their bikes for one to two hours, while 29% parked for four to eight hours, and another 29% parked for over eight hours.
- All respondents indicated that they did not have trouble finding available bicycle parking in Downtown.
- When asked where new bicycle parking should be located, respondents suggested new racks along Main Street's Ark Row, at Woodland's Market on Tiburon Boulevard, and at the Tiburon Lodge.
- The majority of respondents (83%) indicated that they would not be willing to pay a small hourly fee for secure bike parking or valet bike parking services.
- Approximately 71% of survey respondents live or are staying in Tiburon, while others live or are staying in Mill Valley and Novato.

Synthesis of Parking Findings

As chronicled above, Nelson\Nygaard's parking analysis yielded various key findings related to parking supply, regulations, utilization, and turnover in Downtown Tiburon. In sum, finding on-street parking along a few "front door" block faces can be difficult, especially during summer months, but ample parking supply exists to meet current demand. Pockets of high demand and the perceived difficulty of parking Downtown are due to the lack of a coordinated parking management plan, not the need for significant additional parking supply. The specific findings of the parking analysis are summarized below:

Key Finding #1: Downtown Tiburon contains a large amount of parking, occupying a large amount of land area.

A total of 1,608 parking spaces exist in Downtown Tiburon, most of which (1,468) are located in off-street facilities. These surface parking lots occupy large portions of the Downtown area, dictating the urban form along Tiburon Boulevard, where buildings are set back from the street and surrounded by parking. This auto-oriented urban form in turn affects Downtown circulation, as frequent curb cuts disrupt the bicycle and pedestrian network, and large surface parking lots detract from the pedestrian experience and discourage a "park once" district when not publicly accessible.

Key Finding #2: Downtown's existing parking supply, particularly the privately-owned parking, is underutilized.

As a whole, Downtown has more than enough supply to meet current levels of demand. Even during peak summer months, the total combined supply of 1,608 on- and off-street spaces is more than sufficient to meet current needs. Combined utilization rates never exceeded 50% during count periods, meaning that at any given time, 804 spaces *or more* are available in Downtown Tiburon.

An estimate of peak summer demand was also estimated based on various adjustments to previous and current data. It is estimated that in the summer, peak parking utilization is approximately 74% for the study area as a whole. However, this is still below target utilization rates, especially west of Beach Road.

Key Finding #3: While parking Downtown is underutilized, demand is heavily concentrated along Tiburon Boulevard and Main Street (Ark Row), as well as in the off-street facilities closest to the waterfront.

The analysis of utilization and turnover data suggests that certain spaces in Downtown Tiburon are more desirable than others and that demand can be highly concentrated. For example, the on-street spaces on Tiburon Boulevard and Main Street are typically occupied at or above industry standards. Furthermore, the off-street facilities closest to Main Street and the waterfront can see higher levels of demand than off-street facilities further away from the waterfront. This concentration of demand is likely due to a number of reasons, including the following:

- All on-street spaces are free while some off-street spaces are paid, meaning most motorists will seek on-street spaces before deciding to enter a paid off-street lot.
- Many of Downtown's largest attractions are concentrated along the waterfront and Main Street area.

- Wayfinding signage, if present, is inadequate in most of Downtown, meaning many visitors are unaware of the proximity and availability of additional non-"front door" spaces, both on-street and off-street.
- Some of the off-street parking near Main Street and the waterfront is reserved parking and not open to the public.
- The urban form of Tiburon Boulevard and general lack of pedestrian connectivity makes parking facilities within a comfortable, five-minute walk of the waterfront seem further than they actually are.

Parking demand is highest at various "Front-Door" facilities

Source: Nelson\Nygaard

Key Finding #4: During peak summer months, these utilization trends are exacerbated.

During peak summer months, the influx of visitors exacerbate the concentration of parking demand along Tiburon Boulevard and Main Street, and in waterfront off-street facilities, heightening the need for a coordinated parking management strategy that better distributes demand throughout Downtown's various existing on- and off-street facilities. Visitors will typically be unfamiliar with the area and its parking facilities, amplifying the need for a clear and consistent wayfinding system.

Key Finding #5: Average vehicle duration was within the two-hour time limit, but the amount of vehicle relocation reveals some problematic trends that are especially of concern during peak summer months.

The average turnover rate for on-street spaces in the study area is 1.37 hours. As such, it appears that most vehicles are obeying the posted time restrictions. However, the survey indicates that 11% of people admit to relocating their vehicle to avoid the time restriction. In reality, the amount is likely higher given the self-report nature of the parking survey. While the parking survey did not measure the number of employees parking on-street, it is likely that numerous employees working in the downtown area are parking on-street and moving their vehicles every two hours to avoid posted regulations. This represents an inefficient use of prime parking spaces, which should be reserved for visitors and shoppers. It is especially important to limit the use of prime on-street space by local employees during summer months, when the largest amount of visitors and shoppers frequent Downtown Tiburon and parking demand is at its peak.

More importantly, it is also likely that this two-hour limit discourages the potential for longer visits, as visitors decide to leave Downtown instead of moving their vehicles and finding another available on-street space in order to stay. Again, all of Downtown's on-street spaces are time restricted, the majority of which (71%) are limited to two-hour stays. The remaining spaces are limited to even shorter stays (20 minutes or fewer).

Chapter 3 recommends elimination of the two-hour limits and the introduction of on-street meters. On-street meters will discourage employees from parking on-street by making it more cost-efficient to park in an off-street lot. Furthermore, changing Downtown's parking regulations increases convenience by allowing for longer stays for residents, shoppers, and/or visitors.

Key Finding #6: Certain parking restrictions may be unnecessarily limiting supply.

It should also be noted that some on-street parking regulations are leading to very low utilization rates, representing an inefficient use of valuable curb space. More specifically, the Beach Road blocks between Tiburon Boulevard and Main Street, regulated as 20-minute parking, had utilization rates averaging below 7% during all count times. These spaces are relatively close to Downtown's pockets of high on-street demand (Tiburon Boulevard and Main Street). Changing the regulations to allow for longer stays could represent an easily implementable way to relieve pressure on the busiest blocks of Tiburon Boulevard and Main Street.

Underutilized 20-minute parking spaces along Beach Road

Source: Nelson\Nygaard

Key Finding #7: Demand for parking is mostly local, but during summer months non-local parking demand increases.

This project's windshield survey revealed that during non-summer months, those parking in on-street facilities in Downtown Tiburon are predominantly local, mostly coming to eat, drink, or shop. The typical motorist comes at least once per week and parks for less than two hours. During summer months, however, the typical motorist will most likely be a visitor or tourist unfamiliar with the area and its parking facilities. This will serve to increase demand for spaces closest to the Main Street and waterfront area, heightening the need for a coordinated parking management strategy that better distributes demand throughout Downtown's various existing on- and off-street facilities.

Key Finding #8: Bicycle parking utilization is also highly concentrated, and some parking facilities should be improved.

Utilization of bicycle parking facilities varies dramatically based upon location. The highest utilization rates are near the ferry terminal and near the cafes and restaurants along Main Street, where many bicyclists stop to eat and drink. Indeed, parked bicycles (whether in bicycle parking facilities or parked along the sidewalk) tend to clutter Main Street, especially during summer months. Other facilities, specifically those along Tiburon Boulevard, see very low utilization rates, either due to their inconvenient location, their "insecure" appearance, or rack design issues that leave bicycles vulnerable to theft.

Bicycle parking demand is high at the Tiburon Ferry Terminal

Source: Nelson\Nygaard

CIRCULATION ANALYSIS

The circulation of vehicles, bicyclists, pedestrians, and all other modes is also of key concern to the functionality and vitality of Downtown Tiburon. This section provides a brief overview of existing circulation conditions in the Downtown and identifies some of the most significant findings and challenges. Chapter 4 includes a set of targeted recommendations designed to address each of these challenges.

Existing Circulation Plan

Figure 1-22 shows the existing circulation pattern in Downtown Tiburon for vehicles, bicycles, and pedestrians. Tiburon Boulevard is the primary travel corridor throughout Downtown for vehicles and provides access to and from Tiburon, which is located at the tip of the peninsula. As the figure below illustrates, Downtown Tiburon does not contain many traditional "blocks," and instead is broken into four large parcels bisected by Tiburon Boulevard and Beach Road. Both of these roadways have numerous driveway/parking lot curb cuts providing access to the parcels.

By contrast, Main Street is the primary commercial corridor and is a narrow, two-lane road lined with several shops and businesses. The street also connects through to the west and Beach Road. This section of Main Street is known as the Historic Ark Row area. Main Street is approximately 20 feet wide with 8.5-12 feet wide sidewalks on both sides. In the Ark Row area, the road narrows to close to 18 feet in width with a parking lane on the north side.

Tiburon Boulevard also serves as the designated bicycle travel corridor. It contains bi-directional Class II bicycle lanes which transition to the Class I bicycle path just west of Mar West Street. The bicycle lanes continue east of Main Street as Tiburon Boulevard becomes Paradise Drive. As described above, bicycle parking facilities are located throughout the Downtown, but are primarily concentrated around the ferry terminal.

Sidewalks are present throughout Downtown, facilitating pedestrian travel along all major roadways. Several mid-block crossing are provided along Tiburon Boulevard. In addition, there are pedestrian connections throughout the Main Street commercial corridor, which provide access to many of the retail businesses, parking lots, and other trip generators, such as the ferry terminal.

Figure 1-22 Existing Circulation Plan

Key Findings

Vehicle Circulation

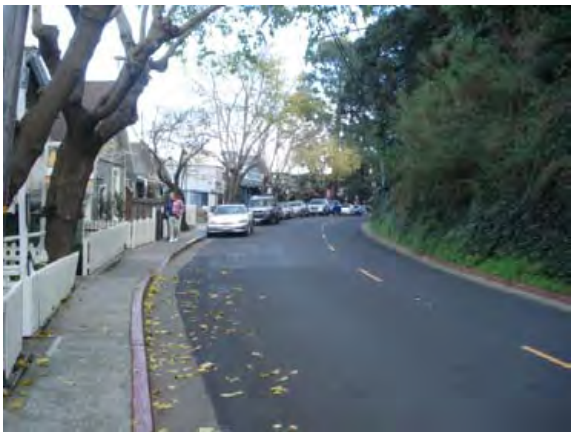
Downtown Tiburon is located at the tip of the Tiburon Peninsula, accessible only via Tiburon Boulevard on the West side of the peninsula, and Paradise Drive on the east side. Tiburon Boulevard is a wide street (close to 70 feet) with limited pedestrian crossings, large lane widths, suburban land uses, and numerous curb cuts, which limit the pedestrian experience and pedestrian connectivity. Traffic volumes are relatively low along Tiburon Boulevard, resulting in minimal congestion.

Juanita Lane, connecting Beach Road and Tiburon Boulevard, is a narrow roadway that lacks sidewalks. It is the only access point for various off-street parking facilities, and sees limited amounts of both pedestrian and vehicular traffic.

Tiburon Boulevard
Source: Nelson\Nygaard

Juanita Lane
Source: Nelson\Nygaard

Main Street
Source: Nelson\Nygaard



Main Street and Ark Row shops
Source: Nelson\Nygaard

Walkability and Wayfinding

One of the most noticeable aspects of Downtown Tiburon is the stark contrast between the pedestrian oriented areas around Main Street and the more suburban areas along Tiburon Boulevard. Main Street and the waterfront exhibit wide sidewalks, narrow roadways, and buildings that meet the street. Conversely, along Tiburon Boulevard buildings are set back from the street and surrounded by surface parking lots, pedestrians must cross long distances and many lanes of traffic at intersections, and frequent curb cuts disrupt the bicycle and pedestrian network.

Indeed, Tiburon Boulevard is a decidedly wide street with limited pedestrian crossings. As such, portions of Downtown are much more walkable than others. While a significant amount of vehicle parking is located within a five-minute walk of Main Street, these facilities feel much farther away due to the poor walkability of the area of Downtown along Tiburon Boulevard.

In general, parking resources are not readily visible, especially to visitors of the area, due to insufficient and inconsistent wayfinding. Wayfinding is not consistent throughout Downtown and fails to provide any strong visual cues for all user groups, but especially motorists searching for parking. As such, many motorists "cruise" for free on-street parking, when both on-street and off-street facilities have significant availability within a five-minute walk of Main Street. This contributes to unnecessary vehicular circulation at various places Downtown.

Existing Wayfinding – Ark Row area

Source: Nelson\Nygaard

Inconsistent parking signage

Source: Nelson\Nygaard

Main Street is the biggest "draw" in Downtown, yet represents an underutilized pedestrian asset. While wide sidewalks, narrow lane widths, mid-block crossings, and attractive brick pavings make the area ideal for high pedestrian traffic, no elements exist that encourage pedestrians to linger and not just travel through Main Street on their way to their final destination. Various amenities such as street furniture, attractive lighting, and a coordinated wayfinding system would encourage pedestrian use of Main Street, and would help attract visitors to Ark Row. Indeed, Ark Row is not as apparent as other Downtown areas and it lacks transitions to and from other parts of Downtown. Programming could also help reinforce Main Street's role as a community space.

While Main Street itself is a walkable area, pedestrian connections to Main Street and throughout the rest of the Downtown area are poor, limiting pedestrian activity. These areas of poor connectivity include:

- From the west side of Downtown to the east side
- To/from Ark Row
- To/from the Tiburon Ferry Terminal

Bicycle Access and Amenities

Downtown Tiburon is located along a popular cycling route used by both residents (typically on road bikes) and tourists (often on bikes rented in San Francisco) alike, mostly recreationally. Many recreational road bicyclists stop in Downtown Tiburon to rest and eat, and many recreational tourist bicyclists come to Downtown Tiburon to catch a ferry back to San Francisco after having ridden across the Golden Gate Bridge. As such, bicycle traffic is relatively high Downtown, especially during summer months, creating a demand for bicycle parking facilities.

Class II bicycle lane on Tiburon Boulevard

Source: Nelson\Nygaard

However, as noted above, utilization of bicycle parking facilities varies dramatically based upon location. Highest utilization rates are near the ferry terminal and near the cafes and restaurants along Main Street, where many bicyclists stop to eat and drink. Indeed, parked bicycles (whether in bicycle parking facilities or parked along the sidewalk) tend to clutter Main Street, especially during summer months, and can impact pedestrian travel. Other bicycle parking facilities, specifically those along Tiburon Boulevard, see very low utilization rates.

Bicycle parking near Ferry Terminal

Source: Nelson\Nygaard

Bicycle infrastructure exists along Tiburon Boulevard and Paradise Drive, where a Class II bicycle lane is striped from Paradise Drive at Mar West Street, through the Downtown roundabout, and along Tiburon Boulevard to the entrance to Downtown. Here the lane connects to the Class I multi-use path that leads to Blackie's Pasture. For bicyclists traveling northbound along Tiburon Boulevard exiting Downtown, this connection is subpar and has limited wayfinding, leading to dangerous conditions at the intersection of Tiburon Boulevard and Mar West Street. The situation is particularly unsafe due to the large amounts of inexperienced tourist riders, and higher vehicle speeds as compared to other Downtown streets.

2 CURRENT PARKING DEMAND

This chapter provides an additional analysis of existing parking conditions in the study area. More specifically, it analyzes existing parking demand in relation to target occupancies and quantifies how much the study area is "over" or "under" supplied. In addition, this chapter analyzes parking demand in relation to existing land uses. This analysis will enable the Town to demonstrate the effects of development on parking and determine whether the study area currently has more or less parking supply than existing demand requires.

Once again, it is important to highlight that the parking study was performed in mid-November, which is not the peak period of demand for Downtown Tiburon. Nelson\Nygaard is fully cognizant of the degree of seasonal variation in the Downtown, yet we believe the findings in this chapter do provide useful insights into the parking trends and behaviors in Downtown. As discussed in Chapter 3, Nelson\Nygaard recommends that the Town conducts annual occupancy counts during the summer months, which can be used to update and revise the Town's database of parking data.

INVENTORY, OCCUPANCY, AND LEVEL OF SUPPLY

The peak hour of parking demand in Downtown was at 1 PM on Thursday and 2 PM on Saturday. For the study area as a whole, peak occupancies were 50% on Thursday and 39% on Saturday. These occupancies are well below target levels of demand and result in an "oversupply" of parking, as demonstrated in Figures 2-1 and 2-2. The figures show the inventory and occupancy during the peak period, calculations of what a "necessary supply" would be needed to meet current occupancy levels and maintain the 85% and 90% target utilization rates, and the resulting over or under supply of existing parking.

Based on the observed occupancy rates, the study area is substantially oversupplied. For example, at peak occupancy on Thursday 805 parking spaces in the study area are occupied. If one were to assume that this was meeting the target occupancy rate, then the study area would only require 899 spaces. Current supply in the study area, however, is 1,608 spaces, which translates into a 79% "oversupply" of parking based on current demand. Similar trends are evident on both sides of Beach Road, although demand is higher east of Beach Road. Figure 2-2 shows that similar trends occur on Saturday. In short, the study area has more than enough parking spaces to meet current demand.

Figure 2-1 Occupancy, Inventory, and Level of Supply, Thursday 1 PM

Area	Occupancy (a)	Necessary Supply (b) = (a / .85)	Existing Supply (c)	Over / Under Supply (d) = (c-b)	% Over / Under Supply (e) = (d / b)
Study Area	805	899	1,608	709	79%
West of Beach Rd.	236	263	512	249	95%
East of Beach Rd.	569	636	1,096	460	72%

Figure 2-2 Occupancy, Inventory, and Level of Supply, Saturday 2 PM

Area	Occupancy (a)	Necessary Supply (b) = (a / .85)	Existing Supply (c)	Over / Under Supply (d) = (c-b)	% Over / Under Supply (e) = (d / b)
Study Area	627	701	1,608	907	129%
West of Beach Rd.	156	174	512	338	194%
East of Beach Rd.	471	527	1,096	569	108%

As described in the existing conditions section of this report, an estimate of peak summer demand was also generated as part of this study. Figure 2-3 highlights the findings of this analysis based on adjusted occupancy rates. It is important to note that during the estimated peak, the study area is still "oversupplied," although far less so than non-summer months. In fact, the supply east of Beach Road would closely meet target occupancies, while there would still be more than enough supply west of Beach Road.

Figure 2-3 Occupancy, Inventory, and Level of Supply, Adjusted Saturday Peak

Area	Occupancy (a)	Necessary Supply (b) = (a / .85)	Existing Supply (c)	Over / Under Supply (d) = (c-b)	% Over / Under Supply (e) = (d / b)
Study Area	1,198	1,409	1,608	199	14%
West of Beach Rd.	298	351	512	161	46%
East of Beach Rd.	900	1,058	1,096	38	4%

PEAK DEMAND IN STUDY AREA

The peak occupancies for the entire study area occurred on Thursday at 1 PM and Saturday at 2 PM. Parking demand ratio calculations reveal two different, but equally useful correlations:

- *Built Stalls to Built Land Use Ratio*. This represents the total number of existing parking stalls correlated to total existing land use square footage (occupied or vacant) within the study area. According to data provided by the Town, there is approximately 350,279 gross square feet (GSF) of land uses.
- *Combined Peak Demand to Occupied Land Use Ratio.* This represents peak hour occupancy within the entire study area combining the on and off-street supply. As such, actual parked vehicles were correlated with actual occupied building area (approximately 305,243 GSF). From this perspective, current peak hour demand stands at a ratio of approximately **2.6 occupied parking stalls per 1,000 GSF** of built land use for Thursday and **2.1 occupied parking stalls per 1,000 GSF** of built land use for Saturday. At this time, about **4.6 parking stalls per 1,000 GSF** of built land use have been developed/provided within the study area (combining the on and off-street parking supplies).

Figure 2-4 summarizes the analysis used to determine the built *ratio* of parking to built land use (i.e., Column D), which is based on the correlation between total built land use of 350,279 GSF (Column A – Built) and 1,608 stalls of "built" parking supply (i.e., Column C). As such, the *built ratio of parking* is 4.6 stalls per 1,000 GSF of commercial/retail building area. Figure 2-4 also demonstrates that the *actual demand* for parking is approximately 2.6 and 2.1 occupied stalls per 1,000 GSF (Column F). This number is derived by correlating actual occupied building area of 305,243 GSF (Column B) to the 805 and 627 vehicles actually parked in the peak hour (Column E).

Figure 2-4 Parking Demand – Mixed Land Use to Built Supply

Peak Time Periods	A	B	C	D	E	F
	GSF (Built)	GSF (Occupied)	Total Supply Inventoried in Study Area	Built Ratio of Parking (per 1,000 GSF)	Total Occupied Spaces	Actual Ratio of Parking Demand (per 1,000 GSF)
Thursday, 1 PM	350,279	305,243	1,608	4.6	805	2.6
Saturday, 2 PM					627	2.1

To date, parking has been *built* at an average rate of 4.6 stalls per 1,000 GSF of development in Downtown Tiburon. Figure 2-5 illustrates parking supply and demand in Downtown Tiburon in comparison to other cities throughout the western U.S. Downtown Tiburon has one of the highest parking demands per 1,000 SF of built uses, but also the highest supply of parking for any of the cities shown.

As a result, it appears that Downtown Tiburon has surplus parking with significant availability in both existing on and off-street facilities, especially given that land uses in the study area generate lower parking *demand* ratios, likely even during peak summer periods. This surplus of parking allows for future development to make use of existing spaces prior to the construction of new parking.

Figure 2-5 Built Parking Supply and Actual Demand, Selected Cities

City	Minimum Requirement / 1,000 SF or Actual Built Supply	Actual Demand / 1,000 SF	Gap between parking built and actual parking demand (for every 1,000 GSF)
Hood River, OR	1.54	1.23	0.31
Oxnard, CA	1.70	0.98	0.72
Newport Beach, CA (Balboa Village)	1.84	1.78	0.06
Corvallis, OR	2.00	1.50	0.50
Monterey, CA	2.14	1.20	0.94
Sacramento, CA	2.19	1.18	1.01
Seattle, WA (SLU)	2.50	1.75	0.75
Kirkland, WA	2.50	1.98	0.52
Palo Alto, CA	2.50	1.90	0.60
Santa Monica, CA	2.80	1.80	1.00
Ventura, CA (Westside)	2.87	1.26	1.61
Chico, CA	3.00	1.70	1.30
Hillsboro, OR	3.00	1.64	1.36
Bend, OR	3.00	1.80	1.20
Salem, OR	3.15	2.04	1.11
Lancaster, CA	3.67	1.37	2.30
Redmond, WA	4.10	2.71	1.39
Mill Valley, CA (Miller Avenue)	4.13	3.08	1.05
Beaverton, OR	4.15	1.85	2.30
Soledad, CA	4.21	1.21	3.00
Tiburon, CA	4.59	2.64	1.95

3 PARKING MANAGEMENT PLAN

The inventory of parking supply and regulations, the parking occupancy and turnover study, and analysis of parking demand provide a wealth of information about parking conditions and behavior within Downtown Tiburon. More importantly, this data will serve as the guiding framework for the Town as it moves forward with reshaping its downtown and reforming its parking policies and management systems.

The recommendations included below are designed to work together to meet the Town's parking management goals. While these recommendations could theoretically be implemented piece by piece, their effectiveness can only be ensured if they are implemented together. It is important that to the greatest extent possible the recommendations be implemented as a cohesive "package" of reforms.

Furthermore, it is important to emphasize that the parking management plan outlined below is designed to be mutually supportive of the circulation recommendations described in Chapter 4. Parking management is one of the most effective ways to address challenges related to congestion, vehicular circulation, transit operations, and pedestrian and bicyclist safety and accessibility. As a result, the proposed parking recommendations seek to reinforce the Town's goals for improved circulation in Downtown.

Finally, this parking management plan is designed to be "actionable" and "implementable," informed by successful strategies already in operation in similar jurisdictions. Nelson\Nygaard recognizes the Town's desire to respond quickly to its parking challenges, as parking is a primary factor in the overall health and success of the Downtown. While some of the strategies described below may require additional analysis and planning, Nelson\Nygaard has sought to craft a plan that will allow the Town to respond to its parking challenges in Downtown Tiburon in a targeted, efficient, and cost-effective manner.

PRINCIPLES FOR EFFECTIVE PARKING MANAGEMENT

Historically, a city wishing to "solve its parking problem" has almost always meant an increase in supply. Unfortunately, simply increasing parking supply often encourages more auto use, as people are incentivized to drive to places that offer plenty of "free parking." Furthermore, simply increasing supply does not address the core problem of concentrated demand, in which popular on-street spaces are consistently oversubscribed while nearby off-street spaces remain underutilized. The goal of parking demand management is to "manage" curb spaces to ensure availability while also optimizing utilization of existing off-street supply to meet a variety of parking needs.

Managing parking has been shown to be one of the single most effective tools for alleviating congestion and improving operation of the street network, even when densities are relatively low and major investments in other modes have not been made. Parking management can also have a significant impact on mode choice, which translates directly to reductions in auto congestion and

improved livability of commercial districts and adjacent neighborhoods. Finally, effective parking management can result in positive economic impacts for local businesses, as employees, residents, and visitors can all better utilize the parking supply to shop, dine, or recreate.

As Downtown Tiburon continues to grow and evolve its parking needs will change as well. This plan recommends techniques to both address current challenges and also allow the Town to be nimble in reacting to future parking challenges. Above all else, this plan proposes a parking management approach that utilizes policies and programs that will enable more efficient utilization of existing supply, while alleviating parking congestion in certain areas.

In recognition of these considerations, the following goals and objectives informed the development of parking management recommendations for Downtown Tiburon:

- The parking supply should be a public resource that is convenient and easily accessible for all user groups.
- The Downtown parking supply (public and private) should be managed as part of an integrated, district-wide system.
- Parking facilities should be managed with a focus on making the most efficient use of all public and private parking facilities before increasing supply.
- Parking regulations should encourage visitors and residents to come and stay in Downtown.
- Specific measures should be evaluated that make it more convenient for local residents to park in Downtown.
- Parking policies should support the ability of local employees to get to work, but also discourage employees from parking in “prime” on-street spaces all day long.
- Evaluate pricing as a tool to manage parking supply and demand, and potentially use any parking revenue to fund improvements in the Downtown area.
- Embrace new parking technologies to maximize customer satisfaction, as well as foster enhanced parking data management and analysis.
- Provide flexibility to local decision makers and Town staff to adapt to seasonal and long-term changes in parking demand and travel patterns, as well as make adjustments to parking policies to improve system performance.
- Be proactive in community engagement to ensure that local businesses, residents, and visitors understand any new parking policies and programs, and how those policies will improve parking in Downtown.

RECOMMENDATION #1: REMOVE "2-HOUR" ON-STREET TIME RESTRICTIONS, INSTALL METERS, AND UTILIZE DEMAND-BASED PRICING TO MANAGE DEMAND AND TURNOVER.

Description

All on-street parking in Downtown Tiburon is free. In addition, 2-hour time limits are in place on most streets in the Downtown area – Tiburon Boulevard, Main Street along Ark Row, and Mar West Street. These time restrictions are in place to generate parking "turnover" and ensure that a given vehicle is not parked in one space all day long.

This recommendation proposes the elimination of all existing "2-hour" time limits. Instead, it is recommended that the Town install "smart" parking meters and price on-street parking as a means to make parking more convenient and accessible for residents and visitors. As described in more detail below, motorists would be allowed to park in an on-street parking space for up to five hours. A 5-hour limit will deter commuters (i.e. ferry riders) from parking on-street all day and direct them to utilize off-street parking, while providing flexibility to shoppers and visitors wishing to stay for more than just a few hours. More importantly, meter pricing will improve convenience by helping to ensure turnover and parking availability for customers. Meter prices would be based on length of stay and also adjusted to respond to seasonal fluctuations in demand so that when parking demand is higher or lower, prices would increase or decrease accordingly.

Rationale for Implementation

The rationale for parking meters in Downtown Tiburon is to ***make parking more convenient and accessible for residents and visitors.*** Finding an on-street parking space in many parts of Downtown, especially during the summer, can be very difficult because motorists will always attempt to seek out free on-street spaces rather than pay for parking in an off-street lot. By using moderate pricing signals, meters can effectively regulate demand and more evenly distribute vehicles among the other parking assets in Downtown. The use of the meters and pricing structures described below has been shown to reduce the incidence of parking violations and the number of tickets issued to motorists in other jurisdictions.

As described in Chapter 1, the occupancy counts in Downtown Tiburon reflect a number of trends related to parking demand. Most importantly, the occupancy counts, even in the off-peak, reinforce a common parking trend – free on-street spaces in prime locations are highly utilized while off-street lots (paid and unpaid) sit mostly empty. For example, the south side of Tiburon Boulevard between Beach Road and Main Street and Main Street near Ark Row both had occupancy levels at or above target occupancy rates (see Figures 3-1 and 3-2). In fact, on Saturday the south side of Tiburon Boulevard between Beach Road and Main Street was almost always 100% occupied.

This is reflective of the universal hierarchy of parking demand in which on-street spaces are the most demanded, and is particularly interesting given that counts were conducted in the "off-peak." In the summer, demand for these, and all, on-street spaces is even more pronounced.

Figure 3-1 Occupancy Rates for Block #11 (Tiburon Blvd.)

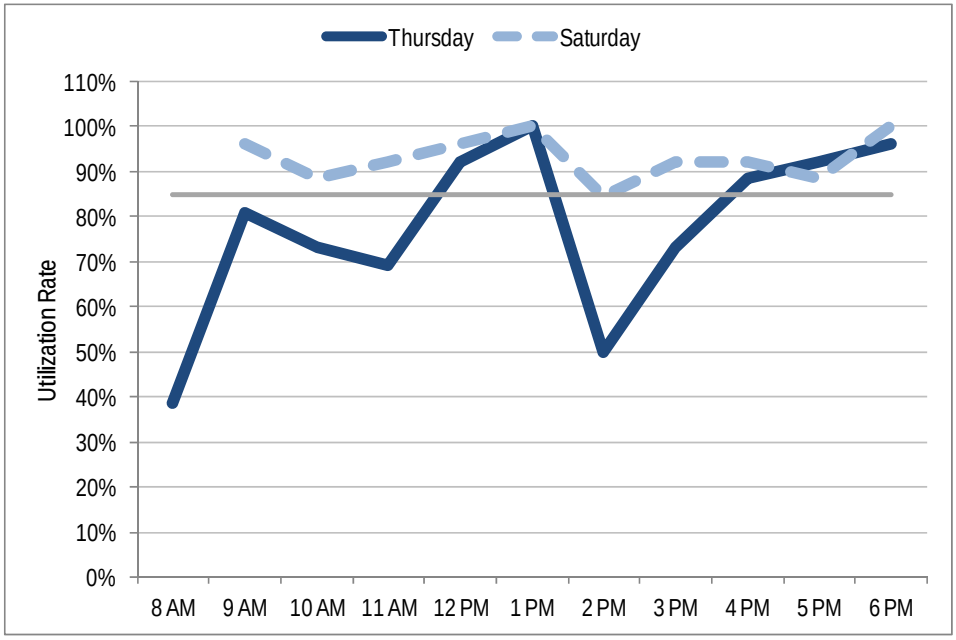
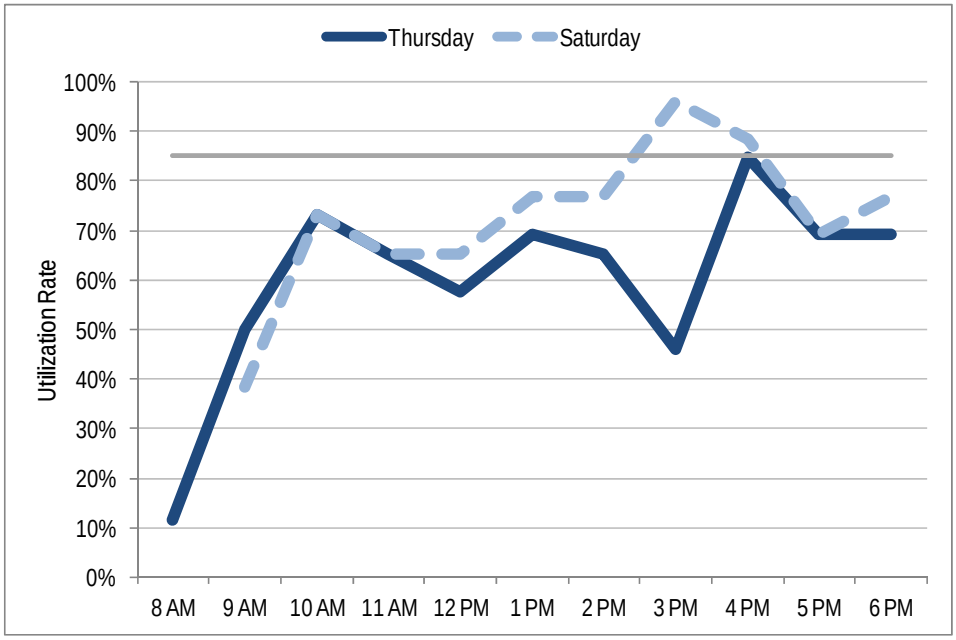


Figure 3-2 Occupancy Rates for Block #16 (Main St. by Ark Row)



Like many other jurisdictions, the Town of Tiburon has sought to regulate its curb spaces through time restrictions and parking fines. These traditional techniques are reasonably effective in generating turnover and increasing municipal revenues, but in most cities are rarely linked to any larger transportation or quality of life goals. In fact, traditional parking policies have often resulted in increased congestion as motorists look for on-street spaces, reduced functionality of streets for transit users, pedestrians, or bicyclists, and frustrated businesses that bemoan the lack of available parking.

Two-hour time limits present several disadvantages, as is experienced in Downtown Tiburon today. First, enforcement of time limits is inefficient and labor-intensive, requiring parking control officers to "chalk" tires and return every two hours. Second, long-term parkers or employees, who quickly become familiar with enforcement patterns, often become adept at the "2-hour shuffle," moving their vehicles regularly or swapping spaces with a co-worker several times during the workday. Even with strictly enforced time limits, if there is no price incentive to persuade long-term parkers to seek out less convenient, bargain-priced spots, these motorists will probably still park in prime spaces. Finally, for customers and visitors, strict enforcement can bring "ticket anxiety," the fear of getting a ticket if one lingers a minute too long (for example, to do a little shopping after lunch).

2-hour parking on Tiburon Boulevard
Source: Nelson\Nygaard

By contrast, one of the best ways to balance parking supply and demand and generate turnover is with pricing structures that take into account *actual demand* for a parking space. By treating parking like any other scarce commodity, and requiring motorists to directly pay for use of a space, a jurisdiction can establish the "market value" for each parking space and adjust those prices depending on the level of demand. Just as hotel room rates increase or decrease based on availability, demand-based pricing for parking seeks to increase prices when and where demand is highest and reduce prices when and where demand is lowest. New advances in parking meter technology, such as wireless "smart" meters, make demand-based pricing a feasible option and can dramatically increase motorist convenience, as well as reduce the number of parking citations.

So, if prices are used to create vacancies and turnover in the prime parking spots, then what is the right price? A well-established, industry standard target occupancy rate for on-street spaces is approximately 85%. At this level of occupancy, at even the busiest hour about one out of every seven or eight spaces will be available, or approximately one empty space on each block face. This provides enough vacancies so that visitors can easily find a spot near their destination when they first arrive.

For each block and each parking lot in downtown, the right price is the price that will achieve this goal. This means that pricing need not be uniform: the most desirable spaces may need higher prices, while less convenient lots are less expensive. Pricing can also be based on length of stay with a higher rate charged the longer one stays. In other words, the goal is not to ticket someone for wanting to stay longer than two hours, but allow them to stay as long as they are willing to pay for the space being used.

Finally, it is important to understand that demand-based pricing does not need to change the parking behaviors of *every* motorist. Motorists can be thought of as falling into two primary categories: bargain hunters and convenience seekers. Convenience seekers (shoppers, diners, or tourists) are more willing to pay for an available front door spot, and are typically less sensitive to parking charges because they stay for relatively short periods of time. By contrast, many long-stay parkers, such as employees, find it worthwhile to walk a few blocks to save on eight hours worth of parking charges. With proper pricing, the bargain hunters will choose currently underutilized lots, leaving the prime spots free for those convenience seekers who are willing to spend a bit more. The ultimate goal, therefore, is to shift the parking behaviors of not all, but *just enough* motorists to reach target occupancy levels.

Benefits

The primary goal of parking meters and demand-based pricing is to make it as easy and convenient as possible to find a parking space. By setting specific availability targets and adjusting pricing ***up or down***, demand can be effectively managed so that when a motorist chooses to park, they can do so without circling the block or searching aimlessly. Demand-based pricing can result in the following benefits:

- Consistent availability and ease in finding a parking space, especially near local businesses and ground floor retail uses
- Flexible time limits, thereby eliminating the need to move a vehicle to avoid time restrictions
- Convenient payment methods that eliminate the need to "plug the meter" and make it easier to pay for parking and avoid parking tickets
- Incentivizes long-term parkers and daily commuters to park in off-street lots
- Reduces search time for parking, resulting in less local congestion and vehicle emissions
- Reduces illegal parking and improves safety and street operations
- A more equitable and efficient way to account for the real costs to a city for providing parking
- Improved economic vitality and business environment due to increased visitors and customer convenience
- A potential revenue stream for the Town that could be invested in a variety of improvements to Downtown (see Recommendation #5)

Tradeoffs

While demand-based pricing and the removal of time limits have proven effective, there are some potential tradeoffs that the Town may wish to consider when evaluating this recommendation. These include:

- **Resistance to change:** Demand-based pricing will represent a substantial change in how parking is currently being managed in Tiburon and may generate apprehension. Business owners, residents and regular visitors can resist such changes, often arguing that parking should be "free" and new meters will "hurt downtown businesses." Such arguments ignore the status quo, which has already resulted in tangible parking, circulation, and quality of life challenges for Downtown Tiburon. Furthermore, numerous examples exist that demonstrate that demand-based pricing can improve the local

economy and that most people are willing to pay for parking if it makes the experience more convenient.

Overcoming resistance to change may be the Town's biggest obstacle to reforming its parking policies and programs. The Town should take steps to proactively educate, inform, and solicit feedback from local residents and businesses, as described in Recommendation #7.

- **Implementation and management costs:** The Town will have to make an investment to implement and manage a demand-based pricing program. In addition to the capital infrastructure required, it is likely that the Town will need to allocate additional staffing resources in the initial stages of implementation to manage the program. While these costs are real, other jurisdictions have shown that such financial outlays are well worth the investment, resulting in dramatic improvements to the areas in which they have been applied. Furthermore, revenue generated from a demand-based pricing program can potentially be used to finance its start-up and ongoing costs, thereby minimizing the costs to the Town.
- **Success can take time:** Demand-based pricing may take time to fully realize its positive effects, as it is unlikely that the initial meter rates will be the exact prices need to shift motorist behavior to the 85% target occupancy. It may take a few additional price adjustments up or down (based on additional occupancy analyses) to find the right prices for the different levels of demand throughout the year. The Town should be prepared for ongoing monitoring and adjustments, and establish specific processes by which those adjustments are made to ensure consistency and transparency.

Necessary Steps for Implementation

Establishing a demand-based pricing program will require a number of specific steps in order to achieve full implementation and continued success. These steps are outlined below:

1. **Understand the existing parking supply and demand.** In order to successfully implement a demand-based pricing program, accurate data is absolutely essential. More specifically, for a city to meet a target occupancy rate, it must know how its existing parking supply is currently being utilized. Unfortunately, most jurisdictions have little idea of how many people are parking on their streets or even how many parking spaces are currently present. Understanding the current supply is the critical first step and will help a municipality identify what parking challenges are top priorities.
2. **Achieve internal consensus.** Transitioning to a demand-based pricing parking management program can be a cultural shift for many jurisdictions. Therefore, it is important to reach internal consensus about what a demand-based pricing program is and is not, how it can help meet Town goals for its Downtown, and how Town resources and staffing should be allocated to help achieve this vision.
3. **Conduct public outreach.** As described in greater detail in Recommendation #7, public outreach is a crucial component to success. Cities that have been transparent about the reasons for the policy changes and have taken the time to articulate the benefits to the public have found success more easily and more quickly. Outreach to local businesses, key stakeholders, local residents, and the general public can be a time-consuming process, yet worthwhile endeavor.

4. **Adopt enabling legislation.** It is recommended that the Town adopt legislation that grants the Town the authority to establish the program and outlines specific parameters of the program, while providing for enough flexibility so that Town officials and staff can revise the program as needed. By articulating the specific program parameters through legislation (target occupancy rates, parking rates, meter adjustment processes, enforcement hours, etc.), the Town can clearly define its regulatory authority, while ensuring adequate transparency in its decision making processes.

   More specifically, Town Council should establish that the primary goal in setting parking meter rates and hours for each block and each lot is to achieve a target occupancy rate and improve parking convenience and access. Additionally, the ordinance should both require and authorize the Town Staff to raise or lower parking prices to meet this goal, without requiring further action by the Town Council.

   Sample parking ordinances from the City of Ventura and the City of Redwood City have been included in Appendix B. Sample enabling legislation can also be found on pages 20-21 of the publication *SFpark: Putting Theory Into Practice*.[6]

5. **Evaluate, procure, and test the appropriate meter technology.** As described in the sidebar on parking meters, there are a number of different technologies available, each with its advantages and drawbacks. It is recommended that the Town purchase multi-space, pay-by-space meters that have wireless, pay-by-phone capabilities. It is also recommended that the Town evaluate several different vendors before proceeding.

6. **Communicate the parking program.** Similar to step three, it is highly recommended that the Town develop an ongoing communication strategy for the parking program. The breadth and depth of a communications program could vary, but could include elements such as: message development, branding/design for signage and wayfinding, outreach to local stakeholders and the public, press relations, and various forms of social media.

7. **Monitor, evaluate, and adjust:** As described in Recommendation #8, demand-based pricing is an iterative process that requires periodic adjustments. As the Downtown changes, businesses come and go, and consumer preferences change, parking behaviors likewise will evolve. It is important that the Town respond to these changes by continuing to refine, adjust, and tweak its pricing structures and hours to meet its target occupancy levels.

Initial Project List

Outlined below are the specific project locations and program parameters recommended for demand-based pricing of Downtown Tiburon's on-street spaces.

Meter Location

Meters should be installed to regulate all legal on-street spaces within the Downtown study area, including those spaces specifically designated for short-term parking (i.e. 20-minute parking). Existing commercial and passenger loading on Main Street and Paradise Drive would not be metered and would maintain existing parking restrictions. In accordance with California law, disabled parking spaces should not be metered.

[6] http://sfpark.org/wp-content/uploads/2011/09/sfpark_aug2011projsummary_web-2.pdf

Meter Technologies

Various new meter technologies exist beyond the conventional coin meters used for the better part of the 20th century. These include smart meters, multi-space meters, in-car meters, and wireless / pay-by-phone technology.

Single-space Meters

Conventional Coin Meters

These meters have been used by municipalities since the 1930s. They only accept change, and do not exhibit illumined displays.

Smart Meters

Smart meters are very similar to conventional coin meters; however, they allow motorists to pay for parking via credit or debit card. They also have illuminated displays that allow viewing of parking rates, hours, time limits, and other important information. The ease of payment with smart meters tends to reduce parking and ticketing anxiety.

Furthermore, when combined with embedded roadway sensors, smart meters allow for demand based pricing schemes, as they can send and receive data regarding parking pricing and availability. Some are also pay-by-phone enabled (see section below). A single smart meter can cost around $200-500.

Coin meter in Sausalito, CA
Source: Flickr user wuestenigel

Pay-by-phone meters in San Francisco, CA
Source: SFPark

Multi-space Meters

Pay-and-display meter in Portland, OR
Source: Flickr user Ian Broyles

Pay-and-display Meters

Pay-and-display meters can be placed on existing light or utility poles and serve roughly 10 to 30 parking spaces each. People must park, walk to the meter where they receive a receipt and return to their vehicle to display the receipt on their dashboard. Pay-and-display meters cost approximately $10,000 to $12,000. These meters have minimal maintenance costs; operating costs vary depending on the type of power system used. Some pay-by-space meters can use solar-power, keeping operational costs very low and requiring no utility work for installation (battery powered meters are also available).

Pay-by-space Meters

Multi-space pay-by-space meters require on-street parking stalls be numbered. They are more convenient to motorists because they are not required to return to their cars. Similar to pay-and-display meters, operational and maintenance costs are minimal, and many new models can support pay-by-phone technology. Finally, such meters have substantially lower enforcement costs, as enforcement staff do not have to inspect each vehicle, and can instead utilize handheld devices. Although such meters require each space to be numbered, this can be down in an inexpensive and conspicuous manner, typically with stencils on the curb. Pay-by-space meters cost between $7,000 and $10,000 per unit.

In-car Meters

In-car meters are small mirror-hanging units that can be purchased from cities and that can store prepaid parking time. Users can turn the meters on when they leave their vehicle and turn it off when they return. In-car meters are popular because they work in real time and people can avoid over or underpaying. Some of these meters operate using cellular technology, allowing people to pay-by-phone with a credit card. Time is then credited to a central database and the in-car meter "calls" the central computer when the meter is in operation.

Wireless / Pay-by-phone

Pay-by Phone technology allows a driver to pay a parking fare via cell phone, mobile phone application, or computer. Motorists can receive a reminder text when their time is almost up, and can add time without returning to their vehicle or parking meter. Receipts are available via email. Typically these programs require pre-registration. Pay-phone technology reduces maintenance and operational costs associated with meters, fare collection, and ticketing.

These meters typically require wireless technology, which can increase setup and maintenance costs, but also offer the potential benefit of creating a free, publicly available wireless network for the area in which the meters are installed.

Meter Type

Based on the analysis of parking conditions in Downtown and the needs of the Town, it is recommended that the Town install multi-space, pay-by-space meters (with wireless, pay-by-phone technology) for its on-street spaces. However, for locations with only a few individual parking spaces (e.g. Mar West Street at Tiburon Blvd.), single space meters (which accept multiple forms of payment) would be likely more cost-effective.

As described above, pay-by-space meters offer aesthetic advantages over single space meters and benefits motorists because they do not have to return their vehicle for the initial or subsequent payments. For the Town, such meters are space-efficient and can reduce enforcement costs. These meters would also be able to be easily installed in off-street facilities, as described in Recommendation #3.

An initial assessment of the on-street facilities indicates that the Town would need to install between 12-16 multi-space meters throughout the Downtown to provide convenient coverage for motorists.

Target Occupancy Rate

Target occupancy rates for on-street spaces should be 85%, which would translate into approximately one space per block being available at all times of the day.

Initial Hours & Pricing Structure

East of Beach Road

- 9 AM – 8 PM, 7 days a week
- Peak period (Memorial Day to Labor Day)
  - $1.50 per hour (0-2 hours)
  - $2.00 per hour (2-5 hours)
- Off-peak period (Labor Day to Memorial Day)
  - $1.00 per hour (0-2 hours)
  - $1.50 per hour (2-5 hours)
- 5-hour time limit

West of Beach Road

- 9 AM – 8 PM, 7 days a week
- Peak period (Memorial Day to Labor Day)
  - $.75 per hour
- Off-peak period (Labor Day to Memorial Day)
  - $.25 per hour
- 5-hour time limit

California Legal Basis for Setting Meter Rates

The California Vehicle Code (CVC Sec. 200258) allows local jurisdictions to set parking meter prices at fair market rates necessary to achieve 85% occupancy. California case law authorizes local jurisdictions to enact parking meter ordinances with fair market rates that "may…justify a fee system intended and calculated to hasten the departure of parked vehicles in congested areas, as well as to defray the cost of installation and supervision."[7] California case law has also recognized that parking meter fees are for the purpose of regulating and mitigating traffic and parking congestion in public streets, and not a "tax" for revenue purposes.[8]

[7] DeAryan v. City of San Diego, 75 CA2d pp 292, 296, 1946.

[8] Ibid., p293.

Meter Pricing Adjustments

It is possible that the initial pricing structure proposed above will not achieve the target occupancy rate. Therefore, meter prices should not be static, but periodically adjusted to respond to changes in demand. Rates need not change constantly or abruptly. When revising meter hours or rates, it is safest to increase or decrease rates slowly, with occupancy checks before and after each rate adjustment, in order to avoid overshooting and accidentally driving away customers.

Therefore, it is recommended that the Town establish specific parameters and procedures as part of the enabling legislation for making such adjustments. More specifically, this Plan recommends that Town Staff be authorized to increase parking prices up or down in $0.25 increments a maximum of four times per year, with an upper price limit of $3.00 per hour.

If and when Staff deems that it is necessary to increase the price further on certain blocks or in certain parking facilities in order to manage higher parking demand in those locations, Staff must return to Town Council to request authorization to do so, at which time a new price threshold (upper limit) on parking prices can also be established.

On-street Pricing in Peer Cities

Mill Valley:

$.75 per hour; 2 hour time limit;
9 AM – 6 PM, 7 days

Sausalito:

$1 per hour; 3 hour time limit;
8:30 AM – 6 PM, 7 days

San Rafael:

$.75-1 per hour;
6 AM – 8 PM and 8 AM – 6 PM
depending on location, M-Sa;
Time restrictions vary based on location

Laguna Beach:

$1-2 per hour;
8 AM – 7 PM, 7 days;
Time restrictions vary based on location

Revenues and Expenditures

To achieve a better understanding of the potential financial impact on the Town of the proposed parking changes, a "high-level" analysis of revenues and expenditures was conducted. It is important to emphasize that this analysis only offers an *approximate estimate* of the potential financial impact from both new meters and a resident permit program (see Recommendation #3).

A number of assumptions were made to inform this analysis with the intention of being as conservative as possible regarding parking demand and revenue generation. Future policy decisions, land use changes, and economic conditions would all impact these assumptions, and additional financial projections should be sure to include the most current data. Assumptions included:

- Parking demand was based on existing levels of demand and projected summer demand as described in Chapter 1.
- All motorists would park for less than two hours.
- The implementation of pricing would result in moderate declines in on-street parking demand.
- The number of resident permits sold would be similar to the amount sold as part of Mill Valley's RSVP program. This amounts to approximately 15-20% of Tiburon residents (over 18 years of age) purchasing a parking permit.

- Any revenue obtained from citations and resident permit sales would be offset by enforcement costs.
- The Town would purchase 16 multi-space meters ($10,000 each) and eight single-space meters ($500 each) without any debt financing. Meter cost estimates also include annual operating costs.
- Marketing efforts (signage, website, informational materials) would cost approximately $15,000.
- Annual staffing costs to administer the program would be $50,000. This figure was estimated "conservatively" and is likely higher than necessary. Nevertheless, the cost estimate demonstrates that management of the new parking program will require additional staffing costs for the Town. Once the program is implemented, the actual costs may be much lower.

Figure 3-3 below summarizes the projected financial impact for the parking program. In the first year, it is estimated that revenues from meters would be approximately $209,000, while total costs would be roughly $234,500. After the first year, costs would only include administrative and operating/maintenance costs (including a cost escalation or inflation factor). Annual meter and permit revenues could fluctuate depending on a number of factors that influence parking demand (such as the hourly pricing structure of the meters).

Figure 3-3 Estimate of Parking Program Financial Impact

Line Item	$ Amount
Revenue	
Annual Meter Revenue[9]	$209,000
Resident Permit Sales + Citations	Assumed to be revenue neutral with "Enforcement Costs"
Capital Costs (one-time)	
Meters[10]	$164,000
Marketing	$15,000
Annual Costs	
O&M Costs for Meters / Signage / Marketing	$5,500
Staff Costs	$50,000
Enforcement Costs	Assumed to be revenue neutral with "Resident Permit Sales + Citations"

[9] Estimated first year revenue based on current demand. Annual revenue could fluctuate depending on a number of factors.

[10] Does not include installation costs.

RECOMMENDATION #2: IMPLEMENT A RESIDENT PERMIT PROGRAM.

Description

A permit program would allow eligible residents to purchase a limited number of vehicle-specific parking permits. These permits would allow for free parking (up to two hours) at all metered on-street spaces. As part of cooperative parking agreements with private lot owners, the Town could also negotiate to allow permit holders to park for free in designated off-street lots for a limited time period. Residents wishing to stay longer than the free period would pay the posted meter rates.

Rationale for Implementation

In addition to being a tourist spot, Downtown Tiburon serves as a primary destination for residents wishing to shop, eat, socialize, and perform other daily errands. Local residents are crucial to the success of local businesses, especially given the dramatic seasonal variations. The Town of Tiburon recognizes the value of Downtown for its residents, and the permit program is ultimately designed to make it more convenient and more attractive for residents and others to visit Downtown.

This parking management plan also recognizes that many of the strategies it proposes will be a major regulatory change for the Town of Tiburon and its residents. This permit program seeks to enable a smooth transition to a robust parking management program and facilitate, in particular, the implementation of on-street pricing.

It is important to note that the permit program is not free, sets a maximum number of permits per household, and only allows two hours of free parking. These program parameters are in place to ensure that local residents do not "overwhelm" the parking supply, especially on-street spaces, and that residents do not simply start parking their vehicles in Downtown all day long.

Benefits

- Makes parking more convenient for local residents
- Incentivizes residents to visit Downtown and support local businesses
- Free parking in designated off-street lots may help to redistribute parking demand

Tradeoffs

- Additional administrative, management, and enforcement costs for the Town
- Potential loss of revenue as cost of permits may not match forgone meter revenue
- Permits would not guarantee "availability" for residents, which may become an issue during peak summer periods.

Necessary Steps for Implementation

1. Establish permit program via Town ordinance and determine specific program parameters
2. Establish program objectives, which could include number of permits sold or resident satisfaction

3. Establish payment and permit distribution processes
4. Identify program start data and begin selling of permits
5. Monitor program performance and adjust program as needed

Initial Project List

Outlined below are the specific program parameters recommended for a resident permit program in Downtown Tiburon.

Parking Restrictions

On-street

- Permits accepted at all on-street, standard meter spaces
- 0-2 hours: Free parking
- 2+ hours: Pay meter rates starting at the "0 hour"

Off-street

- Permits accepted at designated off-street facilities, as determined in Recommendation #3
- 0-3 hours: Free parking
- 3+ hours: Pay meter rates starting at the "0 hour"

Number of Permits

A maximum of four permits per household is allowed. Permits (in the form of a sticker) are assigned to a specific vehicle and are not transferable. In the case of a purchase of a new vehicle to replace an old one, residents would be able to obtain a new permit with proof of purchase and payment of an administrative fee.

Permit Costs

- Permits 1-2: $30 per permit per year
- Permits 3-4: $50 per permit per year
- Lost, damaged, or stolen permits: $100 per permit, no proration

Program Eligibility and Purchasing

Only residents of the Town of Tiburon are eligible to purchase permits. To purchase a permit the following is required:

- Completed application form and payment
- Proof of residence is required (no P.O. boxes), which can include one of the following: Driver's license; Current utility bill; Vehicle registration; Current rental/lease agreement
- Permits can be purchased online, by mail, or in-person at Town Hall

Peer Examples

Mill Valley: The City of Mill Valley instituted a resident shopper vehicle program in June 2010 available to residents of Mill Valley. Permits allow free parking up to posted limits (two hours at most of the City's meters) and are limited to four per household. The first two permits purchased by a household cost $40 each annually, and the third and fourth permits cost $60 each annually. A total of 2,962 stickers were sold in the program's first year.

In July 2011, the City opened the permit program to residents of neighboring communities including Belvedere, Corte Madera, Sausalito, and Tiburon. Permits are $10 more expensive for residents of neighboring towns.

Mill Valley has yet to conduct a formal assessment of the RSVP program. However, the RSVP program has been well-received by residents and businesses, with close to 3,000 permits sold during the pilot year. Many residents have indicated their desire to purchase permits for the next year. In fact, Mill Valley staff members have been informed by residents that they would be willing to pay more for the permits if it continued to ensure parking convenience.

Sausalito: The City of Sausalito's Municipal Parking Lot Residential Parking Card is free to all residents (a $10 administrative fee is required) and allows vehicles to park for free at any of the downtown municipal parking lots for up to three hours between 7 AM – 6 PM. For permit holders, unlimited free parking is allowed at the lots 6 PM to 7 AM.

Laguna Beach: The City of Laguna Beach offers a Shopper Permit to residents, non-resident seniors, and non-residents that live within the Laguna Beach School District, allowing free parking during the posted time restrictions at most on-street and off-street facilities. For residents, the first two permits purchased by a household cost $80 each, while the third and further permits cost $150 each. Resident permits are valid for two years. Non-resident seniors (age 65+) can purchase a permit valid for one year at a cost of $130 with a maximum of one per residence. Non-residents who live within the Laguna Beach School District can purchase a permit for $120 and a second permit for $150. Non-resident shopper permits are valid for one year and limited to two per household.

RECOMMENDATION #3: WHERE FEASIBLE, EXPAND ON-STREET SUPPLY.

Description

While the demand-based pricing program for on-street spaces seeks to more effectively manage existing supply, it is possible that the supply of on-street parking could also be expanded. In short, this recommendation proposes that the Town evaluate some of its existing curb space to determine if it might be possible to "open up" a number of additional curb spaces in Downtown Tiburon and designate them as metered spaces. These metered spaces could be gained through reallocation of some short-term parking spaces, as well as some current "red" curb areas. In addition, there is potential to gain additional on-street parking through future circulation changes, as described in detail in Chapter 4.

Rationale for Implementation

The parking inventory for Downtown Tiburon reveals that there are a very limited number of on-street parking spaces in Downtown Tiburon. More specifically, there are only 140 on-street spaces in Downtown, which represents approximately 9% of the total supply.

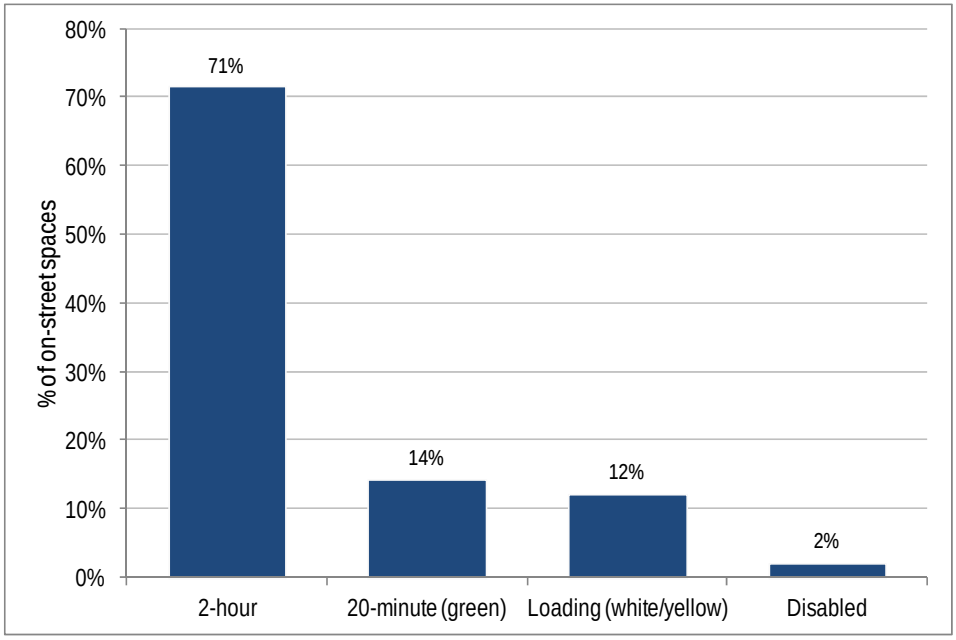
As shown in Figure 3-4, close to one quarter of those 140 spaces are designated for short-term parking or loading. While these spaces serve a valuable function and help to facilitate short trips or deliveries, it is likely from parking occupancy counts that some of these spaces are underutilized and could be converted to metered spaces, thereby allowing additional customers to park for a more flexible period of time. Pricing of meters would be used to generate needed turnover, as described in Recommendation #1.

Furthermore, given the substantial amount of free off-street parking in front of specific businesses in Downtown, short-term parking should not be prioritized for scarce on-street spaces. For example, occupancies on Beach Road were very low on both Thursday and Saturday[11], and it is likely that not all of the 13 green spaces (20-minute parking) on this street are needed, especially given the large amount of off-street parking directly serving the Post Office and Boardwalk Shopping Center (roughly 170 spaces in these two lots).

Finally, some of the areas currently designated as red curb may be able to be slightly reconfigured to gain additional spaces without impacting traffic flow or street operations.

[11] This may be a reflection of the fact that the counts were conducted every hour and that many vehicles in the 20-minute green zones were "missed" by surveyors. However, anecdotal evidence from the parking count surveyors reveals that the spaces were infrequently occupied across both days. Given the low occupancy rates shown over multiple count periods, it is likely that the study is an accurate reflection of occupancy at these spaces at any given point in time.

Figure 3-4 Distribution of On-street Spaces by Regulation



Benefits

- Increased on-street capacity for customers near local businesses and retail/commercial uses
- Enhanced flexibility in parking supply, allowing metered spaces to serve a larger variety of trips
- Enhanced pedestrian environment in locations where new on-street parking can buffer pedestrian activity on sidewalks
- More equitable distribution between on- and off-street supply

Tradeoffs

- Potential reduction in short-term parking and loading capacity
- Additional Town resources will be required to evaluate and implement changes

Necessary Steps for Implementation

1. Identify potential locations for repainting or reconfiguration of parking.
2. Evaluate the potential impacts on loading, parking, and street operations.
3. Inform nearby businesses of parking changes.
4. Repaint, sign designated locations, and install meters as needed.

Initial Project List

Identified below are the specific locations which the Town should evaluate further to determine if existing curb space can be reallocated to metered parking spaces.

Beach Road – South of Tiburon Boulevard

- **West side:** Convert all of the seven existing 20-minute green spaces to standard metered spaces.
- **East side:** Convert four of the six existing 20-minute green spaces to standard metered spaces. The two spaces closest to the Post Office shall also be metered, but retain their 20-minute parking restriction.

  In addition, explore the feasibility of removing 20 feet of the red curb that extends north from Main Street to gain an additional standard metered parking space. This reconfiguration would still leave approximately 30 feet of red curb to accommodate vehicles turning right from Main Street onto Beach Road.

Beach Road – North of Tiburon Boulevard

- Currently, this portion of Beach Road is striped entirely red and does not allow parking on either side of the street. Given the width of the street and low vehicle volumes, however, it is potentially feasible to reallocate some of the red curb space to on-street parking without impacting traffic flow and turning movements.
- **West side:** Convert red curb to standard metered spaces between CVS parking lot entrance and entrance to loading bay to gain approximately 5-6 spaces.
- **East side:** Convert red curb to metered spaced north of 10-foot median between closed curb cut to Bank of America parking lot and 20 feet south of crosswalk to gain approximately 3-4 spaces.

Tiburon Boulevard

- **North side between Beach Road and Main Street:** On this block near Main Street, there is a long stretch of red curb (approximately 115 feet) between two pairs of 20-minute green parking spaces. This red curb serves a vital function (bus stop for Golden Gate Transit service), and it is not recommended that this red curb be eliminated. However, several minor adjustments are recommended for further evaluation, including:
  - Consolidate the four parking spaces closer to Main Street and meter these spaces. Two of the spaces should be metered, but retain 20-minute parking restriction, while the other two should become standard meters per Recommendation #1.
  - Extend the red curb west to where the previous two green spaces were located. At the same time, remove 20 feet of red curb on east side near Main Street to accommodate one additional standard metered parking space, for a total of five spaces at this location.

    Such a reconfiguration would necessitate further evaluation and consultation with Golden Gate Transit, but it is believed that it would not impact their ability to park two buses or to pull in and out of the bus stop. In fact, buses would no longer have to navigate their egress into traffic with vehicles on the western end of this block. Furthermore, without those two parking spaces located at the west end, buses could take advantage of the existing driveway and red curb space to pull into traffic.
- **South side between Beach Road and Main Street:** This block currently has 26 parking spaces that can be accessed via the driveway off of Tiburon Boulevard, of which two spaces are 10-minute parking. In the short-term, it is recommended that the Town

eliminate these two short-term parking spaces and convert them to standard metered parking along with the other spaces as part of Recommendation #1.

- As described in Chapter 4, additional parking may also be gained through more substantial long-term circulation changes to Tiburon Boulevard. These increases in parking supply would primarily be obtained through the closure of some existing curb cuts, reconfiguration of street dimensions, and the implementation of back-in angled parking.

Figure 3-5 Summary of Proposed On-street Parking Changes

Block ID	Location	Existing	Proposed	Potential Net Gain
14	South Beach Rd. - West side	7 green	7 green to standard meter	0
44	South Beach Rd. - East side	6 green	4 green to standard meter	1
			2 green remain, but metered	
			1 red to standard meter	
48	North Beach Rd. - West side	No parking	5-6 red to standard meter	5 to 6
49	North Beach Rd. - East side	No parking	3-4 red to standard meter	3 to 4
9	Tiburon Blvd. - North side, Beach Rd. to Main St.	4 green	2 green to standard meter	1
			2 green remain, but metered	
			1 red to standard meter	
			Consolidate all parking spaces to east	
11	Tiburon Blvd. - South side, Beach Rd. to Main St.	22 2-hour, 2 green, 2 blue	2 green to standard meter, plus all 2-hour to metered	0
			2 blue remain	
8, 10, 11	Tiburon Blvd.	See Circulation Plan in Chapter 4		

Figure 3-6 On-street Parking Restrictions, Existing

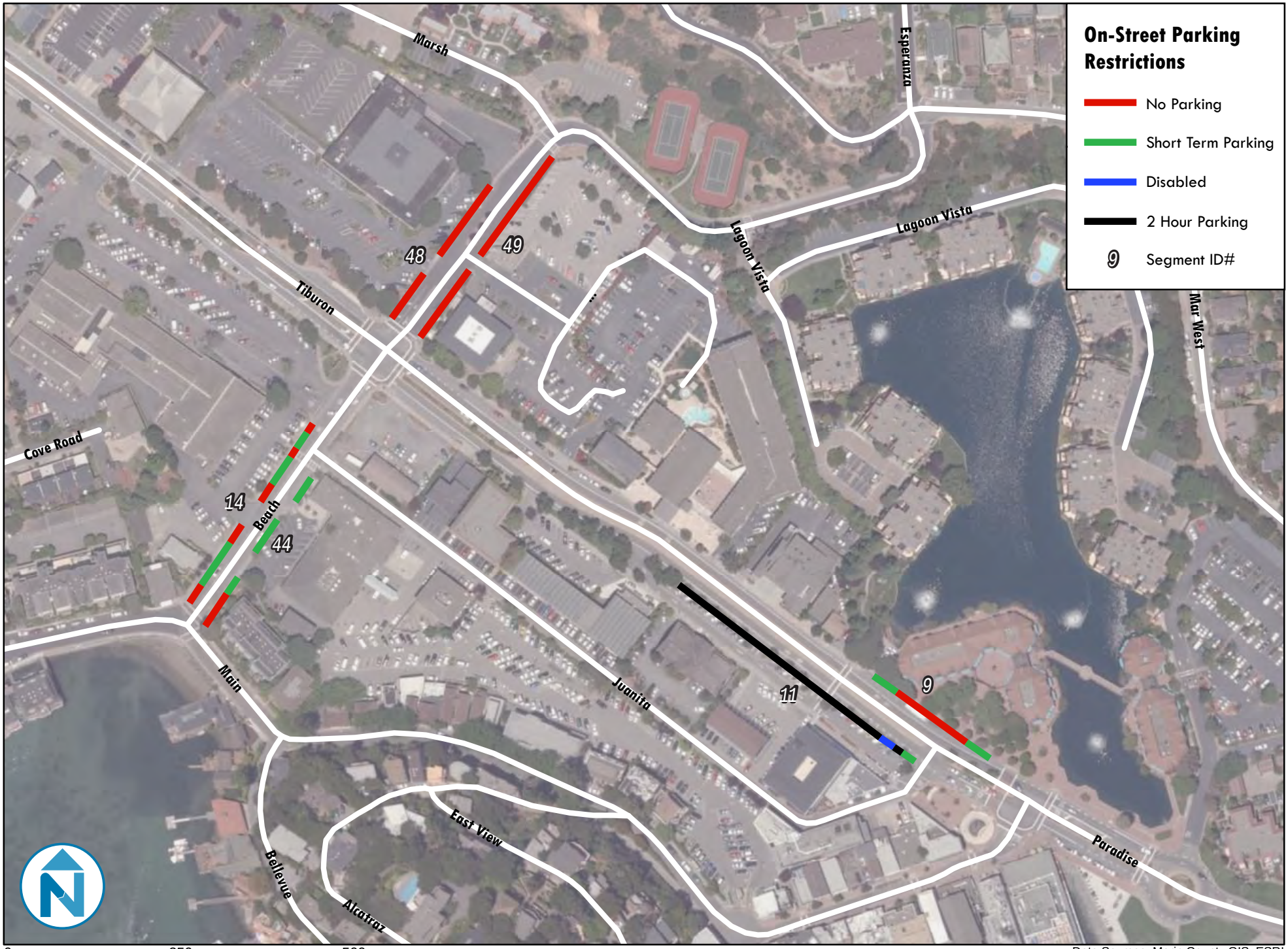
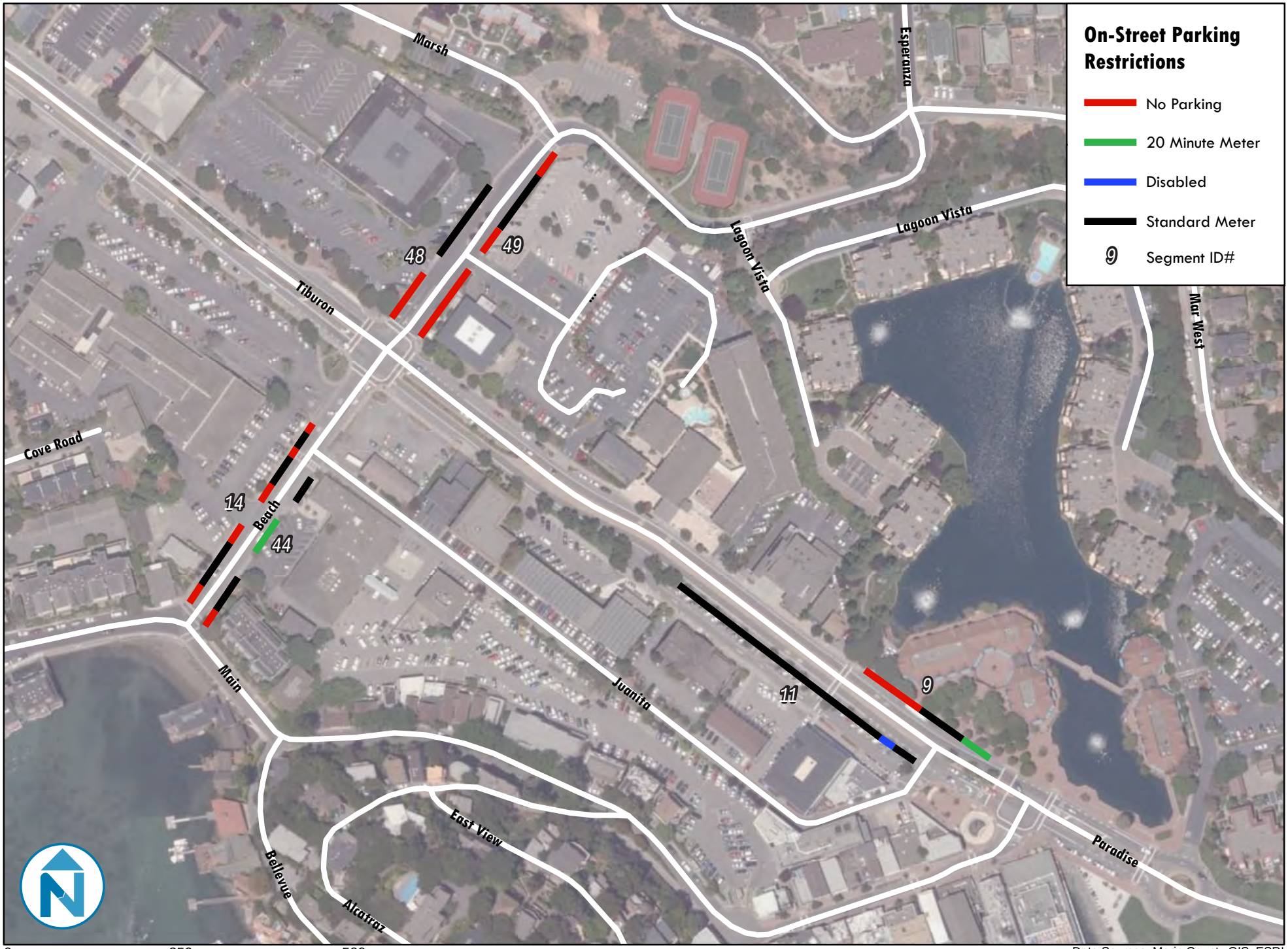


Figure 3-7 **On-street Parking Restrictions, Proposed**



RECOMMENDATION #4: CONSIDER COOPERATIVE PARKING ACCESS AGREEMENT WITH WILLING OFF-STREET LOT OWNERS.

Description

This recommendation seeks to better coordinate pricing and regulatory structures between on- and off-street supply as a means to achieve desired parking and circulation outcomes. In short, the Town should explore entering into cooperative agreements with willing private owners of key off-street lots to implement a demand-based pricing program. Such agreements would facilitate coordination between on- and off-street facilities.

It should be emphasized that this strategy seeks only to engage property owners that may be willing to cooperatively manage their parking assets with the Town.

Rationale for Implementation

In Downtown Tiburon there are 140 total on-street spaces, representing only 9% of the parking supply. Of the 1,468 off-street spaces in Downtown, approximately 75% of the parking is "publicly accessible" (pay or customer parking), while the rest is "reserved" for specific tenants. The largest portion of off-street parking supply (667 spaces or 45%) is located in "publicly accessible pay lots." It is important to note that these lots are NOT owned by the Town of Tiburon. They are all privately owned and operated, including enforcement activities.

Clearly, curb spaces are only one component of the parking "supply." In most downtowns, there is a wide variety of parking types and facilities – on-street spaces, surface lots, or garages – with off-street supply usually exceeding on-street supply. Downtown Tiburon is no different, and given the parking data discussed in Chapter 1, all of these parking facilities are interconnected, with supply and demand in one facility able to influence supply and demand in all other parking spaces.

For example, motorists are going to instinctively seek out on-street parking close to their destination first, ignoring a "less convenient" off-street lot. If those on-street spaces are also free, while a surface lot is charging for parking, there is a direct financial incentive to search for on-street spaces. The end result is highly concentrated demand, on-street spaces that are regularly occupied, and the perception that there is "never any parking." This is clearly the case near the Main Street commercial area, where free on-street spaces on Tiburon Boulevard and Main Street near Ark Row are heavily used, while nearby off-street spaces that charge for parking sit largely empty for all but the busiest days of the year.

An effective parking management plan should therefore propose strategies that recognize the symbiotic relationship between on- and off-street parking supply, and not treat individual blocks or lots as distinct pieces, but rather as a cohesive unit to be managed in a coordinated manner. Unlike in some cities, however, Tiburon owns or "controls" very little of its off-street parking supply and cannot easily coordinate its on-and off-street pricing or regulatory structures. Given the fact that so much of the parking supply in Downtown is in off-street lots, this lack of coordination has the potential to undermine other recommendations in this parking management plan. More specifically, even if Recommendation #1 is fully implemented, off-street lots that are priced substantially higher than on-street spaces will continue to drive demand to a select number of on-street spaces, namely Tiburon Boulevard and Main Street.

Benefits

- More efficient use of existing parking supply and ability to manage this supply as a cohesive unit
- Coordinated pricing and regulatory structures between on- and off-street facilities, which serve to evenly distribute demand
- Easily understandable regulations for local residents, businesses, and the general public
- New and/or maximized revenue source for private property owners
- Enforcement policies supported by the Town's regulatory authority and reduced enforcement burden for private property owners

Tradeoffs

- Private property owners may not be willing to enter into any such agreements with the Town
- Upfront costs to purchase or lease spaces may be high
- Negotiation processes may be lengthy or complicated and could vary depending on the property owner

Necessary Steps for Implementation

1. Evaluate supply and demand trends and identify priority areas
2. Identify willing property owners
3. Negotiate with willing property owners and enter into appropriate purchase, leasing, or parking enforcement agreements
4. Install appropriate meters, signage, payment, and enforcement infrastructure to implement demand-based pricing
5. Monitor, evaluate, and adjust pricing and regulatory structures

Initial Project List

Outlined below are the specific parameters recommended for purchase/leasing of private parking to enable demand-based pricing of Downtown Tiburon's off-street spaces.

Potential Private Lots

As described above, there are a large number of "privately owned, publicly accessible pay" lots in Downtown. These are located throughout Downtown, with some in the immediate proximity of the Main Street commercial corridor, while others are located near the western entrance to Downtown. It is these "pay" lots with which the Town should prioritize agreements, yet other private property and business owners may be willing to enter into shared parking agreements.

Which off-street spaces are ultimately pursued[12] is a Town decision that needs to balance existing parking supply and demand, proximity to major trip generators, and expected ease of negotiation.

Type of Public/Private Agreement

There are four basic types of agreements which the Town could enter into with a willing private property owner. These are:

1. Direct purchase: The Town would simply purchase these parcels of land, thereby allowing them control over the parcels.
2. Leasing of the private lot: Under this arrangement the Town would essentially "rent" the parking spaces from the property owner, and would be entitled to control pricing and regulations of the facility. The Town would enforce compliance with regulations.
3. Private owner, public management: Under this arrangement the Town would pay for the installation of meters and be entitled to control pricing and regulation of the facility. However, all meter revenue would go to the property owner. The Town would be responsible for parking enforcement and would collect all citation revenue.
4. Private ownership, public enforcement: Under this arrangement the private property owner would install and maintain the meters and set the pricing. The Town would enforce the parking lot and collect citation revenue.

Liability issues often emerge as a potential concern, yet these issues are typically covered in standard liability coverage in any land use policy to cover public passage. In addition, liability can be more comprehensively addressed through well-written lease agreements that include provisions about requiring the lessor to maintain a good state of repair, ADA access, etc. and the lessee to provide adequate and appropriate signage for patrons and take actions to avoid overcrowding or other hazardous situations.

Meter Type

New meters should be multi-space meters and also employ "smart" technology that accepts multiple forms of payment, including credit cards and pay-by-phone technology, and can be easily programmed to allow for potential the use of dynamic pricing. Ideally, off-street meters should be the same as on-street meters recommended above (#1) to ensure consistency and user-friendliness.

Target Occupancy Rate

Target occupancy rates for off-street spaces should be 90%, which would translate into enough spaces being available at all times of the day.

[12] It is worth noting that even if the Town is not able to reach an agreement with each privately owned, off-street facility, it is likely that the "market" for parking will ultimately shift based on Town action. As the Town implements pricing in both on- and off-street facilities, private lot owners will need to adjust their regulations in order to present an attractive parking option and maximize their revenue.

Initial Hours & Pricing Structure

Hours and pricing should be based on demand and proximity to prime parking destinations. Furthermore, pricing structures would be set lower than on-street rates in order to incentivize motorists to seek out underutilized off-street spaces. Ideally, all off-street "pay" facilities would employ consistent pricing structures, as outlined below:

Commercial core (east of Beach Road)

- 9 AM – 8 PM, 7 days a week
- Peak period (Memorial Day to Labor Day)
  - $.75 per hour (0-2 hours)
  - $1.00 per hour (2+ hours)
- Off-peak period (Labor Day to Memorial Day)
  - $.50 per hour (0-2 hours)
  - $.75 per hour (2+ hours)

Non-commercial core (west of Beach Road)

- 9 AM – 6 PM, 7 days a week
- Peak period (Memorial Day to Labor Day)
  - $.50 per hour
- Off-peak period (Labor Day to Memorial Day)
  - $.25 per hour

Meter Pricing Adjustments

It is possible that the initial pricing structure proposed above will not achieve the target occupancy rate. Therefore, meter prices should not be static, but periodically adjusted to respond to changes in demand. Rates need not change constantly or abruptly. When revising meter hours or rates, it is safest to increase or decrease rates slowly, with occupancy checks before and after each rate adjustment, in order to avoid overshooting and accidentally driving away customers.

Therefore, it is recommended that the Town establish specific parameters and procedures as part of the enabling legislation for making such adjustments. More specifically, this Plan recommends that Town Staff be authorized to increase parking prices up or down in $0.25 increments a maximum of four times per year, with an upper price limit of $3.00 per hour.

If and when Staff deems that it is necessary to increase the price further on certain blocks or in certain parking facilities in order to manage higher parking demand in those locations, Staff must return to Town Council to request authorization to do so, at which time a new price threshold (upper limit) on parking prices can also be established.

RECOMMENDATION #5: IF NECESSARY, IMPLEMENT A PEAK PERIOD VALET PARKING PROGRAM.

Description

This recommendation proposes the potential implementation of a Downtown valet parking program during peak periods of demand. The valet program should be designed to facilitate convenient drop-off and pick-up in the Downtown area, without impacting existing parking or traffic operations.

Rationale for Implementation

During peak periods (i.e. summer weekends), Downtown Tiburon experiences a dramatic influx of visitors, tourists, and residents wishing to access shops, dining, and recreational opportunities. As the parking occupancy data demonstrates, the vast majority of this parking demand is concentrated around the Main Street commercial core.

One of the primary goals of this parking study is to more evenly distribute parking demand to off-street facilities throughout Downtown. Valet parking provides an opportunity to not only shift demand to off-street lots, but also increase parking supply during these periods of high demand. In short, valet parking programs enable the more efficient use of parking supply as valet operators can "tandem" or "triple" park vehicles. By increasing the supply of parking near the commercial core, the Town would be able to accommodate a substantial number of additional vehicles in off-street lots during periods of high demand. Valet parking also offers a more convenient parking option for those customers willing to pay for it.

It should be noted that there are occasional parking valet programs for certain businesses in Downtown. The valet services often store vehicles in private parking lots that are unused in the evening and on the weekend. This recommendation would seek to coordinate these existing valet programs and create a "universal" valet service for Downtown during the periods of highest parking demand.

Benefits

- Increased parking supply and more efficient use of existing supply
- Shifts parking demand to off-street facilities
- Diversifies parking supply, allowing motorists willing to pay for additional convenience to do so
- Easily understandable parking option for tourists, who are less price-sensitive
- Potential revenue stream for Town based on leasing arrangements with valet operators

Tradeoffs

- Would likely need to allocate scarce curb spaces for pick-up and drop-off
- Pick-up and drop-off has potential to impact street operations
- Requires additional administration costs for Town
- Valet parking may not fit with the current "feel" of Downtown Tiburon and some businesses may resist valet parking

Necessary Steps for Implementation

1. While Nelson\Nygaard believes it is feasible to implement a valet parking program in Downtown, it remains unclear at this time whether a valet program is definitively needed, would be used, or would be supported at this time. It is recommended that additional study be undertaken to determine whether a valet program is ultimately needed. Key determining factors would include whether the level of demand during proposed periods of operation warrants such a program; whether the valet program would be utilized by Downtown clientele; and if a new valet program would be supported by local businesses.
2. If approved, identify and designate pick-up and drop-off locations, as well as off-street lots to be set aside for valet operations.
3. Require that valet operators lease parking spaces for no less than market rates.
4. Establish standards for valet operators to be permitted to operate, such as maintaining adequate insurance and requiring attendants to wear recognizable uniforms.
5. Issue a competitively-bid RFP for contracts to provide valet service. Given the relative size of the commercial core to be served, it is likely that only one valet operator would be needed.

Initial Project List

Outlined below are the recommended parameters for a potential valet parking program in Downtown Tiburon.

Time of Operation

- Memorial Day to Labor Day
- Friday evening (5 PM – 10 PM)
- Saturday and Sunday (12 PM – 10 PM)

Drop-off / Pick-up Locations

- Potential drop-off / pick-up locations would include:
  - 2-3 spaces along the south side of Tiburon Boulevard near Juanita Lane
  - 1-2 spaces along the south side of Paradise Drive near the Ferry Terminal
- Selection of these locations would need to evaluate how loss of parking spaces would impact parking behavior and whether drop-off and pick-up would negatively affect traffic flow and street operations

Vehicle Storage

Given the limited number of on-street parking spaces in Downtown Tiburon, it is highly recommended that valet operators be prohibited from parking vehicles in on-street spaces. Instead, valet operators would be permitted to lease off-street parking spaces. Given the demand for self-parking near the commercial core during peak periods, it is likely preferable that valet operators utilize one of the off-street lots west of Beach Road to park vehicles.

Valet Technology

Advances in technology have enabled valet parking drop-off, pick-up, and payment to be as seamless as possible. Numerous valet operators now employ technology (e.g. point-of-sale hand-held computers, key "fobs," self-serve kiosks, mobile phone technology) to enhance the customer experience by facilitating easy retrieval of vehicles and payment. For example, key "fobs," provided to a customer when dropping off their vehicle, can be activated 5-10 minutes before departure so that a vehicle is returned by the time the customer is ready to leave. Furthermore, this technology can enable more accurate collection of parking data and revenue. It is recommended that the Town contract with a valet operator that maximizes use of such technologies.

"Universal" Valet Parking Programs

Universal, district-wide valet services allow motorists to drop their vehicle off at any valet location, and pick their vehicle up at any other valet stand. Typically, these programs can be funded through downtown business associations or meter revenues.

In general, cities enter into a contract with one or a few valet providers to provide the service. In order to create a level playing field and not disadvantage smaller valet operations, a feasibility study should be conducted with a full public process and in close consultation with businesses that currently offer or would like to offer valet parking in the future. In order to make valet services a single, seamless operation, consistent branding (signage and uniform) should be required and valet stands should be placed at key destinations (high demand garages, restaurants, clubs, and other trip generators).

Old Pasadena:

The City of Pasadena offers district-wide valet service in the Old Pasadena district. The universal valet parking program allows customers to drop off their vehicles at any of the 11 valet stations within the district, and can arrange to have their vehicle waiting for them at any other valet stand. Various participating merchants allow validation that reduces the price of valet parking. The current cost is $10 without validation, and the City does not regulate the price of valet parking.

San Diego:

The City of San Diego offers district-wide valet service in its Little Italy district. Motorists pay $7 to drop their vehicles at one of the three district wide valet stands. The services operate during peak periods only (Thursday – Saturday from 6 PM to 11 PM).

RECOMMENDATION #6: DEVELOP A PROACTIVE COMMUNITY OUTREACH PLAN AND ONGOING COMMUNICATION STRATEGY.

Description

It is recommended that the Town be proactive in its communications with the greater Tiburon community and develop a formal outreach program that articulates the specifics, goals, rationale, and benefits of this Parking Management Plan.

Rationale for Implementation

While many people believe that parking challenges exist in Downtown, not everyone has a full understanding of what exactly those challenges are, their origins, or how they can be addressed. With this parking study the Town of Tiburon has made a substantial commitment to comprehensively documenting and analyzing its parking supply, and developing solutions that are designed to improve parking conditions in the Downtown.

However, this Plan represents a departure from how parking has been managed for numerous years in Downtown Tiburon. Consequently, it is recommended that the Town communicate the specifics of the proposed changes, the rationale behind the recommendations, and the benefits to the Downtown.

Experience has shown that effectively communicating parking policy changes to the public are crucial to the success of parking management reform, especially as it relates to on-street pricing. A well-conceived outreach and communication plan will require additional Town resources, but can prove worthwhile in overcoming any community opposition and getting parking reforms implemented.

Benefits

- Increased transparency regarding policy changes
- Public awareness of parking challenges, potential solutions, and expected benefits
- Allows Town to anticipate any public concerns and respond accordingly
- Help to establish local support, especially among businesses, for parking reforms

Tradeoffs

- Additional Town resources and staffing

Necessary Steps for Implementation

1. Develop a messaging platform for the parking management plan, which clearly articulates the problems and solutions, and includes key messages and talking points
2. Develop a visual “brand” for the parking management plan, which can support and reinforce a new signage and wayfinding program
3. Develop outreach and informational materials
4. Identify key stakeholders, including: decision-makers, neighborhood and merchant groups, other local businesses, etc.

5. Conduct outreach meetings (individual and public) as a means to explain parking program and receive feedback
6. As needed, adjust policies based on feedback
7. A few weeks before implementation of demand-based pricing and installation of meters, distribute informational materials to public
8. As program evolves, continue to inform public of program revisions

Initial Project List

An outreach and communications plan should include, as deemed feasible, the strategies outlined below. Each strategy should incorporate elements of the project's messaging and branding in order to consistently communicate the proposed projects and programs.

- Community meetings, including small group or community-wide meetings
- Informational materials, such as brochures or Town newsletter
- Press releases
- Parking signage and wayfinding
- Website
- Social media, such as Facebook and Twitter
- Smartphone applications
- Email distribution lists to inform subscribers of program updates

RECOMMENDATION #7: ESTABLISH AN ONGOING DATA COLLECTION, MONITORING, AND EVALUATION PROCESS.

Description

In parking, it is only possible to manage what is measured. This Plan recommends that the Town periodically collect parking occupancy data for both on- and off-street parking facilities, and additional turnover data for on-street spaces. This data will be essential for evaluating whether the demand-based pricing policies recommended within this Plan are achieving their goals.

Rationale for Implementation

Demand-based pricing policies are based on the goal of meeting target occupancy levels to ensure that there are always an adequate number of parking spaces available, that "cruising" for a parking space is limited to greatest degree possible, and that parking demand is evenly distributed. As part of Recommendations #1 and #3, this Plan recommends an initial pricing structure to help the Town achieve 85% and 90% target occupancy levels for on-street and off-street spaces, respectively.

As mentioned earlier, it is possible that these pricing levels will be higher or lower than needed and will have to be adjusted accordingly. Without adequate occupancy data, however, it will very difficult to determine whether the pricing and regulatory structures are having their desired effect. By developing a formal data collection process, the Town will be able to better understand its parking supply and quickly make adjustments to its pricing and regulatory structure to respond to changes in parking demand.

Benefits

- Provides better understanding of parking supply and parking behavior within Downtown
- Facilitates periodic adjustments to pricing and regulatory structures, allowing Town to meet target occupancy rates
- Improves transparency in decision-making and public understanding of parking behavior

Tradeoffs

- Requires additional Town resources and staffing

Necessary Steps for Implementation

1. Develop a consistent data collection program that allows for easy comparison with the baseline data collected as part of this study and future data collection efforts.
2. Identify needed Town resources and staffing plan.
3. Implement data collection and evaluation program.
4. Evaluate data and make program adjustments as needed.

Initial Project List

Outlined below are the recommended parameters for an ongoing data collection and monitoring program for Downtown Tiburon.

Data to be Collected

The Town should collect occupancy data for on- and off-street parking facilities. In addition, parking turnover data should be collected for on-street spaces. Above all, consistency is the most important part of any data collection effort as it allows for easy longitudinal comparisons. The baseline data collected as part of this study should serve as a foundation for future data collection efforts.

How to Collect Data

There are a number of potential methods by which the Town could collect the necessary data, including:

- Manual counts conducted by trained surveyors.
- Automatic data provided by parking meters. Automatic collection of such data would depend on the type of meter ultimately installed for both on- and off-street facilities.
- For off-street spaces, the Town should encourage private parking lot owners to collect occupancy data and share that data with the Town.

Frequency of data collection

At a minimum, data should be collected and analyzed on an annual basis. For example, if manual counts are utilized, they should be done during the peak period of demand. It is recommended that both an hourly Thursday and Saturday count be conducted during a non-holiday week between Memorial Day and Labor Day.

If feasible, another count during the off-peak period should also be conducted to evaluate off-peak pricing and regulatory structures. Once again, consistency is most important and subsequent counts should take place at the same time each year.

Depending on the parking meters selected, however, it is also possible that occupancy data could be collected and analyzed much more frequently.

RECOMMENDATION #8: CONSIDER USING PARKING METER AND PERMIT REVENUE FOR DOWNTOWN IMPROVEMENTS.

Description

This recommendation proposes that the Town should consider utilizing any net parking revenue generated from newly installed meters at curb spaces, meters in designated off-street lots, and resident permits for Downtown improvements. This revenue could be deposited in a new Downtown Reinvestment Fund, and could be spent on projects or programs designed to improve conditions within Downtown.

Rationale for Implementation

Paying for parking can be unpopular for a number of reasons. One of the primary reasons is that when motorists feed the meter, their money seems to "disappear" and they feel they derive little benefit from the transaction. Local businesses often voice similar objections to the pricing of parking, arguing that it "drives customers away" and they don't see any direct benefit from the parking revenue. This is largely because most cities have traditionally sent their parking revenue into the general fund, and not necessarily to improving parking or enhancing the local transportation system.

In recent years, some cities have sought to reverse this dynamic by guaranteeing that local parking revenue "stays local." Experiences from these cities have shown that when local merchants, residents, and property owners can clearly see that the monies collected are being spent for the benefit of their blocks they become willing to support market rate pricing.

Finally, and most importantly, this revenue can provide an initial funding stream to leverage additional dollars and create momentum for Downtown revitalization efforts.

Benefits

- Provides a revenue stream to directly finance, or leverage additional dollars, for Downtown improvements
- Improved parking management and transportation systems in Downtown

Tradeoffs

- Additional administrative and management costs for the Town
- Parking revenue would not go to the General Fund, which may impact spending on other Town priorities
- Revenue can fluctuate from year to year depending on seasonal demand or overall health of local economy

Necessary Steps for Implementation

1. Adoption of Town resolution creating a Downtown Reinvestment Fund, stipulating that all parking revenue generated within Downtown be used to fund designated improvements or programs.

Initial Project List

The Downtown Reinvestment Fund could be used to finance or fund the following types of projects and programs:

- Purchase and installation costs of meters (e.g., through revenue bonds or a "build-operate-transfer" financing agreement with a vendor)
- Purchase or leasing of private off-street spaces
- Wayfinding and signage
- Landscaping and streetscape greening
- Street cleaning, power-washing of sidewalks, and graffiti removal
- Transit, pedestrian, and bicycle infrastructure and amenities
- Additional parking enforcement
- Valet parking services during peak periods
- Outreach program related to parking reforms
- Marketing and promotion of Downtown and local businesses
- Management activities for the oversight entity
- "Mobility Ambassadors" to provide assistance to visitors, as well as additional security
- Construction of additional parking, if deemed to be necessary

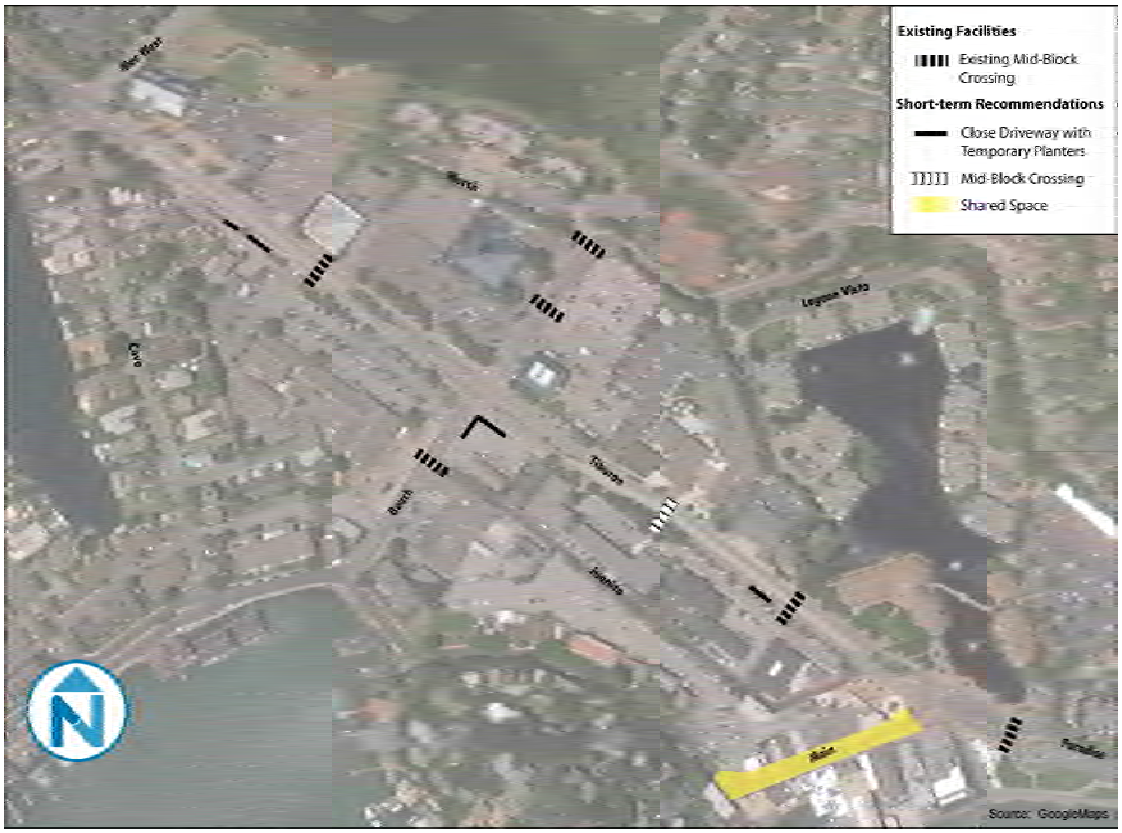
4 CIRCULATION PLAN

This chapter proposes a targeted set of recommendations related to circulation in Downtown Tiburon. The ultimate goal of these recommendations is to improve safety, accessibility, and mobility for all user groups in Downtown. Ultimately, these recommendations also seek to complement the parking management plan described in Chapter 3 and maximize the efficiency of Downtown's parking supply.

The recommendations are organized by a rough distinction of "low-cost" and "high-cost," according to the relative projected costs and feasibility of implementation. This distinction is intended to provide an approximate phasing plan, as the short-term projects are relatively low-cost while long-term recommendations are more expensive and would require some difficult policy decisions. However, each recommendation should be assessed in the context of Town resources, cost-effectiveness, and priorities for Downtown.

"Lower-cost" Recommendations and Shorter-term Concepts

Figure 4-1 Summary of Lower-cost Recommendations and Shorter-term Concepts



RECOMMENDATION #1: INITIATE NEGOTIATIONS WITH CALTRANS CONCERNING JURISDICTION OF TIBURON BOULEVARD IN THE DOWNTOWN AREA.

Description

As a state highway (Highway 131), Tiburon Boulevard is currently a state-owned highway under the control of Caltrans. This designation potentially restricts future design and engineering changes to the roadway. The Town should initiate discussions with Caltrans about the transfer of jurisdiction to the local government in the vicinity of Downtown.

Rationale for Implementation

Establishing jurisdiction over Tiburon Boulevard in the Downtown area would free the Town to make its own decisions about the future of the roadway. This would also make the process of changing the roadway much easier to manage. Because this road does not connect to other state highways at either end, and does not serve a regional transportation purpose, it is believed that Caltrans will likely be willing to transfer control.

Benefits

The Town of Tiburon will have more freedom to decide how Tiburon Boulevard in the Downtown area will function in the future and there will be fewer restrictions on the possible design and engineering options.

Tradeoffs

Maintenance costs for any portion of Tiburon Boulevard transferred to local control would now be borne by the Town of Tiburon.

Necessary Steps for Implementation

Open a dialogue with Caltrans District 4.

Conduct an analysis of maintenance costs.

RECOMMENDATION #2: CLOSE A TARGETED NUMBER OF DRIVEWAYS ALONG TIBURON BOULEVARD.

Description

This strategy recommends the installation of planters to close a targeted number of driveways along Tiburon Boulevard in the Downtown area. As shown in Figure 4-2, these driveways include: two driveways along the south side of Tiburon Boulevard between Mar West Street and the Boardwalk, two on the south side of Tiburon Boulevard between Beach Road and Main Street, and one on the east side of Beach Road just south of Tiburon Boulevard. The planters could be large cast-in-place concrete planters, or a series of smaller, prefabricated planters of several possible materials.

Rationale for Implementation

Closing unnecessary driveways along Tiburon Boulevard will help to improve circulation and safety for bicyclists, pedestrians, and drivers. In short, fewer driveways translate into fewer conflict points as vehicles enter and exit Tiburon Boulevard.

Closing driveways also allows for the reclamation of some parking spaces. The use of planters will allow these driveways to be closed to vehicle traffic at very low cost.

Benefits

Closing driveways reduces potential turning movement conflicts which will allow for smoother traffic flow. This will also reduce conflicts between bicyclists, pedestrians, and drivers by eliminating these points of interaction.

Fewer driveways will also help to create a more continuous street frontage along Tiburon Boulevard, thereby improving the pedestrian environment.

Based on the proposed driveway closures, it is estimated that the Town could gain approximately 10-12 additional parking spaces.

Tradeoffs

There is potential for more restricted access for deliveries to nearby businesses.

Maintenance costs related to plants and planters.

Necessary Steps for Implementation

1. Establish jurisdiction over Tiburon Boulevard in the Downtown area; or attain approval from Caltrans to close driveways through the use of planters.
2. Discuss driveway closures with adjacent property owners and Town Council.
3. Identify and select planter type and install in designated locations.

Initial Project List

- Place planters in each driveway to close the two central secondary curb cuts on the south side of Tiburon Boulevard near the nursery.

- Place planters in each driveway to close the two curb cuts closest to the intersection on the southeast corner of the Beach Road/Tiburon Boulevard intersection (i.e. Shark's Deli parking lot).
- Place planters to close the one driveway on the south side of Tiburon Boulevard opposite the Tiburon Fire Station.

Figure 4-2 Locations for Closure of Curb Cuts

RECOMMENDATION #3: INSTALL A NEW CROSSWALK ON TIBURON BOULEVARD. UTILIZE HIGH VISIBILITY CROSSWALK MARKINGS, ADVANCE YIELD LINES, AND APPROPRIATE SIGNAGE.

Description

Install new high visibility crosswalks for all midblock crossings along Tiburon Boulevard and add a new mid-block crossing on Tiburon Boulevard between Beach Road and Main Street. Install advance yield lines and signs at each of the midblock crossings on Tiburon Boulevard.

Rationale for Implementation

Intersections along Tiburon Boulevard are roughly 1,000 feet apart, much further than the average person will walk to cross a roadway. The existing street design results in unexpected midblock crossing activity, as pedestrians seek out the quickest path to their destination. Midblock crossings are particularly difficult for pedestrians and often unexpected for drivers. High visibility crosswalks with appropriate advance warning systems can greatly improve the quality of the crossing experience for drivers and pedestrians.

Major land uses along Tiburon Boulevard, such as The Lodge at Tiburon, generates a great deal of foot traffic. Currently, the marked pedestrian crosswalks closest to the lodge are roughly 775 feet apart with the closest crossing roughly 385 feet east of the lodge.

Benefits

High visibility crosswalks and advance yield signs will greatly enhance the function of midblock crossings and improve the experience for drivers and pedestrians. Such crossings also have the ability to "calm" traffic as motorists approach areas where they can expect to find pedestrians.

A new midblock crossing closest to the main entrance to the Lodge at Tiburon would be approximately halfway between the existing crossing east of Beach and the Beach Road intersection, which would provide Tiburon Lodge guests with more convenient access to and from Downtown and the waterfront.

Tradeoffs

- Tiburon would be responsible for maintaining the new pavement markings and signs.
- Curb ramps will need to be installed on both sides of Tiburon Boulevard at the new crosswalk.

Necessary Steps for Implementation

1. Secure Caltrans approval if required.
2. Identify ideal alignment for new crossing.
3. Remove existing midblock crossing markings.
4. Install new crossing markings, signage, and appropriate curb ramps.

Initial Project List

- Install two new curb ramps, one on each side of Tiburon Boulevard, east of the Lodge at Tiburon exit driveway and west of the entrance to the parking lot on the south side, per applicable standards.

Figure 4-3 Location of New Mid-block Crossing

RECOMMENDATION #4: TRANSITION LOWER MAIN STREET INTO A FORMAL "SHARED SPACE."

Description

Clearly define Lower Main Street as a space that is shared by all road users equally.

Rationale for Implementation

Main Street already currently acts as an informal shared space with pedestrians often crossing at multiple points along the street while bicyclists and drivers share the limited roadway space. Officially formalizing these spatial interactions and arrangements will alert drivers to the fact that the space is used differently than other roadways in Tiburon. In addition, this recommendation can facilitate additional temporary street closures for special events, which are extremely effective for generating additional business activity. Finally, this effort would also initiate the possible transition to a full Woonerf[13] space (where the distinction between spaces for the different modes is completely blurred) at some point in the future.

It should be noted that converting Main Street (including Ark Row) to a one-way street was also evaluated but was not recommended for further study or implementation for a number of reasons. First, the existing street already functions quite well to reduce traffic speeds and promote walkability. The existing street should not be dramatically changed, but simply enhanced. Second, it is unlikely that such a conversion would add any value to the Ark Row area (such as expanded sidewalks) as the existing street width would likely need to be maintained to ensure adequate fire access. Third, experience has shown that businesses benefit, and strongly prefer, tw0-way traffic flow because it can generate additional activity. Finally, conversion to one-way traffic would restrict egress from Corinthian Island.

Benefits

- Drivers would be more aware of the presence of pedestrians.
- A shared street creates formal support for pedestrian use of the entire roadway space.
- Facilitates an increased number of temporary street closures for the Main Street commercial area.

Tradeoffs

- Potentially reduces the ability for Main Street to act as a through street for vehicles to Ark Row commercial area due to more frequent closures.
- Special design details may need to be implemented to ensure the street is accessible to pedestrians who are blind or have limited vision.
- Implementation costs, including design and capital, will need to be carefully considered.

[13] Dutch term for a shared street.

Necessary Steps for Implementation

Seek approval from the appropriate decision making bodies for a new designation for Main Street as a formal shared space.

Initial Project List

Sign Main Street as a shared space and consider possible pavement treatments for visual reinforcement of the unique character of the shared space. Treatments could include one or more of the following:

- Physical barriers, such as bollards or planters, to divert, limit, or slow vehicle traffic
- A raised roadway that is level with existing curb
- Implementation of more "active" uses of sidewalk and/or roadway with expanded seating, benches, or additional landscaping
- Raised or high-visibility crosswalks
- Textured paving surfaces
- Signage to delineate shared space zone, presence of bicyclists and pedestrians, and reduced speed limits
- Bicycle parking facilities, such as bicycle corrals
- Ensure compliance with ADA and Title 24 requirements.

RECOMMENDATION #5: DESIGN AND IMPLEMENT A COORDINATED DOWNTOWN WAYFINDING SYSTEM.

Description

Wayfinding strategies seek to efficiently coordinate movement within a district, pointing users of all modes of travel to the best access routes for their destination. Wayfinding is an important part of a comprehensive circulation and parking management strategy, improving the customer-friendliness of a neighborhood or district while also better distributing parking demand throughout a variety of parking facilities and directing visitors to major destinations. This recommendation proposes various types of wayfinding signage and potential locations for their installation in Downtown Tiburon.

Rationale for Implementation

A key finding of the Downtown Vibrancy project was that stakeholders were concerned about the lack of sufficient parking wayfinding signage. As described in Chapter 1, the occupancy counts in Downtown Tiburon show that specific "front-door" on-street facilities experience much higher utilization rates than all other Downtown parking facilities. This includes various blocks of Main Street and Tiburon Boulevard. One reason for this concentration of demand is likely the lack of a consistent and adequate wayfinding system pointing motorists to other Downtown facilities, meaning many visitors are unaware of the proximity and availability of additional non-"front door" spaces, both on-street and off-street. Parking wayfinding signage would better distribute Downtown parking demand to currently underutilized on- and off-street facilities.

Furthermore, with the recent increase in bicycle access to Downtown Tiburon, as well as continued pedestrian use of the Downtown area, wayfinding specific to bicyclists and pedestrians is an important part of a customer-friendly circulation strategy. Bicyclists and pedestrians entering downtown from the Tiburon Bike Path currently have no wayfinding signage directing them to the heart of Downtown, its various attractions, or the location of bicycle parking facilities. Such a wayfinding system would increase the ease and attractiveness of alternative modes of travel, and encourage visitors to the area to frequent various Downtown establishments.

Vehicle-specific wayfinding is also an important portion of a comprehensive wayfinding system. Visitors arriving downtown via car can be pointed to the best access routes for various destinations. In general, wayfinding is a particularly important strategy during peak summer months, when a large portion of those traveling to and through Downtown Tiburon are not familiar with the area.

It should be noted that wayfinding, if designed improperly, can impact a community's "feel" or "sense of place." In Downtown Tiburon, emphasis should be placed on developing a system that integrates as seamlessly as possible within the existing street network and aesthetic framework. To the greatest degree possible, signage should be minimized to preserve the existing Town character.

Benefits

Parking Wayfinding
Source: SFpark

- Directs motorists to underutilized off-street facilities, freeing up the most convenient "front-door" curbside spaces, and maximizing the efficiency of a parking system.
- Reduces traffic caused by cars "cruising" for on-street parking.
- Dispels perceived (but not actual) shortages in parking
- Directs motorists, bicyclists, and pedestrians to the best access routes for their destination.
- Directs those on foot or on bike to the safest bicycle and pedestrian routes, as well as to the location of bicycle parking spaces, showers, changing facilities, and other bicycle and pedestrian amenities.
- Improves conditions for alternative modes, supporting various Transportation Demand Management (TDM) objectives, reducing vehicle trips to a specific area, and reducing the need for vehicle parking.

In sum, a coordinated wayfinding system for all modes of transportation will increase the customer-friendliness of Downtown Tiburon, pointing visitors to various destinations, amenities, and parking facilities, and encouraging them to stay in Downtown Tiburon as opposed to just travel through the area.

Tradeoffs

- Additional capital costs for the Town.
- Additional operational and maintenance costs for parking signage.

Necessary Steps for Implementation

Wayfinding is most effective when it is consistent; all signage should be produced in a similar style, and organized by type (parking, bicycle/pedestrian, vehicle, retail). Regardless of the particular signage installation utilized, good design that is consistent with and supports the character of the neighborhood is critical for all signage elements.

The Town should also explore making parking information available on the Town website and /or smartphone applications, which would allow people to check parking locations, pricing, and even level of parking availability. As all of Downtown's off-street lots are privately held, some coordination would be required to implement these recommendations.

Initial Project List

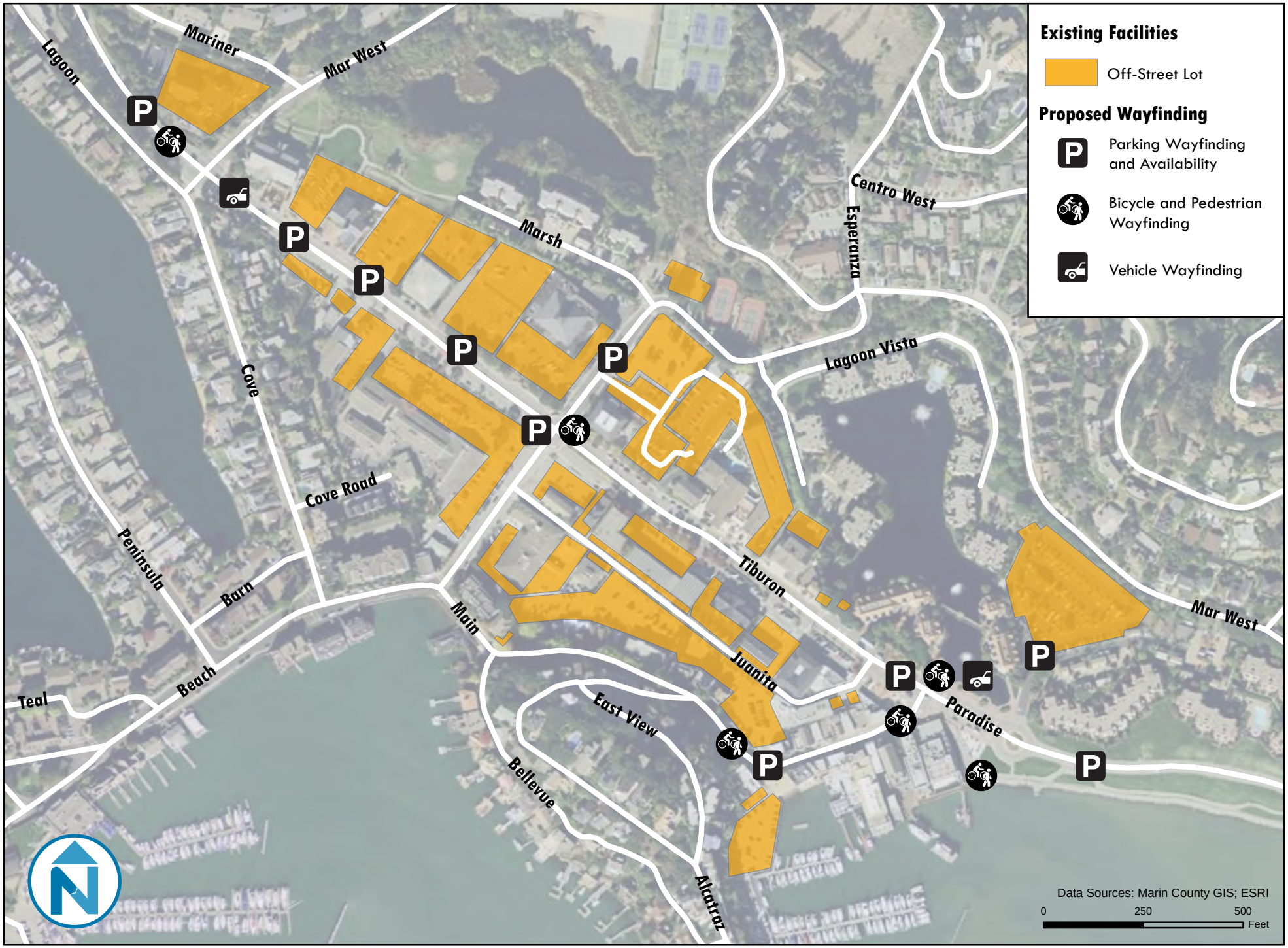
A wayfinding system is most effective if signs are located at the traditional entrances to a district, near major lots and attractions, and along major arterials. Bicycle and pedestrian wayfinding should be prioritized along and near major bicycle and pedestrian routes. In partnership with

local businesses, retail establishments can also be listed on wayfinding signs and materials, encouraging visitors to frequent the area.

Identified below are the specific locations where the Town should consider installing wayfinding signage, as shown in Figure 4-4.

- **Tiburon Boulevard at Mar West Street**: As the traditional entrance to Downtown for all modes of travel, all types of wayfinding should be located at the corner of Tiburon Boulevard and Mar West Street. Parking location and availability signage should point motorists to various off-street lots. Bicycle and pedestrian signage should point bicyclists to the bike lane on Tiburon Boulevard and to bicycle parking locations, and both bicyclists and pedestrians to various downtown attractions. Vehicle wayfinding should point motorists to downtown attractions and lodging.
- **Tiburon Boulevard at Beach Road**: At this important intersection, parking wayfinding and availability signage should point motorists to lots off of Beach Road. The location of bicycle and pedestrian routes and amenities should also be displayed, as well as the direction of the Tiburon Ferry Terminal.
- **Tiburon Boulevard at Main Street**: All types of wayfinding should also be installed at the corner of Tiburon Boulevard and Main Street. Parking wayfinding and availability signage should point motorists to the large Main Street and Point Tiburon Plaza lots. Bicycle and pedestrian wayfinding should point non-motorized travelers to important destinations and amenities, including bicycle parking areas and the Tiburon Ferry Terminal. Vehicle wayfinding should point motorists to downtown attractions and lodging.
- **Tiburon Ferry Terminal**: For visitors arriving by ferry, bicycle and pedestrian wayfinding should highlight the various attractions of Downtown Tiburon, and encourage bicyclists to utilize bicycle parking areas as opposed to leaving bikes unlocked along Main Street. Specific signage pointing visitors to hard to locate attractions such as the shops along Ark Row is particularly important near the Ferry Terminal.
- **Main Street Lot and Point Tiburon Plaza Lot**: Work with lot owners to coordinate signage and post user-friendly information about parking pricing and parking availability.
- **Ark Row**: Additional wayfinding, such as coordinated signage and textured pavement, should be prioritized as a means to facilitate pedestrian flow to the Ark Row area.
- **Historic and Interactive Signage**: The use of historic and “interactive” signage has been used successfully in other jurisdictions to not only direct people to destinations, but also inform them about local points of interest.

Figure 4-4 Proposed Downtown Wayfinding Strategy



RECOMMENDATION #6: EXPAND BICYCLE PARKING SUPPLY AND REPLACE SOME EXISTING BICYCLE PARKING FACILITIES.

Description

Even though Downtown-wide bicycle parking utilization rates were low, there are various hotspots of demand and areas that need additional attention, especially when bicycling use increases during the summer. Furthermore, some existing racks are underutilized, in poor condition, and in need of replacement. This recommendation proposes various new rack locations, including some bicycle corrals in on-street parking spaces, and identifies facilities in need of replacement and/or relocation.

Rationale for Implementation

In Downtown Tiburon, utilization of bicycle parking facilities varies dramatically depending on the time of the year, as well as upon location in Downtown. The highest utilization rates are near the ferry terminal and near the cafes and restaurants along Main Street, where many bicyclists stop to eat and drink. Indeed, parked bicycles (whether in bicycle parking facilities or parked along the sidewalk) tend to clutter Main Street, especially during summer months. Conversely, other facilities (specifically those along Tiburon Boulevard) experience very low utilization rates, either due to their inconvenient location, their "insecure" appearance, or rack design issues that leave locked bicycles vulnerable to theft. As such, this recommendation proposes adding bicycle parking in various areas of high demand to limit bicycles cluttering Main Street, and either replacing or relocating racks that are underutilized.

In areas where public spaces and the pedestrian right-of-way should be kept as clear as possible to limit clogging pedestrian traffic, the Town should consider the installation of bicycle corrals in one or two on-street vehicle parking spaces near areas that see high levels of bicycle parking demand.

Benefits

The provision of safe, easy to use, and convenient bicycle parking is one of the most important strategies to encourage bicycling. Other benefits of well-designed bicycle parking facilities include:

- The creation of an orderly streetscape and the preservation of the pedestrian right-of-way
- The legitimization of cycling as a transportation mode
- Business benefits including additional customer parking capacity, the attraction of bicycle customers, and displaying business support of sustainable values

Tradeoffs

- Capital and maintenance costs
- Potential loss of one or two on-street vehicle parking spaces

Necessary Steps for Implementation

1. Identify desired type of bicycle parking, prioritizing convenience of use and safety

2. Identify and prioritize specific locations for rack installation, based upon recommendations show in Figure 4-5
3. Identify sources of necessary funding
4. Install and/or replace bicycle parking at priority locations

Initial Project List

Figure 4-5 shows the proposed location of additional bicycle racks, existing facilities in need of replacement or relocation, and three potential locations for bicycle corrals. Specific projects include:

1. New/additional bicycle racks (u-racks or "wave" racks) installed at the following locations:
    - Tiburon Ferry Terminal
    - The public plaza at Main Street and Tiburon Boulevard
    - Ark Row
    - Along Tiburon Boulevard, in conjunction with local businesses
2. In addition to the new rack location listed above, the Town should evaluate the potential installation of bicycle corrals in vehicle parking spaces, specifically in locations where racks could clutter the pedestrian realm. Potential locations include:
    - Along Tiburon Boulevard, as close to Main Street as possible
    - Along Main Street
    - In the Main Street lot, as close to Main Street as possible
3. Remove, replace, or relocate the following facilities:
    - Wheel-well racks adjacent to the bus stop at Point Tiburon Plaza
    - Wheel-well racks adjacent to New Morning Café
    - Racks at Maritime Center
    - Rack in front of Café Acri

Furthermore, as many bicyclists parking at the Tiburon Ferry Terminal are locking their bikes for longer periods of time, the Town should consider increasing the attractiveness of nearby bicycle parking, including covering existing racks to provide complete weather protection. Many municipalities have installed standard bus shelters at high demand rack locations to provide such protection. Bicycle-specific information and maps could also be displayed at these covered bicycle shelters.

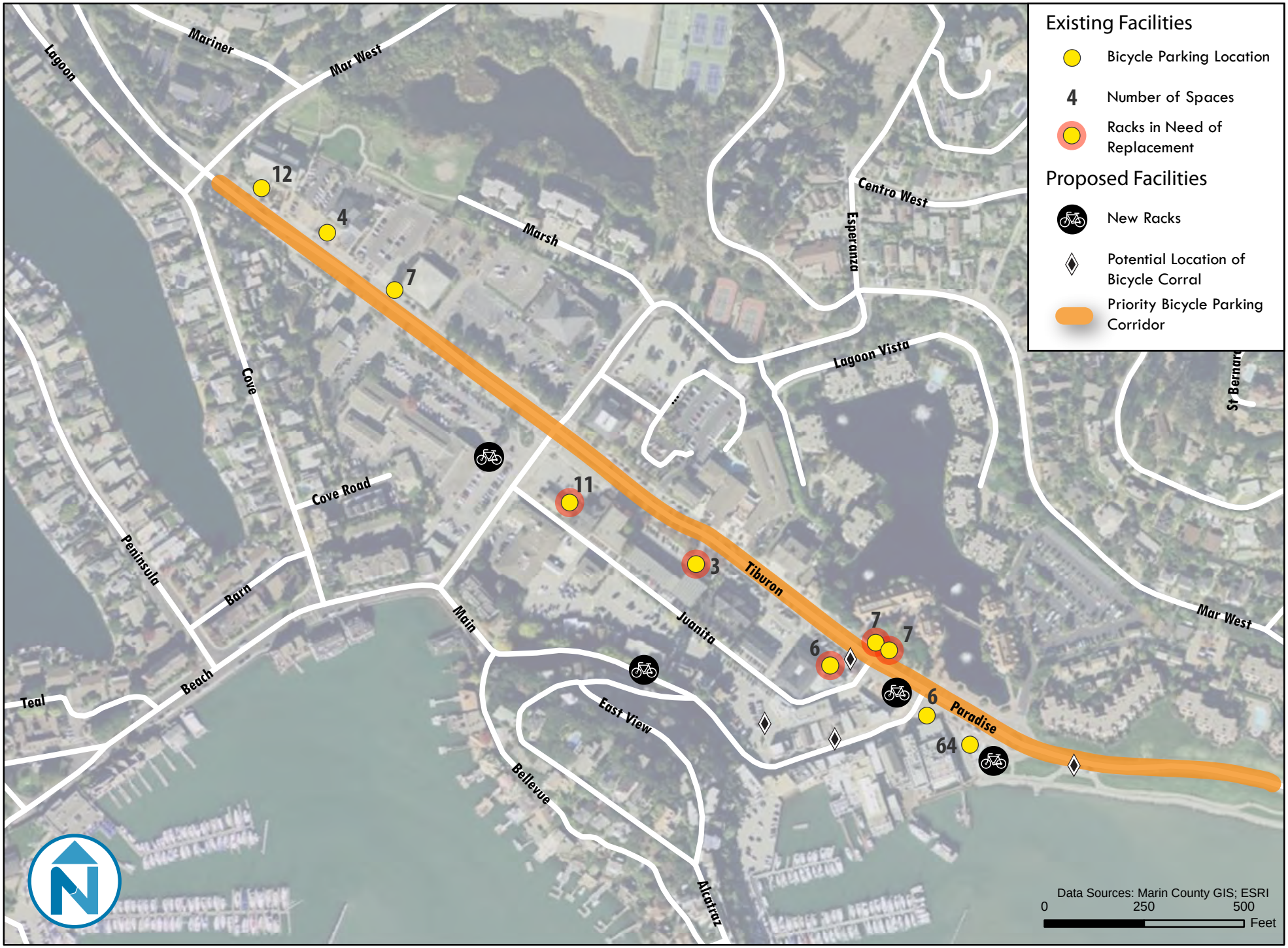
Covered bicycle parking in Portland, OR

Source: Flickr User, ThomasnGo

Bicycle corral

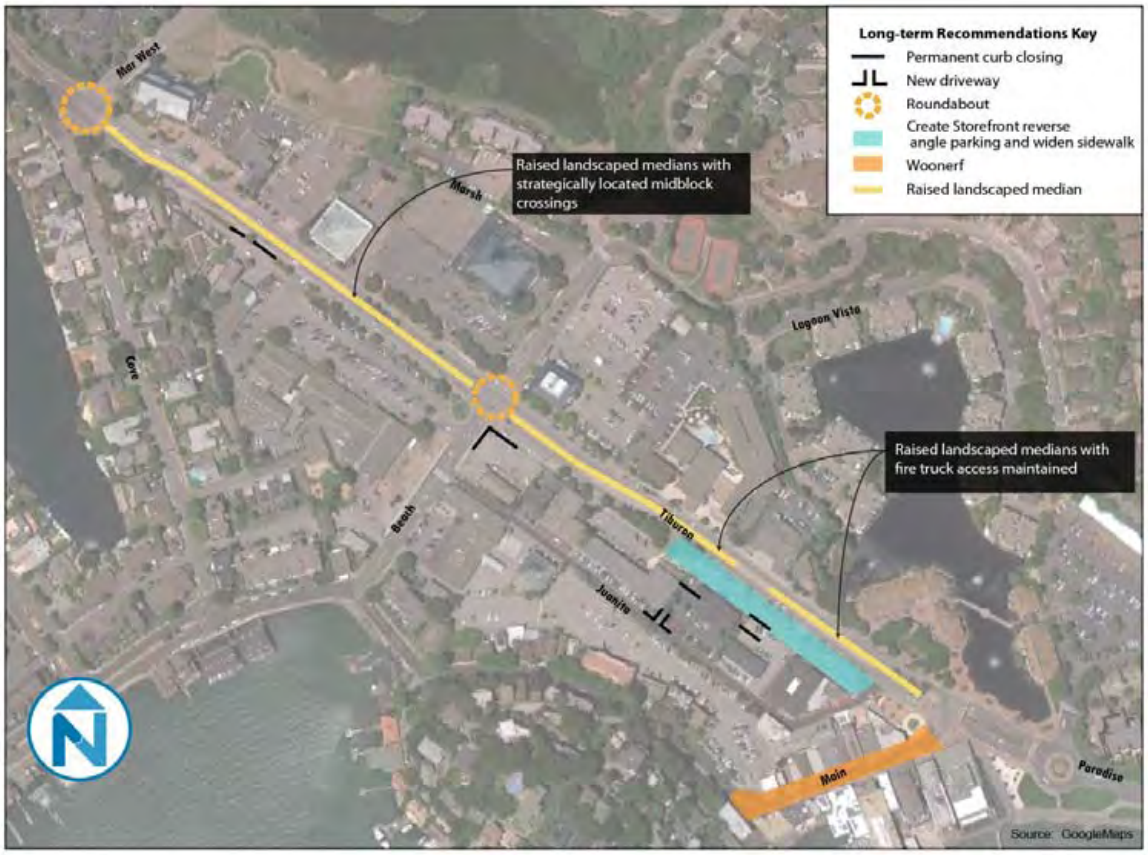
Source: SF Bike

Figure 4-5 Proposed Bicycle Parking Improvements



"Higher-cost" Recommendations and Longer-term Concepts

Figure 4-6 Summary of Higher-cost Recommendations and Longer-term Concepts



RECOMMENDATION #7: PERMANENTLY CLOSE TARGETED DRIVEWAYS ON TIBURON BOULEVARD.

Description

Replace the planters with expansions of the existing curb.

Rationale for Implementation

Formally close the unnecessary driveways, as identified in Circulation Recommendation #2.

Benefits

Allows for the construction of sidewalks along these sections of roadway, thereby improving the pedestrian environment, improving traffic flow, and limiting potential points of conflict.

Tradeoffs

- Capital costs.

Necessary Steps for Implementation

Secure Caltrans approval.

Develop construction designs for the installation of curbs.

Initial Project List

- Two central secondary driveways on the south side of Tiburon Boulevard near the nursery.
- Two driveways closest to the intersection on the southeast corner of the Beach Road/Tiburon Boulevard intersection (i.e. Shark's Deli parking lot).
- Driveway on the south side of Tiburon Boulevard opposite the Tiburon Fire Station.

RECOMMENDATION #8: CONVERT THE EASTERN SECTION OF TIBURON BOULEVARD INTO A "MAIN STREET" WITH GENEROUS PUBLIC SPACE.

Description

Install a continuous raised landscaped median on Tiburon Boulevard between Beach Road and Main Street with a median opening in front of the firehouse. Transition all driveways and minor roadways to right-in, right-out only and add new midblock crossings. Remove the access lane on the south side and convert pull-in parking to reverse angle (back-in) parking.

Widen the sidewalk on the southern side to replace the access lane, leaving the gutter intact. Several options could be considered for the bicycle facilities including standard bicycle lanes, buffered bike lanes (painted buffers), or cycle tracks located behind parked vehicles.

Figure 4-7 Project Location for Tiburon Boulevard Reconfiguration

Rationale for Implementation

The existing median is wider than is necessary as a turning lane. Some of this space could be reallocated to more active uses. In addition, the parking access lane is unnecessary and contributes to an environment that is unfriendly to pedestrians. By reallocating the existing right-of-way definitive improvements can be made to street functionality.

Back-in parking offers a definitive improvement over head-in parking in a number of ways:

- It allows increased visibility when leaving a parking space, increasing safety. This is especially important on busy streets or in areas where drivers find their views obstructed by large vehicles and where it can be especially hard to see oncoming bicyclists.
- Pulling into a back-in angled space is a simpler maneuver than parallel parking.
- Simple signage can be used to introduce drivers to back-in/head-out angle parking.
- The open doors of a vehicle block pedestrian access to the travel lane, pointing pedestrians to the sidewalk. This safety benefit is particularly important for children.
- Back-in angled parking moves cargo-loading/unloading activities to a safer position on the curb, rather than on the street.

A third alternative (Figure 4-11) has also been included that employs front-in angled parking. This alternative represents a more traditional approach to street design, but likely does not offer the same safety improvements that back-in angled parking does on a street with adjacent bicycle lanes.

Benefits

Restricting left-turns will improve circulation and reduce conflicts and congestion. Removing the access lane frees up space for the widening of the sidewalk to allow for sidewalk dining and more public space. Reverse angle parking improves parking access and safety. Enhanced bicycle facilities will attract casual bicyclists.

Tradeoffs

Some property owners may be concerned that restricting turning movements may result in impacts to their businesses.

Back-in angled parking on major streets is an unfamiliar concept to many drivers.

Necessary Steps for Implementation

Obtain jurisdiction over Tiburon Boulevard in the Downtown area and develop and implement a roadway design fitting to the roadway conditions.

Initial Project List

- Remove access lane, pull-in parking and landscape divider on eastern end
- Close parking lot access driveways along access lane on the eastern end
- Convert pull-in parking to back-in parking along the sidewalk
- Add crosswalks and pedestrian and bicycle passages through median at strategic locations
- Widen sidewalk on eastern end
- Add raised landscaped median full length of Tiburon from Beach Road to Main Street with an opening at the firehouse
- Add parking lot access off Juanita Lane

Figure 4-8 Typical Existing Tiburon Boulevard Configuration (Beach Road to Main Street)

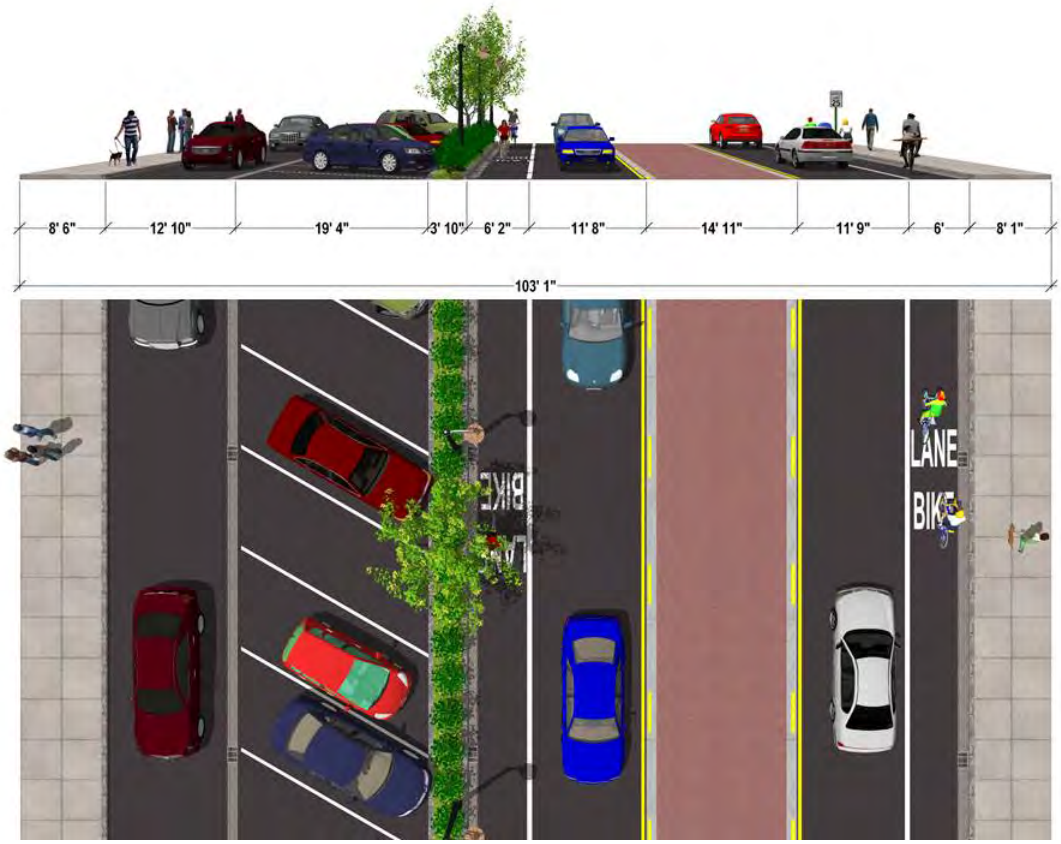


Figure 4-9 Alternative Concept #1 - Back-in Angled Parking and Wide Median

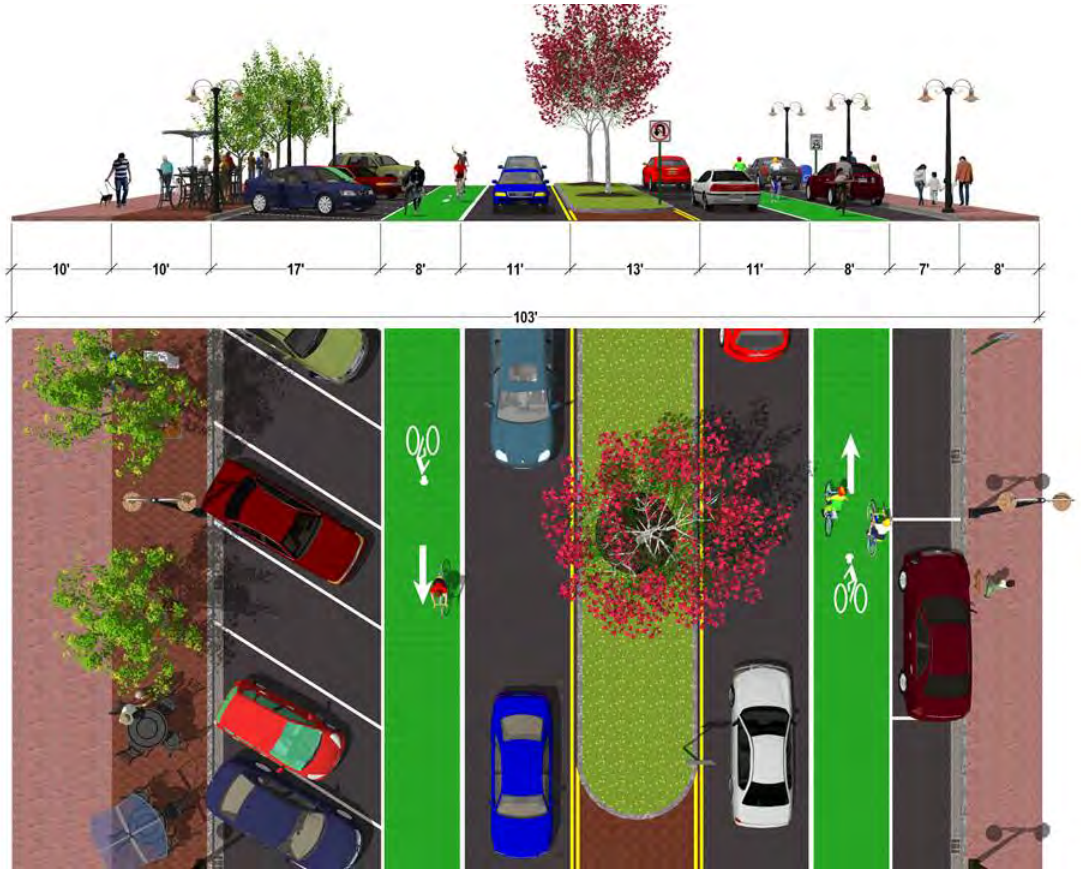


Figure 4-10 Alternative Concept #2 - Back-in Angled Parking and Buffered Bicycle Facilities

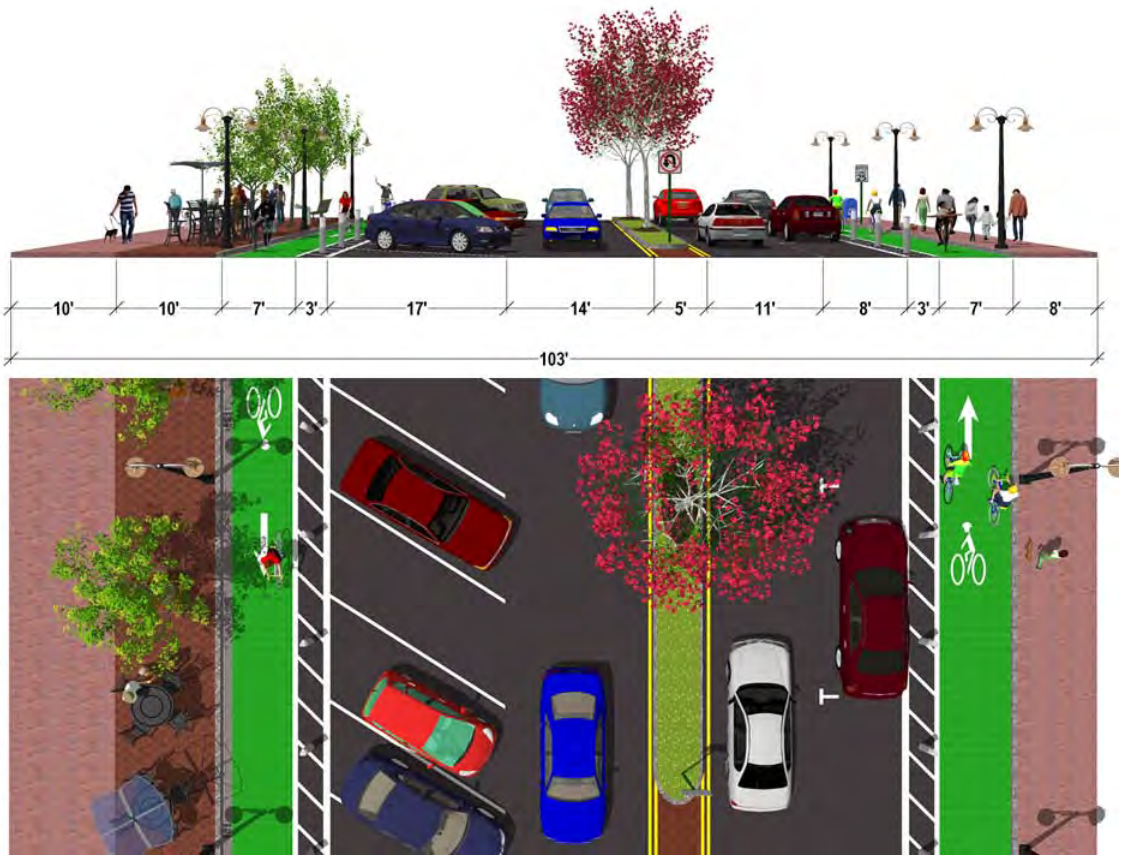
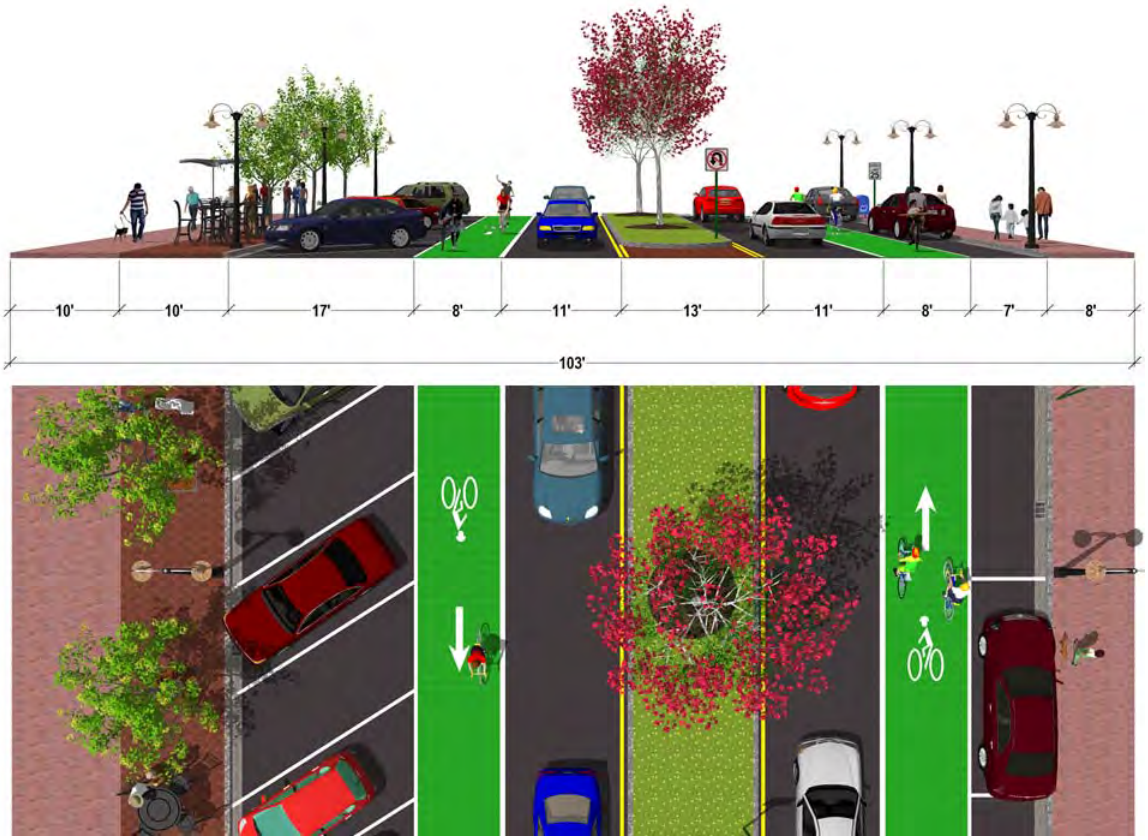


Figure 4-11 Alternative Concept #3 – Front-in Parking



RECOMMENDATION #9: CONSIDER REALLOCATION OF ROADWAY SPACE ON TIBURON BOULEVARD BETWEEN MAR WEST STREET AND BEACH ROAD AND INSTALLATION OF A NEW MEDIAN.

Description

Figures 4-13 and 4-14 present two different alternative concepts for Tiburon Boulevard as a means to enhance the streetscape, improve bicycle facilities, and increase parking capacity. Each alternative is designed to reallocate the right-of-way without involving significant construction costs, such as drainage system changes, moving or installing curbs, or widening the right-of-way. These options explore the potential for adding parallel parking on both sides or converting the bike lanes to a buffered bike lane.

In addition, Figure 4-16 presents an additional alternative for back-in angled parking on Tiburon Boulevard across from Town Hall. This alternative would essentially remove the existing access road to the public parking and relocate it on the other side of the curb. This option would also include a buffered bikeway to further enhance bicyclist safety. The merits of back-in angled parking are discussed in greater detail in Circulation Recommendation #10.

Finally, this recommendation encourages the Town to install a raised, landscaped median on Tiburon Boulevard between Mar West Street and Beach Road, transition all driveways and minor roadways to right-in, right-out only and add new midblock crossings.

Rationale for Implementation

The flush median between Mar West Street and Beach Road is much wider than is necessary as a turning lane. Some of this space could be reallocated to more active uses. The buffered bicycle lane option (Alternative #1) improves bicyclist comfort and has been found to be more attractive to casual bicyclists. The three-foot buffer between the bicycle lane and the travel lane further delineates the vehicle and bicycle realms, while ensuring the bicyclists do not enter the door zone in locations with parallel parking.

The parallel parking option (Alternative #2) would add a few parking spaces to this length of roadway, yet would offer more limited improvements to street operations for other roadway users.

With the addition of roundabouts at both ends of the roadway segment, left turns can be restricted improving circulation and reducing conflicts. With the restriction of left turns, the turning lane can be removed freeing up significant right-of-way that can be reallocated for an enhanced user experience, such as a landscaped median (see Figure 4-9, Figure 4-11, or 4-16 as an example).

Benefits

The designs allow for enhanced bicycle facilities or additional parallel parking. Both options offer defined buffers between traffic and the pedestrian realm, thereby enhancing the pedestrian experience.

By requiring vehicles to use roundabouts to access the opposite side of the road, a revised Tiburon Boulevard right-of-way with a raised landscaped median will improve circulation by removing left-turn conflicts as well as the resulting congestion. The recommended concept would provide a

median refuge for pedestrians crossing Tiburon Boulevard, thereby facilitating crossings at both marked crosswalks and when pedestrians choose to cross midblock.

Tradeoffs

There will be loss of portions of flush median space and possibly the need to remove and reconstruct the textured pavement. Initially, the business owners may be concerned that the left turn restriction will impact access to and from their business.

Even though the recommended concept does not involve moving the sidewalk curbs or drainage facilities, installing a new raised landscaped median would require significant capital investment.

Necessary Steps for Implementation

Obtain jurisdiction over Tiburon Boulevard in the Downtown area. Explore design concepts presented in this report and examine the feasibility of installing preferred changes. Identify the preferred concept and initiate a full design process.

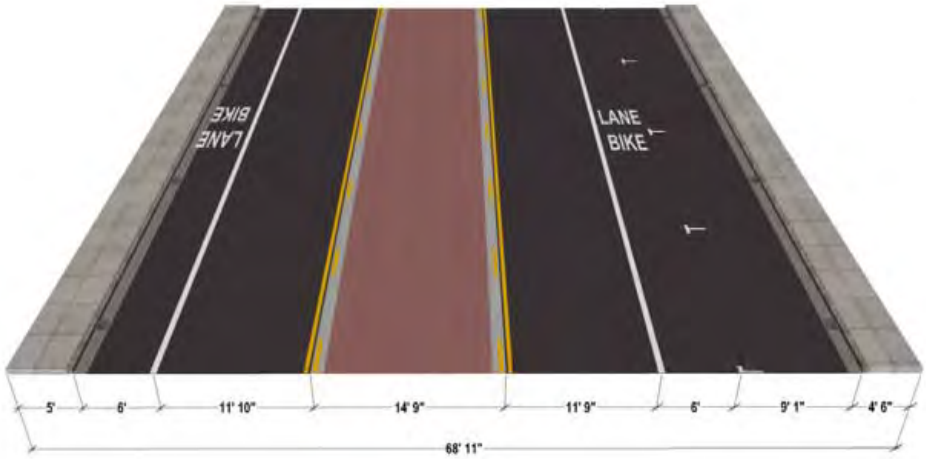
Initial Project List

- Build roundabouts (Recommendation #8)
- Install raised landscaped median
- Install strategically located midblock pedestrian crossings
- Restripe the roadway to reallocate space to bicycle facilities and parking, as specified in the final design concept
- Highlight the bicycle facilities using green colored pavement. (Optional)

Existing Roadway

- Two travel lanes (~12 feet)
- Paved median (14'9")
- Two 6-foot bicycle lanes
- Parallel parking on one side of roadway
- 5-foot sidewalks

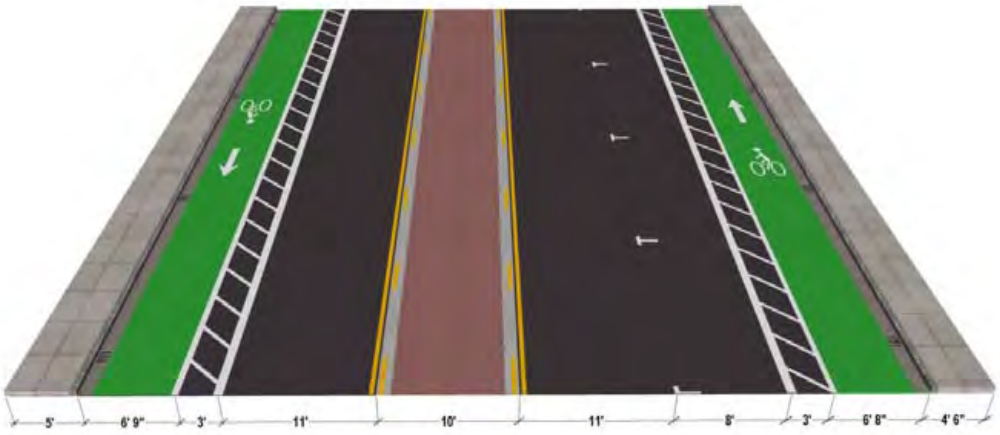
Figure 4-12 Typical Existing Configuration on Tiburon Boulevard



Alternative Concept #1 – Buffered Bicycle Facilities

- Two 11-foot travel lanes
- 10-foot median
- 8-foot parking lane
- Two bicycle lanes (6-foot plus) with 3-foot buffer
- 5-foot sidewalks

Figure 4-13 Alternative Concept #1 – Buffered Bicycle Lanes



Alternative Concept #2 – Parallel Parking

- Two 11-foot travel lanes
- 10.5-foot median
- Two 7.5-foot parking lanes
- Two 6-foot bicycle lanes
- 5-foot sidewalks

Figure 4-14 Alternative Concept #2 – Parallel Parking

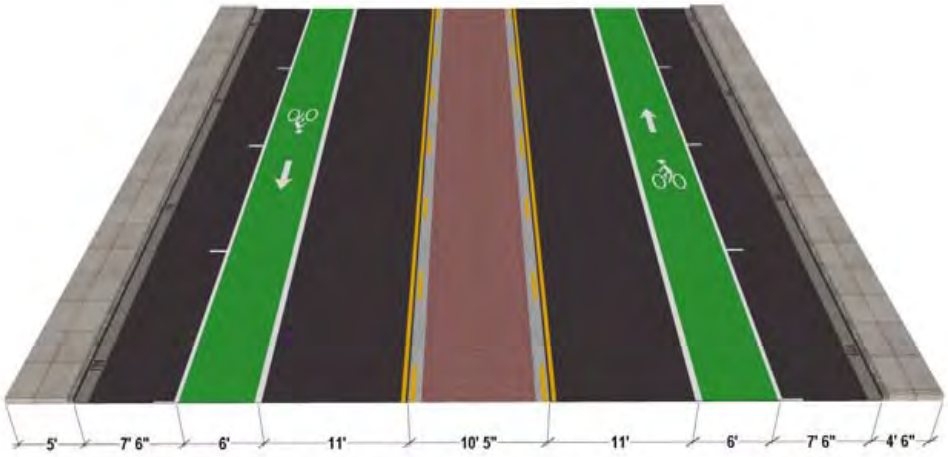


Figure 4-15 Existing Configuration on Tiburon Boulevard near Town Hall

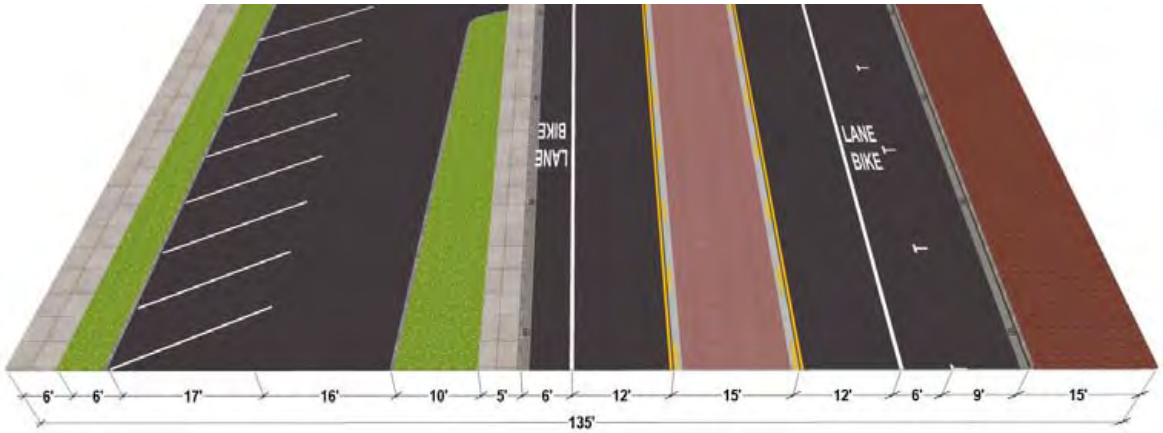
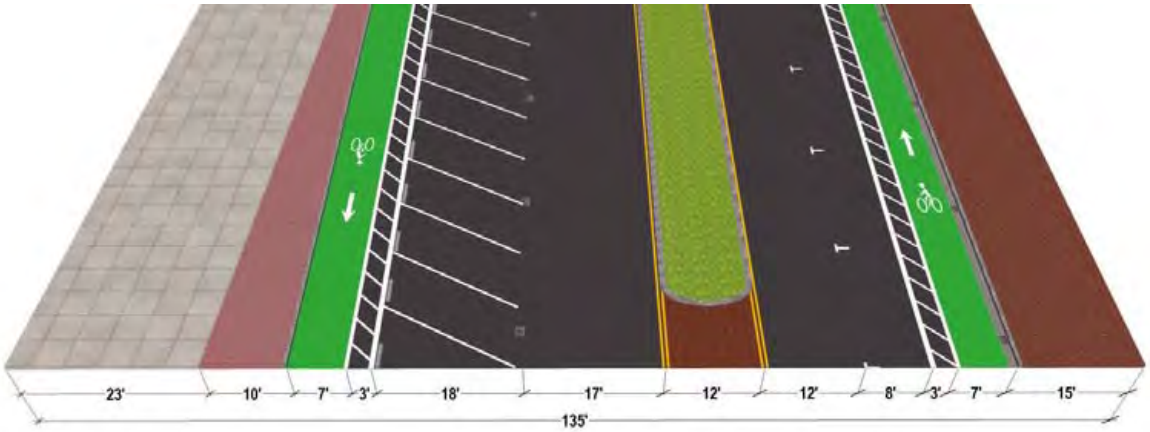


Figure 4-16 Alternative Concept #3 – Back-in Angled Parking near Town Hall



RECOMMENDATION #10: REPLACE MAJOR FOUR-WAY INTERSECTIONS WITH ONE-LANE ROUNDABOUTS.

Description

Replace Tiburon Boulevard's intersections at Mar West Street and Beach Road with single-lane roundabouts.

Rationale for Implementation

These intersections could operate more efficiently and safely from a traffic perspective and result in fewer conflict points if replaced by roundabouts. The intersection at Mar West Street offers the greatest benefit as it would improve circulation and reduce vehicle speed as motorists enter Downtown. In addition, the roundabout at Mar West Street offers an opportunity to create a new Downtown "gateway" that identifies the area as a unique place in Tiburon.

Benefits

In general, roundabouts lower emissions, relieve congestion, and reduce both the number and severity of crashes. Roundabouts also provide significant opportunities for landscaping, both along the wide medians approaching the roundabouts and in the central island. The Mar West Street roundabout could serve as a "gateway" to Downtown Tiburon, clearly defining the point in a trip where the character of the roadway changes from rural highway to a commercial-oriented downtown.

In addition, pedestrians experience almost no delay at roundabouts as they do not need to wait for traffic signals, and the slow vehicle speeds at roundabouts encourage drivers to yield to pedestrians. Roundabouts are also safer for pedestrians than signalized intersections (e.g. existing Beach Road intersection) as well as two-way stop control (e.g. existing Mar West Street intersection).

Figures 4-17 and 4-18 offer an analysis of intersection performance in both the existing and future conditions with and without the proposed roundabouts. The results show that both intersections, particularly at the intersection of Mar West Street and Tiburon Boulevard, will experience reductions in vehicle delay and increased level-of-service (LOS).[14]

Figure 4-17 Mar West Street & Tiburon Boulevard LOS Analysis

	Existing				2020			
	Stop Sign		Roundabout		Stop Sign		Roundabout	
	AM	PM	AM	PM	AM	PM	AM	PM
Delay (average in secs)	22.9	24.9	9.1	10.4	24.5	26.6	14.4	22.9
Delay (worst in secs)	22.9	28.8	10.3	11.4	24.5	31.7	16.8	28.2
LOS	C	C/D	A	B	C	D	B	C

[14] Level of service analyses are based on data collected for the 2008 Easton Point Residential Development Draft EIR.

Figure 4-18 Beach Road & Tiburon Boulevard LOS Analysis

	Existing				2020			
	Stop Sign		Roundabout		Stop Sign		Roundabout	
	AM	PM	AM	PM	AM	PM	AM	PM
Delay (average in secs)	15.6	18.5	10.3	10	15.8	18.9	10.7	14.1
Delay (worst in secs)	15.6	18.5	12.3	10.9	15.8	18.9	12.7	15.6
LOS	B	B	B	A	B	B	B	B

Tradeoffs

- Roundabouts require slight diversions of pedestrian pathways to crossings setback from the intersection.
- Capital costs can be significant and it may require a larger right-of-way than the current intersection, especially at Mar West Street.
- Bicycle lanes are not carried through the roundabout, so bicyclists will need to merge with other traffic. However, motor vehicle speeds through roundabouts are compatible with bicycle speeds.
- The roundabout at Beach Road may require small amounts of additional right-of-way on the corners of the intersection.
- In order to provide separation from the intersection of Cove Road and Lagoon Road, the design shown for Mar West Street has a 90-foot diameter, rather than the 105-foot diameter at Beach Road. This means that tractor-trailer vehicles (WB-50) will not be able to make left turns or U-turns and will only be able to travel straight through the roundabout. Emergency vehicles and single unit trucks will be able to make all turning movements.

  With more detailed design and perhaps a small amount of additional right-of-way, it may be possible to design a roundabout with a 105-foot diameter at this intersection, but it will result in less space between these closely-spaced intersections, which may be appropriate given the low volume on this leg of the roundabout.

Necessary Steps for Implementation

- Develop and finalize construction designs for the installation of roundabouts.
- Identify sources of funding.
- Install roundabouts.

Initial Project List

Figure 4-19 Potential Mar West Street Roundabout Concept for Future Evaluation

Figure 4-20 Potential Beach Road Roundabout Concept for Future Evaluation

Experience with Roundabouts

Roundabouts (also referred to as traffic circles) are intersection treatments that stand as an alternative to typical signalized intersections. Common in Europe, roundabouts have increased in popularity in American towns and cities in recent years, as they exhibit certain traffic and safety benefits for all transportation modes.

Roundabout in Anacortes, Washington

Source: Flickr user WSDOT

Benefits

Roundabouts move traffic through intersections more safely and efficiently, and exhibit various operational, safety, environmental, and aesthetic benefits. These benefits include the following:

- Roundabouts reduce points of conflict within an intersection, greatly reducing the potential for crashes. Studies by the Insurance Institute for Highway Safety (IIHS) and Federal Highway Administration have shown that roundabouts typically reduce all collisions by 37%, injury collisions by 75%, and fatality collisions by 90%.[15]
- Research shows that roundabouts severely reduce vehicle speeds through an intersection, meaning that when vehicle, vehicle-pedestrian, or vehicle-bicycle collisions do occur, they are typically less severe.

[15] Washington State Department of Transportation: http://www.wsdot.wa.gov/Safety/roundabouts/benefits.htm and IIHS: http://www.iihs.org/research/qanda/roundabouts.html

- Even though speeds through intersections are reduced, roundabouts improve traffic flow, reducing average intersection delay. At signalized intersections, two or more directions of traffic are stopped at any given time, whereas roundabouts allow all directions of traffic to be constantly flowing.
- Roundabouts reduce long-term operational costs by an average of $5,000 per year.[16] They exhibit limited or no electrical costs, lower maintenance costs, and typically have a longer service life (about 25 years) than traffic signals.
- Roundabouts reduce vehicle emissions, fuel use, and noise pollution. As roundabouts improve traffic flow and reduce delay, vehicles are no longer idling at intersections, meaning they use less fuel and emit less carbon dioxide as compared to vehicles traveling through signalized intersections.
- Roundabouts can beautify a community, offering unique opportunities for gateways into a town or district, and landscaping/aesthetics.

Safety Concerns

As roundabouts typically lack traffic signals and motorists are therefore not required to stop at an intersection, many have expressed concern that they are unsafe for pedestrians and bicyclists traveling through them or crossing streets at the traffic circle. However, current research shows that after the installation of a properly designed roundabout, pedestrian collisions tend to decrease at formerly signalized intersections. Studies by the Insurance Institute for Highway Safety (IIHS) and Federal Highway Administration have shown that roundabouts typically reduce pedestrian collisions by 40%. Studies in Europe have shown that roundabouts can reduce pedestrian collisions by as much as 75%.[17]

Typical modern roundabout design places crosswalks at least one full car-length away from the yield line (entrance to roundabout). This means pedestrians do not need to cross in an area where motorists are looking for a gap in roundabout traffic, simplifying the motorist's decision making tasks.

However, while roundabouts drastically reduce pedestrian collisions, data does suggest that continuing a striped bicycle lane through a roundabout increases the number of bicycle collisions. Therefore, best practices suggest allowing bicyclists to mix with traffic at roundabouts with low traffic volumes (less than 8,000 vehicles per day) or only a single lane.[18] Where sufficient space exists, at high volume roundabouts bicycle lanes should be removed from the roadway and onto a shared bicycle-pedestrian path or sidewalk, to enable the bicyclist to travel through the roundabout as a pedestrian. These treatments significantly reduce bicycle collisions at roundabouts.

[16] Nevada Department of Transpiration: http://www.nevadadot.com/safety/roundabout/benefits.aspx

[17] IIHS: http://www.iihs.org/research/qanda/roundabouts.html

[18] US Department of Transportation: http://www.fhwa.dot.gov/publications/research/safety/00067/00067.pdf