

Muir Woods Shuttle Evaluation



Marin County
Department of Public Works
November 2006



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EXECUTIVE SUMMARY

The summer of 2006 marked another overwhelmingly successful season for the Muir Woods Shuttle. Ridership during the 2006 season totaled almost 14,600 trips, more than 140% above 2005 figures, despite one weekend of Bay Bridge closures that likely impacted visitor numbers at the park.

Description of Current Service

The Muir Woods Shuttle is in its second year of a three-year pilot project developed by the County of Marin in coordination with the National Park Service to provide an alternative to driving to Muir Woods. Shuttle goals include reducing vehicular impact on the park, eliminating the need for on-site parking lot expansion, and reducing congestion on roads leading to Muir Woods. Service is funded through an FHWA earmark and is operated by Golden Gate Transit under contract to the County of Marin's Public Works Department.

The Shuttle route begins in Marin City, where passengers can park or make connections with other Golden Gate Transit routes, with stops at two additional park and ride lots enroute to Muir Woods: Hwy 101 at Pohono St. and the Manzanita Park and Ride Lot.

Shuttle service operates on weekends and holidays during the peak summer season, between Memorial Day weekend and Labor Day weekend. Buses departed Marin City every half hour between 9:30 AM and 6:30 PM. High ridership often required extra trips to be dispatched when demand exceeded capacity, however unlike the 2005 season no extra trips were regularly scheduled.

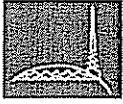
Extensive marketing was conducted for the shuttle, including distribution of brochures to San Francisco hotels, use of changeable message signs on Highway 101 indicating that Muir Woods parking was full, and shuttle signs on the exit off-ramps, as well as information on the internet. The County also hired an ombudsperson to assist passengers with the service at the Pohono St. and Manzanita Park and Ride Lot.

Service Evaluation

The evaluation of second year operations included extensive original data collection including ridechecks, on-board passenger surveys, and non-passenger visitor surveys. It was based on four weekends of data collection, including two holiday weekends and two non-holiday weekends of on-bus surveys and park entrance data collection. A total of 386 on-board and 1434 non-passenger surveys were collected over the course of this study. In addition, passenger and park visitor counts collected by Golden Gate Transit and the National Park Service throughout the season were used in the analysis.

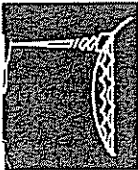
Ridership and Productivity

Almost 14,600 trips were made on the shuttle between Memorial Day weekend and Labor Day, 2006. Ridership on the shuttle was much higher than initially expected, to the point that passengers were often "passed up" and required to wait for the next bus. Unlike in 2005, ridership was high from the beginning of the season, with almost 1,500 trips over Memorial Day weekend. Ridership remained high for subsequent weekends, with the average weekend ridership over the whole season over 900 trips.



The average productivity for the weekends evaluated was 22.5 passengers per hour. This is highly productive for a relatively long route with few intermediate stops. Peak ridership to Muir Woods tended to occur between 11:00 AM and 3:30 PM and peak ridership returning from Muir Woods occurred between 1:00 PM and 6:30 PM.

As the easiest stop to access for those traveling northbound on Highway 101 from San Francisco, the Pohono Street stop had the largest number of boardings. Average boardings per day by stop is shown in the map in Figure ES-1



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Muir Woods Shuttle Evaluation

Figure ES-1 Muir Woods Shuttle - Average Boardings Per Day

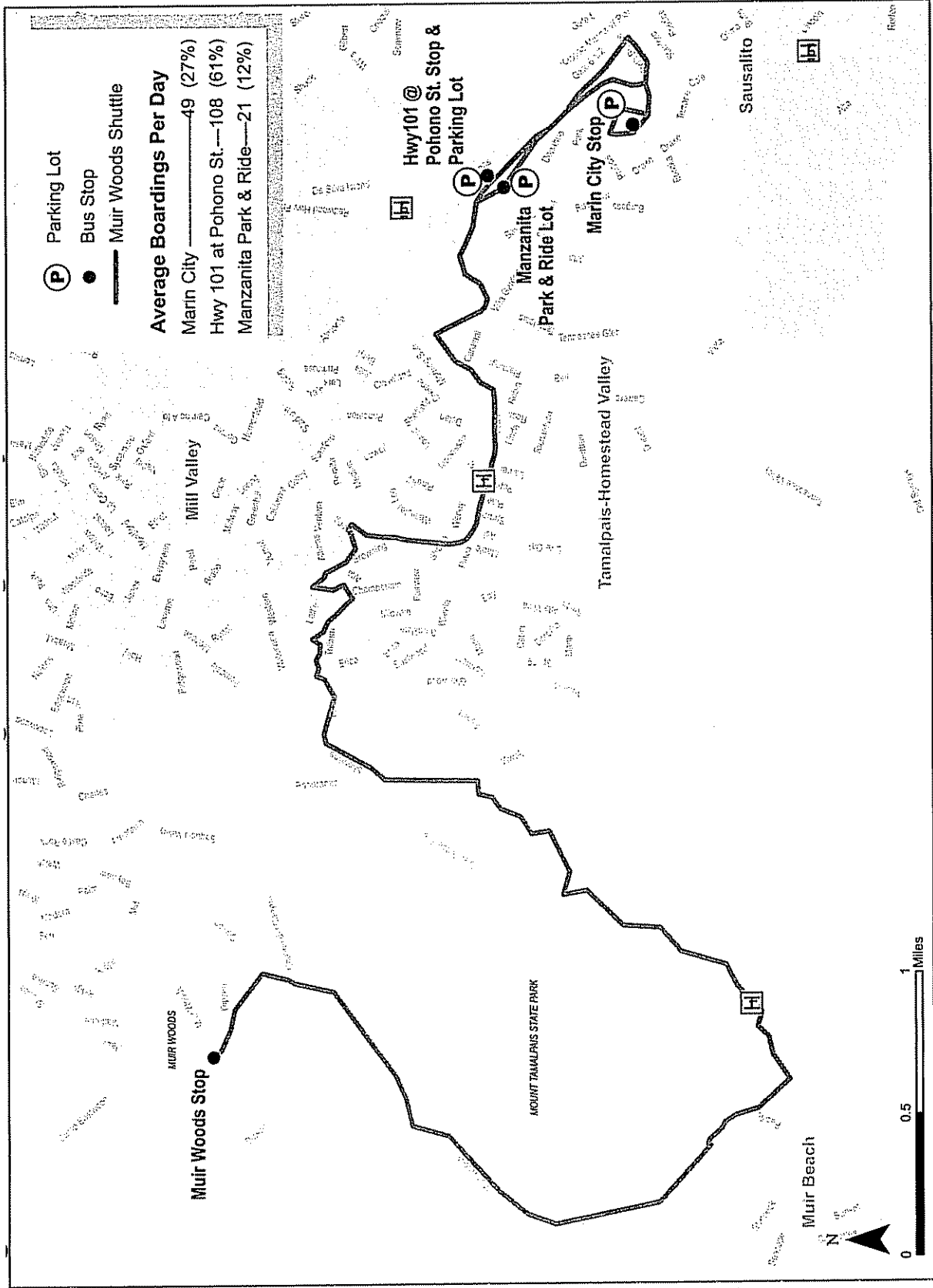




Figure ES-3 Ridership for Each Service Day, 2005 and 2006

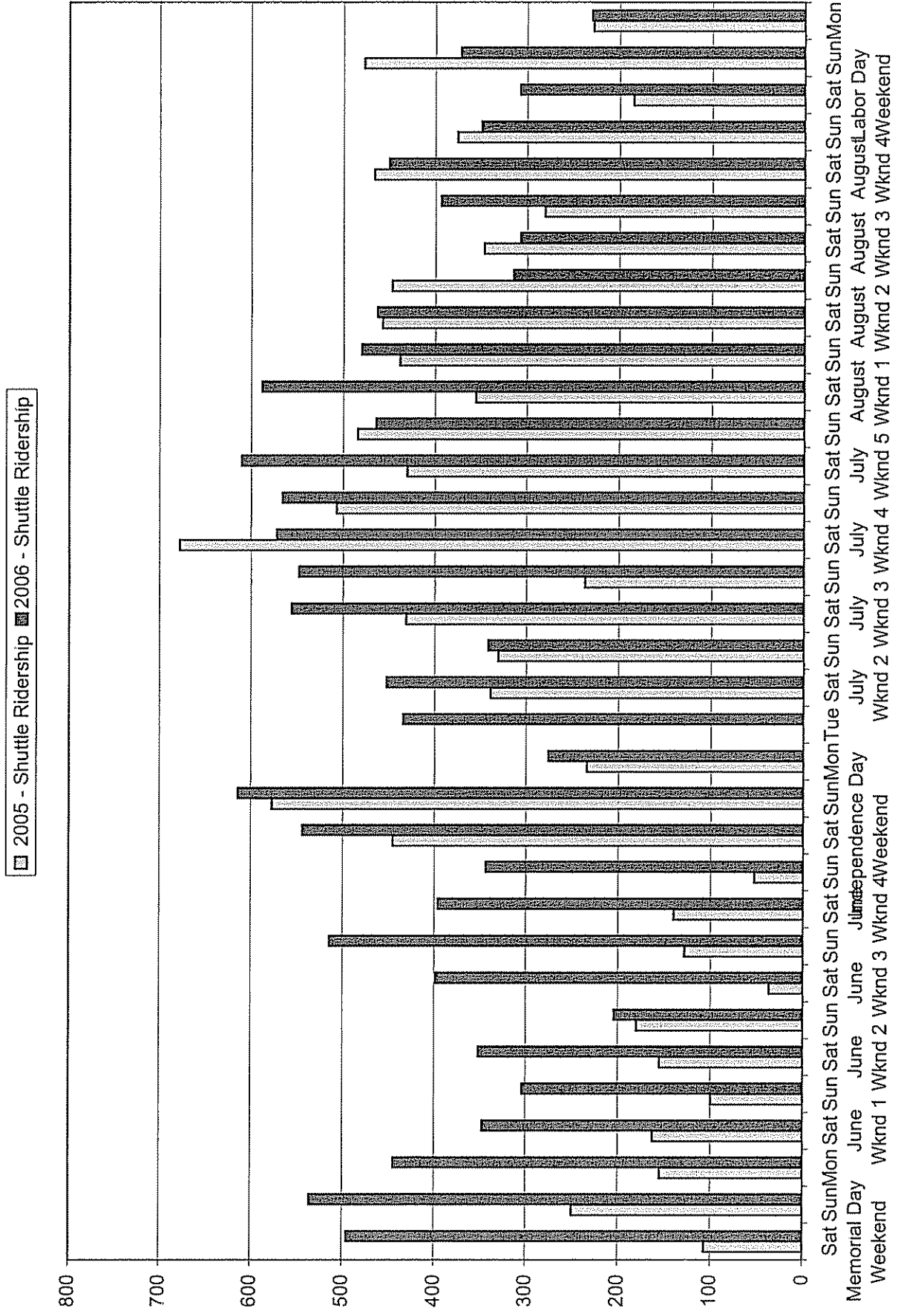
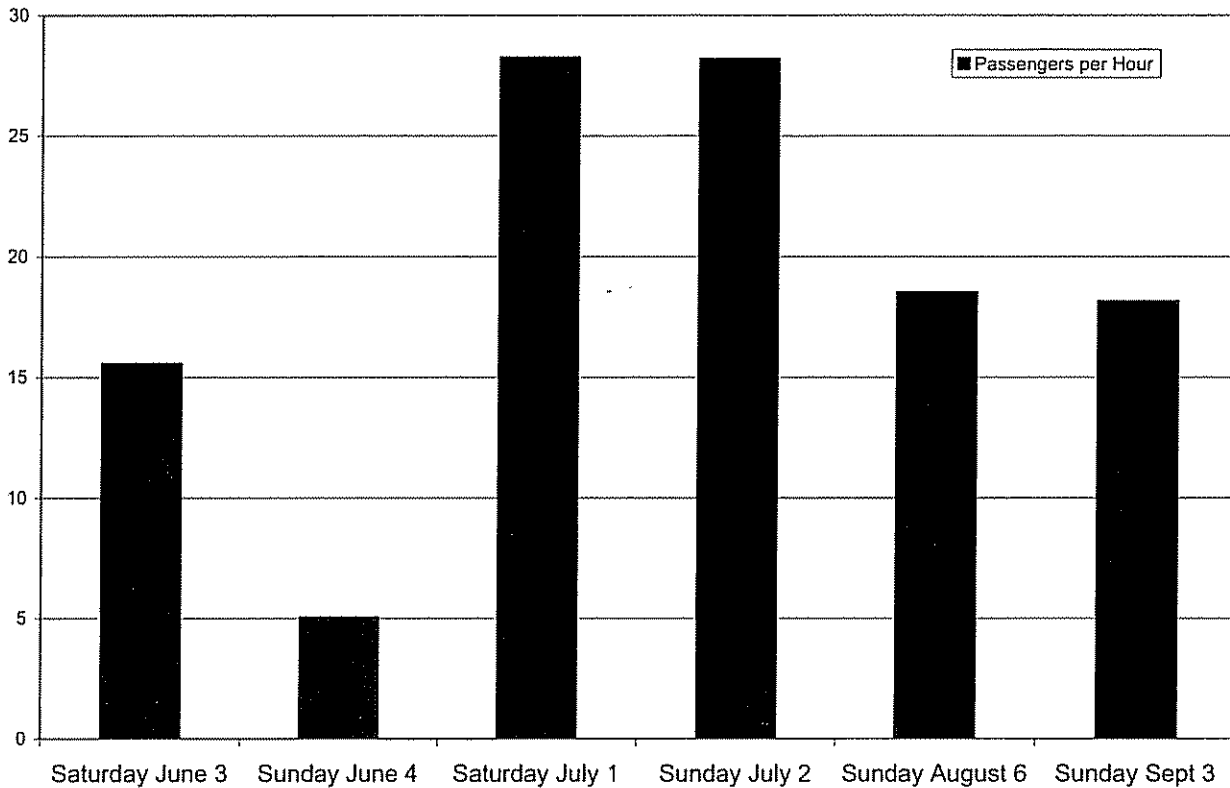


Figure ES-4 Route productivity



On-time Performance

The following table shows the on-time performance of the shuttle over the course of service. Eastbound afternoon trips had the worst on-time performance due to westbound congestion and inadequate recovery time at Muir Woods.

Figure ES-5 On-time Performance Summary

	2005	2006
Time Points within Standard	61.4%	38.8%
Very Late (More than 10 minutes)	14.3%	19.4%
Very Early (More than 5 minutes)	0.5%	0.7%

Service Cost and Farebox Recovery

A \$2.00 round trip cash fare was inaugurated with the 2006 shuttle season with discount fares for seniors, youth, and disabled riders. Over \$12,500 was collected in fare revenue, leading to a fare recovery rate of 6.56% of the full cost of the shuttle service or 12.84% of the cost of shuttle operations. While this is well below the average fare recovery rate of 26.9% for MCTD routes, the Muir Woods Shuttle has a long trip length and no intermediate stops. A reasonable fare recovery goal for this route is 10% of total costs.



Demographics and Travel Behavior

Highlights from the passenger and non-passenger surveys:

- Over half of respondents indicated that they were visiting Muir Woods for the first time at the time surveys were completed. Visitors to Muir Woods came from 23 countries.
- Just over 40% of survey respondents live in the Bay Area.
- Over 42% of park visitors began their trips in San Francisco.
- Almost 65% of passengers traveled to the shuttle stop by car while 27% took transit.
- Almost 90% of non-shuttle users traveled to the park by car.
- Park visitors that did not ride the shuttle tended to have higher incomes than shuttle riders.
- A high percentage of riders learned about the shuttle by seeing shuttle signs (22%). The highway signs (18%), bus stops and bus signs (7%), and websites (17%) were also important ways that people learned of the shuttle.
- Many shuttle riders (28%) chose to use the shuttle because they didn't want to drive in traffic or look for parking at Muir Woods. 25% chose the shuttle because they saw the sign on Highway 101.
- Over 73% of respondents would "definitely" or "probably" use the shuttle again.
- Without the shuttle, 66% of riders would have driven a car or ridden in someone else's car. 22% would not have made the trip to Muir Woods.
- 90% or more of passengers rated the shuttle "good" or "excellent" for convenience of schedule and cleanliness/condition of vehicles.
- Service frequency and ease of transfers were given the worst ratings with just over 55% of

respondents selecting "good" or "excellent."

- The most common rider-suggested improvements were increased frequency (24%) and weekday service (9%).
- Over 90% of shuttle passengers thought a fare of \$2.00 or greater was reasonable for shuttle service, and 10% suggested a fare of less than \$2.00.
- Two thirds of non-riders were not aware of the shuttle, 18% knew about it but didn't have any information about it, and 14% knew about it but it wasn't appropriate for their travel needs.
- Of non-riders that were aware of the shuttle, most learned about it through the highway signs (24%).
- Most non-shuttle users (57%) did not use the shuttle because they did not know about it.
- 56% of non-passengers would "definitely" or "probably" use the shuttle for future visits to Muir Woods.

Highway Message Signs

About 31% of those surveyed at the park entrance saw the changeable message sign on Highway 101 for Muir Woods. Of those respondents that saw the sign, two thirds said it had no impact on their trip, though 58% of them said that the message sign was either "useful" or "very useful." Respondents rated the sign information favorably along several variables including whether the information was understandable, current, and accurate.

Traffic Reduction

While the data collected did not include direct counts of vehicles, it is possible to estimate the number of vehicle trips the shuttle removed. Taking into account the size of each party and the total number of trips on the shuttle, this number is estimated at about 4800 vehicle trips over the course of the summer.

Conclusions and Recommendations

Service recommendations include ways to further increase ridership on this already-successful service, and further achieve the original goals of the shuttle. To expand on the successes of the first two years of the demonstration, the shuttle will need to enhance visitor experience and increase service levels. Bus stops should be easy to identify and the shuttle should easily connect to other popular destinations where possible.

Future Service Plan for Muir Woods

Consistent with the proposed MCTD service plan the following improvements are recommended for the summer of 2007 that can be accommodated within the existing funding:

- **Add Frequency:** To meet the demand, schedules should be adjusted to provide consistent 20 minute frequencies. This would reduce wait time and prevent passenger pass-ups. In addition, an overlay service could be provided that skips the Marin City stop, providing increased capacity at the Pohono and Manzanita Park and Ride stops, where over 70% of passengers board the shuttle. Additional service could also be combined with a route extension to Sausalito.
- **Extend Route to the Sausalito Ferry Terminal:** This would increase the connectivity of the shuttle significantly, providing a direct trip for those staying in hotels in Sausalito, and to those visiting Sausalito on their way to or from Muir Woods. For those traveling from San Francisco, transfers to the shuttle from the Sausalito Ferry Terminal are much easier and more convenient than transfers from the bus, especially when connected with a visit to Fisherman's Wharf. Service should not be extended to Sausalito unless it is accompanied by an increase in service, since this extension

will further increase ridership.

- **Consider weekday and shoulder season service:** While summer weekend visitation is the highest visitation period at the park, summer weekday visitation is also very high, especially on Mondays and Fridays. Unfortunately, without an alternative to offer, some visitors may never arrive at the park on the weekdays, and may be deterred from future visits. Providing long-weekend service from Friday to Monday may be an initial step toward providing full 7-day summer service. Providing shuttle service during May and September should also be considered.
- **Purchase larger buses:** Golden Gate Transit is currently providing Muir Woods service with vehicles it had available and could easily acquire for this service. As the service becomes permanent, it will be important to purchase the largest and most comfortable bus that can serve the difficult terrain to access the park. Ideally, buses would be 35' long, with bicycle racks that can accommodate at least 3 bikes, with maximum accessibility features including low floor boarding and wheelchair access. As with all new buses operating in California, alternative fuels should be an important consideration; however, the selected technology must be able to reliably serve the terrain and hill climbing required for this route.
- **Improve bus stops:** The existing bus stops are poorly marked and have minimal or no shelter, and almost no amenities. This is due to the fact that the shuttle is still considered a temporary demonstration project. Lower cost amenities include trash cans, benches, and information kiosks; while higher cost amenities include shelters and water fountains.
- **Improve shuttle information:** Information on the Golden Gate and National Park Service websites should be more detailed, encouraging, and conspicuous. Outreach to tour guide publishers will also increase visitor awareness of the shuttle. Information about both the shuttle and other connecting services, in east and west Marin should be available at all stops, including ideas about making



a day on transit. Information kiosks at bus stops should include schedule information about the shuttle, connecting services such as Marin County Transit District, including the Stagecoach, and Golden Gate routes, ideas for “making a day on transit”, and information on where basic amenities can be found such as restrooms and water fountains. Materials about the park experience, and other parks in Marin County should also be available.

- Develop a sustainability plan: With two successful seasons behind it, it is clear that the Muir Woods Shuttle service is an important and desirable link for Marin County and GGNRA. With renewed national emphasis on transit service to national parks, it is now time to develop a sustainability plan that will take the shuttle beyond the three year demonstration program Long term considerations include sustaining the existing service with the recommendations included in this report, and also expanding the service beyond peak weekends to include weekday summer service, and ideally an expanded service period that would include the months of May and September.
- Add a stop at Muir Beach and provide West Marin connections: This would allow passengers to “make a day” out of their trip to Muir Woods; It would cost little in terms of trip time, and could easily be accommodated in the schedule. Coordination with other service to West Marin, such as the West Marin Stagecoach is essential, especially as the Stage service expands to weekends.

INTRODUCTION

Description of Current Service

The Muir Woods Shuttle has recently completed its second year of a three-year pilot project developed by the County of Marin in cooperation with the National Park Service and Golden Gate Transit. The shuttle is designed to provide an alternative to automobile access and parking at Muir Woods, with the goal of reducing vehicular impact on the park and congestion on roads leading to the park. Currently operated by Golden Gate Transit under contract to Marin County, the service is funded through the Federal Highways Administration (FHWA) with annual service improvements expected over the life of the demonstration.

While shuttle routing has remained consistent over the two years of service, minor schedule adjustments have been made to better meet demand in the second year of the demonstration. The shuttle captures passengers at three park and ride lots near Highway 101 and then expresses directly to Muir Woods. The route begins in Marin City, where passengers can either park or make connections with other Golden Gate Transit routes. Two park and ride stops are served en route to Muir Woods: Highway 101 at Pohono St. and the Manzanita Park and Ride Lot. The Pohono St. stop is directly adjacent to the Sausalito Mill Valley multi-use path, which some passengers use to access the shuttle. Figure 1 shows the shuttle route, stops, and parking locations.

The pilot project is expected to cost approximately \$620,000 over three years, which includes plan-

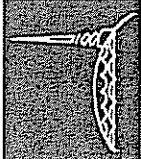
ning, operations, promotion, and evaluation of the service. The original plan proposed gradually increasing service over the three years to coincide with anticipated ridership increases as the service became more established.

This evaluation of the second season of service is based on four weekends of on-bus surveys and surveys completed at the Muir Woods park entrance. The objectives of this evaluation include the following:

- Evaluate the operation of the Muir Woods Shuttle and compare it to the initial season of service.
- Refine performance benchmarks for subsequent seasons.
- Make recommendations for service improvements for next season

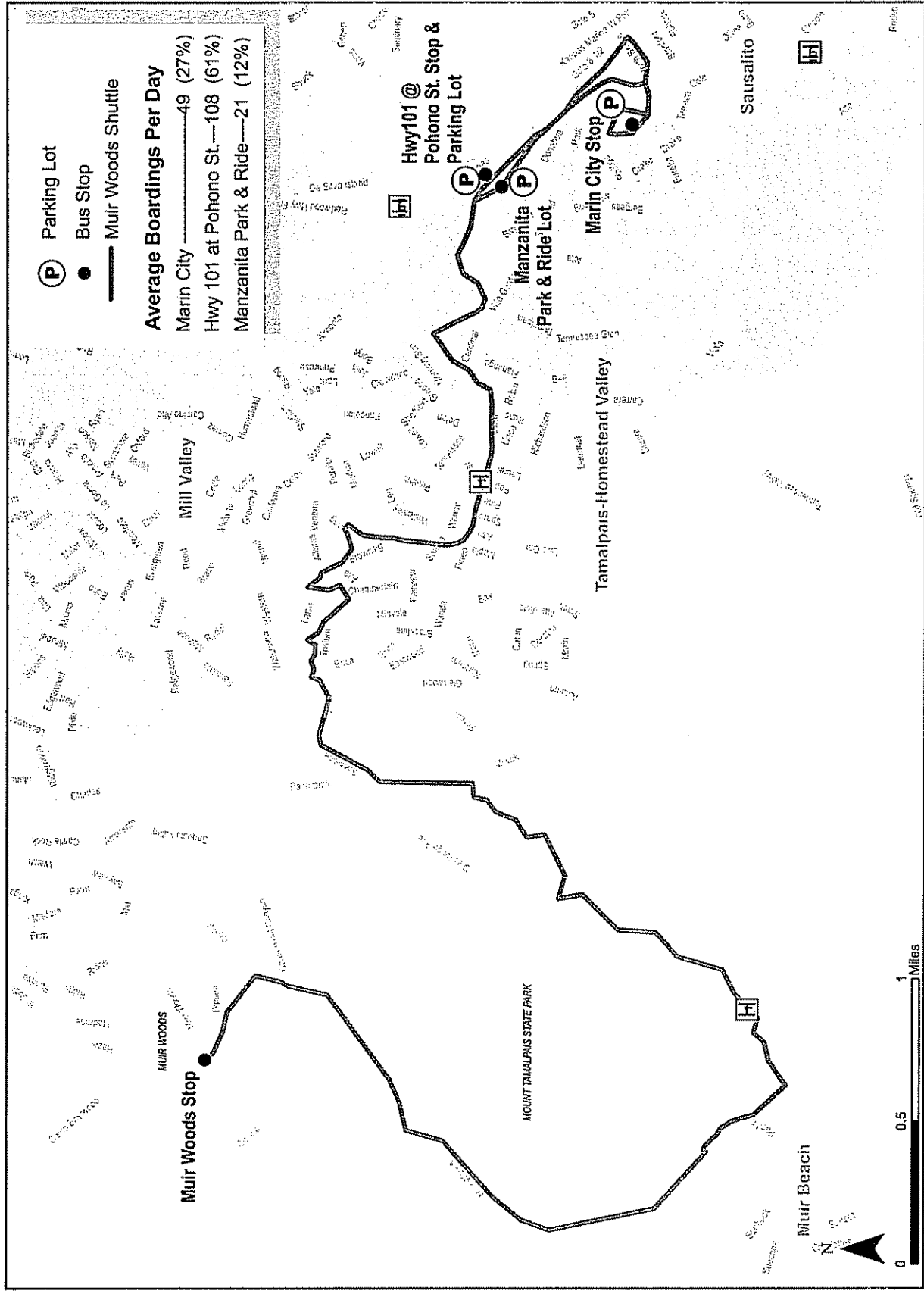
Second year shuttle service began on Memorial Day weekend 2006, operating weekends and holidays during the peak summer season, and ending on Labor Day (September 4, 2006). Buses were scheduled every half hour between 9:30 AM and 6:30 PM Westbound and between 10:00 AM and 7:00 PM Eastbound. This schedule increased service above the 2005 shuttle schedule by maintaining 30 minute frequencies throughout the service period. Even so, extra trips were often provided to meet ridership demand. One important change in 2006 was the addition of a fare. During the 2006 season, a \$2.00 per person round trip fare was charged, with children under 12, seniors over 65, and persons with disabilities riding for half fare.

Marketing conducted for the shuttle included extensive distribution of brochures to San Fran-



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Figure 1 Muir Woods Shuttle - Average Boardings Per Day



cisco hotels, use of changeable message signs on Highway 101 alerting drivers of parking conditions at Muir Woods, and shuttle signs on the exit off-ramps. Information was also posted on several websites including those of the County of Marin, the Marin County Visitors Bureau, the National Park Service, and Golden Gate Transit. The County also hired an ombudsperson to assist passengers waiting for the shuttle at the Pohono and Manzanita Park and Ride stops. Her assistance greatly aided passengers, especially those arriving in peak periods when crowding caused some service delays. She also served as a liaison with Golden Gate Transit, requesting extra trips when necessary. The National Park Service also provided information at Muir Woods. Figure 2 shows the current Muir Woods bus schedule.

Description of Evaluation

Extensive original data collection was completed for this evaluation including ridechecks, on-board passenger surveys, and non-passenger visitor surveys. The survey instruments can be found in Appendix A.

Data was collected over four summer weekends, approximately one month apart, including two holiday weekends – Independence Day and Labor Day – and two non-holiday weekends – June 3 and 4, and August 6. A total of 386 surveys were collected on-board the shuttle during these four weekends. An additional 1434 surveys were collected from park visitors who did not use the shuttle, to compare their demographics and attitudes, and to determine how the shuttle might reach an even broader market. For both surveys, each party was asked to fill one survey out for his or her group.

Figure 2 Current Muir Woods Bus Schedule

Westbound			Eastbound		
MC	Manzanita	Muir Woods	Muir Woods	Manzanita	Marin City
9:30 AM	9:36 AM	9:56 AM	10:05 AM	10:25 AM	10:29 AM
10:00 AM	10:06 AM	10:26 AM	10:35 AM	10:55 AM	10:59 AM
10:30 AM	10:36 AM	10:56 AM	11:05 AM	11:25 AM	11:29 AM
11:00 AM	11:06 AM	11:26 AM	11:35 AM	11:55 AM	11:59 AM
11:30 AM	11:36 AM	11:56 AM	12:05 PM	12:25 PM	12:29 PM
12:00 PM	12:06 PM	12:26 PM	12:35 PM	12:55 PM	12:59 PM
12:30 PM	12:36 PM	12:56 PM	1:05 PM	1:25 PM	1:29 PM
1:00 PM	1:06 PM	1:26 PM	1:35 PM	1:55 PM	1:59 PM
1:30 PM	1:36 PM	1:56 PM	2:05 PM	2:25 PM	2:29 PM
2:00 PM	2:06 PM	2:26 PM	2:35 PM	2:55 PM	2:59 PM
2:30 PM	2:36 PM	2:56 PM	3:05 PM	3:25 PM	3:29 PM
3:00 PM	3:06 PM	3:26 PM	3:35 PM	3:55 PM	3:59 PM
3:30 PM	3:36 PM	3:56 PM	4:05 PM	4:25 PM	4:29 PM
4:00 PM	4:06 PM	4:26 PM	4:35 PM	4:55 PM	4:59 PM
4:30 PM	4:36 PM	4:56 PM	5:05 PM	5:25 PM	5:29 PM
5:00 PM	5:06 PM	5:26 PM	5:35 PM	5:55 PM	5:59 PM
5:30 PM	5:36 PM	5:56 PM	6:05 PM	6:25 PM	6:29 PM
6:00 PM	6:06 PM	6:26 PM	6:35 PM	6:55 PM	6:59 PM
6:30 PM	6:36 PM	6:56 PM	7:05 PM	7:25 PM	7:29 PM



In addition to on-board surveys, members of the evaluation team rode each scheduled trip during the four survey weekends to provide additional information about shuttle performance. Data from the surveys and on-board observations can be used to evaluate the shuttle in the following areas:

- Reliability and on-time performance
- Route productivity and ridership counts
- Stop-by-stop boardings and alightings by trip
- Passenger and non-passenger demographics and perceptions
- Passenger and non-passenger origins and destinations, and trip-making, and mode choice

In addition to survey data collected periodically during the shuttle season, Golden Gate Transit maintained information about ridership throughout the summer season. Where relevant, data covering the entire season is included in this report.

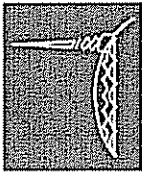
OPERATIONAL CHARACTERISTICS

Productivity and Ridership

In its second year of service, the shuttle carried about 14,570 passenger trips, compared to the 2005 total of 10,219 passenger trips, an increase of 40%. Ridership began the season at far higher levels than 2005, suggesting that there was more awareness of the service at the beginning of the season. Memorial Day weekend, the first weekend of service, in 2006 served almost three times the number of riders than the same weekend in 2005. Ridership continued to build slowly through the month of June to a high of over 1800 passengers on the July 4th weekend (July 1-4 in 2006). Following the July 4th weekend, ridership remained high through the first weekend of August. Ridership dropped in mid-August to levels comparable to those weekends in 2005. The single highest daily ridership for the shuttle occurred on July 2nd when 614 passengers were carried. Figure 3 shows ridership for each service day over the course of the summer compared to the corresponding day in 2005.

One important indicator is the number of people who use the shuttle compared to the total number of visitors to Muir Woods. In 2005, an average of 4.03% of visitors used the shuttle throughout the summer weekends, with a peak of 7.46% on July 23rd. In 2006, this number rose to 5.80% of visitors using the shuttle, an increase of 1.77 percentage points or 44% in one year. Figure 4 shows the % of Muir Woods visitors that used the shuttle each service day, in 2005 and 2006.

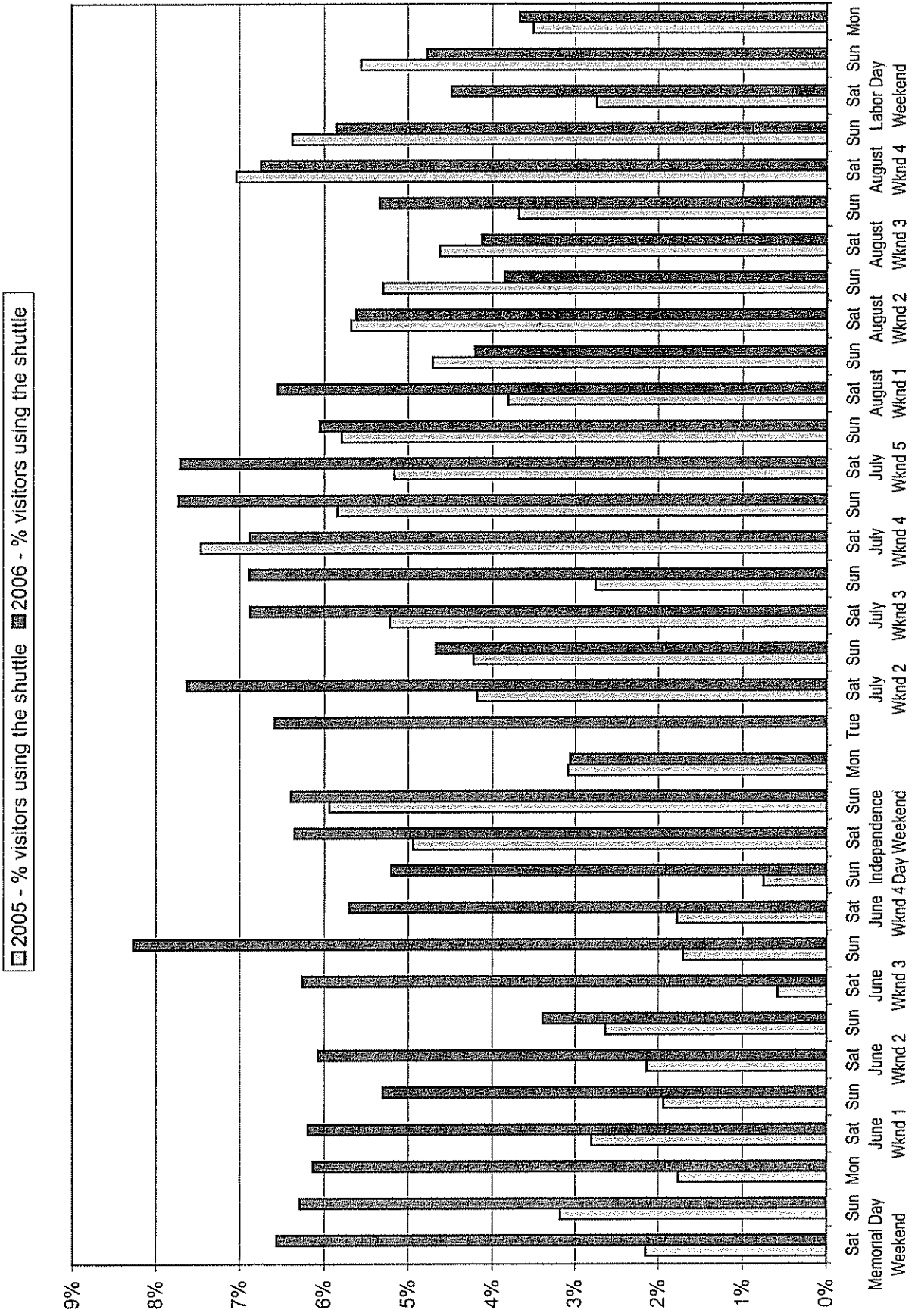
Despite minor increases in service, ridership on the shuttle during the 2006 season regularly ex-



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Figure 4 Percent of Muir Woods Visitors Using the Shuttle Each Service Day, 2005 and 2006



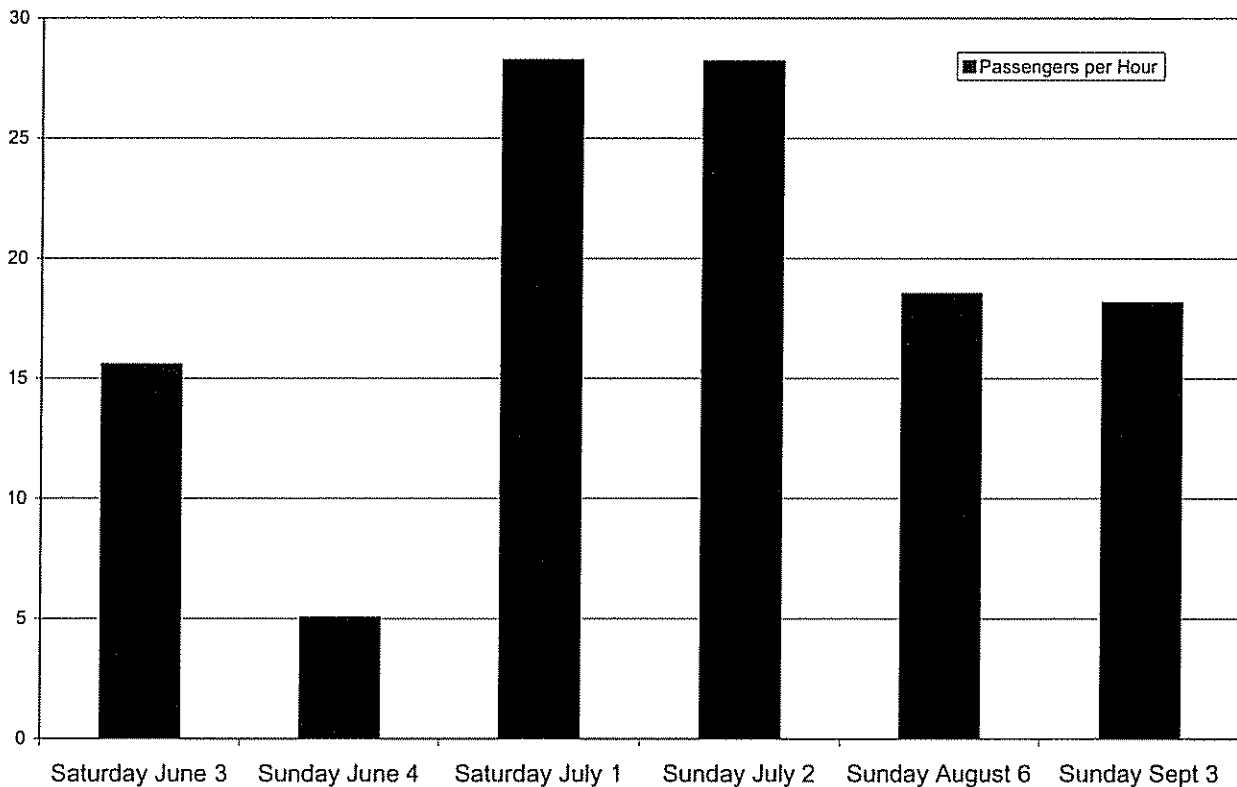
ceeded capacity during peak periods; passengers were often “passed up” and required to wait for the next bus. This was a particular problem when buses filled at Marin City and were not able to stop to add passengers at the Pohono St. and Manzanita stops. Extra buses were regularly put into service to meet this demand, but passengers still saw increased wait times.

Productivity

Productivity of transit services is generally measured by the number of passengers carried per revenue hour of service. Over the four weekends evaluated, productivity of the shuttle ranged from a low of 5 passengers per hour on Sunday

June 4th to a high of 28 passengers per hour on the Sunday of Independence Day Weekend (July 2nd). The overall productivity for the weekends evaluated was 19 passengers per hour. This is highly productive for a relatively long route with few intermediate stops. Fluctuations can be attributed to the range of ridership over the summer. Figure 5 shows productivity calculated for each of the four survey weekends. Productivity in the 2006 season was similar to productivity calculated in a four weekend sample in 2005 with average productivity over the four survey weekends was 22.5 passengers per hour, compared with 23.5 in 2005.

Figure 5 Productivity





Stop Activity Time of Day and Direction

Peak ridership times varied throughout the season, partly due to the number of large groups and changes in weather conditions at the Woods. Peak ridership times to Muir Woods tended to occur between 11:00 AM and 3:30 PM and peak ridership returning from Muir Woods occurred between 1:00 PM and 6:30 PM. As might be expected, loading is very directional, with heavy westbound traffic earlier in the day, and eastbound traffic later in the day. During peak times, one direction of the roundtrip is essentially deadheading (or not carrying passengers) while the other direction is over capacity. Extra trips were added when needed to alleviate crowding. Figures 7 and 8, show the average ridership by trip over the weekends surveyed.

Boardings by Stop

The shuttle made three stops en route to Muir Woods: Marin City, Highway 101 off-ramp (Shoreline Highway) at Pohono Street, and the Manzanita Park and Ride Lot on Shoreline Highway just west of Highway 101. As the most visible and easiest stop to access for those traveling northbound on Highway 101 from San Francisco, about 60% of passengers boarded at Pohono Street. About 12% of passengers boarded at Manzanita, and just under 30% boarded in Marin City.

Like in 2005, eastbound buses did not stop at Pohono Street because there is no adequate turn-around for buses, and high volumes of opposing traffic make left turns onto Pohono Street difficult. Pohono passengers alighted at Manzanita and walked under the highway to their vehicles.

On-Time Performance

On-time performance data was collected during ride checks. Buses are considered to be on-time if they are at the time point between one minute before and 4 minutes after the scheduled time. The following table shows the on-time performance of shuttle service over the course of service. On time performance during 2006 was significantly worse than the 2005 season, with just under 40% of time points within the on-time standard. Most time points that were not within the standard were between five and ten minutes late. However, observations that were more than ten minutes late rose to approximately 20%. This could be due to increased ridership from last year as well as congestion. Fewer observations were recorded as more than one minute early, making up only about 2% of time points.

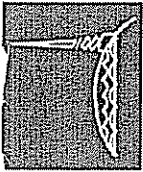
Figure 6 On-Time Performance Summary

	2005	2006
Time Points within Standard	61.4%	38.8%
"Very Late (More than 10 minutes)"	14.3%	19.4%
"Very Early (More than 5 minutes)"	0.5%	0.7%

Although the on-time performance patterns were fairly consistent over the four weekends of data collection, eastbound trips had consistently worse on-time performance.

Service Costs and Farebox Recovery

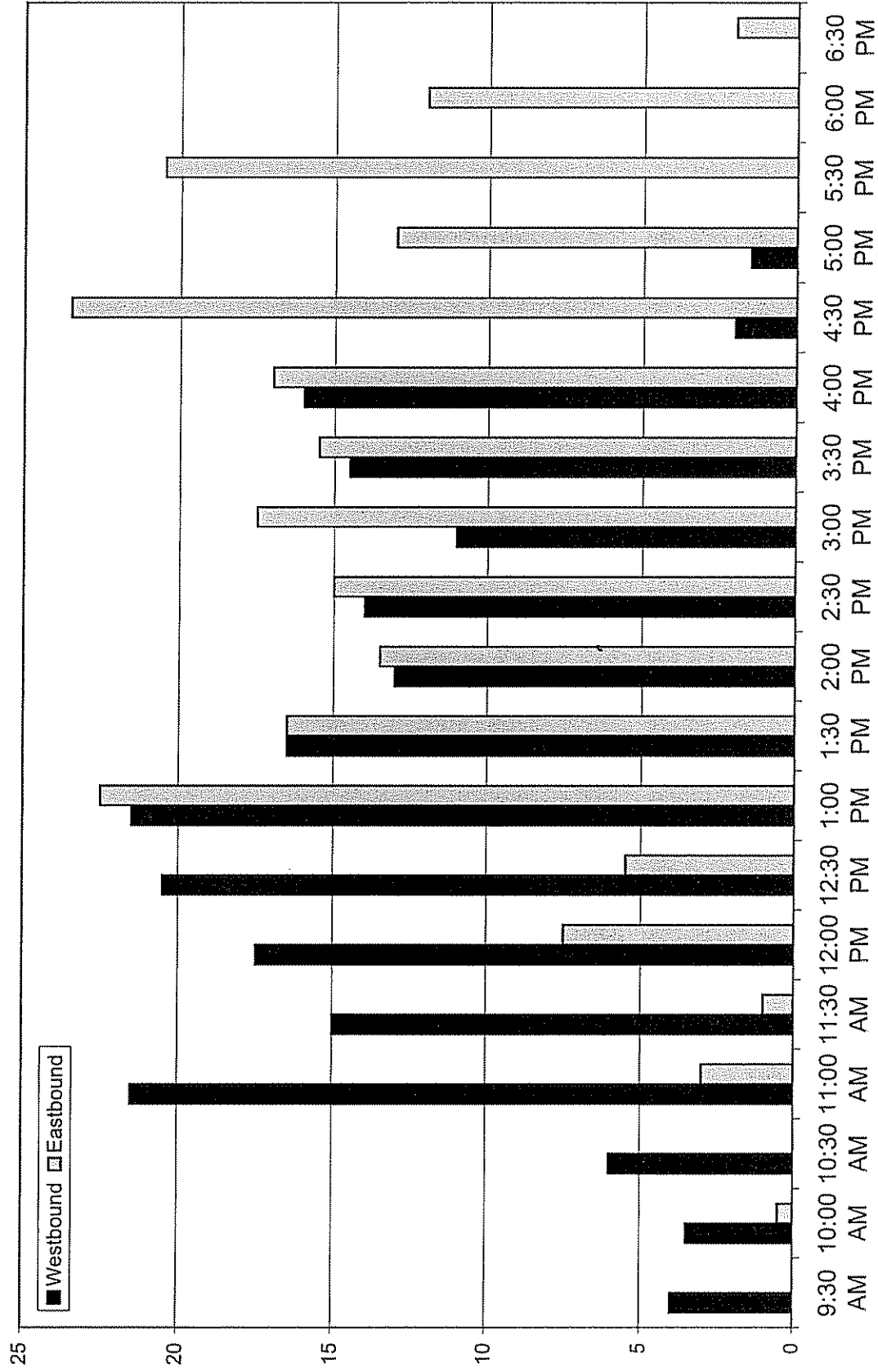
A \$2.00 round trip cash fare was inaugurated with the 2006 shuttle season. Seniors, youth, and disabled riders were charged a \$1.00 discount fare. This fare was designed to be consistent with

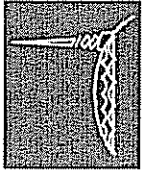


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Figure 7 Average Boardings by Time - Saturday

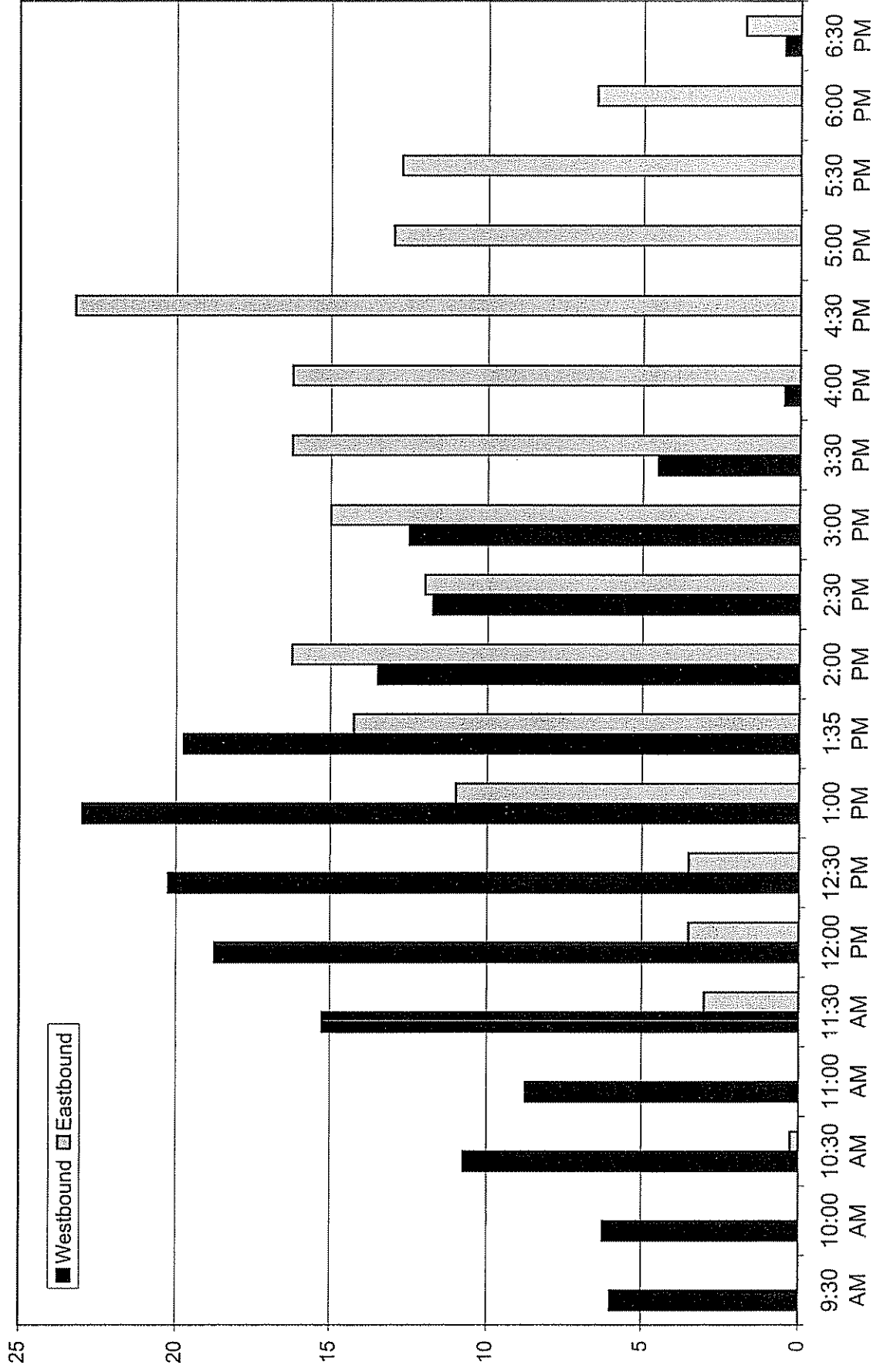




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Figure 8 Average Boardings by Time - Sunday

Muir Woods Shuttle Evaluation



Marin County Transit District (MCTD) fares, though because they are roundtrip, the shuttle fares are essentially half-price. The fare did not appear to have any significant dampening effect on ridership.

As shown in Figure 9, a total of \$12,500 was collected in fares over the course of the season. This amounts to a net total cost for service of \$179,000 and a farebox recovery rate of 6.56% based on the \$191,500 total cost of providing and evaluating the service. This figure rises to a recovery rate of 9.73% when only considering the \$129,000 operating contract with Golden Gate Transit, which does not include marketing, passenger assistance, or evaluation of the service. And a fare recovery rate of 12.84% when only considering the operation costs involved in providing the service. While this is considerably below the fare recovery rate of Marin County Transit District routes operated by Golden Gate Transit, which have an average fare recovery of 26.9%, for this type of service, with long trip lengths and no intermediate passenger ons and offs, a fare recovery rate of 10% is a reasonable goal. The fare revenue collected translates to about 115 service hours at Golden Gate Transit's contract rate of \$110 per hour.

Figure 9 Muir Woods Service Costs - 2006

Golden Gate Transit Contract	
Total operating cost	\$97,925
Lease and preparation cost	\$15,774
Marketing and information	\$15,470
Total	\$129,169

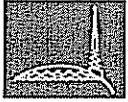
Revenue	\$12,573
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Other Costs	
Nelson\Nygaard contract	\$24,865
Marketing	\$5,000
Passenger assistance	\$2,500
Renting changeable message sign and operating staff cost	\$20,000
Administration cost	\$10,000

Total cost	\$191,534
Total revenue	\$12,573
Net total cost	\$178,961

Farebox Recovery	
Farebox recovery - Net total cost	6.56%
Farebox recovery - Golden Gate Transit contract	9.73%
Farebox recovery - Golden Gate Transit - total operating cost	12.84%

Muir Woods Shuttle Evaluation



DEMOGRAPHICS AND TRAVEL BEHAVIOR

Rider demographics were determined via on-board passenger surveys. A total of 386 surveys were collected from shuttle riders over the four survey weekends. Non-rider information was gathered from groups entering Muir Woods from parking areas. Surveyors randomly approached parties and requested that they fill out a survey. A total of 1434 non-rider visitor surveys were completed over the four weekends.

Visitors to the Area

Muir Woods attracts visitors from all over California, the US, and the world. In 2006, survey respondents came from 23 countries. 57% of shuttle passengers and 53% of non-passengers were visiting Muir Woods for the first time. With a high ratio of first-time visitors and people unfamiliar with the transportation options in the area, shuttle information, schedules and bus stops need to be easy to find and understand.

Groups

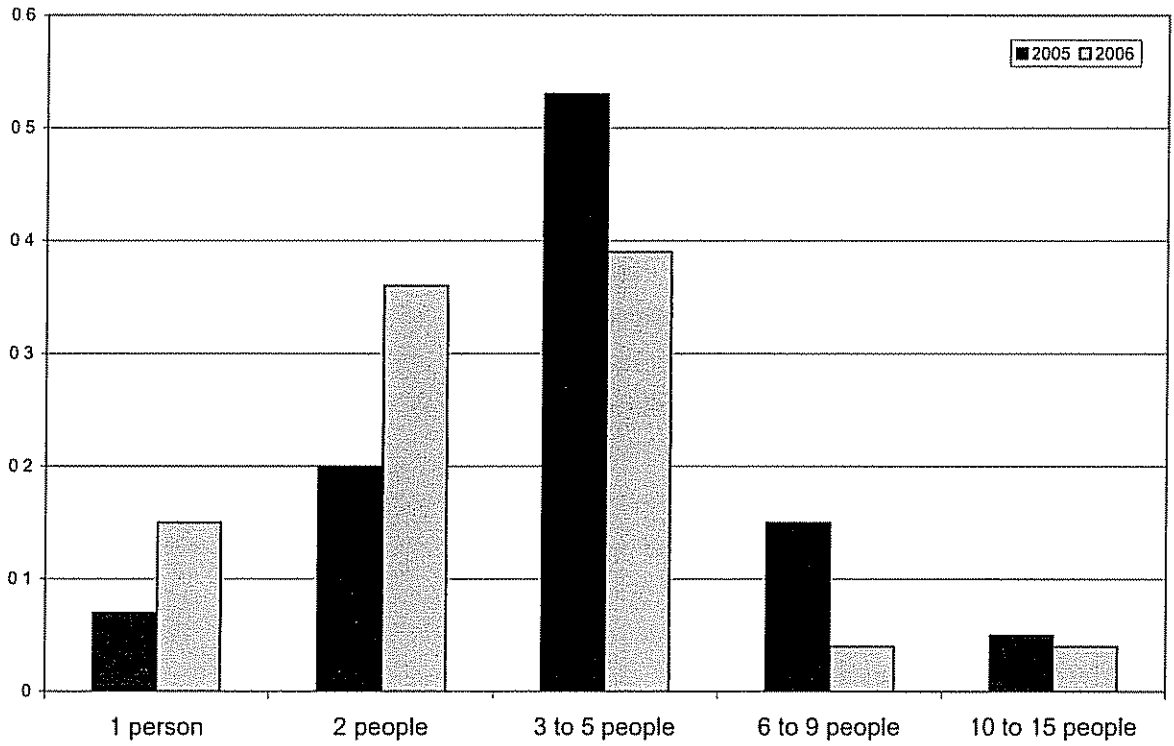
The size of groups traveling on the shuttle was heavily weighted toward groups of 1-5, with an average group size of 3.1 people. However party size ranged from 1 to a high of 40 in one case. While larger parties are rare, these groups can take up most or all of the capacity of a single bus. There were problems at times with groups being split up and other passengers not getting seats on the bus as a result. Large groups should be encouraged to make advance arrangements to use the shuttle by contacting the Muir Woods Visitor Center, or to use the shuttle during non-peak times, typically the first few westbound trips in the morning and

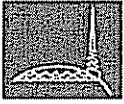
the mid-afternoon eastbound trips. Shuttle riders were less likely to be traveling with children than non-riding visitors to Muir Woods. Seventy-five percent (75%) of shuttle riders responding to the survey had no children under 18 in their group, and 93% had no children under 6 with them. Of those with children, over half were traveling with only one child and just over a quarter were traveling with two children. Only a handful of respondents over the four survey weekends were traveling with three or more children under 18 years old.

During the survey weekends, surveyors observed a number of "special occasion" parties that had included the Muir Woods shuttle as part of their celebration. These included at least one large family reunion which consisted entirely of people who had never been to a national park, despite being "headquartered" in Marin City, and at least two wedding parties. Large groups especially appreciated the shuttle because they were able to travel together rather than organizing multiple car trips.

Average group size for non-shuttle riders was slightly larger than for visitors who rode the shuttle, with an average group size of about 4 people. Almost 30% of respondents had only 2 people in their party, while another 40% had 3 or 4 people. Non-riders were slightly more likely to have children in their group than shuttle riders. About 35% of non-riders had children in their party, compared with 32% of shuttle riders.

Figure 10 Rider Group Size

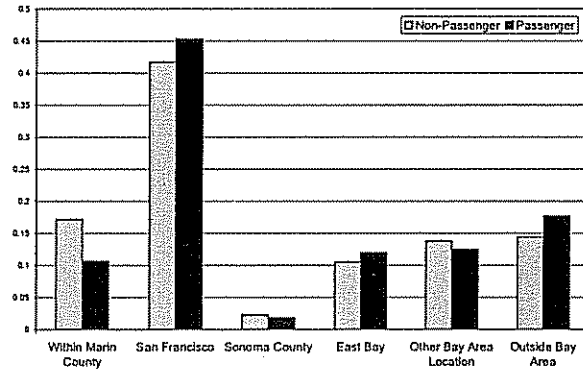




Trip Origins

Over 45% of shuttle riders and 42% of non-riders began their trip in San Francisco, reflecting the extensive marketing done in San Francisco hotels and the strong connection between the San Francisco tourist market and travel to Muir Woods. The remaining shuttle riders were roughly evenly distributed with trip origins in Marin County (11%), the East Bay (12%), and other Bay Area locations (13%). Only 2% of respondents indicated that they were coming from Sonoma County. A total of 18% of shuttle riders began their trip outside of the Bay Area.

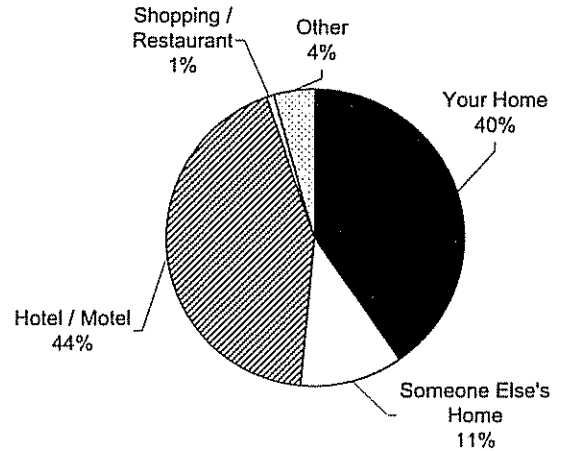
Figure 11 Trip Origin Locations



Most shuttle riders (95%) began their trip from their home (40%), their hotel (43%), or someone else's home (11%). The percent of respondents starting from these locations in 2006 is slightly higher than from the previous year's survey (about 88%); the other 12% came from shopping and restaurants (6%) and other locations (6%). During 2006, shopping and restaurants accounted for less than 1% of trip origins and "other" for 4% of trip origins. These responses are similar to non-rider responses, who began their trip from

their home (48%), their hotel (36%), or someone else's home (9%).

Figure 12 Rider Origin Place



Trip Destinations

About 50% of respondents to the on-board survey said they were going somewhere else after their visit to Muir Woods, other than returning to their home or hotel. This suggests that for many, Muir Woods is a primary destination, but not the only destination for the day. Figure 13 shows places that passengers said they planned to go to after their trip to Muir Woods. This does not include trips back to home or hotel. As shown in Figure 13, San Francisco and Sausalito are major destinations for visitors; making these trips as simple as possible would improve the market for shuttle users and would include the quality of experience for those attempting a complex trip.

Compared with the passenger survey, slightly more non-shuttle users (almost 57%) said they were going somewhere other than returning to their home or hotel after their visit to Muir Woods. Only 20% indicated this as a reason that they did not use the shuttle but it is a clear barrier to shuttle use. Figure 13 shows places that non-passengers said they planned to go to after their trip to Muir Woods. Destinations in West Marin and Napa Valley are more common for non-riders, while travel to Sausalito remains fairly constant as a second destination.

Figure 13 Other Destinations in Connection Muir Woods Trips

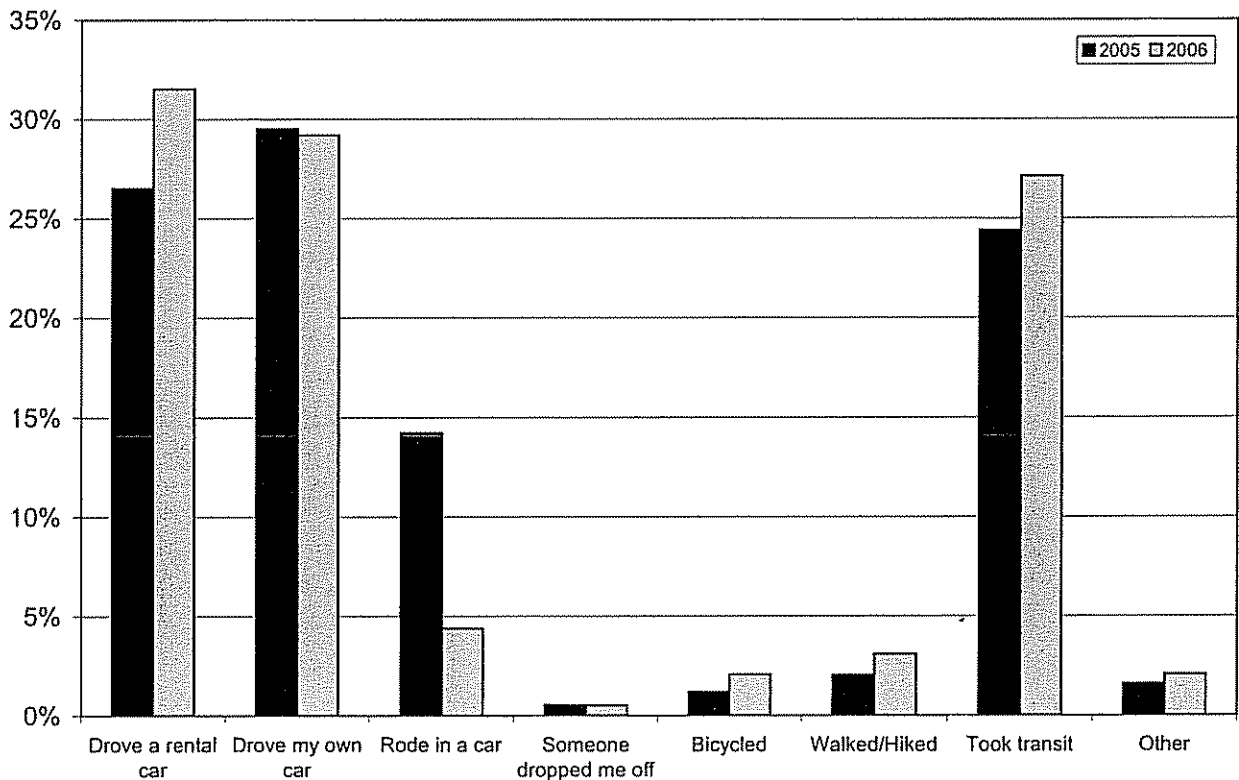
Trip Destination	2005 Passengers	2006 Passengers	2005 Non-Passengers	2006 Non-Passengers
San Francisco	40%	26%	16%	17%
Sausalito	16%	20%	17%	17%
West Marin (Muir and Stinson beaches, Mt. Tam, etc.)	3%	12%	20%	31%
Other East Marin (San Rafael, Marin City, Novato, etc.)	5%	6%	3%	1%
North Coast (Medocino, Pt. Reyes, etc.)	5%	4%	6%	6%
Napa/Wine Country	3%	4%	12%	9%
Golden Gate Bridge	2%	4%	3%	2%
Other Bay Area	8%	6%	3%	3%
Out of Area	8%	4%	5%	4%
Other	7%	11%	9%	8%
Don't Know	3%	3%	5%	3%



How Do Riders Access the Shuttle?

Almost 65% of respondents accessed the shuttle stop by car, whether by driving their own car (29%), driving a rental car (32%), or riding as a passenger in a car (4%), while approximately 27% of respondents took transit. Last year 70% of respondents came by car and 25% came by transit. Like last year most of those taking transit said they took Golden Gate's Route 10, 70 and 80 from San Francisco or Sausalito. A few also mentioned taking bus route 22 from Sausalito. Several respondents mentioned taking the ferry even though that was not a choice provided on the survey since there is no direct connection.

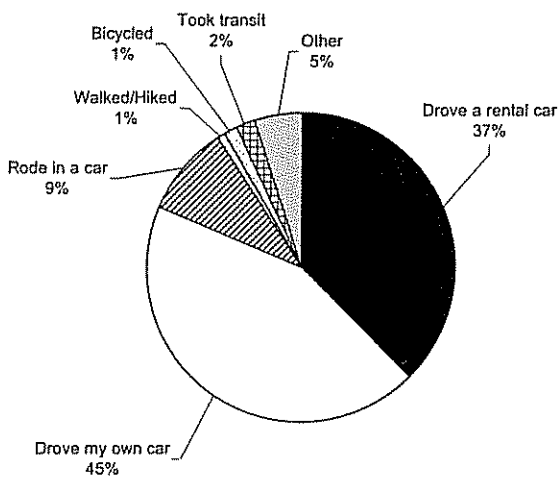
Figure 14 How Riders Access the Shuttle



How Did Non-Shuttle Users Get to the Park?

Nearly 90% of non-shuttle riders traveled to Muir Woods by car, including 44% who drove their own car, 37% who drove a rental car, and 9% who rode in someone else's car to the park. 10% of non-shuttle riders used alternative modes of transit to reach the park such as tour buses. These results are similar to last year's findings.

Figure 15 How Non-Riders Access the Park



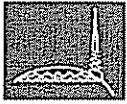
Equipment/Carrying Items

Luggage space did not seem to be a problem for shuttle riders; 65% of the respondents said they were not carrying anything with them, while 24% said they had backpacks. A few mentioned larger items such as coolers and bicycles, which all buses were equipped to carry on external racks. Only two people had wheelchairs.

Over 72% of non-passengers surveyed had no items that might affect their use of the shuttle. Few had backpacks with them, possibly due to having storage space in their cars for personal items.

People with Disabilities & Special Traveling Needs

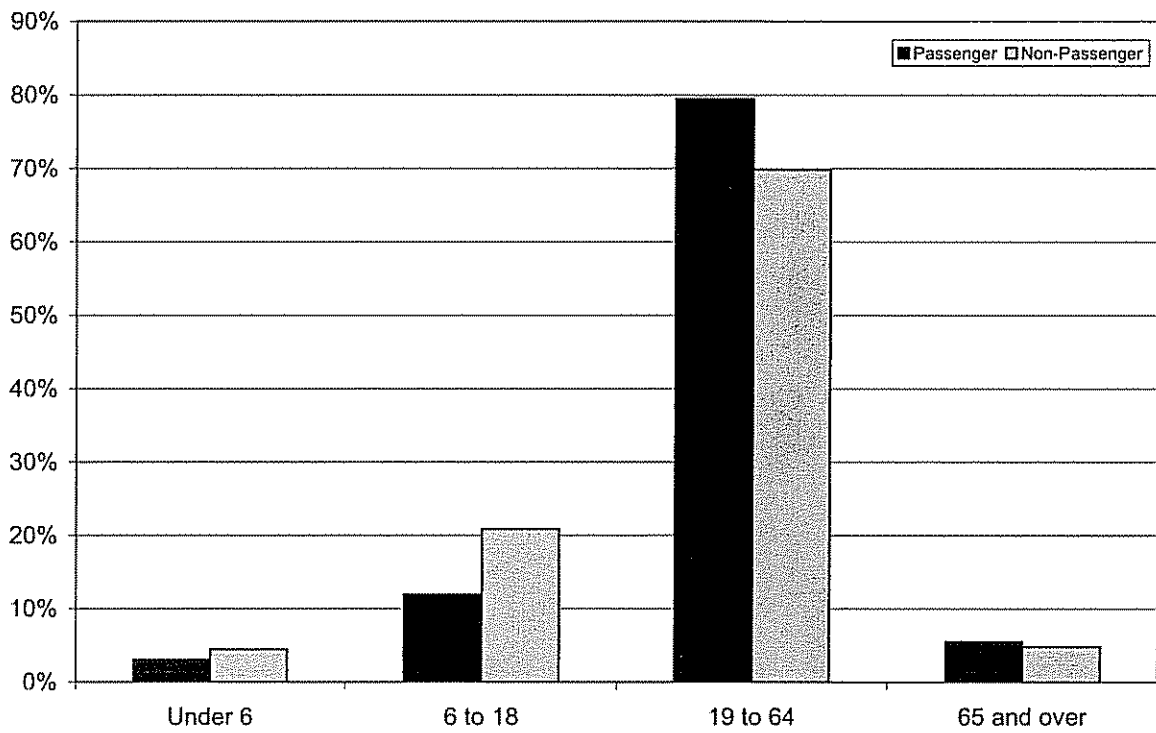
Only 1.5% of shuttle rider respondents were traveling with someone with a disability or special traveling need, including two people over the four weekends who said they were traveling with a wheelchair. The percent of non-shuttle riders was similar, with only 1.3% traveling with people with disabilities or special traveling needs.



Age

Around 79% of shuttle rider respondents were between 19 and 64, compared with about 70% of all park visitor respondents. Slightly more adults over 65 (about 6%) chose the shuttle over other means of transportation (5%). Significantly more children under 18 (25%) used other means of transportation than the shuttle (15%).

Figure 16 Age Distribution of Park Visitors



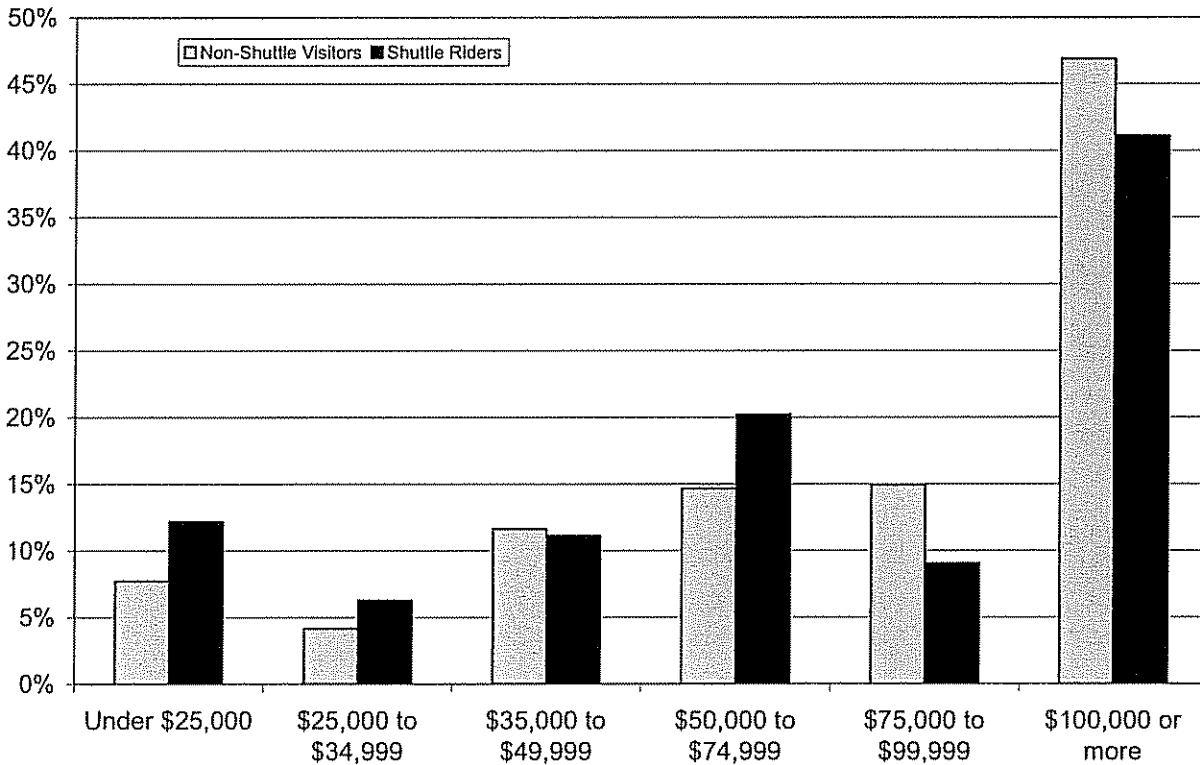
Income

Unlike other Marin County Transit riders, Muir Woods Shuttle users tended to have higher than average incomes, with about 41% of respondents living in households earning \$100,000 or more. Middle income categories were also well represented with 29% having incomes between \$50,000 and \$100,000. Twelve percent (12%) of respondents to this question said they had household incomes of under \$25,000 and about 30% below \$50,000.

Non-riders tended to have slightly higher incomes than shuttle riders with about 47% of those surveyed in households earning \$100,000 or more, compared to 40% of shuttle passengers. Middle income categories were also slightly more

represented in the non-rider group with 30% having incomes between \$50,000 and \$100,000. There were fewer non-rider respondents with low household incomes, around 16% had incomes of \$25,000 to \$49,000 and only 8% had incomes of under \$25,000.

Figure 17 Income Distribution of Muir Woods Visitors





Employment

Eighty-four (84%) of non-shuttle passengers were employed full time this year and 6% were not employed; this compares similarly to 2005 with slightly more non-shuttle visitors employed full time (87%) and slightly fewer visitors not employed (3%). In 2005, fewer shuttle riders were employed full time (77%) than non-shuttle riders, and more were employed part-time (12.5%) or not employed (10.5%). In 2006, the number of shuttle riders employed full time fell drastically to 57%. More than a third of shuttle riders were employed part-time (36%), and 7% were not employed. It is unclear why there was such a significant change from the first year of service.

RIDER ATTITUDES AND PERCEPTIONS

How Did Riders Learn About and Prefer to Get Information About the Shuttle?

A high percentage of riders learned about the shuttle by seeing the shuttle signs this year (22%). The highway signs (18%), bus stops and bus signs (7%), and websites (17%) were also important ways that people learned of the shuttle. A key change from 2005 was the decrease in importance of word of mouth for information. In 2005, information from friends and family accounted for 30% of responses, compared with only 10% in 2006. The remaining respondents learned about the shuttle in other ways including: information kiosks (11%) and hotel pamphlets (6%).

Respondents indicated the best way to receive information is through the internet (41% of respondents) or email (around 11%) and information at the bus stops (18%). About 8% also said that brochures, newspapers, or direct mail would be best, and another 7% mentioned notices on the bus.

Why Did Riders Choose to Use the Shuttle?

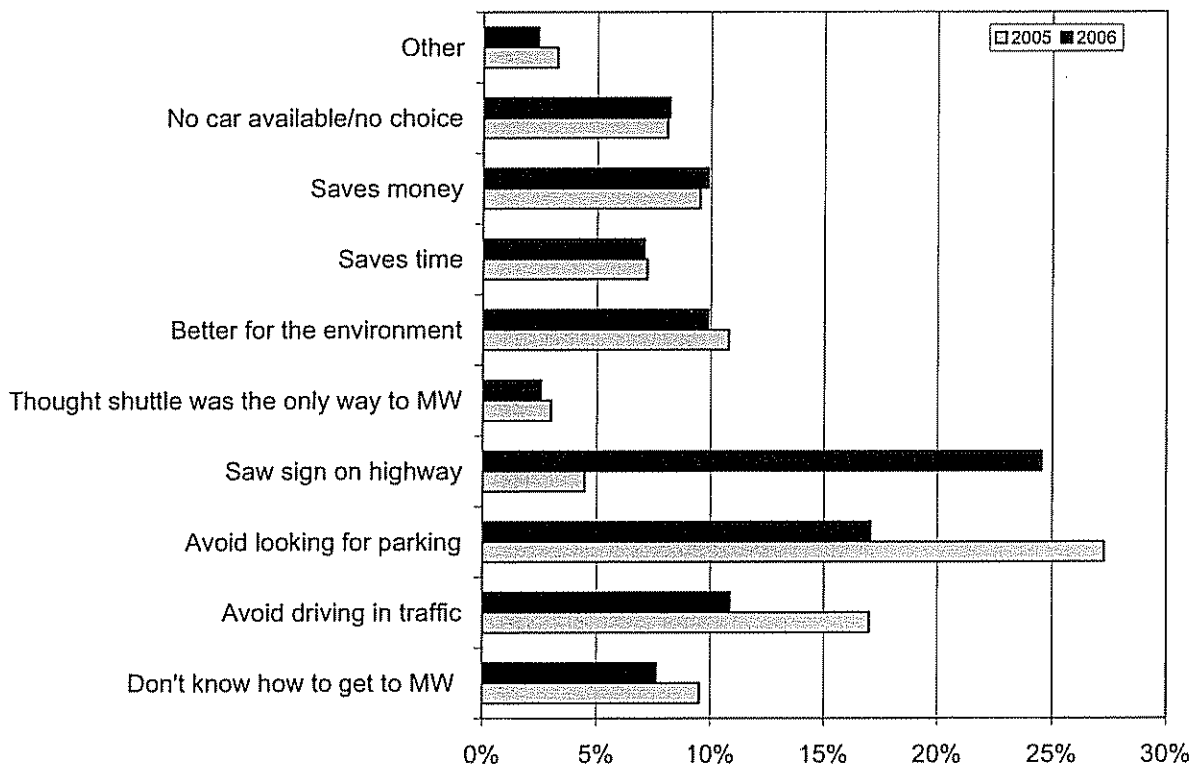
Many respondents (25%) chose to use the shuttle because they saw the highway sign say that the Muir Woods parking lot was full, many thinking there was no other way to visit the park. This number is significantly higher than the responses from 2005, when only 4% of respondents took the shuttle because of the sign's message. Another 28% said they took the shuttle because they didn't want to drive in traffic or look for a parking space at Muir Woods. Last year, 44% of respondents took the shuttle for this reason. Figure 18 shows the reasons that riders chose to use the shuttle.

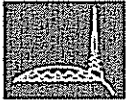
Frequency of Use

Over 73% of rider respondents said they would "definitely" or "probably" use the shuttle again, while 14% of respondents said they did not know if they would use the Shuttle again. Over 6% said they would "definitely" or "probably" not use the Shuttle again.

While this is a good gauge of whether passengers will use the shuttle for future trips, most passengers (over 56%) were first-time visitors to Muir Woods. Another 26% visit the park rarely, defined as once a year or less. Planning efforts should assume that most shuttle users (or park users in general) are infrequent visitors, and are not familiar with the shuttle, its route, or its schedule.

Figure 18 Reasons For Using the Shuttle

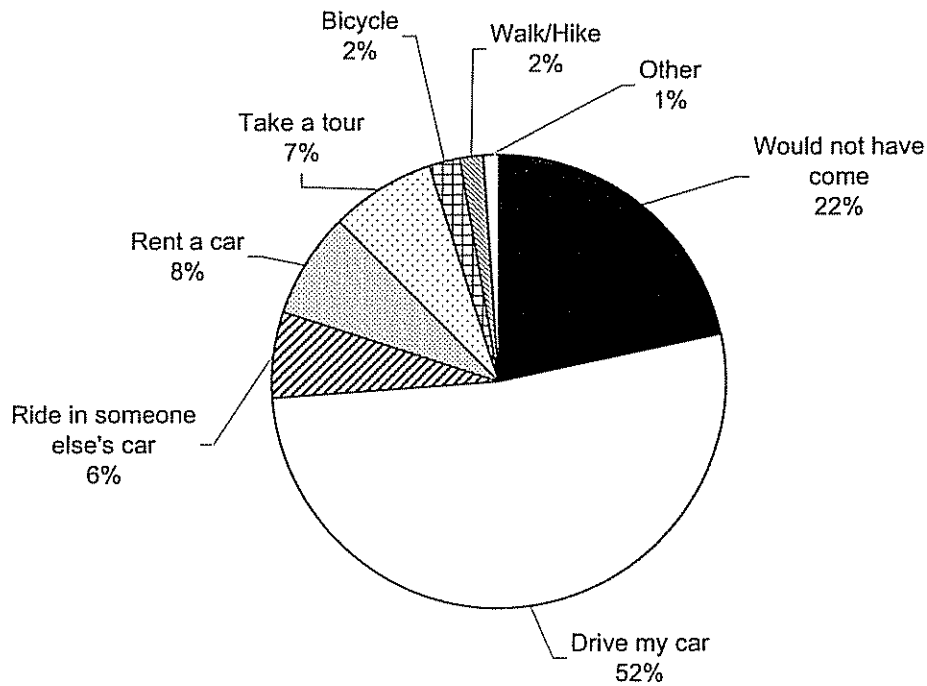




How Would They Have Made The Trip Without The Shuttle?

Most respondents said they would have driven a car (52%) or ridden in someone else's car (12%) if the shuttle did not exist. This suggests a significant decrease in vehicular traffic to Muir Woods attributable to the shuttle. An additional 16% of respondents said they would not have made the trip to Muir Woods without the shuttle, indicating an important aspect of increased accessibility to the park for those that do not have a car or choose not to drive to Muir Woods. As discussed below, the number of car trips to Muir Woods that were avoided can be estimated at 4800. Figure 18 shows the breakdown of how respondents said they would have made the trip to Muir Woods.

Figure 19 Trip Mode Without Shuttle Option



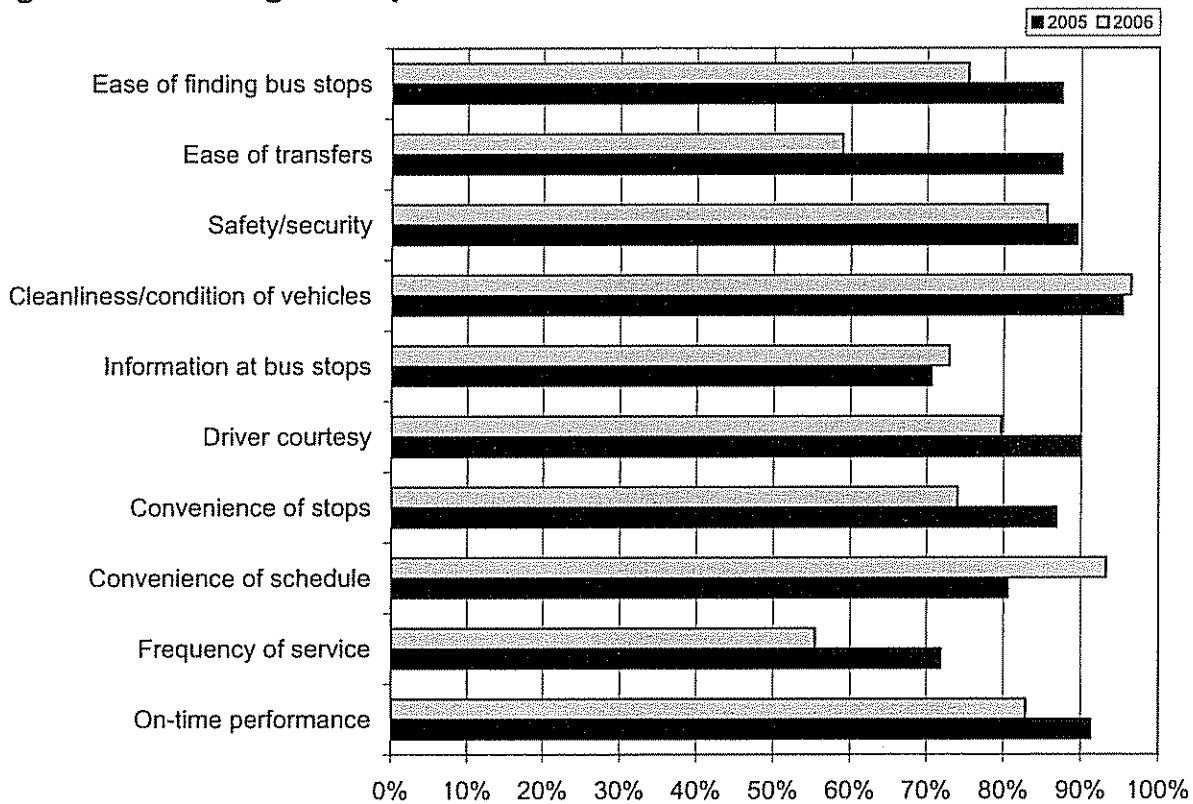
n = 2

Attitudes About Service Characteristics

User ratings on various aspects of service were generally high, with 90% or more of respondents selecting “good” or “excellent” for the following variables: convenience of schedule (93% rating) and cleanliness/condition of vehicles (96%). While last year, on-time performance, vehicle quality, driver courtesy, and vehicle cleanliness and condition had ratings above 90%, approval in these areas dropped slightly in 2006, as seen in Figure 20.

Service frequency and ease of transfers were given the worst ratings with just over 55% of respondents selecting “good” or “excellent.” This is likely due to the increase in ridership; many trips were over capacity leaving passengers to wait for the next bus a half-hour later. Last year, the lowest service ratings were just above 70% for service frequency and bus stop information. Overall, service ratings improved over the course of the summer.

Figure 20 Percentage of Respondents Who Rated Service as “Good” or “Excellent”

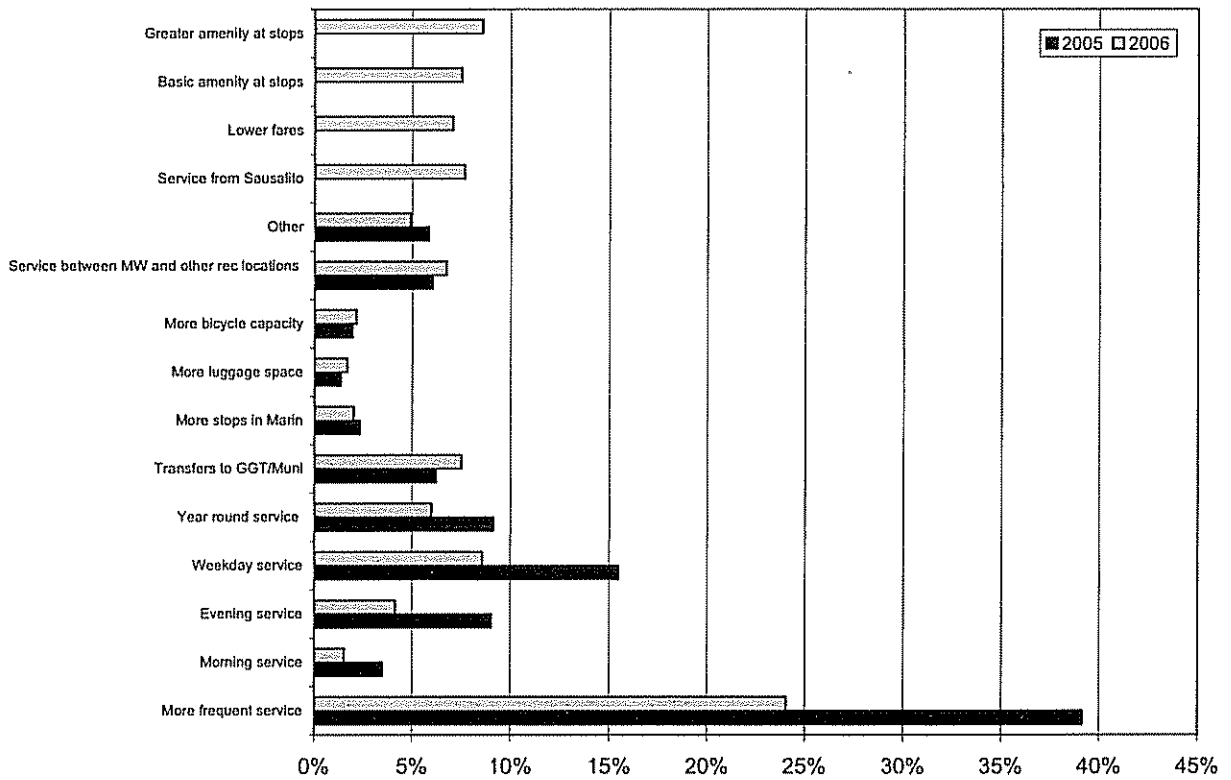




Improvements to Service

The most common improvement suggested by shuttle riders was increased frequency, with around a quarter of respondents indicating this as a need. Weekday service was also a top improvement requested, with around 9% suggesting this. Figure 21 shows passengers' suggested improvements.

Figure 21 Suggested Improvements - Passenger



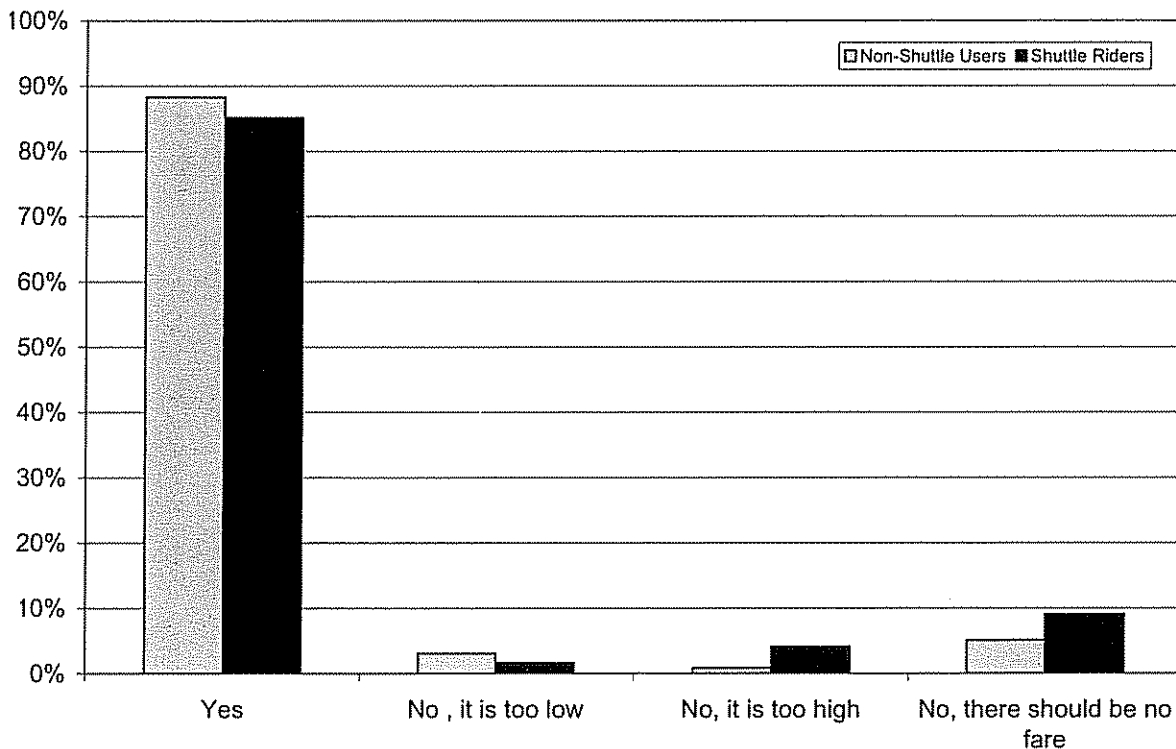
Reasonable Fare

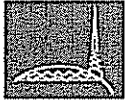
A key change in service this year was the implementation of a \$2.00 fare for each round trip. Passengers were asked if the current fare is a reasonable price to ask for the service. Almost 90% of respondents agreed that this fare is reasonable or should be higher, while 10% thought there should be no fare or that the fare should be lower. Last year, only 50% of respondents supported a fare above \$2.00. Non-shuttle users generally thought fares could be slightly higher than those who used the shuttle. Over 90% suggested a fare of \$2.00 or greater. Only 6% thought there should be no fare of that the fare should be lower.

Passenger attitudes about fares would likely be affected by changes in entry fee or parking costs for non-riders. With parking provided at no charge when available, shuttle riders have an economic disincentive to use the shuttle except during times when parking is unavailable.

Figure 22 shows the percent of respondents that would find the fare reasonable.

Figure 22 Attitudes On Whether The Fare Is Reasonable





Shuttle Awareness Among Non-Riders

Two-thirds of non-riders surveyed were not aware of the shuttle, while 18% said they knew about it but didn't have enough information about it. Around 14% said that they knew about it but found it wasn't appropriate for their travel needs. Of those that were aware of the shuttle, most saw the highway signs (24%). Lower percentages learned about the shuttle by viewing the shuttle signs (22%), or learned through a family or friend (12%).

Similar to the passenger survey, most non-riders preferred to get information on the shuttle through the internet (42%). Nineteen percent (19%) wished to receive e-mails, and 13% wished to learn about the shuttle through brochures or direct mailings. Several respondents also mentioned either hotels or concierges, and guidebooks and maps as good ways to get more information on the shuttle.

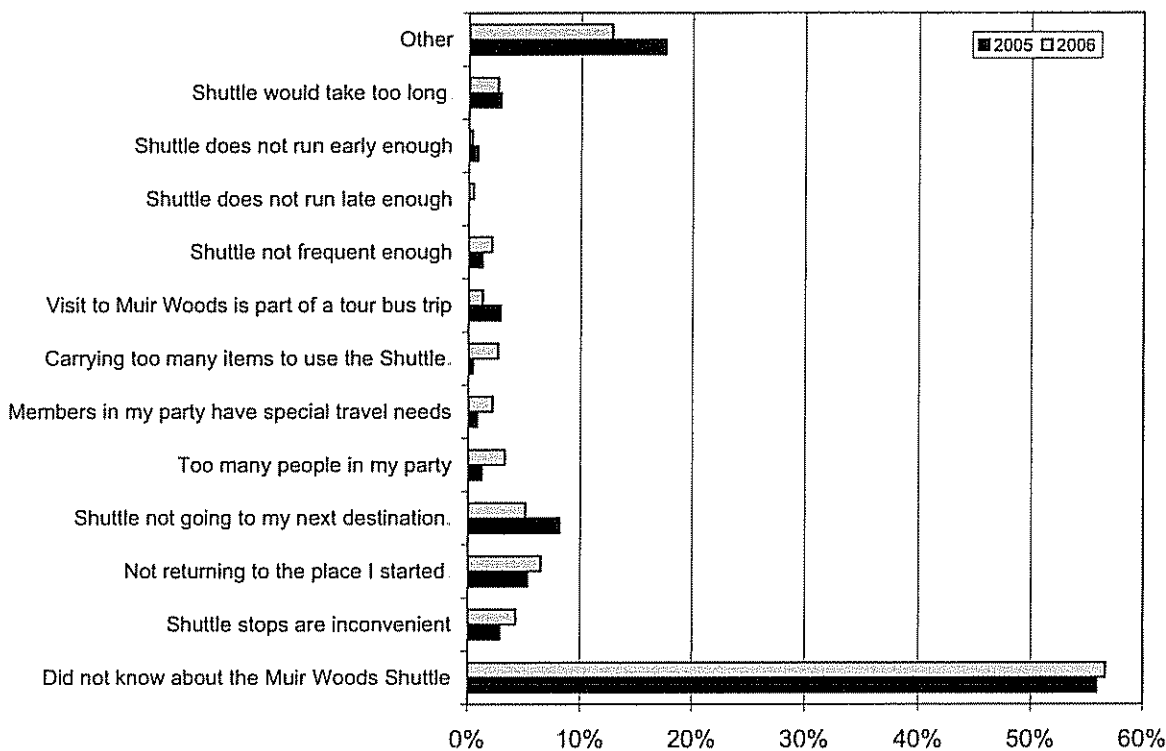
Why Did Non-Riders Choose Not To Use The Shuttle?

Over half (57%) of non-riders said they did not use the shuttle because they did not know about it. Other reasons for not using the shuttle were varied, with only 5% saying that they didn't use it because it wasn't going to their next destination. Figure 23 shows the reasons that riders chose not to use the shuttle.

Over 56% of respondents said they would "definitely" or "probably" use the shuttle for future visits to Muir Woods. A little over 14% said they would "definitely" or "probably" not use the Shuttle.

Over 20% of respondents suggested that the shuttle needs more frequent service. Many (over 15%) also suggested easier transfers to MUNI and Golden Gate Transit. Greater amenities at stops (9%) and weekday service (9%) were also suggested as improvements. Only 10% said that nothing would encourage them to use the shuttle. Figure 24 shows the suggested improvements to shuttle service. Respondents were permitted to select more than one improvement, so the total is greater than 100%.

Figure 23 Reasons For Not Using The Shuttle



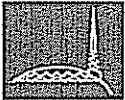
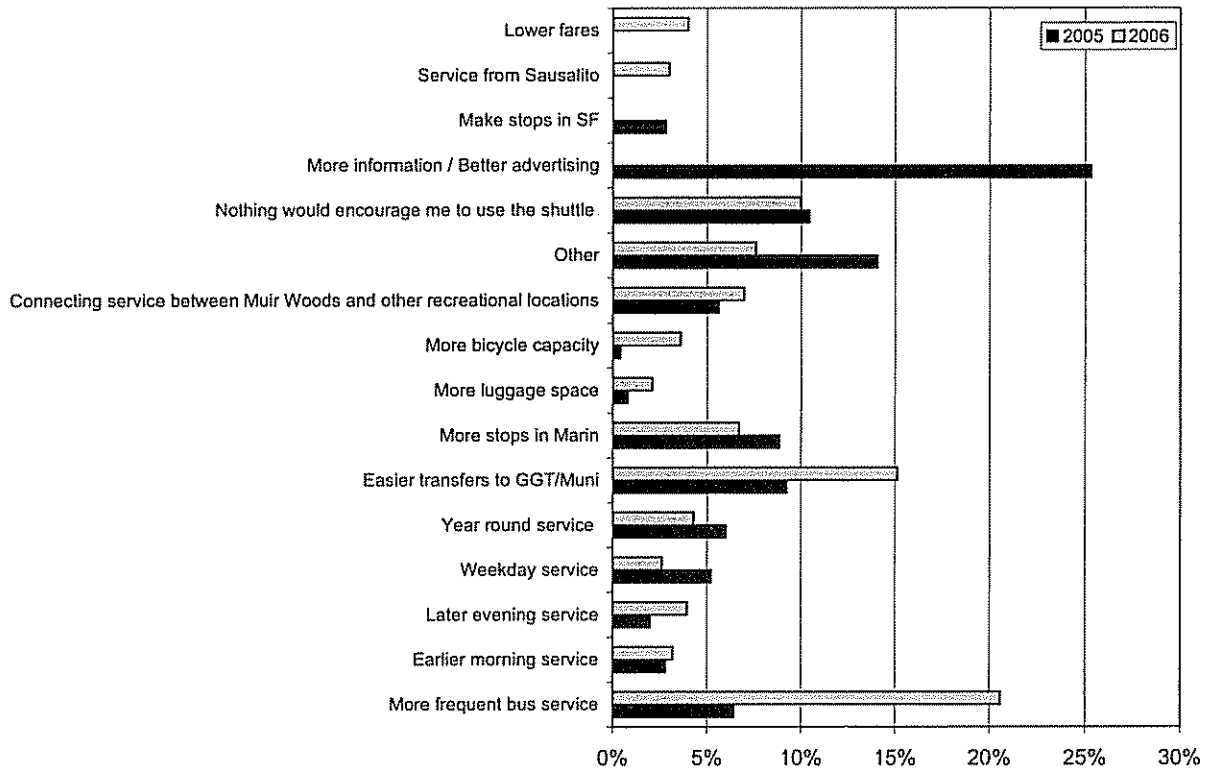


Figure 24 Suggested Improvements - Non-Passenger



Highway Message Signs

Non-shuttle users were also polled on their awareness of the highway message signs and their usefulness.

Awareness

About 31% of those surveyed saw the changeable message sign on Highway 101 for Muir Woods and other parks. This is comparable to 2005, where 35% of respondents saw the changeable message sign. Almost 21% of those who saw the sign said it had a message referring to the Muir Woods parking being full. The other respondents said the message referred to road closures, park directions, the Muir Woods shuttle, or they did not see what the sign said.

Impact/Usefulness

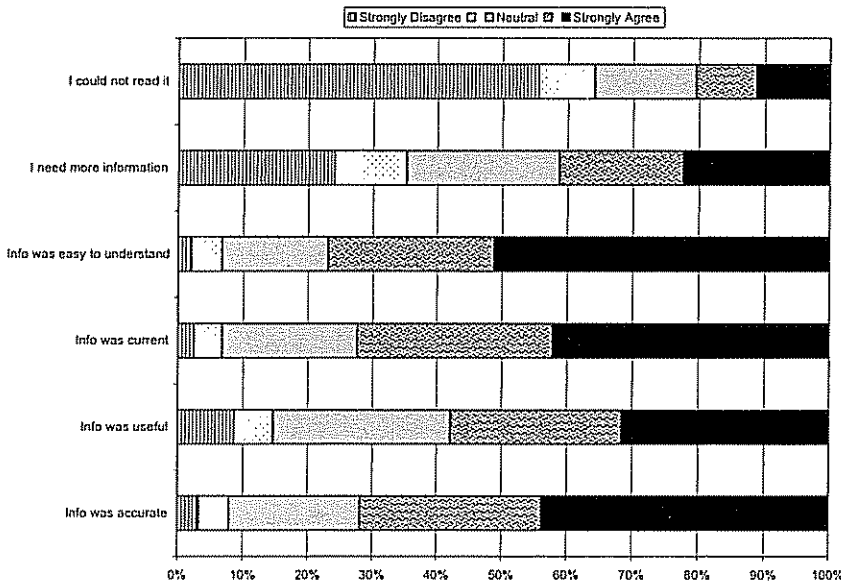
Of those respondents who saw the sign, 57% said it had no impact on their trip, while another 16% said it made their visit to Muir Woods more enjoyable. Several respondents mentioned that this was because they knew what to expect. Al-

most 58% of the respondents indicated that they agreed or strongly agreed that the information on the sign was useful, compared with about 15% who disagreed or strongly disagreed that the sign was useful.

Sign Information

Respondents rated the sign information along several variables. For most of the variables, most of those surveyed responded positively about the message sign: 72% agreed or strongly agreed that the information was accurate, 72% that the information seemed current, and 77% that the information was easy to understand. And 64% indicated that they could read the sign. However, only 58% of respondents found the information useful for their trip. Respondents were split on whether the sign provided enough information; with slightly more (51%) indicating it was enough compared with (41%) indicating that they could have used more information. Figure 25 shows how respondents rated the information on the changeable message sign.

Figure 25 Highway Message Sign Ratings





Traffic Reduction

While the data collection effort did not directly count the reduction in vehicles to Muir Woods attributable to the shuttle, this number can be estimated based on passenger counts and responses to how passengers arrived at the shuttle stop. An estimated 2400 vehicles or 4800 vehicle trips were eliminated by the shuttle over the course of the summer.

CONCLUSIONS AND RECOMMENDATIONS

During its second season, the shuttle exceeded expectations in ridership and productivity. While this became a problem early on, Golden Gate Transit demonstrated its flexibility by adding extra trips to the schedule at peak times. Service recommendations include ways to further increase ridership on this already-successful service, and further achieve the original goals of the shuttle.

Service Impact on Visitor Experience

To expand on the success of this second year of the demonstration, the shuttle will need to enhance visitor experience and increase service levels. Bus stops should be easy to get to, whether by transit, car, biking, or walking. Stops should have enough information and amenities that passengers can be comfortable and relaxed while waiting. The shuttle should also connect easily to other destinations where possible, such as the beach, Sausalito, and San Francisco by a simple transfer via bus and/or ferry.

It is important to remember that the clientele for this service is different from that other Golden Gate Transit or MCTD routes and they have different needs. As recreational riders, they are more likely willing to wait for a bus if the waiting area is pleasant or there are other things to do there. They are often making a day out of their visit to Muir Woods by making additional stops in Marin and other North Coast destinations. And they are often not familiar with the geography of Marin or the local transportation alternatives.

Future Service Plan for Muir Woods

The following improvements are recommended for the summer of 2007:

Adjust Schedule

Based on the 2005 service evaluation, service frequencies were improved during peak times, providing a consistent 30-minute headway throughout the day. Even this increase in service does not appear to be adequate to meet demand. This is a particular problem for buses filling up in Marin City, providing inadequate capacity for the two intermediate stops and creating especially long waits at those stops. The customer service representative stationed at Pohono and Manzanita helped passengers navigate to the best location to get a ride, but on the busiest days and times, capacity at those stops was not adequate.

To meet the demand, schedules should be adjusted to provide consistent 20 minute frequencies. While added frequency will disrupt timed transfers at Marin City, it will provide needed capacity for the service. Additional measures to improve service at the Pohono and Manzanita Park and Ride stops, where over 73% of passengers board the shuttle, could include some trips that skip the Marin City stop. These could be combined with trips originating in Sausalito, as described in the next recommendation.

Evaluate Extending Route To Sausalito

Nearly 20% of both riders and non-riders indicated that they plan to combine their trips to Muir Woods with a trip to Sausalito. Extending service to Sausalito would offer an opportunity to do multiple activities in one day on transit, including the ferry trip from San Francisco, for visitors originating there, and the shuttle to Muir Woods. This expansion was recommended in 2005, but was not implemented due to cost. Instead, marketing materials included information about taking a Golden Gate bus and connecting to the shuttle.

Transit connections to the shuttle did increase in 2006, but not as significantly as might be hoped, given the strong connection between Sausalito and Muir Woods. Combined with the previous recommendation, it may be possible to add an overlay service to Sausalito, traveling to Pohono, Manzanita and the park, without stopping in Marin City. This would increase the connectivity of the shuttle significantly, providing a direct trip for those staying in hotels in Sausalito, and to those visiting Sausalito on their way to or from Muir Woods. Trips from San Francisco by ferry would also be facilitated, improving access to that potentially large market without increasing bridge trips.

Service to Sausalito could initially be provided to meet the ferry trips arriving and departing from Sausalito. Because Sausalito is an intermediate destination for many, shuttle service could also be provided at regular frequencies, not coordinated with ferry schedules, from the start.

Service should not be extended to Sausalito unless it is accompanied by an increase in service



frequency, because this extension is expected to generate additional demand. With 30-minute headways from Marin City, service already ran above capacity at peak times during its inaugural season, and grew significantly during the 2006 season. Ridership is expected to continue to grow as more people learn about this service and as additional connection options are provided.

Develop a Sustainability Plan and Consider Weekday and Shoulder Season Service

With two successful seasons behind it, it is clear that the Muir Woods Shuttle service is an important and desirable link for Marin County and GGNRA. With renewed national emphasis on transit service to national parks, it is now time to develop a sustainability plan that will take the shuttle beyond the three year demonstration program.

Long term considerations include sustaining the existing service with the recommendations included in this report, and also expanding the service beyond peak weekends to include weekday summer service, and ideally an expanded service period that would include the months of May and September.

While summer weekend visitation is the highest visitation period at the park, summer weekday visitation is also very high, especially on Mondays and Fridays as shown in Figure 26. An average of 2376 visitors per weekday, and 2892 on Mondays and Fridays visited Muir Woods throughout the summer, compared with 3481 on an average weekend day. Parking conditions at the park are nearly as severe on summer weekdays as they are on weekends, requiring that the

changeable message signs indicate that the lots are full. Unfortunately, without an alternative to offer, some visitors may never arrive at the park on the weekdays, and may be deterred from future visits. Providing long-weekend service from Friday to Monday, throughout the summer may be an initial step toward providing full 7-day summer service.

Expanding service later in the fall and earlier in the spring should also be considered. Visitation in the fall is often more weather dependent than in the summer; however the Bay Area “summer” season extends essentially through September and into October. Marin County and GGNRA should further explore park conditions and consider expanding the shuttle season to shoulder periods when parking conditions are proven to be problematic. Expanding the service period and days of service is a significant increase in service costs, and should be considered only in the context of additional and permanent funding.

Evaluate Adding a Stop at Muir Beach and Provide West Marin Connections

Adding a stop at Muir Beach will improve the quality of service by allowing passengers to make a day out of their trip to Muir Woods, especially since there are no picnic facilities at Muir Woods. The addition of the stop would cost little in terms of trip time, and could easily be accommodated in the schedule.

The need for connections to Muir Beach and other West Marin locations was emphasized by the high percentage of non-riders (over 20%) who indicated that they were traveling to destinations in West Marin in addition to the park. The cus-

customer service staff who assisted passengers helped some riders understand how they might utilize Route 63 (now part of the West Marin Stagecoach) to complete their trips. Better integration of the Muir Woods Shuttle with Marin County Transit's Stagecoach service is essential, especially as West Marin Stagecoach service is expanded to weekends. Information about both the shuttle and other connecting services, in east and west Marin should be available at all stops, including ideas about making a day on transit.

Capital Improvements

As a demonstration service, little capital investment has been made in the shuttle. As options for sustaining the service are explored, additional capital investments will be required to improve customer experience. These include slightly larger vehicles and stop amenities.

Larger Buses

Golden Gate Transit is currently providing Muir Woods service with vehicles it had available and could easily acquire for this service. As the service becomes permanent, it will be important to purchase the largest and most comfortable bus that can serve the difficult terrain to access the park. Ideally, buses would be 35' long, with bicycle racks that can accommodate at least 3 bikes, with maximum accessibility features including low floor boarding and wheelchair access. Because the number of wheelchairs using the system is small, fold down seats should be provided over wheelchair tie-down areas to maximize seating capacity. Overhead storage should ideally be provided, to maximize seating capacity by moving back packs and other carry-ons to the luggage rack. As with all new buses operating in California, alternative fuels should be an important consideration;

however, the selected technology must be able to reliably serve the terrain and hill climbing required for this route.

Bus Stop Improvements

The existing bus stops are poorly marked and have minimal or no shelter, and almost no amenities. This is due to the fact that the shuttle is still considered a temporary demonstration project. However, even very low cost improvements could significantly improve passenger service. A painted stripe indicating where passengers should "line up" for the shuttle would relieve the chaotic sense that new comers may get in line ahead of those that have been waiting, and would speed and organize boarding. Trash cans could be provided in more visible locations, making it possible for riders to throw away empty bottles and other trash easily.

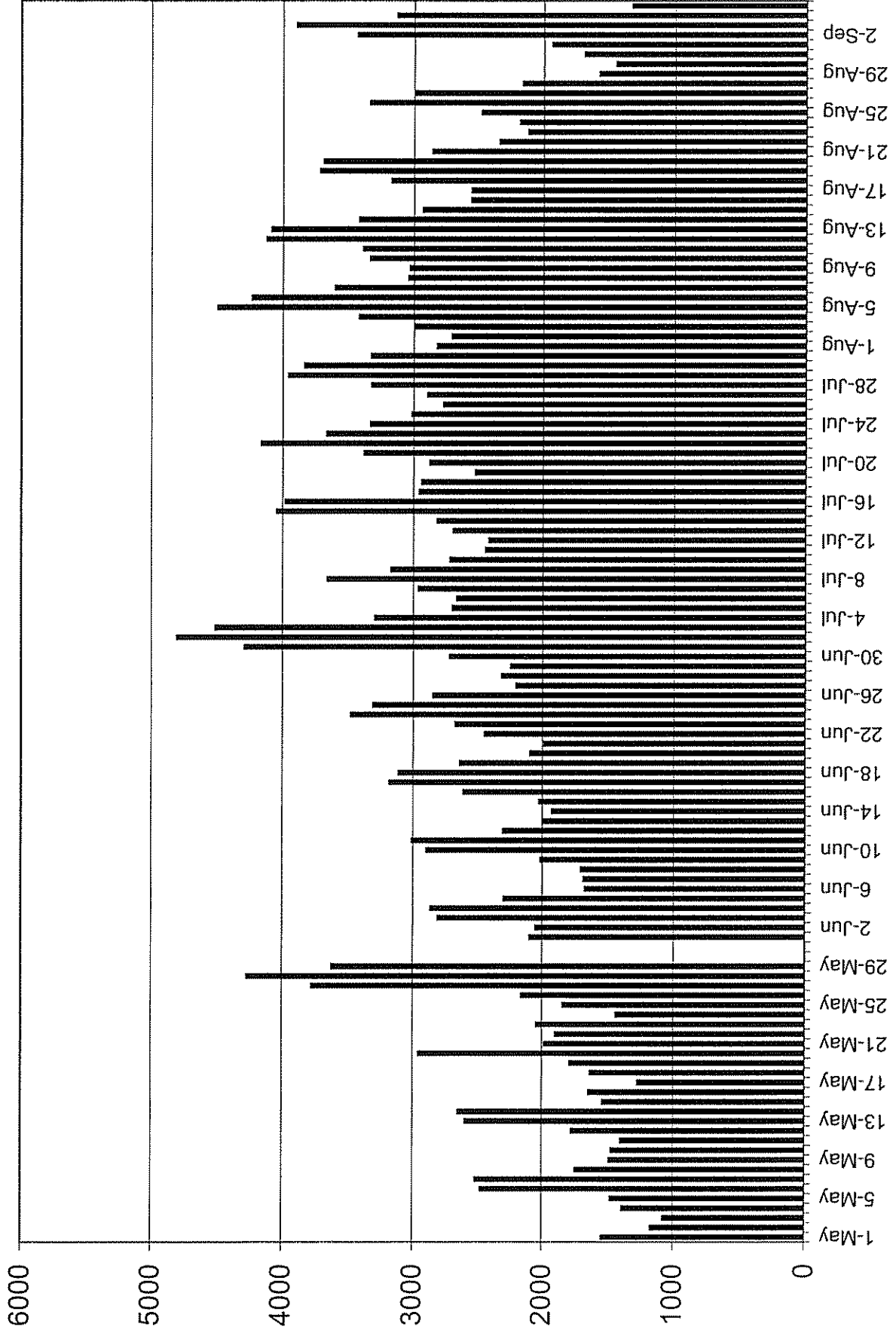
At somewhat higher cost, shelters could be provided at all locations providing at least some weather protection for riders waiting for the bus. Information kiosks designed into these shelters would provide schedule information, and orientation to the park. This year, the County and GGNRA staff provided significant "human powered" orientation at stops. This is a great way to provide a personal touch; however, additional printed materials should be well stocked at all waiting locations. Information should include schedule information about the shuttle, connecting services such as Marin County Transit District, including the Stagecoach, and Golden Gate routes, and ideas for "making a day on transit", and information on where basic amenities can be found such as restrooms and water fountains. Materials about the park experience, and other parks in Marin County should also be available.



Marr County
Department of
Public Works

Muir Woods Shuttle Evaluation

Figure 25 Muir Woods Visitor Counts



Conclusion

Like in 2005, the Muir Woods Shuttle's second year of service was an overwhelming success. Ridership grew by about 40% even with the addition of a fare and a one weekend closure of the Bay Bridge, which may have affected park visitorship. This translates to 5.8% of weekend visitors to Muir Woods using the shuttle. However, even with schedule changes that provided a consistent half-hour frequency throughout the day, demand for the shuttle was often over capacity, especially during peak hours. With the popularity of the shuttle this season and potential for increasing service and ridership in the next season, focus must now be shifted towards making the shuttle a permanent route. This needs to include both determining sustainable funding sources and greater integration with other transportation services in Sausalito and along Highway 101 as well as in West Marin. This will ensure that the shuttle best serves the County of Marin, the park, and visitors, providing alternative access to the park, reducing parking overflow conditions at the park, relieving traffic congestion, especially locally around the park, and preserving.

APPENDIX
SURVEY INSTRUMENTS

APPENDIX SURVEY INSTRUMENTS

Muir Woods Shuttle Passenger Survey

The County of Marin initiated the Muir Woods Shuttle Service in 2005, with the goal of increasing service over three years. We appreciate your time to help improve the Shuttle Service. Please complete this survey while you are on the bus and return the form to the surveyor on board. **Please complete only one survey today. Please Complete All Sections**

Please Describe Your Trip TO Muir Woods Today.

1. Where did you come to Muir Woods from today?

- ₁ Within Marin County (City/Town) _____
- ₂ San Francisco (Neighborhood) _____
- ₃ Sonoma County (City/Town) _____
- ₄ East Bay (City/Town) _____
- ₅ Other Bay Area location (City/Town) _____
- ₆ Outside Bay Area (City/Town) _____

2. Did you begin your trip from _____?

- ₁ Your Home ₂ Someone Else's Home
- ₃ Hotel/Motel ₄ Shopping/Restaurant
- ₅ Other (Specify): _____

Please specify the location (street/cross street): _____

3. How did you get to the Muir Woods Shuttle?

- ₁ Drove a rental car ₂ Walked/Hiked
- ₃ Drove my own car ₄ Bicycled
- ₅ Rode in a car (as a passenger)
- ₆ Someone dropped me off
- ₇ Took transit/ferry (Specify Route) _____
- ₈ Other (Specify): _____

4. Where did you get on the shuttle bus going TO Muir Woods?

- ₁ Marin City
- ₂ Manzanita Park and Ride
- ₃ Hwy 1 at Pohono
- ₄ Other (Specify): _____

5. How many people are in your party (including yourself?) _____

6. How many people in your party (including yourself):
 _____ Are under 6 yrs old
 _____ Are 6 to 18 yrs old _____ Are 65 and over
 _____ Have a disability or other special travel need

7. What items are you traveling with that could affect your use of a shuttle bus?

- ₁ Backpacks ₂ Stroller
- ₃ Bicycle ₄ Wheelchair/scooter
- ₅ Cooler ₆ No items
- ₇ Other (Specify): _____

8. After you leave Muir Woods today, where are you going next?

- ₁ My home or hotel/motel
- ₂ Restaurant/Shopping (where?) _____
- ₃ Other recreational Location (where?) _____
- ₄ Somewhere else (where?) _____

Tell Us What You Think

9. Why did you choose to use the Muir Woods Shuttle Today? (check all that apply)

- ₁ Don't know how to get to Muir Woods myself
- ₂ To avoid driving in traffic
- ₃ To avoid looking for parking
- ₄ Saw a sign that Muir Woods parking was full
- ₅ Thought this was the only way to get to Muir Woods
- ₆ Better for the environment
- ₇ Saves Time
- ₈ Saves Money
- ₉ No Car Available/No Choice
- ₁₀ Other (specify): _____

10. Please rate the shuttle service on each of the following: (Excellent, Good, Fair, Poor, Very Poor, No Opinion)

	Excellent	Good	Fair	Poor	Very Poor	No Opinion
On-time performance	1	2	3	4	5	6
Frequency of service	1	2	3	4	5	6
Convenience of Schedule	1	2	3	4	5	6
Ease of finding bus stops	1	2	3	4	5	6
Convenience of stops	1	2	3	4	5	6
Driver courtesy	1	2	3	4	5	6
Information at bus stops	1	2	3	4	5	6
Cleanliness/condition/quality of vehicles	1	2	3	4	5	6
Safety/security	1	2	3	4	5	6
Ease of transfers	1	2	3	4	5	6

Muir Woods Shuttle Evaluation



11. Do you think the current fare is reasonable for this service?

- 1 Yes, 2 No, it is too low, 3 No, it is too high, 4 No, there should be no fare

If not, what would be a reasonable roundtrip fare for this service? \$ _____

12. How would you have made this trip if you couldn't ride the shuttle?

- 1 Would not have made the trip/Would go somewhere else, 2 Drive my car to Muir Woods, 3 Ride in someone else's car to Muir Woods, 4 Rent a car, 5 Take a Tour Bus, 6 Bicycle, 7 Walk/Hike, 8 Other (specify) _____

13. What improvements would make you more likely to use the shuttle again in the future?

- (Choose the three most important) 1 More frequent bus shuttle service, 2 Easier transfers to Golden Gate Transit/Muni, 3 Service from the Sausalito Ferry Terminal, 4 More stops in Marin (where?) _____, 5 Connecting service between Muir Woods and other recreational locations (where?) _____, 6 Earlier morning service, 7 Lower fares, 8 Later evening service, 9 Weekday service, 10 Year Round Service, 11 More bicycle capacity, 12 More luggage space, 13 Basic amenity at bus stops (shelter, benches), 14 Greater amenity at bus stops (restrooms, waiting room, information kiosk), 15 Other (specify) _____

14. Would you use this Shuttle again?

- 1 Definitely yes, 2 Probably yes, 3 Don't Know, 4 Probably not, 5 Definitely not, 6 Will not be back

Tell us a little about yourself:

15. Where do you live?

City _____ ZIP Code _____
Country (if not US) _____
If within Marin County, nearest intersection (Street and Cross Street) _____

16. How old are you?

- 1 17 or under, 2 18-21, 3 22-29, 4 30-39, 5 40-49, 6 50-59, 7 60-64, 8 65 and over

17. Are you (check all that apply)

- 1 Employed full-time, 2 Employed part-time, 3 Not currently employed, 4 Student, 5 Retired

18. How did you learn about this Shuttle?

- 1 Family or friend, 2 Web Site (which one?) _____, 3 Information Kiosk (where?) _____, 4 Hotel pamphlet or concierge, 5 Saw changeable message sign on Hwy 101, 6 Saw shuttle sign on highway exit, 7 Saw bus/bus stop, 8 TV, Radio, Newspaper (which station/paper?) _____, 9 Other (Specify): _____

19. How do you prefer to get information on the Muir Woods Shuttle?

- 1 E-mail, 2 Brochure/newsletter, 3 Web Site, 4 Notice on bus, 5 Information at bus stops, 6 Information Kiosk (where?) _____, 7 Newspaper/Radio (which one?) _____, 8 Other (explain): _____

20. How often do you visit Muir Woods?

- 1 This is my first time, 2 Rarely (1 time per year or less), 3 1-3 times per year, 4 More frequently (at least 4 times per year), 5 Very frequently (at least monthly)

21. Did you ride the Muir Woods Shuttle last year? 1 Yes, 2 No

22. Total household income (for everyone in your household):

- 1 Under \$25,000, 2 \$25,000 to \$34,999, 3 \$35,000 to \$49,999, 4 \$50,000 to \$74,999, 5 \$75,000 to \$99,999, 6 \$100,000 or more

23. Do you have any other comments?

Muir Woods Transportation Survey

The County of Marin and the National Park Service are working together to improve your trip to Muir Woods. We would like your help today in filling out a survey to assist the County in improving its direct shuttle service. This survey is strictly voluntary and confidential, and will take about 8 minutes.

Please Describe Your Trip TO Muir Woods Today.

1. Where did you come to Muir Woods from today?

- ₁ Within Marin County (City/Town) _____
- ₂ San Francisco (Neighborhood) _____
- ₃ Sonoma County (City/Town) _____
- ₄ East Bay (City/Town) _____
- ₅ Other Bay Area location (City/Town) _____
- ₆ Outside Bay Area (City/Town) _____

2. Did you begin your trip from _____?

- ₁ Your home ₂ Someone else's home
- ₃ Hotel/Motel ₄ Shopping/restaurant
- ₅ Other (Specify): _____

Please specify the location (street/cross street):

3. How did you get to Muir Woods today? (check one)

- ₁ Drove a rental car
- ₂ Drove my own car
- ₃ Rode in a car (as a passenger)
- ₄ Someone dropped me off
- ₅ Walked/Hiked
- ₆ Bicycled
- ₇ Took transit (Specify Bus Route) _____
- ₈ Other (Specify): _____

4. How many people are in your party (including yourself?) _____

5. How many people in your party (including yourself):
 _____ Are under 6 yrs old
 _____ Are 6 to 18 yrs old _____ Are 65 and over
 _____ Have a disability or other special travel need

6. Are you traveling with large items that could affect your use of a shuttle bus? (check all that apply)

- ₁ Backpacks ₂ Stroller
- ₃ Bicycle ₄ Wheelchair/scooter
- ₅ Cooler ₆ No items
- ₇ Other (Specify): _____

7. After you leave Muir Woods today, where are you going next?

- ₁ My home or hotel/motel
- ₂ Restaurant/shopping (where?) _____
- ₃ Other recreational location (where?) _____
- ₄ Somewhere else (where?) _____

8. If you drove today, how long did it take you to find a parking space at Muir Woods?

- ₁ 0 to 5 minutes ₂ 6 to 10 minutes
- ₃ 11 to 15 minutes ₄ 16 to 20 minutes
- ₅ More than 20 minutes

9. How long did it take you to walk to the Muir Woods entrance booth from your parking space?

- ₁ 0 to 2 minutes ₂ 11 to 15 minutes
- ₃ 3 to 5 minutes ₄ 16 to 20 minutes
- ₅ 6 to 10 minutes ₆ More than 20 minutes

10. Overall, how would you rate your transportation experience traveling to Muir Woods? (check most applicable)

- ₁ Excellent – no problems with congestion or parking
- ₂ Some problems with congestion on the way to Muir Woods
- ₃ Some problems with parking at Muir Woods
- ₄ Poor – serious delays and/or parking problems at Muir Woods

11. Are you aware of the Muir Woods Shuttle from Marin City and other parking areas near Hwy 101? (surveyors will distribute brochures)

- ₁ Yes, I'm aware of it, but don't have any information on it
- ₂ Yes, I'm aware of it, but it was not appropriate for our needs.
- ₃ No, I'm not aware of it



12. If yes, how did you learn about the Muir Woods Shuttle?

- 1 Family or friend
- 2 Web Site (which one?) _____
- 3 Information Kiosk (where?) _____
- 4 Hotel pamphlet or concierge
- 5 Saw changeable message sign on Hwy 101
- 6 Saw shuttle sign on highway exit
- 7 Saw bus/bus stop
- 8 TV, Radio, Newspaper (which station/paper?) _____
- 9 Other (Specify): _____

13. Why did you choose not to use the Muir Woods Shuttle today? (check all that apply)

- 1 Did not know about the Muir Woods Shuttle
- 2 Shuttle stops are inconvenient
- 3 Not returning to the place I started
- 4 Shuttle not going to my next destination
- 5 Too many people in my party
- 6 Members of my party have special travel needs
- 7 Carrying too many items to use the Shuttle
- 8 Visit to Muir Woods is part of a tour bus trip
- 9 Shuttle not frequent enough
- 10 Shuttle does not run late enough
- 11 Shuttle does not run early enough
- 12 Shuttle would take too long
- 13 Other (Specify): _____

14. Do you think the current \$2.00 roundtrip fare is reasonable for this service?

- 1 Yes
- 2 No, it is too high
- 3 No, it is too low
- 4 No, there should be no fare

If not, what would be a reasonable roundtrip fare for this service? \$ _____

15. How do you prefer to get information about transportation options to Muir Woods?

- 1 E-mail
- 2 Brochure/newsletter
- 3 Web Site
- 4 Notice on bus
- 5 Information at bus stops
- 6 Information Kiosk (where?) _____
- 7 Newspaper/Radio (which one?) _____
- 8 Other (explain): _____

16. What improvements would make you more likely to use the shuttle in the future? (Choose the three most important)

- 1 More frequent bus shuttle service
- 2 Easier transfers to Golden Gate Transit/Muni
- 4 Service from the Sausalito Ferry Terminal
- 3 More stops in Marin (where?) _____
- 5 Connecting service between Muir Woods and other recreational locations (where?) _____
- 6 Earlier morning service
- 7 Lower fares
- 8 Later evening service
- 9 Weekday service
- 10 Year Round Service
- 11 More bicycle capacity
- 12 More luggage space
- 13 Basic amenity at bus stops (shelter, benches)
- 14 Greater amenity at bus stops (restrooms, waiting room, information kiosk)
- 15 Other (Specify) _____
- 16 Nothing would encourage me to use the shuttle

17. Would you use the Muir Woods Shuttle for future trips to Muir Woods?

- 1 Definitely yes
- 2 Probably yes
- 3 Don't Know
- 4 Probably not
- 5 Definitely not
- 6 Will not be back

Tell us a little about yourself:

18. Where do you live?

City _____ ZIP Code _____

Country (if not US) _____

If within Marin County, nearest intersection (Street and Cross Street) _____

19. How old are you?

- 1 17 or under
- 2 18-21
- 3 22-29
- 4 30-39
- 5 40-49
- 6 50-59
- 7 60-64
- 8 65 and over

20. Are you (check all that apply)

- 1 Employed full-time
- 2 Employed part-time
- 3 Not currently employed
- 4 Student
- 5 Retired

21. How often do you visit Muir Woods?

- ₁ This is my first time
- ₂ Rarely (1 time per year or less)
- ₃ 1-3 times per year
- ₄ More frequently (at least 4 times per year)
- ₅ Very frequently (at least monthly)

22. Did you ride the Muir Woods Shuttle last year?

- ₁ Yes
- ₂ No

23. Total household income (for everyone in your household):

- ₁ Under \$25,000
- ₂ \$25,000 to \$34,999
- ₃ \$35,000 to \$49,999
- ₄ \$50,000 to \$74,999
- ₅ \$75,000 to \$99,999
- ₆ \$100,000 or more

Highway Message Sign

24. On this trip did you see a changeable message sign located on US Hwy 101 that displayed parking and road information for Muir Woods and other parks?

- ₁ Yes. (proceed to Question 25)
- ₂ No. (skip to question 28)

25. Did the sign have a message on it as you drove by?

- ₁ Yes. It said: _____
- ₂ No.

26. How strongly would you agree or disagree with the following statements regarding the changeable message sign?

(circle one for each line)

	Strongly Agree	4	Neutral	2	Strongly Disagree
a) The information was accurate	5	4	3	2	1
b) The information was useful to me and/or my group	5	4	3	2	1
c) The information seemed current	5	4	3	2	1
d) The information was easy to understand	5	4	3	2	1
e) I needed more information	5	4	3	2	1
f) I could not read it	5	4	3	2	1

Thank you for your help in completing this survey. Results will be available after February 2007 on the following web site: www.marintraffic.org
 Further information about this survey can be obtained from the following address:

Information Collection Clearance Officer,
 National Park Service, Golden Gate National Recreation Area,
 Building 201, Fort Mason, San Francisco, CA 94123

27. How did the sign message affect YOUR TRIP? (check all that apply)

- ₁ I drove to different park area(s) prior to going to Muir Woods (Where?): _____
- ₂ I went to Sausalito or Marin City first
- ₃ I changed the time of day that I visited Muir Woods
- ₄ I decided to visit Muir Woods on a different day
- ₅ I used the shuttle or other public transportation to get to the park
- ₆ I had better expectations of the traffic and parking conditions but continued with my visit as planned
- ₇ The information had no affect on my trip
- ₈ Other (Explain) _____

28. Do you have any other comments about your travel experience to Muir Woods today?

Surveyor: _____

Date: _____

Time: _____

Survey #: _____ Int: _____



PRIVACY ACT and PAPERWORK REDUCTION ACT statement:

16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by Marin county & park managers to better serve the visiting public. Response to this request is completely voluntary, and confidential. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

BURDEN ESTIMATE STATEMENT: Public reporting burden for this form is estimated to average 8 minutes per response. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, National Park Service, Golden Gate National Recreation Area, Building 201, Fort Mason, San Francisco, CA 94123.