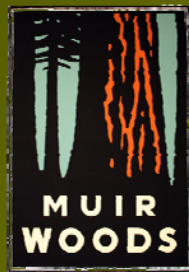




Muir Woods Shuttle Year in Review – 2010 Season

MARCH 2011



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INTRODUCTION

This report focuses on the sixth year of operations for the Muir Woods Shuttle service to Muir Woods National Monument in Marin County, California. Shuttle service began operation in 2005 as a demonstration project, and was created and designed to provide an alternative to automobile access and parking, thus alleviating parking and traffic in this National Monument. Now after five seasons of operation, the Shuttle has evolved to meet visitor needs and has become an integral mode of access to the park, carrying approximately 9.17% percent of visitors on peak summer weekends.

The Shuttle represents a unique partnership of government at a number of levels. The service was originally designed as a partnership of the National Park Service, County of Marin, and Golden Gate Transit. In 2009, responsibility for the Shuttle shifted to the Marin County Transit District (Marin Transit) under a funding agreement with the National Park Service. In 2010 Golden Gate Transit continued to operate the service under contract to Marin Transit, as Route 66.

For the first three years of operation, ending in 2007, the service was funded primarily through a grant from the Federal Highway Administration (FHWA). Funds for the 2008 season were provided by a combination of TCSP (Transportation and Community and System Preservation Program) and PLH (Public Lands Highway Discretionary Program) funds. Having proven itself as

an important access mode to the Park, the Shuttle is no longer a federally funded pilot program. Beginning in May 2009, it became a regular route operated by Marin Transit, funded partly by the Transit District and partly by the Park Service.

From summer 2005 through 2008, the annual service evaluation included surveys of Shuttle passengers, and intercept surveys of park visitors who did not ride the Shuttle, to determine characteristics of riders and non-riders, traveler preferences and attitudes toward service changes, as well as qualitative observations about the Shuttle operations, wayfinding, and amenities at stops.

Passenger and intercept surveys were not conducted in the 2009 season. This 2010 season evaluation does include the results of a passenger survey.

Using information collected in each of the pilot project seasons, the evaluation report provides trends and changes over time and makes recommendations for the Shuttle's future.

Description of Current Service

Shuttle operations in 2010 included weekends and holidays beginning on Saturday May 1, and continuing through Sunday September 26, 2010. In all, service was provided on 33 peak summer days and 14 shoulder season days.

The primary Shuttle route began in Marin City,

where passengers could park or make connections with other Golden Gate Transit routes. It then made one stop at the Park and Ride lot at Highway 101 and Pohono Street, and continued on to the park. On its return trip, it stopped at the Manzanita Park and Ride lot directly across Highway 101 from the Pohono Street parking lot; passengers then used a crosswalk to return to the Pohono lot. The Shuttle then continued on to the last stop in Marin City. Throughout the summer, the first bus left Marin City at 9:30 AM, and the last scheduled departure from the park left at 7:05 PM.

This routing was implemented in 2008, and was a simplification of the original Shuttle routing during the pilot years, when the route included stops at both Pohono and Manzanita Park and Ride lots on the trip to Muir Woods, but only stopped at Manzanita on the way back. The original routing was time-consuming and confusing to riders, so the Manzanita stop was dropped from the park-bound route. Wayfinding signage was added at both stops to help riders understand that they would depart from the Pohono lot and return to the Manzanita lot. Figure 1 shows the current Muir Woods Shuttle routing.

The span of service and frequency remained unchanged in 2010, operating every 30 minutes during the “shoulder seasons” of May 1 through May 23 and September 11 through 26. Beginning on Memorial Day weekend (May 29) and continuing through the peak months of June, July, and August, frequency increased to operate every 20-minute intervals. Service ended on the last Sunday in September (for 2010, September

26).

For the fourth consecutive year, a second route from the Sausalito Ferry Terminal to Muir Woods operated during the three peak season months of June, July, and August. In addition to the ferry terminal in downtown Sausalito, buses following this routing made stops at the Pohono Street lot before heading to the park, with return service to the Ferry Terminal via Manzanita Park and Ride lot in the afternoon. The buses were timed to meet the Golden Gate Ferry arrivals and departures in Sausalito. Sausalito is also served by the Blue and Gold Ferry from Fisherman’s Wharf, providing additional ferry-Shuttle connections.

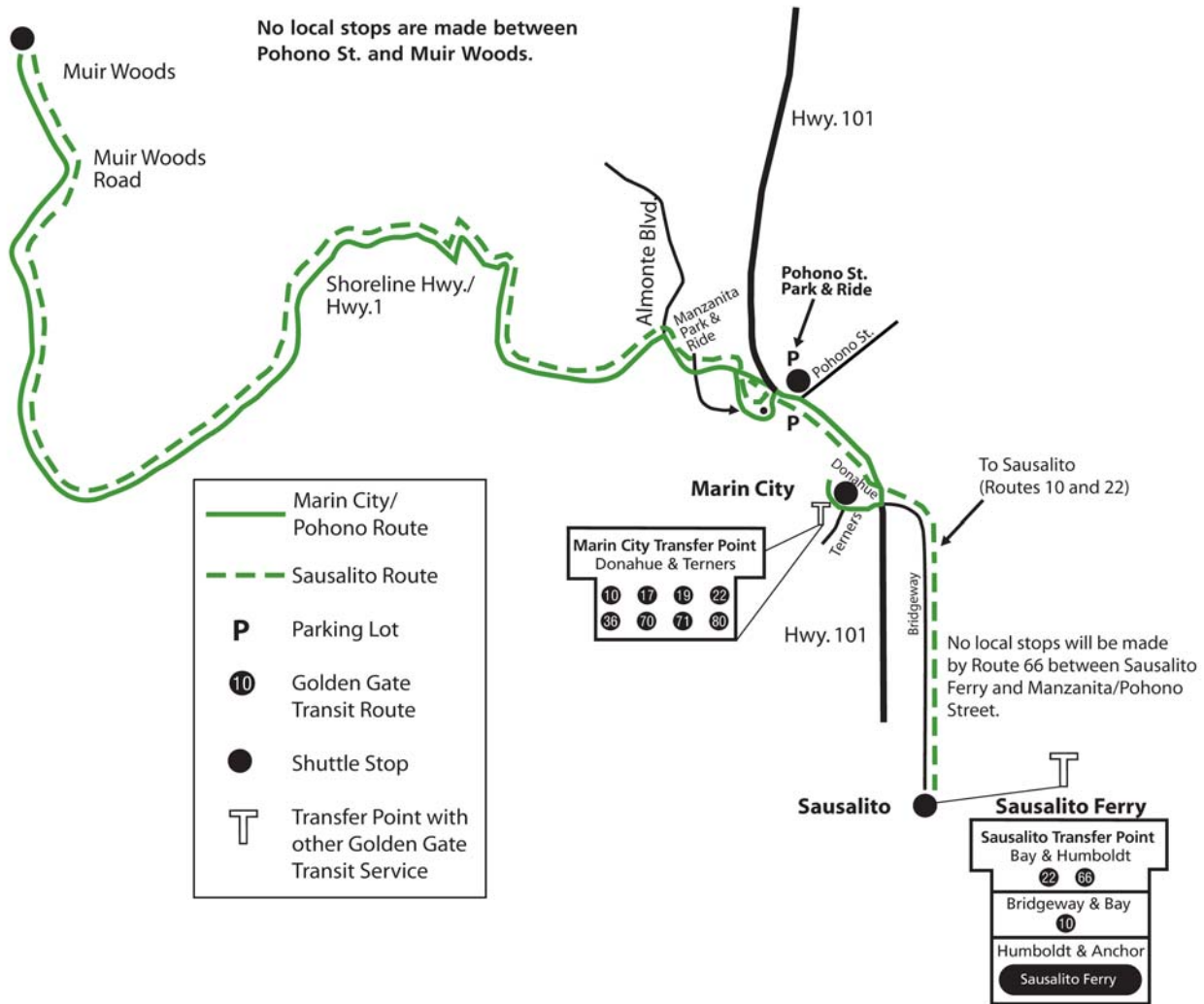
2010 round trip fares for all non-discounted riders were \$3.00 per person. The discount fares for youth ages six to 18, seniors over 65, and persons with disabilities were \$1.00.

In previous seasons, Marin Transit hired an ombudsperson to liaise with passengers waiting for the Shuttle at the Pohono Street Park-and-Ride lot and to provide additional monitoring of service quality. This practice was continued into the 2010 season with the hiring of two individuals serving in the ombudsperson role. The ombudspersons’ assistance greatly aided passengers, especially those arriving in peak periods when heavy demand can lead to long lines and waits to catch the Shuttle at Pohono Street. The ombudspersons also administered the passenger surveys during the 2010 operating season. During the peak season there were two ombudsperson shifts on each service day with some overlap during the midday. The first shift started at 10:00

AM and ended at 2:30 PM. The second shift started at 11:30 AM and finished at 4:00 PM. During the shoulder season there was one shift

per service day starting at 10:00 AM and finishing at 2:30 PM.

Figure 1 Muir Woods Shuttle (Route 66) Map



Ombudsperson responsibilities included:

- Serving as Marin Transit and NPS “ambassadors” to Shuttle patrons.
- Providing Shuttle, Marin Transit, and NPS information to the public including next bus information, fare policy, and park program information (brochures are distributed while Shuttle passengers wait for the next bus).
- Service monitoring and reporting to Marin Transit:
 - Daily trip by trips recording arrival and departure times, number of passengers arriving on board from Sausalito and Marin City, numbers boarding at the Pohono site, and the number of passengers passed-up when each bus is full.
 - Individual weekly observation reports recording incidents or passenger comments.
 - Joint monthly observation reports.
- Coordinating exact fares amongst passengers prior to boarding.
- General problem solving (helping with lost items etc.)

Daily data collected by the ombudspersons is important to the ongoing Shuttle monitoring, evaluation, and planning. Of particular interest are the passenger loads and passenger pass-ups data by trip. These facilitate the tracking of pass-up trends for the strategic consideration of “peak-of-the-peak” extra runs.

To reinforce formal representation, NPS has provided the ombudspersons with NPS jackets, vests, and hats.

Figure 2 summarizes service changes over the last three years of Shuttle operations

Figure 2 Summary of Operations, 2008-2010

	2008	2009	2010
Number of routes	2 - Marin City/ Muir Woods, Sausalito/Muir Woods	2 - Marin City/ Muir Woods, Sausalito/Muir Woods	2 - Marin City/Muir Woods, Sausalito/Muir Woods
Service span	Weekends and holidays from May 1 through September 30	Weekends and holidays from May 2 through September 27	Weekends and holidays from May 1 through September 26
Frequency	30 minutes, May and September shoulders; 20 minutes, Memorial Day – Labor Day	30 minutes, May and September shoulders, 20 minutes, Memorial Day - Labor Day	30 minutes, May and September shoulders, 20 minutes, Memorial Day - Labor Day
Service Hours	2,112	2,158	2,115
Standard Fare	\$3.00 round trip	\$3.00 round trip	\$3.00 round trip
Farebox Recovery*	21.58%	16.17%	18.27%

* Calculated on GGT operating costs

Marketing the Shuttle

Shuttle marketing has continued to follow a market-based approach, focusing on visitors to the Bay Area and local riders. Information was distributed at tourist sites and through San Francisco hotels, as well as published in newspapers, on the Internet, and on physical signs near the highway exits. Marketing efforts were shared by Golden Gate Transit, Marin Transit, and the National Park Service.

Information was distributed to the visitor market through hotel concierges, hostels, and travel services in the City of San Francisco, the area near the San Francisco Airport, and the Oakland/Berkeley area, and through Chambers of Commerce and libraries. The schedules were also available on the buses and at the Sausalito Visitor's Center and the San Francisco Ferry Building. Schedules were posted at the Sausalito Ferry Landing and at all stops on "sandwich board" displays secured to the stop, giving both shoulder and peak season schedules. In addition, there were ads on the backs of buses adver-

tising the service, and posters in buses and on ferries. The National Park Service (NPS) provided information at Muir Woods, and information was posted on several Web sites, including those of Marin Transit, Golden Gate Transit, the County of Marin, Marin County Visitors Bureau, and NPS.

The most effective visible element of the marketing effort for the Muir Woods Shuttle remains the changeable message signs (CMS). The CMS were installed on Highway 101 alerting motorists about parking conditions at Muir Woods and directing them to the Shuttle stop at Pohono Street. Once on the exit ramp, drivers are further guided to the Pohono Street Park and Ride lot by permanent metal Shuttle signs on the exit off-ramps. In the 2010 intercept passenger survey, 39% of respondents identified the CMS as how they learned about the Shuttle. In past years, passenger surveys have indicated that more than half of Shuttle riders attributed their taking the Shuttle to having seen the CMS signs on the highway.

Figure 3 describes the messages displayed on Changeable Message Signs

Figure 3 Changeable Message Sign Messages

Location	Operated by	Typical message
Northbound 101 between Alexander Ave. on-ramp (Waldo Grade) and Waldo Tunnel	Muir Woods / NPS	Muir Woods Parking Full-Use Shuttle
Northbound 101 Marin City off-ramp	County of Marin/Dept. of Public Works	Muir Woods Shuttle Take Route 1 Exit

CMS signs are leased from the California De-

partment of Transportation and operated by NPS and the County of Marin. In previous seasons, additional CMS signs were installed on the southbound Hwy 101 approach, but equipment problems prevented the continued use of a southbound sign. In 2010 problems with the signs included 1) not being turned on, 2) not working at all, or 3) messages not being legible. When operating normally, the signs are activated by NPS personnel between 10:00 and 10:30 AM on summer weekends. Based on past trends, this is the timeframe when the parking demand exceeds Muir Woods parking lot capacity. NPS personnel must manually activate one sign while activating the second sign with a remote control as long as they are in close physical proximity to the sign.

Evaluation Methodology

Data on Shuttle ridership published in this report was derived from fare collection reports compiled for each day of service in 2010. Ridership data for previous years was provided by Golden Gate Transit. Data on park visitation levels was provided by NPS staff. Financial figures and monthly service hours information were compiled by Marin Transit.

Anecdotal observations on the 2010 service were provided by the ombudspersons for Marin Transit, and include such commentary as the on-time performance, fare collection, passenger pass-ups, service strengths, services weaknesses and ways to improve service. Stakeholder interviews were conducted with both ombudspersons, Ali

Iqbal and Sylvia Darling on March 1, 2011. Ombudsperson observations are reflected in the conclusions and recommendations.

In 2010, Marin Transit administered an intercept mail-back passenger survey. Questionnaires were distributed by the Muir Woods Shuttle ombudspersons to Shuttle passengers while they waited for Shuttle departures at the Pohono Street Park-and-Ride lot. Questionnaires were distributed during the period July through September 2010. Findings are summarized in the following section, Demographics and Travel Behavior and are used in the development of recommendations.

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RIDERSHIP, PRODUCTIVITY AND MODE SHARE

This section summarizes the number of passengers the Muir Woods Shuttle carried in 2010, the productivity of the service, and the percentage of visitors to Muir Woods who chose to use the Shuttle, and then compares these figures with previous years' service. Data from previous years' service was recalculated for consistency purposes when necessary, and therefore may not match previous reports. NPS has provided the number of visitors for every day from May through September 2010. Daily fare collection reports furnished by Golden Gate Transit provide ridership figures. Golden Gate Transit also provided a daily breakdown of service hours for each service day during the peak and shoulder seasons.

Ridership

Ridership is measured as one-way passenger trips. Approximately 32,590 one-way passenger trips were made on the Muir Woods Shuttle between Saturday, May 1st, and Sunday, September 26, 2010.

Economic uncertainty in 2009 resulted in a decline in both Muir Woods visitors and Shuttle passengers from 2008. In 2009, Muir Woods visitors¹ were down 58,936 visitors (seven percent)

from 2008 levels and Shuttle ridership was down 1,946 passengers (six percent). Both Muir Woods visitor volumes and Shuttle ridership increased in 2010 over 2009 levels. While Park visitation increased by 55,000 (seven percent) it was still one percent below 2008 levels. Shuttle ridership had increased by 17% between 2009 and 2010, while still remaining below 2008 levels. This later increase in Shuttle ridership may show a shift in Shuttle mode share as the Shuttle becomes a recognized alternative.

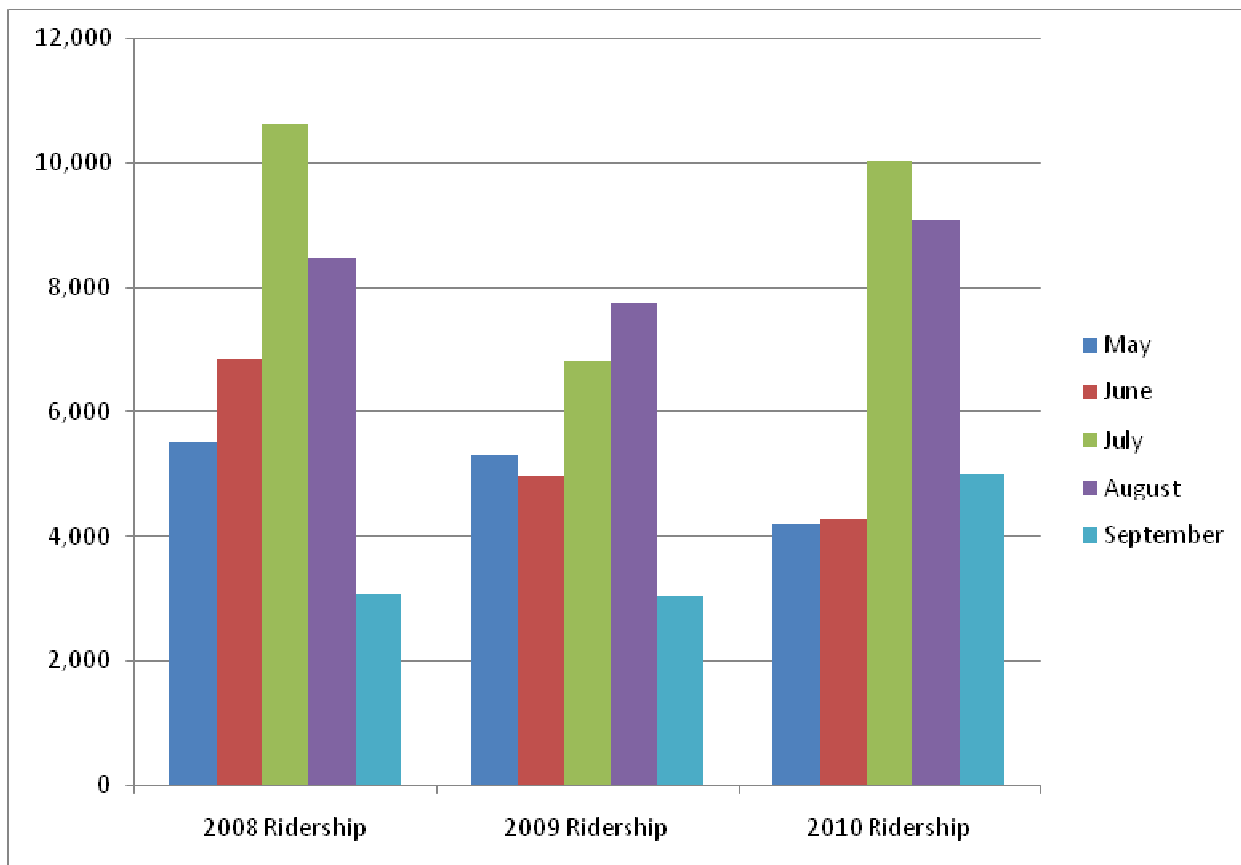
Figure 4 shows the total ridership for the 2008, 2009, and 2010 Shuttle seasons, by month, and the year-over-year change from 2008-2010 and 2009-2010. July saw the highest ridership this year, while May and June experienced year-over-year declines. Figure 5 displays the monthly Shuttle ridership for the period 2008-2010, illustrating the importance of the core summer months of July and August.

¹ Muir Woods had 838,292 visitors in 2008, 779,356 in 2009, and 834,356 in 2010 (NPS).

Figure 4 Table of Shuttle Ridership by Month, 2008 – 2010

Month	2008 Ridership	2009 Ridership	2010 Ridership	Ridership Change 2008- 2010	Ridership Change 2009-2010	% Change 2008-2010	% Change 2009-2010
May	5,502	5,319	4,194	(1,308)	(1,125)	-24%	-21%
June	6,855	4,984	4,268	(2,587)	(716)	-38%	-14%
July	10,645	6,845	10,036	(609)	3,191	-6%	47%
August	8,460	7,737	9,091	631	1,354	7%	18%
September	3,074	3,063	5,001	1,927	1,938	63%	63%
TOTAL	34,536	27,948	32,590	(1,946)	4,642	-6%	17%

Figure 5 Chart of Shuttle Ridership by Month, 2008-2010



Shuttle ridership remains higher in the peak season (Memorial Day Weekend through Labor Day Weekend). In 2010, approximately 88% of total Shuttle riders were during the peak season. Figure 6 shows peak season ridership for the six years of service since inception, along with the rate of change year-over-year. Growth in ridership was 17% between the 2009 and 2010 peak

seasons, mirroring the growth rate in ridership for the full 2010 season. Figure 7 provides total passengers for each service weekend during the 2010 Shuttle season. Figure 7 data clearly illustrates the “peaking” of Shuttle ridership during the months of July and August, as well on the three holiday weekends. Figure 8 provides a more detailed ridership by individual service day.

Figure 6 Peak Ridership, 2005 – 2010

	2005	2006	2007	2008	2009	2010
Riders	10,219	14,571	27,713	29,938	24,737	28,824
% Change From Previous Year		43%	90%	8%	-17%	17%

Figure 7 Ridership for Each Service Weekend of the 2010 Shuttle Season

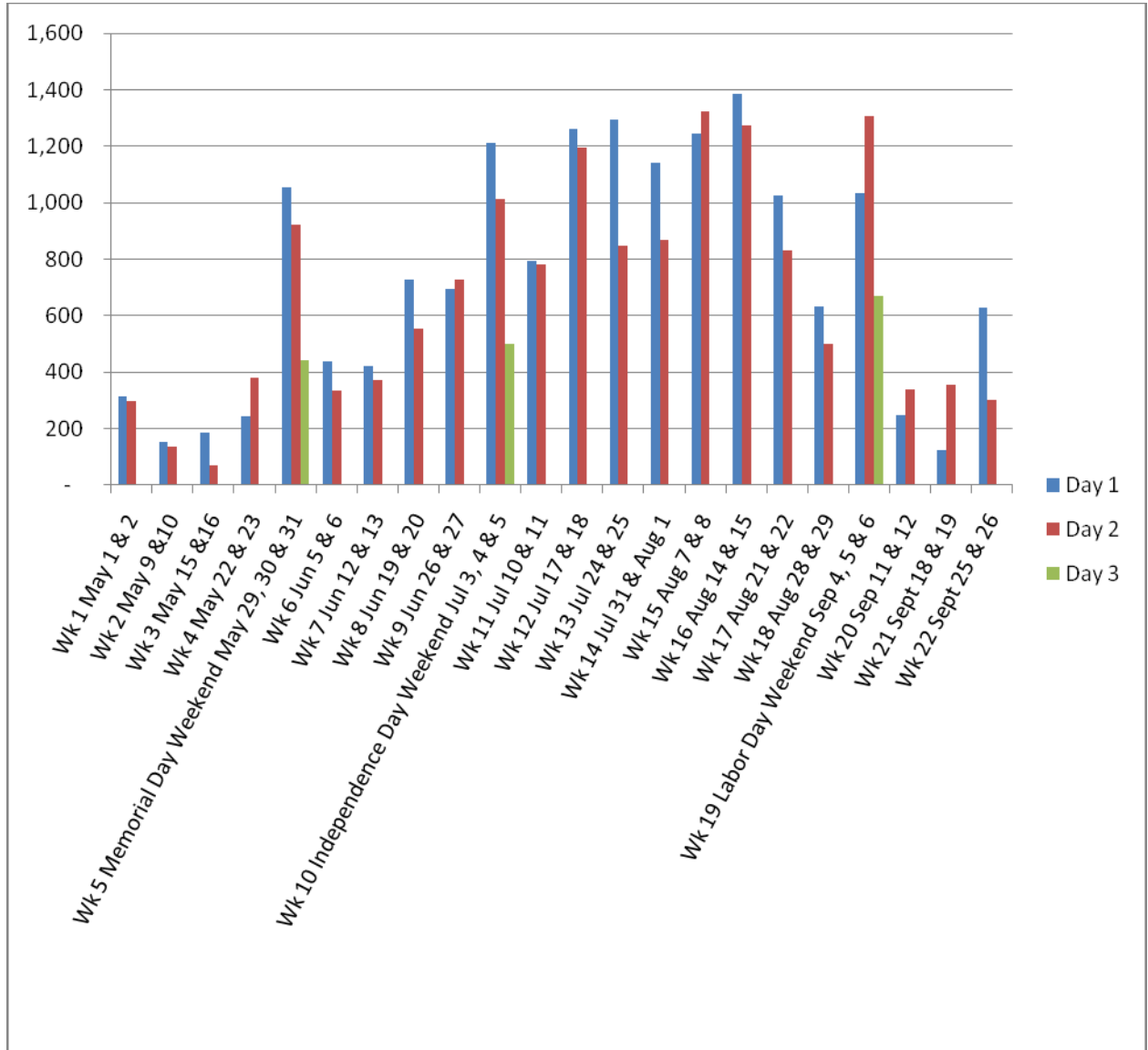


Figure 8 Daily Shuttle Ridership In 2010 Shuttle Season

Month	Day	Daily Ridership	Monthly Ridership
May	1-May	315	4,194
	2-May	296	
	8-May	154	
	9-May	136	
	15-May	183	
	16-May	71	
	22-May	244	
	23-May	378	
	29-May	1056	
	30-May	920	
	31-May	441	
June	5-Jun	437	4,268
	6-Jun	336	
	12-Jun	420	
	13-Jun	372	
	19-Jun	729	
	20-Jun	553	
	26-Jun	694	
	27-Jun	727	
July	3-Jul	1211	10,036
	4-Jul	1011	
	5-Jul	501	
	10-Jul	794	
	11-Jul	780	
	17-Jul	1261	
	18-Jul	1196	
	24-Jul	1293	
	25-Jul	849	
31-Jul	1140		

Month	Day	Daily Ridership	Monthly Ridership
August	1-Aug	870	9,091
	7-Aug	1246	
	8-Aug	1325	
	14-Aug	1386	
	15-Aug	1272	
	21-Aug	1027	
	22-Aug	832	
	28-Aug	632	
	29-Aug	501	
	September	4-Sep	
5-Sep		1307	
6-Sep		671	
11-Sep		247	
12-Sep		337	
18-Sep		121	
19-Sep		356	
25-Sep		627	
26-Sep	301		
2010 Total Ridership			32,590

Percent of Muir Woods Visitors Using the Shuttle

Another important indicator of the success of the service is the percentage of total park visitors who choose to take the Shuttle, which can be described as the Shuttle “mode share”. Of the 834,356 visitors to Muir Woods in 2010, 16,295²

individual visitors rode the Shuttle. Of the total annual visitors in 2010, Shuttle mode share was 1.95%. To calculate a truly representative mode share impact for the Muir Woods Shuttle, the mode share measure should be calculated on the

² Based on the round trip nature of the Shuttle service, the actual number of individual Park visitors is calculated by

dividing the total 32,590 one-way passenger trips by two. It is assumed that each visitor makes two one-way trips per visit to the park.

number of Park visitors and those visitors using the Shuttle on its actual service days. During 2010, there were 177,638 visitors to the Muir Woods National Monument on Shuttle service days. Sixteen thousand, two and ninety-five visitors rode the Shuttle on days service was provided, representing a 9.17% mode share. Using this method of mode share calculation, average

monthly Shuttle mode share exceeded 10% in July and August. Figure 9 provides average monthly Shuttle mode share for the 2010 operating season. Figure 10 provides a list of 2010 service days when Shuttle mode share exceeded 10%. During the 2010 season, mode share exceeded 10% on 18 service days.

Figure 9 Monthly Shuttle Mode Share Averages In 2010 Season

2010 Shuttle Season						
	May	June	July	August	September	Season Average
Shuttle Mode Share	5.90%	7.77%	11.20%	11.63%	8.14%	9.17%

Figure 10 Service Days When Shuttle Mode Share Exceeded 10% In 2010 Season

Month	Service Day	Mode Share
May	29-May	12.54%
	30-May	10.55%
July	3-Jul	12.48%
	4-Jul	11.79%
	10-Jul	10.45%
	17-Jul	13.74%
	18-Jul	13.09%
	31-Jul	12.15%

Month	Service Day	Mode Share
August	1-Aug	10.10%
	7-Aug	12.68%
	8-Aug	13.35%
	14-Aug	14.14%
	15-Aug	12.98%
	21-Aug	12.19%
September	22-Aug	10.88%
	4-Sep	12.01%
	5-Sep	13.65%
	25-Sep	10.81%

Productivity

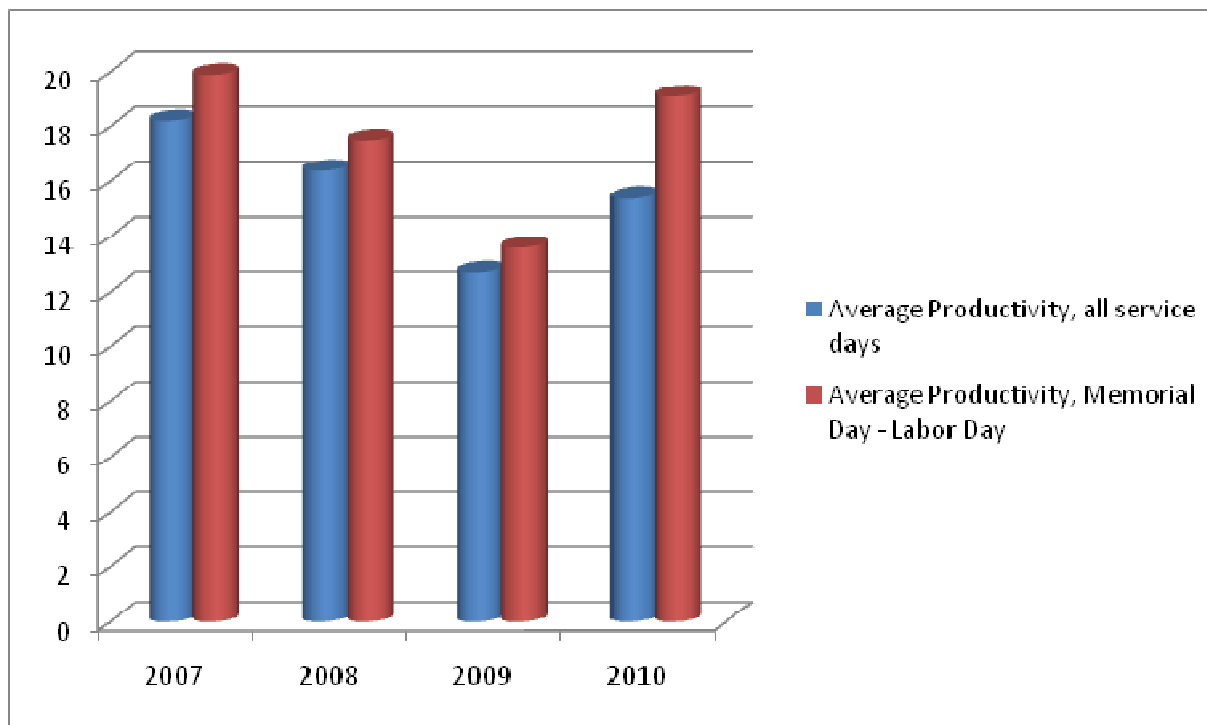
Productivity of transit service is generally measured by the number of passengers carried in each revenue hour of service. Including the shoulder season and Sausalito service, the average productivity for the 2010 Shuttle season was 15.4 passengers per hour, up 18% from 13.6

passengers per hour for all service in 2009. Figure 11 shows the average productivity for 2007, 2008, 2009, and 2010 for all service days and for the peak season only. Figure 12 summarizes productivity trends over the four seasons, comparing peak season productivity from 2005 to 2009. In 2010, peak season productivity rebounded to near 2007 levels.

Figure 11 Average Productivity, 2007 – 2010

	2007	2008	2009	2010
Average Productivity, all service days	18.2	16.4	12.7	15.4
Average Productivity, Memorial Day - Labor Day	19.9	17.5	13.6	19.1

Figure 12 Passengers per Service Hour (Productivity), 2007 – 2010



On-Time Performance

In keeping with a transit industry standard, Shuttle on-time performance is measured by the percentage of trips departing from a scheduled time point five or more minutes after the published departure time. In the case of the Shuttle, trips leaving “hot” (five or more minutes early) were not considered as a schedule adherence issue. Buses left early if they had a full passenger load. For a shuttle-type of service this is not an issue when buses are running on a 20 or 30-minute frequency.

The measurement of on-time performance was based on daily monitoring reports completed by the Shuttle ombudspersons at the Pohono Street Park and Ride lot. Figure 13 provides a monthly summary of recorded trip observations breaking out the percentages of trips that were considered on-time and those that departed five minutes or more later than the scheduled departure time. Not all trips were monitored during the season. No trips were monitored in September.

Figure 13 Shuttle On-Time Performance, 2010 Season

Month	Number of Trips Observed	% On-Time	% Departing Late
May	140	77%	23%
June	172	83%	17%
July	225	67%	33%
August	205	80%	20%
TOTALS	742	76%	24%

Late departures tended to cluster midday between 11:00 AM and 1:00 PM. There was a higher proportion of late departures on holiday weekends with higher passenger volumes and traffic congestion. On-time performance is difficult to maintain under the Shuttle operating conditions. Reasons for late departures included:

- Buses leaving the Golden Gate Transit yard late at the beginning of a shift (vehicle breakdown or operators showing up late).
- Delays in passenger boardings (arranging exact fare and actual onboard fare collection).
- Traffic congestion on-route or at the Muir Woods site.

Passenger Pass-Ups

Passenger pass-ups occur during peak periods when passenger demand exceeds bus capacity on a trip by trip basis. Bus capacity is restricted to 36 seated passengers. Standing loads are not permitted because of roadway design. Pass-ups can occur on a regular basis during busy days in July and August. Ninety-three percent of the May passenger pass-ups occurred on the Saturday and Sunday of Memorial Day Weekend. Thirty-six percent of the July passenger pass-ups occurred on the Saturday and Sunday of the Independence Day Holiday Weekend. Pass-ups can be clustered between 10:00 AM and 2:30 PM. On peak days, some passengers are passed-up by up to three buses. Some of those waiting are discouraged and depart by car to Muir Woods instead of waiting for the Shuttle.

Figure 14 Shuttle Passenger Pass-Up Summary, 2010 Season

Month	Number of Trips Observed	Number of Pass-Ups Observed	Number of Passengers Impacted
May	137	36	822
June	183	13	150
July	225	76	1,678
August	205	48	1,034
TOTALS	750	173	3,684

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SERVICE COSTS AND FAREBOX RECOVERY

Total service cost for 2010 was \$340,209. This is inclusive of the operating costs, lease costs, and the cost of marketing the service and providing information. This is \$33,560 less than in 2009, mainly because of a reduction in bus lease and preparation costs and marketing costs. Figure 15 identifies the service hours, costs, revenue, and a series of key performance measures for the Shuttle for the past four seasons.

Farebox Recovery

In its six years of service, the Muir Woods Shuttle has gone from offering free rides in its inaugural year (2005), to charging a \$2.00 round trip cash fare in 2006 and 2007, and to charging a \$3.00 round trip cash fare in 2008 through 2010. For all years where a fare was charged, seniors, youth, and disabled riders were offered a discounted \$1.00 fare. After three years of operation at the current fare level, it does not appear that the fare increase that took effect in 2008 has had any significant dampening effect on ridership. While there was evidence in 2008 that the fare may be as high as it can reasonably go without charging for parking at Muir Woods, the \$3.00 fare is not a significant barrier to ridership or mode selection. Ridership has increased by 17% from 2009 to 2010.

As shown in Figure 15, a total of \$43,864 was collected in fares over the course of the 2010 season, compared to \$39,805 in 2009, and \$44,064 in 2008. While not reaching farebox levels in the high ridership season of 2008, 2010 farebox revenue was up 10% over 2009.

Applying fare revenue to the full cost for service results in a net total cost for service of \$340,209 and a farebox recovery rate of 12.9%. This figure rises to a recovery rate of 15.6% when only considering the \$280,986 contract costs with Golden Gate Transit, which does not include the other direct costs of Marin Transit's ombudsperson (passenger assistance), CMS sign and portable toilet rentals, and staff administrative expenses to manage the service. The farebox recovery rate rises further to 18.3% when only considering the direct operating expenses of Golden Gate Transit (\$240,073) for purchased transportation services.

The farebox recovery rate for the Muir Woods Shuttle operation is about 40% less than the average farebox recovery rate of Marin Transit's twelve regular fixed routes operated by Golden Gate Transit, which have an average fare recovery of 21.5% percent. The Shuttle farebox recovery is about four percent lower than the 13.5% farebox recovery ratio for Marin Transit's rural (West Marin Stagecoach).

Figure 13 Muir Woods Shuttle Service Costs, 2007 - 2010

	2007	2008	2009	2010	% Change 2007 -2010
Service Hours					
TOTAL	1,739	2,112	2,159	2,115	21.62%
Ridership					
Total Annual Ridership	33,534	34,536	27,948	32,590	-2.82%
Golden Gate Transit Contract Costs					
Total Operating Costs	\$187,747	\$204,216	\$238,238	\$240,073	27.87%
Lease and Preparation Costs	\$47,520	\$59,135	\$66,154	\$37,078	-21.97%
Marketing and Information	\$14,208	\$14,918	\$13,346	\$3,835	-73.01%
SUBTOTAL	\$249,475	\$278,269	\$317,738	\$280,986	12.63%
Other Costs					
Consultant Contract & Data Entry (2010)	\$34,405	\$12,500	\$0	\$1,302	-96.22%
Additional Marketing	\$10,000	\$10,000	\$0	\$2,617	-73.83%
Passenger Assistance	\$5,400	\$5,600	\$5,715	\$5,344	-1.04%
Changeable Message Sign Rental and Operating Staff Costs	\$32,500	\$32,500	\$32,500	\$32,500	0.00%
Marin Transit Administration Costs	\$15,000	\$15,000	\$15,000	\$15,000	0.00%
Portable Restroom Rental	\$2,000	\$2,500	\$2,817	\$2,460	23.00%
SUBTOTAL	\$99,305	\$78,100	\$56,032	\$59,223	-40.36%
TOTAL COSTS	\$348,780	\$356,369	\$373,770	\$340,209	-2.46%
Farebox Revenue	\$28,504	\$44,064	\$39,805	\$43,864	53.89%
NET TOTAL COST	\$320,276	\$312,305	\$333,965	\$296,345	-7.47%

Figure 13 Muir Woods Shuttle Service Costs, 2007 - 2010 (Continued)

	2007	2008	2009	2010	% Change 2007 - 2010
Farebox Recovery Ratios					
Farebox Recovery/GGT Total Operating Cost	15.18%	21.58%	16.71%	18.27%	20.35%
Farebox Recovery/GGT Contract Cost	11.43%	15.84%	12.53%	15.61%	36.63%
Farebox Recovery/Total Cost	8.17%	12.36%	10.65%	12.89%	57.76%
Performance Measures					
Cost/Service Hour	\$200.56	\$168.74	\$173.12	\$160.86	-19.80%
Cost/One Way Passenger Trip	\$10.40	\$10.32	\$13.37	\$10.44	0.37%
Subsidized Cost/One Way Passenger Trip	\$9.55	\$9.04	\$11.95	\$9.09	-4.79%
Passengers/Revenue Hour	19.28	16.35	12.94	15.41	-20.09%

Cost Per Service Hour

The cost per service hour has decreased approximately 20% from 2007 to 2010.

Cost Per One Way Passenger Trip

The cost per one way passenger trip has fluctuated over the four year period with an overall growth of less than 0.5% between 2007 and 2010. The cost per one way trip dropped 22% from 2009 to 2010 because of reduced service delivery costs combined with increased ridership.

Subsidized Cost Per One Way Passenger Trip

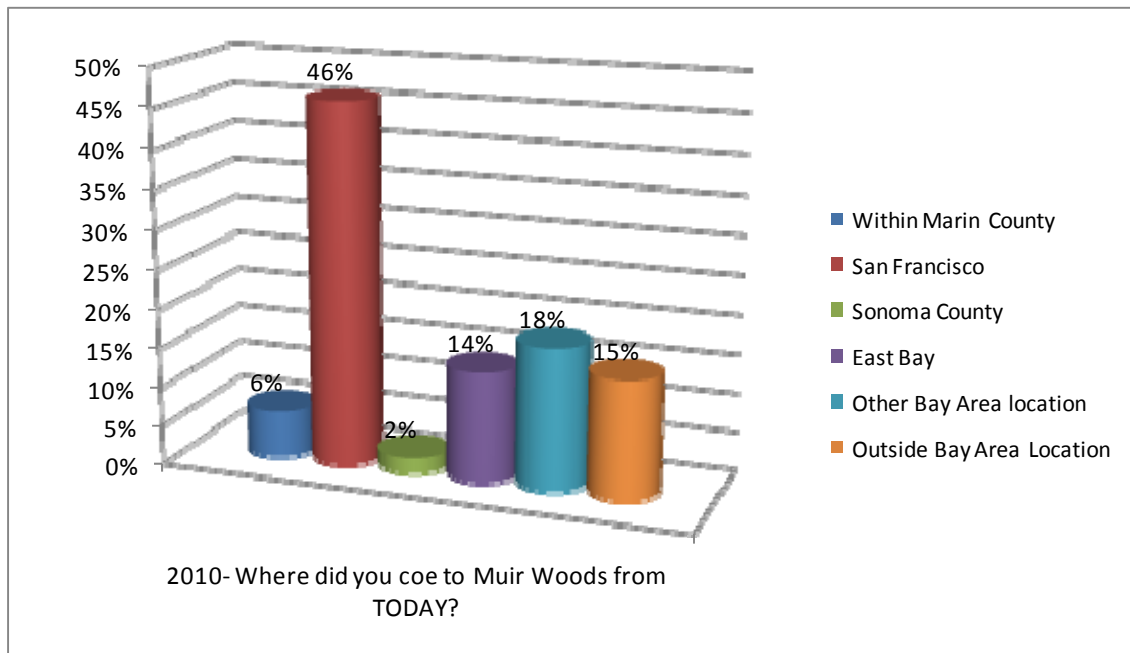
The subsidized cost per one way passenger trip has also fluctuated over the four year period with an overall drop of less approximately five percent between 2007 and 2010. There was a more dramatic decrease of 24% from 2009 to 2010 because of reduced service delivery costs combined with increased ridership.

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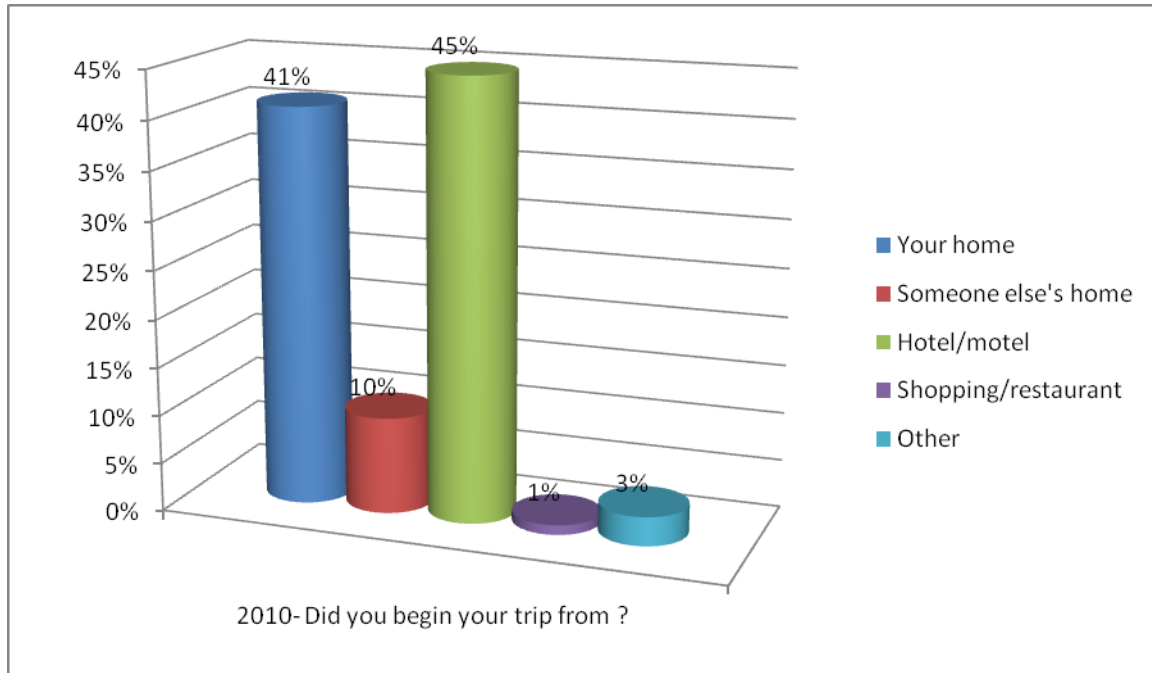
2010 PASSENGER SURVEY FINDINGS

In 2010, Marin Transit administered an intercept mail-back passenger survey. The Muir Woods Shuttle ombudspersons distributed questionnaires to Shuttle passengers while they waited for Shuttle departures at the Pohono Street Park-and-Ride lot. Questionnaires were distributed during the period July through September 2010. Six hundred questionnaires were returned for analysis. The following provides an overview of survey findings organized by question.

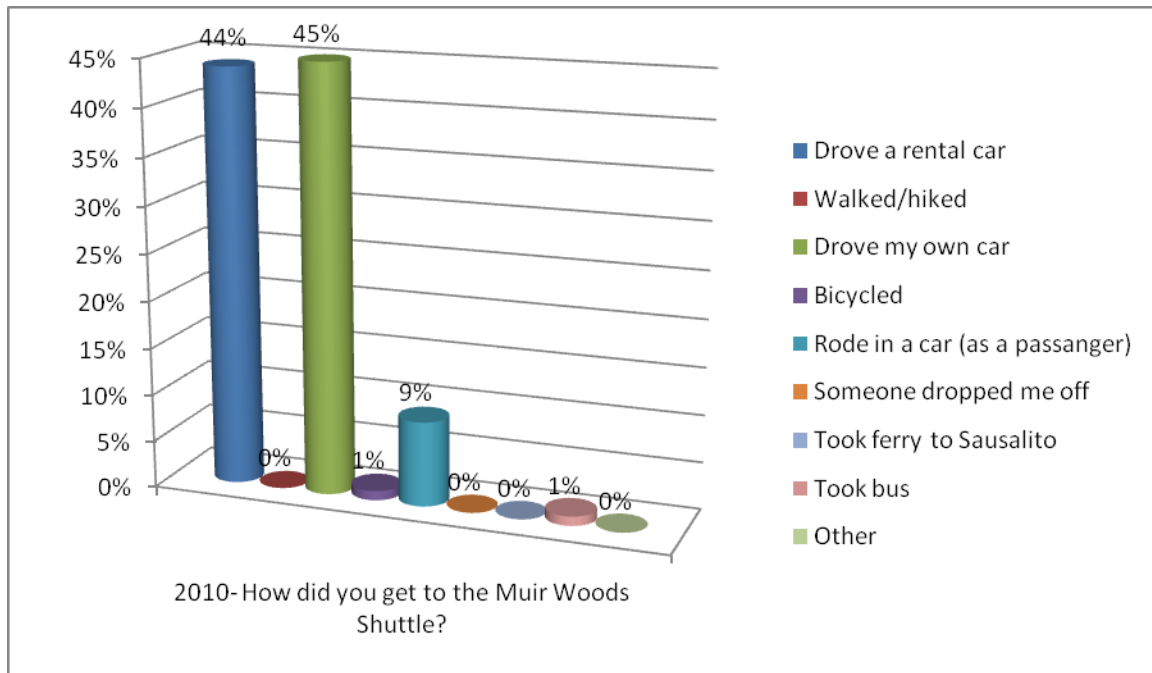
Question 3: Where did you come to Muir Woods from today?



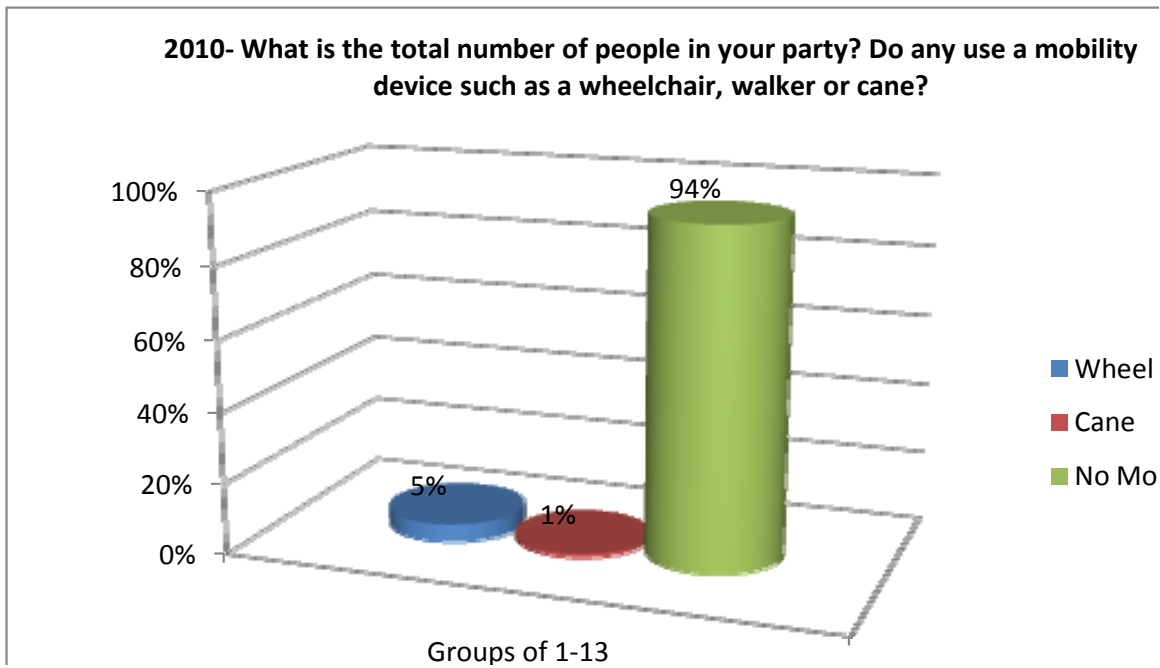
Question 4: Where did you begin your trip?



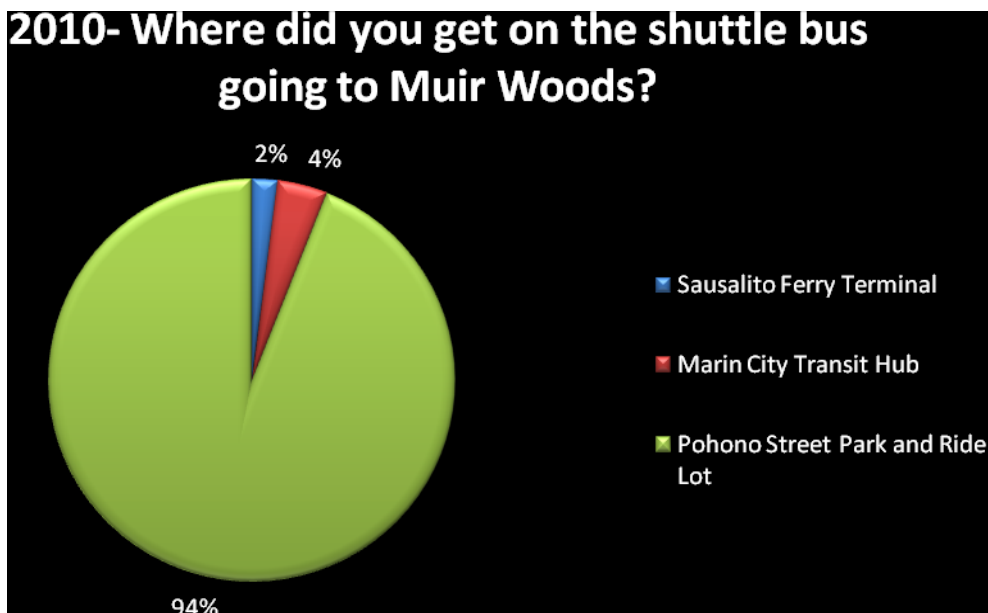
Question 5: How did you get to the Muir Woods Shuttle?



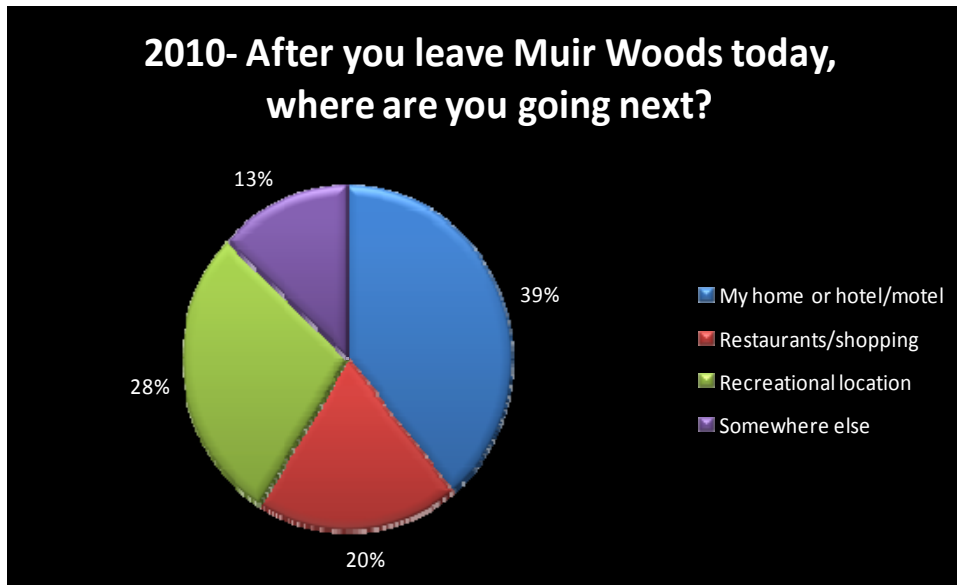
Question 6: What is the total number of people in your party? Do any use a mobility devise such as a wheelchair, walker or cane?



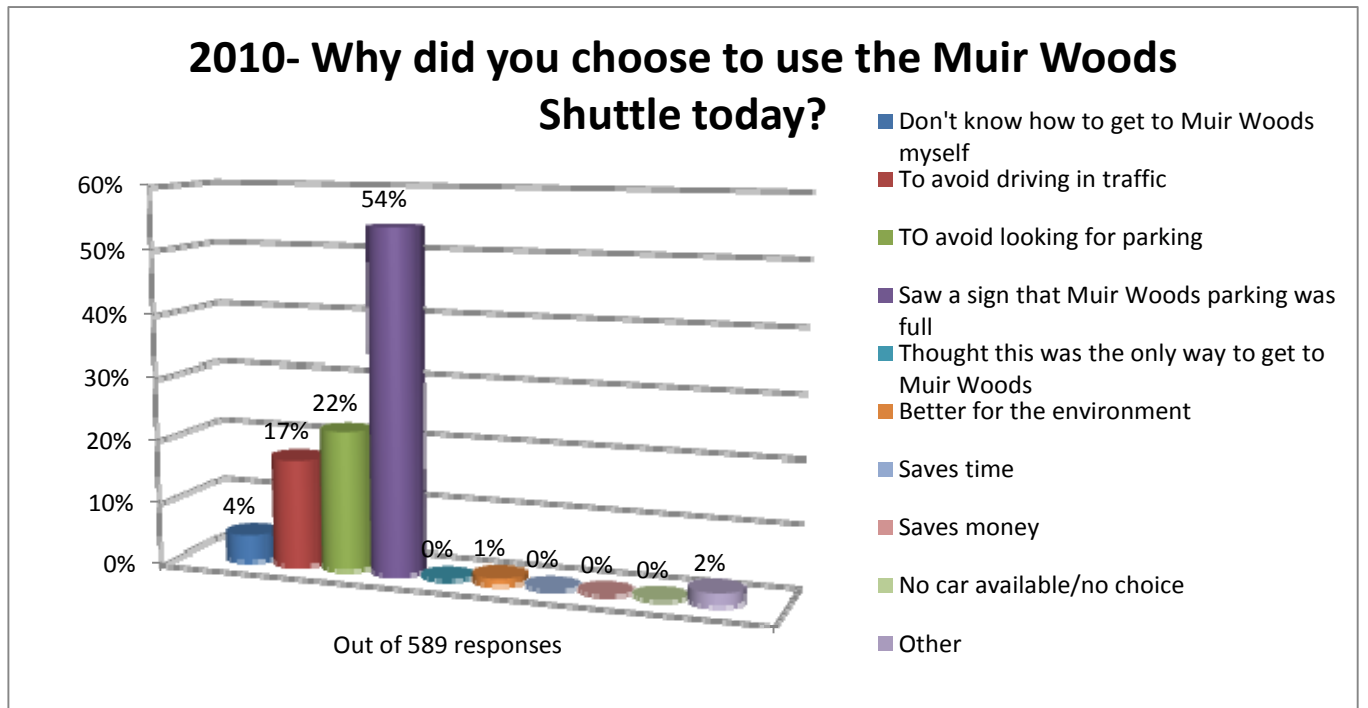
Question 7: Where did you get on the shuttle bus going to Muir Woods?



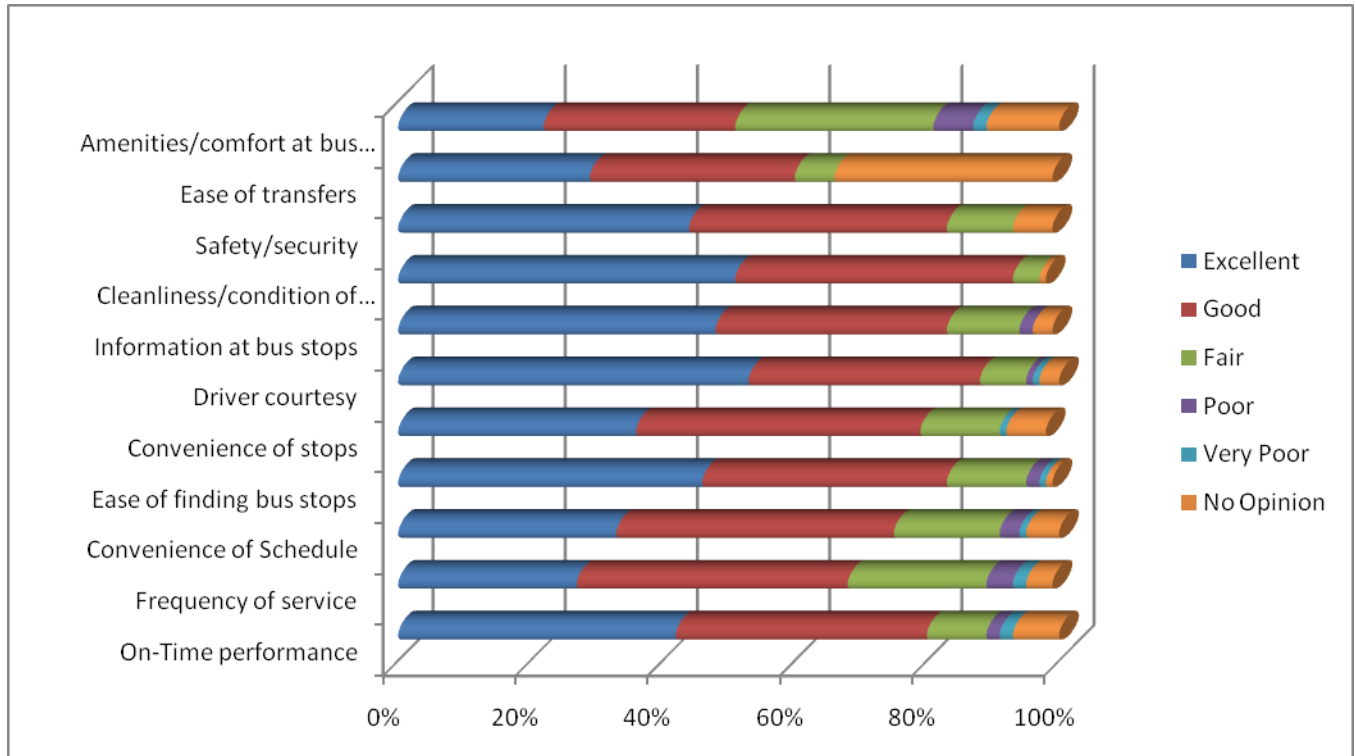
Question 8: After you leave Muir Woods today, where are you going next?



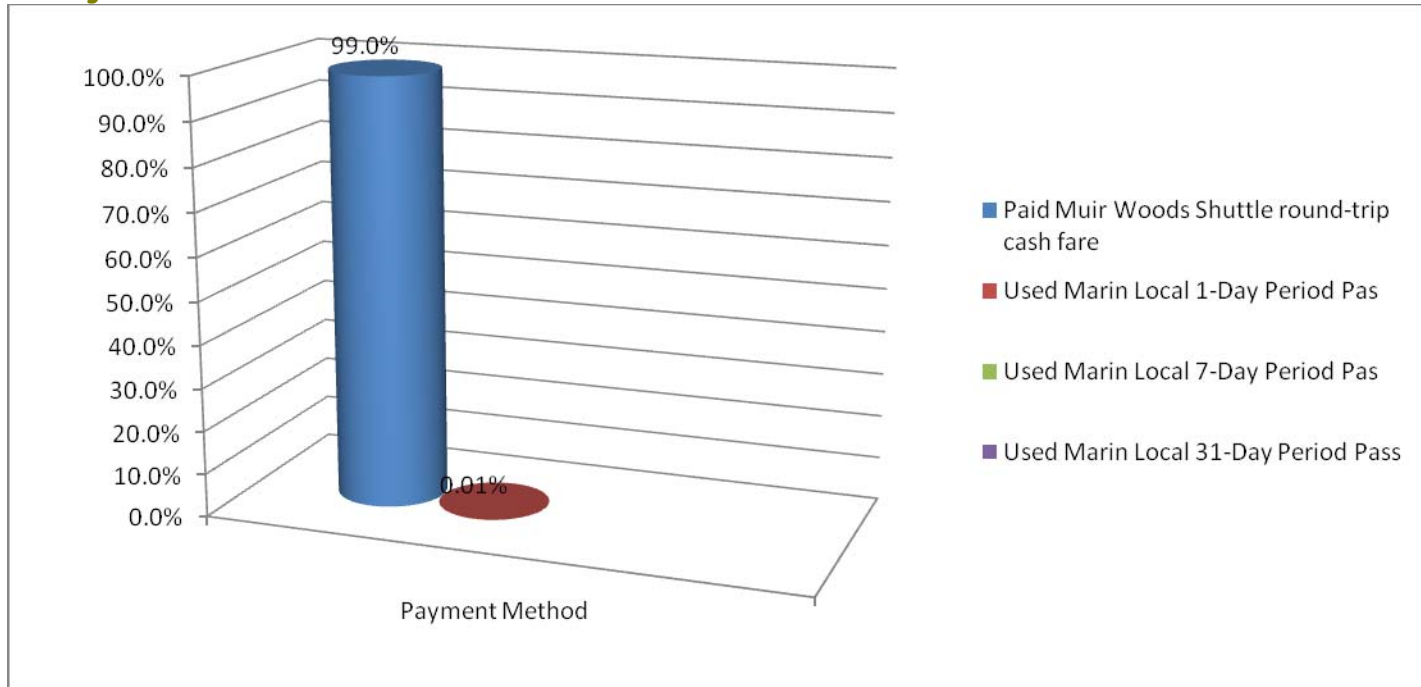
Question 9: Why did you choose to use the Muir Woods Shuttle today?



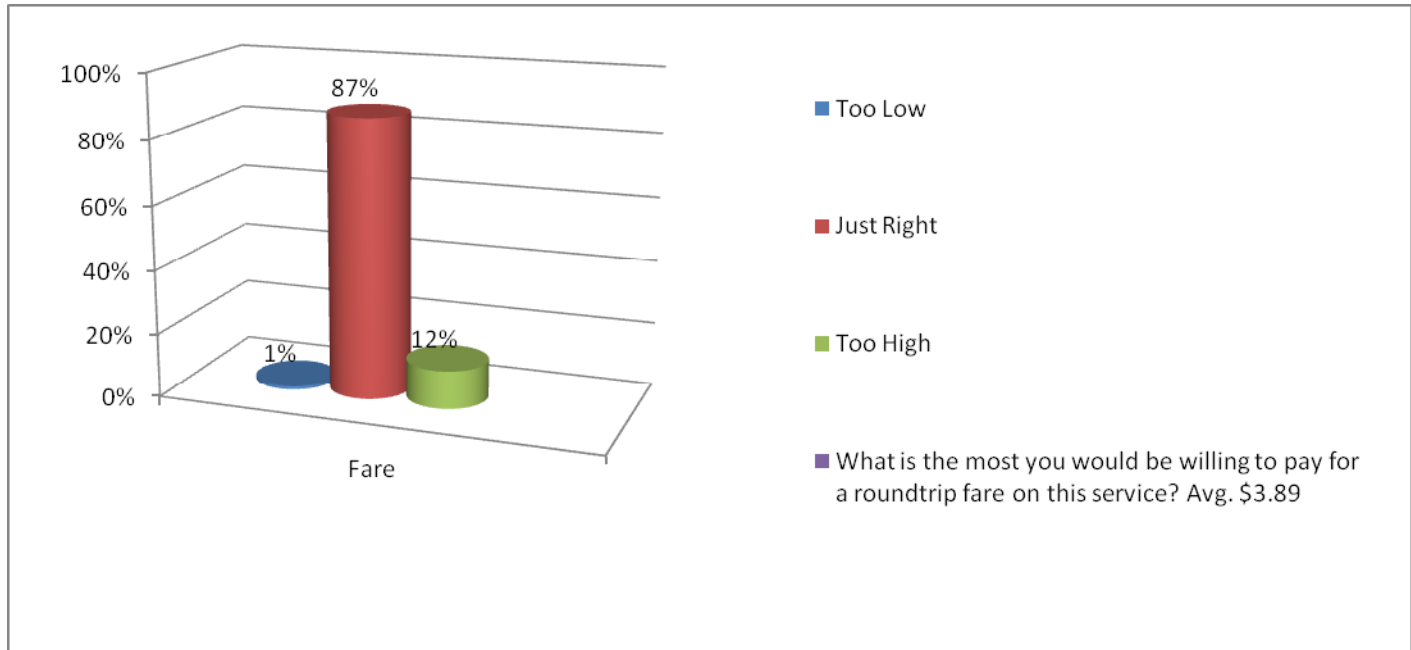
Question 10: Tell us what you think of the Shuttle Service?



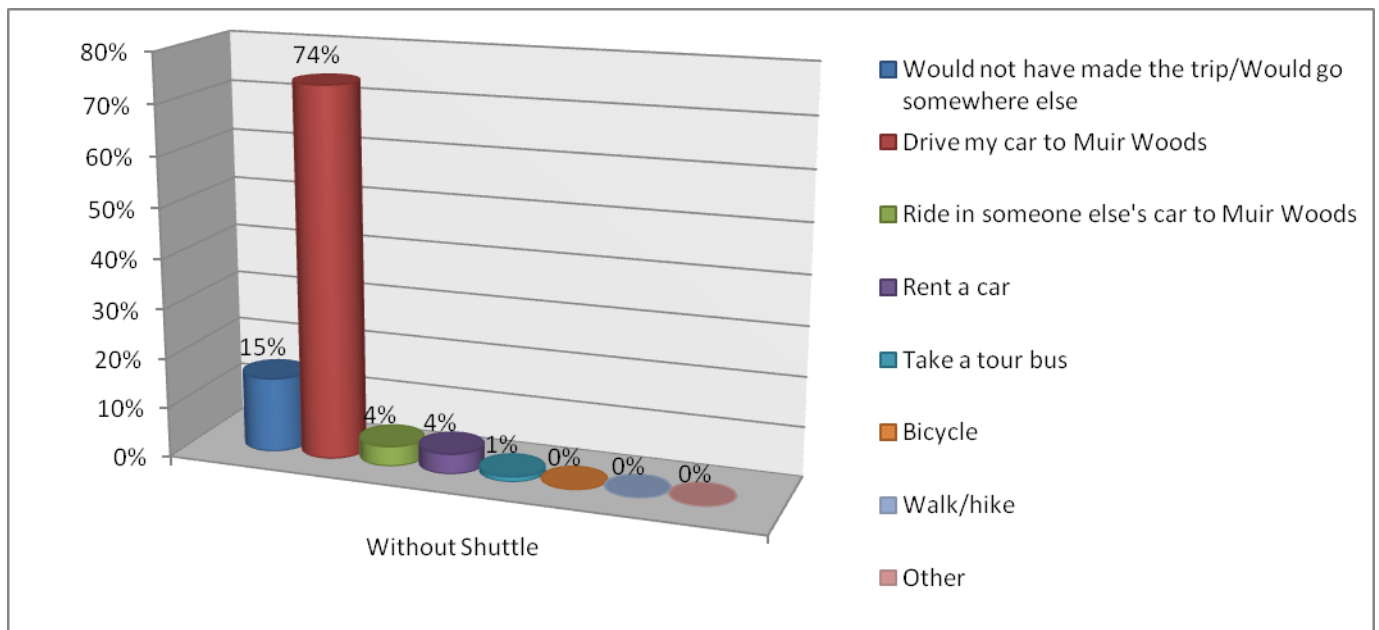
Question 11: How did you pay your fare on the Muir Woods Shuttle today?



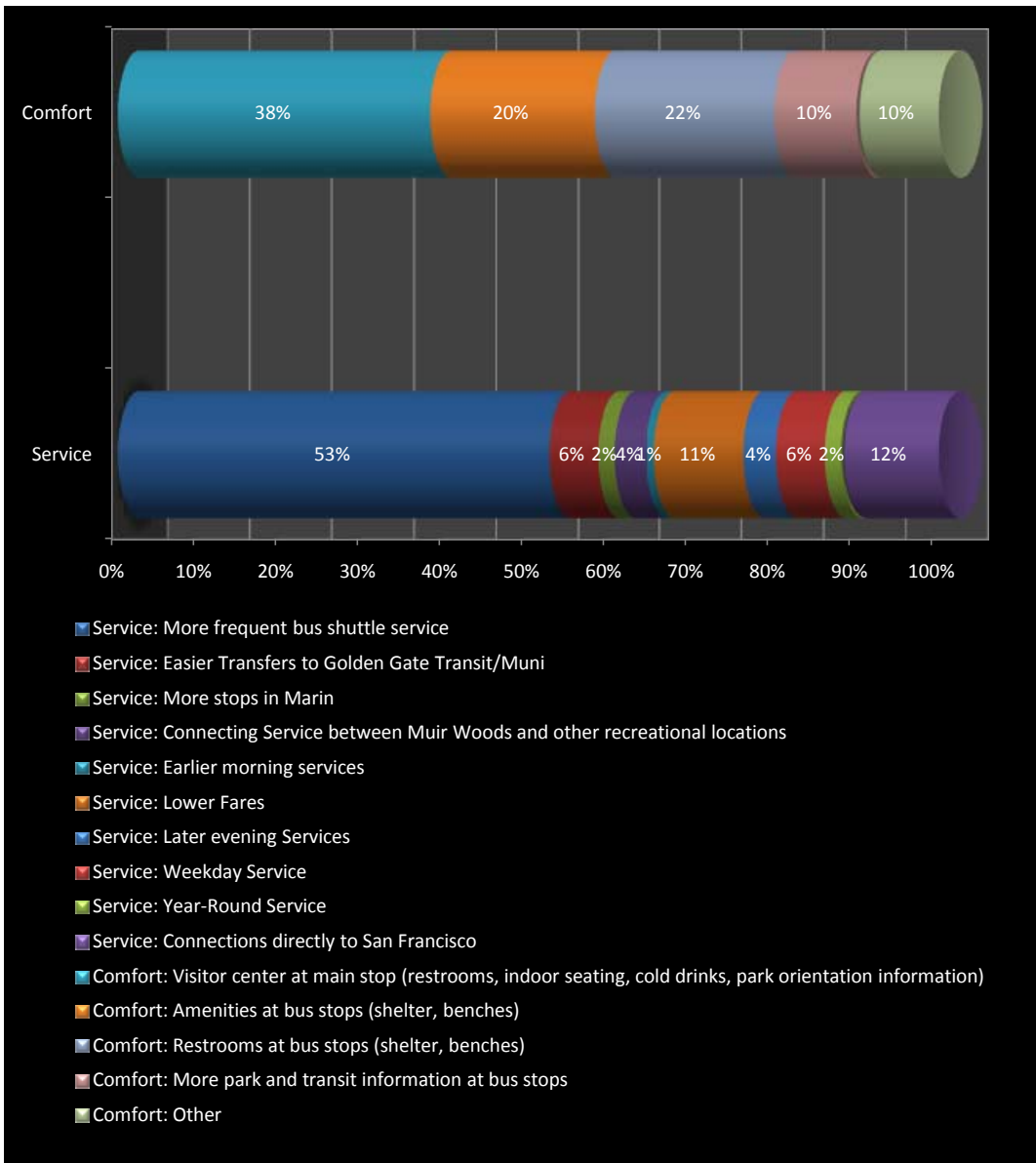
Question 12: What do you think of the fare for this service?



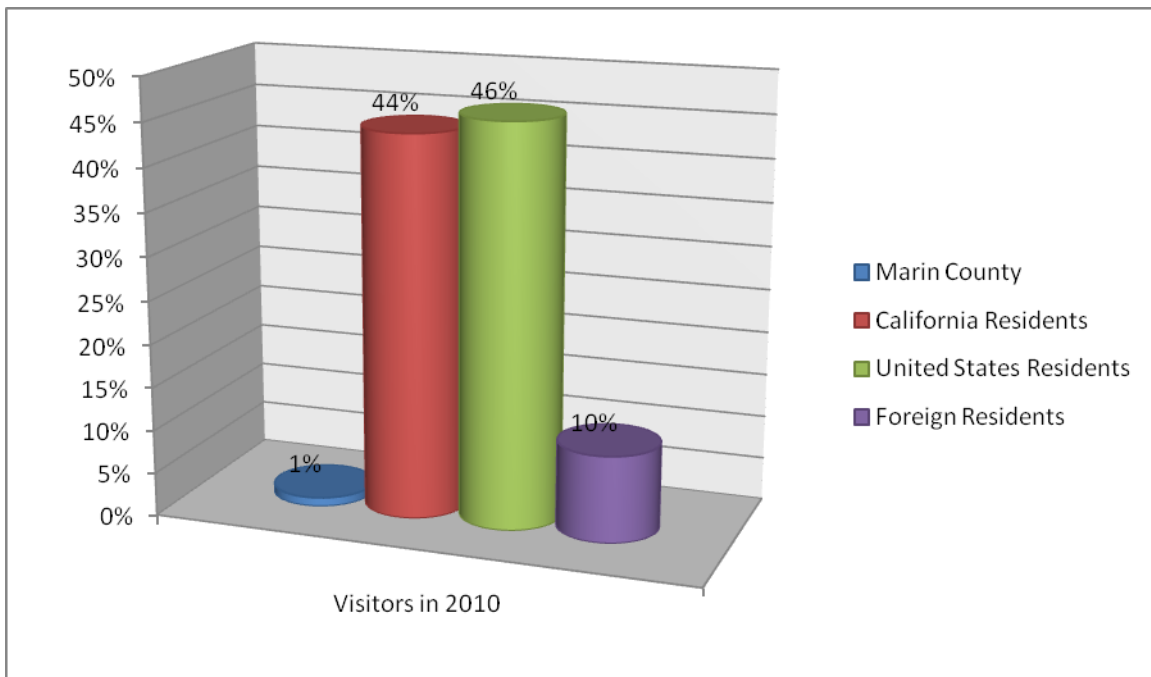
Question 13: How would you have made this trip if you couldn't ride the shuttle?



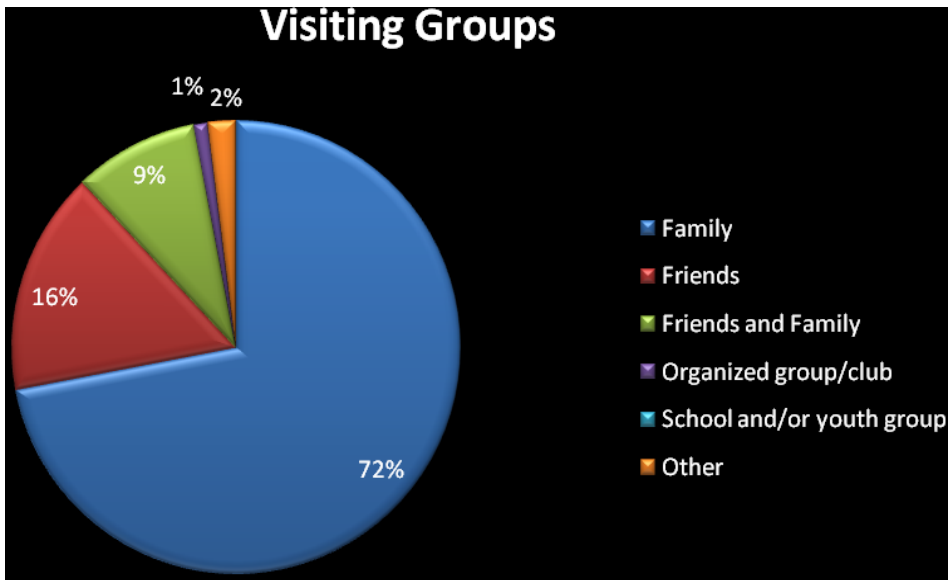
Question14: Which of the following improvements would make you more likely to use the shuttle again in the future?



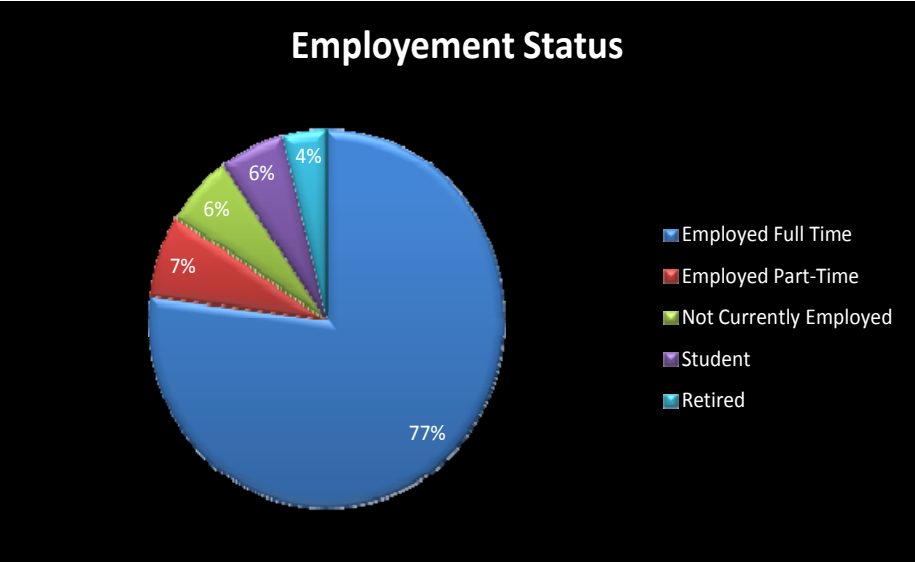
Question15: Where do you live?



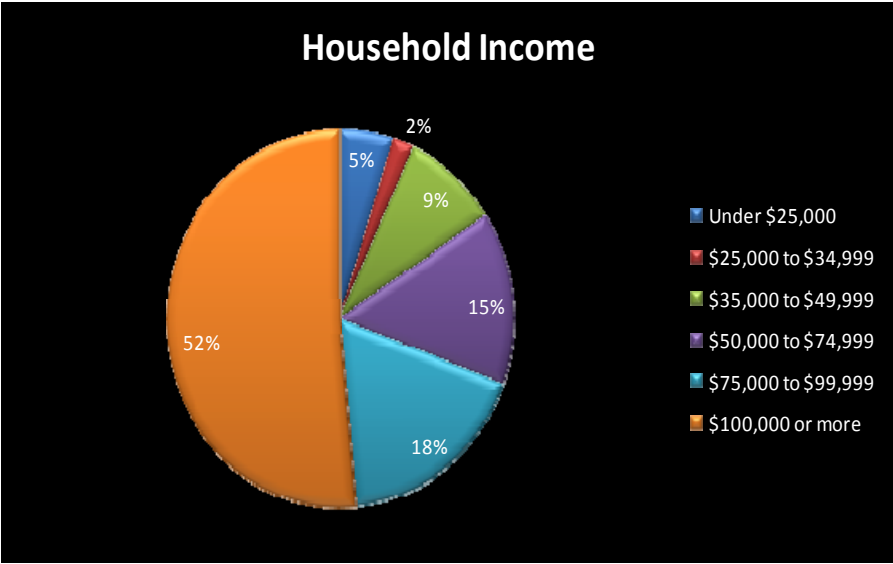
16. Which of the following best describes your group?



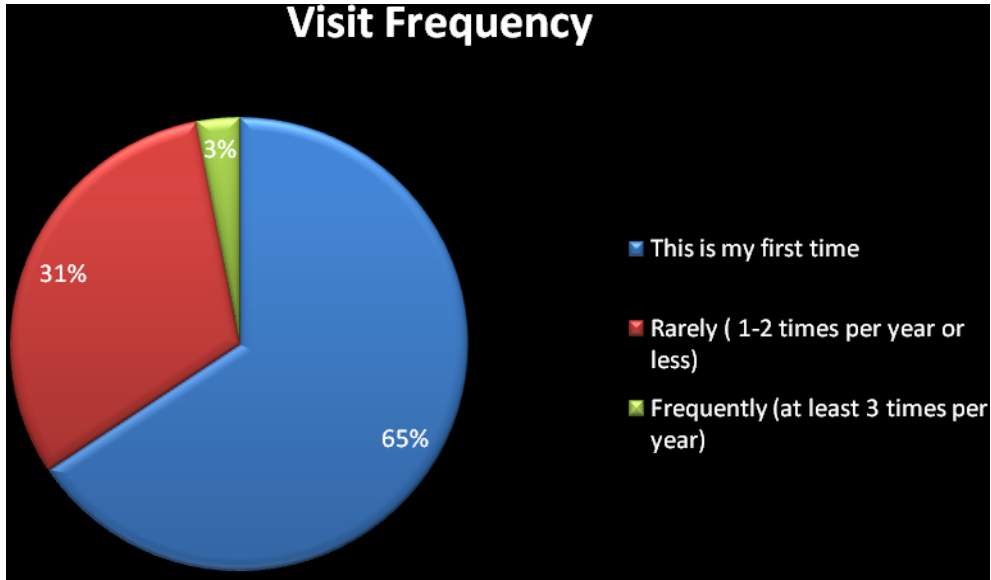
Question 19: Are you employed?



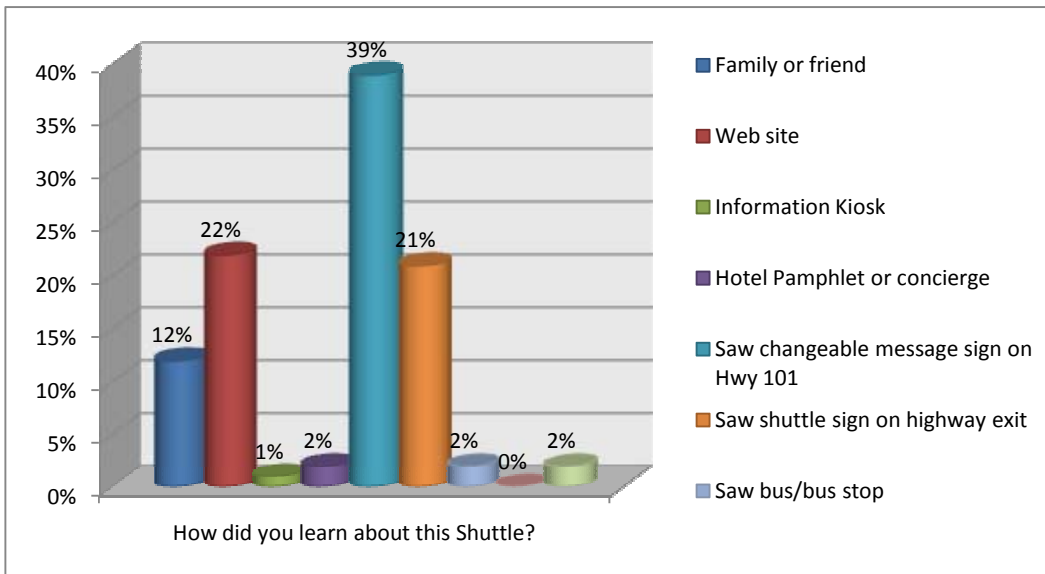
20. Total household income (for everyone in your household)



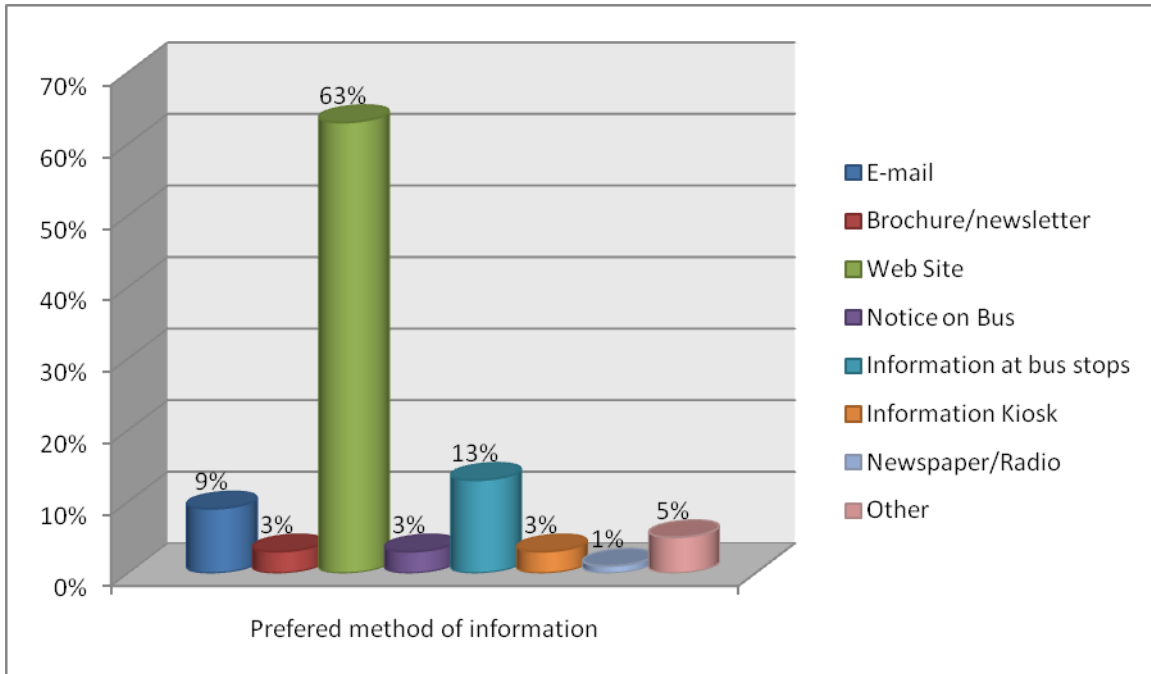
Question 21: How often do you visit Muir Woods?



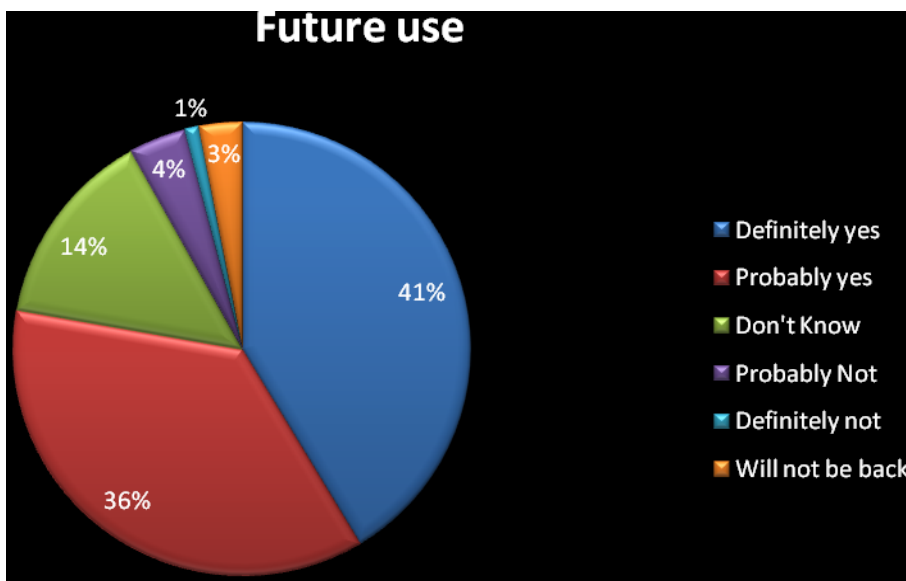
Question 22: How did you learn about this Shuttle?



Question 23: How do you prefer to get information on the Muir Woods Shuttle?



Question 25: Would you use this Shuttle again?



Question 26: Other Comments on transportation to Muir Woods?

1.	Provide trail maps at the bus so we could plan hiking while riding the bus.
2.	Too long of a round trip.
3.	Same Pick-Up/ Drop Off Location
4.	Free Shuttle
5.	Signage from the hwy to the shuttle lot and from the lot to the bus stop was clear, but maybe a sign within the parking lot to say that the shuttle does not pick up from the lot
6.	Should sell bottle water at bus stop. learned about shuttle at about.com website
7.	Should post warning for people with motion sickness that it is a rough ride. Crossing Pohono St is dangerous
8.	Should let us know there is no cell service up there.
9.	Should have more service on weekends
10.	Shade at bus stop and learned about shuttle at GGT website
11.	Prefer to get information on road signs
12.	No need for air conditioning on bus. How about an electric bus? Spare energy!
13.	Needs better signs from hwy 101. directly after Golden Gate Bridge for the proper exit to access Muir Woods

14.	Needs restrooms
15.	Accept AC Translink, clipper, etc and prepay at stop. have a pre-pay automatic/cc kiosk to pay at the stops or give exact change
16.	AC on bus was too cold, no need for AC.

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CONCLUSIONS AND RECOMMENDATIONS

Muir Woods National Monument Congestion Management and the Muir Woods Shuttle

Demand for parking at the Muir Woods site exceeds onsite capacity on many weekend and summer weekdays. Private vehicles or rental vehicles remain the key modes for accessing Muir Woods. Muir Woods visitor traffic creates congestion on Marin County highways leading to and from the sites. This situation will continue to worsen as annual visitation continues to increase. The Muir Woods Shuttle could play a more significant role in congestion management. Over time, additional capacity could be added on the Saturdays and Sundays of peak season Holiday Weekends, and as funding becomes available, service expansion to weekdays could be considered during the peak summer months of July and August. However, in the near term, there are a number of areas that need to be addressed to attract more Shuttle use, improve Pohono site amenities, improve communications, and reduce passenger pass-ups.

Importance of Ombudsperson Presence

The presence of an ombudsperson is critical to a better passenger experience and to the operational monitoring of service. Having two ombudspersons with some peak season shift overlap has

enhanced the effectiveness of this position. *These positions should continue as part of the provision of Shuttle service. The dissemination of Park and transit information and trip by trip service monitoring should remain key functions.*

Communication Between Shuttle Ombudspersons and Golden Gate Transit Dispatch

There are incidents where Shuttle buses arrive late or do not arrive at all at the beginning of a shift. The ombudsperson(s) on duty is unable to provide waiting passengers with estimated time of arrival information. *To overcome this situation, a communication protocol between the Golden Gate Transit dispatchers and the ombudspersons should be established to inform of vehicle breakdowns, in service vehicle switch outs, or anticipated late arrivals at the beginning of a shift.* This could be accomplished through a check-in protocol via cell phone communication (ombudsperson and dispatcher) or through on site monitoring by at Golden Gate Transit road supervisor at the beginning of Shuttle shifts.

Fares and Fare Collection

Exact fare policy and fare collection remain an “Achilles heel” to Shuttle operations, especially at peak periods. Confusion over fare collection can result in late bus departures, passenger pass-ups, and visitor anxiety. *Marin Transit should investigate feasible strategies to improve fare collection through the on-site availability of change machines, credit card processing, or pre-sale of tickets at area hotels or online.*

Passenger Pass-Ups

Passenger pass-ups also remain a problem that negatively impacts the “visitor experience”. Road conditions limit bus size and rule out standing loads. Individual bus capacity is limited to 37 seated passengers. An increase in the number of in-service buses is required to effectively address this problem. *The limited and strategic operation of extra buses could be considered at known crush load times. The strategic use of extras could make the full operation of 15-minute headways unnecessary. Straight through operation of full Sausalito and Marin City buses without stopping at the Pohono site may be advisable in conjunction with extras operating specifically from the Pohono site.*

Changeable Message Signs (CMS)

The changeable message signs remain the most important marketing tool for Shuttle ridership. The

current northbound locations are effective as intercept sites. Sign reliability must be improved. This includes the legibility of the message lettering as well as the consistent functioning of the signs. Signage must be approved by Caltrans for use along their right-of-way. Marin Transit is currently investigating the rental of new CMS units for use in the 2011 season. *New signage should have pre-set on/off message capability and be pre-set for automatic timed operations. Signage operations should be under the direct control of Marin Transit.* Based on Muir Woods parking lot use trends, the changeable message signs should be programmed to go on at 9:30 AM and go off at 2:00 PM.

Dealing with Extreme Crowds

Crowding on peak demand days remains a concern, especially if pass-ups increase the size of crowds. As mentioned earlier in this section, additional bus capacity will reduce crowding. Seating remains a problem at the Pohono site. As suggested in earlier Shuttle evaluations, consideration should be made in future seasons to make these waiting riders “captive”, such as providing a coffee cart or an additional shelter. The Shuttle ombudspersons will continue to play a significant role in managing Pohono site crowds and assisting individuals by providing Park information to read while waiting to visit Muir Woods.

Coordinating with Local Events and Transportation

Southern Marin, and Sausalito in particular, are tourist destinations. During the summer months, there is a large influx of both tourists and local residents attending special events.

The 2011 Mountain Play will be held on Mt. Tamalpais May 22, and 29, and June 5, 11, 12 and 19, with bus transportation provided from the same parking lot at Pohono Street where the Muir Woods Shuttle provides parking. In past years, this has caused the lot to fill up earlier than usual. In addition, a few people travelling to the play have taken the bus to the park by accident, and vice versa. This seems to be due primarily to the signage in the parking lot not clearly distinguishing between the two bus systems. In addition, a final destination check by all drivers prior to departing the lot would have been helpful. This situation was not adequately addressed in 2010. *Marin Transit should explore the estab-*

lishment of improved Mountain Play/Muir Woods Shuttle signage with the Play organizers prior to their event.

On Labor Day, ferry service is increased in part because of the Sausalito Art Fair, which brings thousands of people into Sausalito. This increases ridership on the Muir Woods Shuttle as people take advantage of both opportunities. *Marin Transit should explore the provision of and funding responsibility for additional Art Fair shuttle capacity between the ferry terminal and Art Fair site to free Muir Woods Shuttle capacity from the ferry for Park visitors.*

Monthly Service Evaluation

Marin Transit planning staff will review the daily monitoring sheets prepared by the ombudspersons on a monthly basis to identify on-time performance issues or chronic pass-up problems. This will facilitate correction within the current operating season.

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APPENDIX A:
2010 SHUTTLE PASSENGER SURVEY
QUESTIONNAIRE

Muir Woods Shuttle Passenger Survey – 2010

2001

We appreciate your time to help improve the Shuttle Service. Please complete this postage pre-paid survey while you are on the bus and return the form to the bus operator or place in any U.S. Postal Service Mailbox.

Please complete only one survey today. Please complete all sections.

Today's Date & Time.

1. What is today's date? _____
2. At what time did you board the bus? _____

Please Describe Your Trip TO Muir Woods Today.

3. 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) _____

4. Did your trip begin 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): _____

5. 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 ferry to Sausalito
 - 8 Took bus (specify route): _____
 - 9 Other (specify): _____

6. What is the total number of people in your party (including yourself?) _____ Do any use a mobility device such as a wheelchair, walker or cane? _____

7. Where did you get on the shuttle bus going to Muir Woods?
 - 1 Sausalito Ferry Terminal
 - 2 Marin City Transit Hub
 - 3 Pohono Street Park and Ride Lot

8. After you leave Muir Woods today, where are you going next?
 - 1 My home or hotel/motel
 - 2 Restaurant/shopping (where?) _____
 - 3 Recreational location (circle one or write in)

Sausalito Muir Beach Stinson Beach
 Sonoma/Napa SF-Fisherman's Wharf Other SF

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): _____

Tell Us What You Think of the Shuttle Service:

10. Please rate the shuttle service on each of the following:	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 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
Amenities/comfort at bus stops	1	2	3	4	5	6

11. How did you pay your fare on the Muir Woods Shuttle today?
 - 1 Paid Muir Woods Shuttle round-trip cash fare
 - 2 Used Marin Local 1-Day Period Pass
 - 3 Used Marin Local 7-Day Period Pass
 - 4 Used Marin Local 31-Day Period Pass

12. What do you think of the fare for this service?
 - 1 Too Low
 - 2 Just right
 - 3 Too High

13. What is the most you would be willing to pay for for a roundtrip fare on this service? \$ _____

13. 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) _____

14. Which of the following improvements would make you more likely to use the shuttle again in the future?

Service:

- 1 More frequent bus shuttle service
- 2 Easier transfers to Golden Gate Transit/Muni
- 3 More stops in Marin (where?) _____
- 4 Connecting service between Muir Woods and other recreational locations (where?) _____

- 5 Earlier morning service
- 6 Lower fares
- 7 Later evening service
- 8 Weekday service
- 9 Year-round service
- 10 Connections directly to San Francisco

Comfort:

- 11 Visitor center at main stop (restrooms, indoor seating, cold drinks, park orientation information)
- 12 Amenities at bus stops (shelter, benches)
- 13 Restrooms at bus stops (shelter, benches)
- 14 More park and transit information at bus stops
- 15 Other (specify): _____

Continues on Reverse →

Tell us a little about yourself:

15. Where do you live?

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

**16. Which of the following best describes your group?
(check one)**

- 1 Family 2 Friends
- 3 Family and friends 4 Organized group/club
- 5 School and/or youth group
- 6 Other (specify) _____

17. In what year were you born? _____

18. How many in your party are:

0-12 years _____ 13-17 years _____
 18-34 years _____ 35-54 years _____
 55-64 years _____ 65 and over _____

19. Are you (check all that apply)

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

20. 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

21. How often do you visit Muir Woods?

- 1 This is my first time
- 2 Rarely (1-2 times per year or less)
- 3 Frequently (at least 3 times per year)

22. 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): _____

23. 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 7 Newspaper/Radio
- 8 Other (explain): _____

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

- 1 Yes 2 No

25. 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

26. Other comments on transportation to Muir Woods?

Thank you for taking transit!



SPONSORSHIP OF ROUTE 66 SERVICE

Route 66 (Muir Woods Shuttle) is funded by Marin Transit and the National Park Service, and operated under a service agreement between Marin Transit and the Golden Gate Bridge, Highway and Transportation District (the operator of Golden Gate Transit).



For more information, please visit our website at www.marintransit.org or email info@marintransit.org

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