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Muir Woods Shuttle Evaluation Report







2011 Seasonal Service

in partnership with:



January, 2012

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INTRODUCTION

This report focuses on the seventh 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 six seasons of operation, the Shuttle has evolved to meet visitor needs and has become an integral mode of access to the park, carrying approximately 13.05% 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. Golden Gate Transit operated the service under contract to Marin Transit, as Route 66 in 2011.

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 Shut-

tle 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, way finding, and amenities at stops.

Passenger and intercept surveys were not conducted in the 2009, 2010, and 2011 season. This 2011 season evaluation includes 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 2011 included weekends and holidays beginning on Saturday May 7, and continuing through Sunday September 25, 2011. In all, service was provided on 33 peak summer days and 12 shoulder season days (versus 33 peak summer days and 14 shoulder season days

in 2010).

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. Way finding 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.

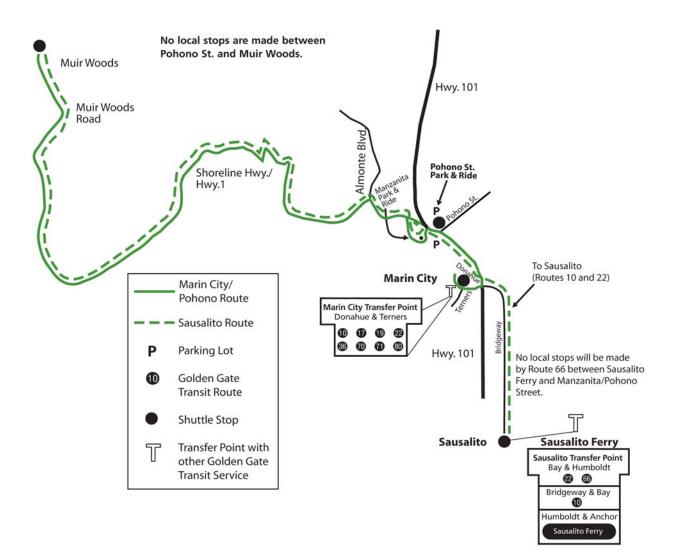
The span of service and frequency remained unchanged in 2011, operating every 30 minutes during the "shoulder seasons" of May 7 through May 22 and September 10 through 25. Beginning on Memorial Day weekend (May 28) and continuing through the peak months of June, July, and August, frequency increased to operate every 20-minute intervals. Service ended on the last Sunday in September (for 2011, September 25).

For the fifth 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.

2011 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 2011 season. 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 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.

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.
- Coordinating exact fares amongst passen-

gers 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-thepeak" 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 four years of Shuttle operations

. Figure 2 Summary of Operations, 2008–2011

	2008	2009	2010	2011
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	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	Weekends and holidays from May 7 through September 25
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	30 minutes, May and September shoulders, 20 minutes, Memorial Day - Labor Day
Service Hours*	2,112	2,158	2,115	2,108
Standard Fare	\$3.00 round trip	\$3.00 round trip	\$3.00 round trip	\$3.00 round trip
Farebox Recovery*	21.58%	16.17%	18.27%	26.8%

*Fluctuations in service hours reflect the need to add service and/or overall fewer weekends due to shorter season

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 (NPS).

Information was distributed to the visitor market through hotel concierges, hostels, and travel ser-

vices 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 advertising the service, and posters in buses and on ferries. 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 2011 intercept passenger survey, 30% 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. Marin Transit and NPS have since developed websites with Shuttle information which assisted 27% of surveyors. However, CMS is still the predominant method of advertising the use of the Shuttle. Figure 3 describes the messages displayed on the CMS.

Location	Operated by	Typical message
Northbound 101 between Alexander Ave. on-ramp (Waldo Grade) and Waldo Tunnel	Pacific Highway Rentals	Muir Woods Parking Full Use Muir Woods Shuttle
Northbound 101 Marin City off-ramp	Pacific Highway Rental	Muir Woods Shuttle Next Exit

Figure 3 Changeable Message Sign Messages

Evaluation Methodology

Data on Shuttle ridership published in this report was derived from fare collection reports compiled for each day of service in 2011. 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 2011 service were provided by the ombudspersons for Marin Transit, and include such commentary as the on-time performance, weather conditions, fare collection, passenger pass-ups, service strengths, services weaknesses and ways to improve service.

In 2011, Marin Transit administered an intercept mail-back passenger survey, identical to the 2010 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 2011. Findings are summarized in the last section, **2011 Passenger Survey Findings**, and are used to develop of service recommendations. THIS PAGE INTENTIONALLY LEFT BLANK

RIDERSHIP AND PRODUCTIVITY

This section summarizes the number of passengers the Muir Woods Shuttle carried in 2011, 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 2011. Daily fare collection reports provide 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 47,572 one-way passenger trips were made on the Muir Woods Shuttle between Saturday, May 7th, and Sunday, September 25, 2011.

Both Muir Woods visitor volumes and Shuttle ridership increased in 2011 over 2010 levels¹. While Park visitation increased by 20,055 (two percent), reaching record high park visitation levels. Shuttle ridership had increased by 46% between 2010 and 2011, reaching the highest level

of ridership since the service was initiated.

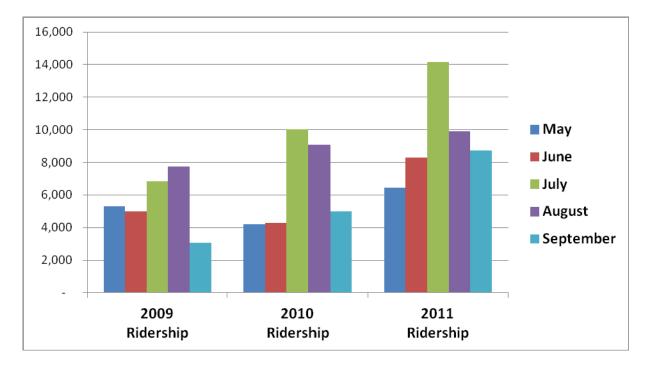
Figure 4 shows the total ridership for the 2009, 2010, and 2011 Shuttle seasons, by month, and the year-over-year change from 2009-2011 and 2010-2011. While each month showed a year-over-year increase, July saw the highest ridership. Figure 5 displays the monthly Shuttle ridership for the period 2009-2011, 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).

Month	2009 Ridership	2010 Ridership	2011 Ridership	Ridership Change 2009-2010	Ridership Change 2010-2011	% Change 2009-2011	% Change 2010-2011
May	5,319	4,194	6,443	(1,125)	2,249	-21%	54%
June	4,984	4,268	8,305	(716)	4,037	-14%	95%
July	6,845	10,036	14,166	3,191	4,130	47%	41%
August	7,737	9,091	9,924	1,354	833	18%	9%
September	3,063	5,001	8,734	1,938	3,733	63%	75%
TOTAL	27,948	32,590	47,572	4,642	14,982	17%	46%

Figure 4 Table of Shuttle Ridership by Month, 2008 – 2011

Figure 5 Chart of Shuttle Ridership by Month, 2008-2011



Shuttle ridership remains higher in the peak season (Memorial Day Weekend through Labor Day Weekend). In 2011, approximately 87% of total Shuttle riders were during the peak season. Figure 6 shows peak season ridership for the seven 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. Between 2010 and 2011, peak ridership increased by 43%. Figure 7 provides total passengers for each service weekend during the 2011 Shuttle season. Figure 7 data clearly illustrates the "peaking" of Shuttle ridership between the Fourth of July Weekend and Labor

ridership by individual service day.

Figure 6 Peak Ridership, 2005 - 2011

	2005	2006	2007	2008	2009	2010	2011
Riders	10,219	14,471	27,713	29,938	24,737	28,824	41,236
% Change Fi	rom Previous						
Year							
		42%	92%	8%	-17%	17%	43%



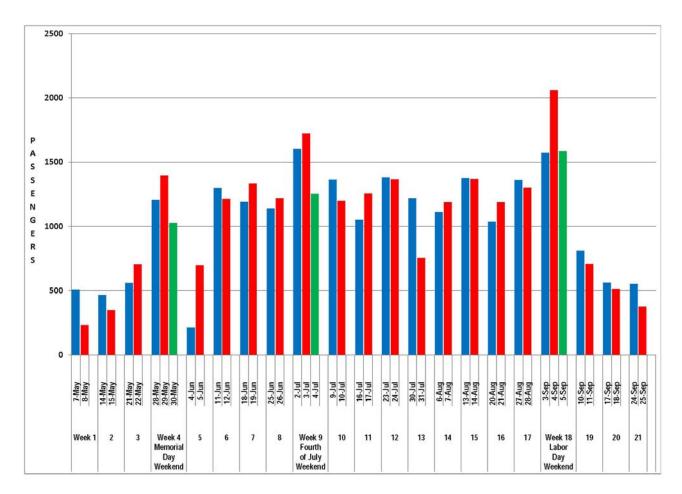


Figure 8 Daily Shuttle Ridership In 2011 Shuttle Season

Month	Day	Daily Ridership	Monthly Ridership
	Saturday, May 7	508	
	Sunday, May 8	232	
	Saturday, May 14	465	
	Sunday, May 15	347	
May	Saturday, May 21	560	6,443
	Sunday, May 22	704	
	Saturday, May 28	1206	
	Sunday, May 29	1395	
	Monday, May 30	1026	
	Saturday, June 4	213	
	Sunday, June 5	697	
	Saturday, June 11	1300	
June	Sunday, June 12	1215	8.305
June	Saturday, June 18	1191	0,505
	Sunday, June 19	1332	
	Saturday, June 25	1139	
	Sunday, June 26	1218	
	Saturday, July 2	1602	
	Sunday, July 3	1722	
	Monday, July 4	1253	
	Saturday, July 9	1362	
	Sunday, July 10	1197	
July	Saturday, July 16	1052	14,166
	Sunday, July 17	1256	
	Saturday, July 23	1381	
	Sunday, July 24	1366	
	Saturday, July 30	1220	
	Sunday, July 31	755	

Month	Day	Daily Ridership	Monthly Ridership
	Saturday, Aug. 6	1110	
	Sunday, Aug. 7	1186	1
	Saturday, Aug. 13	1375	
	Sunday, Aug. 14	1367	0.00
August	Saturday, Aug. 20	1036	9,924
	Sunday, Aug. 21	1187	1
	Saturday, Aug. 27	1361	
	Sunday, Aug. 28	1302	
	Saturday, Sept. 3	1572	
	Sunday, Sept. 4	2057	1
	Monday, Sept. 5	1585	
	Saturday, Sept 10	810	
September	Sunday, Sept 11	707	8,73
	Saturday, Sept. 17	564	
	Sunday, Sept. 18	513	
	Saturday, Sept. 24	552	
	Sunday, Sept. 25	374	
)11- Total Ri	dership		47,57

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 854,411 visitors to Muir Woods in 2011, 23,786² individual visitors rode the Shuttle. Of the total annual visitors in 2011, Shuttle mode share was

3%. To calculate a truly representative mode share impact for the Muir Woods Shuttle, the mode share measure should be calculated on the number of Park visitors and those visitors using the Shuttle on its actual service days. During 2011, there were 129,585 visitors to the Muir Woods National Monument on Shuttle service days. Twenty-three thousand, seven hundred and sixty-eight park attendees rode the Shuttle on days service was provided, representing a 13.05% mode share (up from 9.17% in 2010).

² Based on the round trip nature of the Shuttle service, the actual number of individual Park visitors is calculated by dividing the total 47,572 one-way passenger trips by two. It is assumed that each visitor makes two one-way trips per visit to the park.

Figure 9 provides average monthly Shuttle mode share for the 2011 operating season. Figure 10 provides a list of 2011 service days when Shuttle mode share met or exceeded the 13% average. During the 2011 season, mode share met or exceeded 13% on 25 service days.

Figure 9 Monthly Shuttle Mode Share Averages in 2011 Season

Shuttle Season - 2011						
May June July August September Average						Average
Shuttle Mode Share	10%	14%	14%	14%	12%	13%

Figure 10 Service Days When Shuttle Mode Share Met Or Exceeded 13% In 2011 Season

Month	Day	Park Attendance	Mode Share
	Saturday, May 28	3890	16%
May	Sunday, May 29	4589	15%
85.8	Monday, May 30	4013	13%
	Saturday, June 11	3958	16%
	Sunday, June 12	3736	16%
June	Saturday, June 18	4027	15%
June	Sunday, June 19	4097	16%
	Saturday, June 25	4113	14%
	Sunday, June 26	3831	16%
	Saturday, July 2	5170	15%
	Sunday, July 3	5356	16%
	Monday, July 4	4102	15%
hilse	Saturday, July 9	4240	16%
July	Sunday, July 10	4244	14%
	Sunday, July 17	4556	14%
	Saturday, July 23	5068	14%
	Sunday, July 24	4918	14%

Month	Day	Park Attendance	Mode Share
-	Saturday, Aug. 13	4687	15%
	Sunday, Aug. 14	4601	15%
August	Sunday, Aug. 21	4363	14%
	Saturday, Aug. 27	4476	15%
	Sunday, Aug. 28	3955	16%
	Saturday, Sept. 3	4864	16%
September	Sunday, Sept. 4	5243	20%
	Monday, Sept. 5	4598	17%

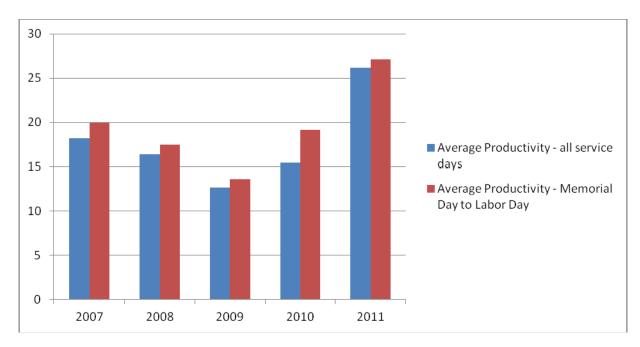
Productivity

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 2011 Shuttle season was 26.2 passengers per hour, up a remarkable 70% from 15.4 passengers per hour for all service in 2010. 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. The 2011 season experienced the highest overall Passenger per Service Hour levels since the inception of the Muir Woods Shuttle service.

	2007	2008	2009	2010	2011
Average Productivity - all service days	18.2	16.4	12.7	15.4	26.2
Average Productivity - Memorial Day to Labor Day	19.9	17.5	13.6	19.1	27.1

Figure 11 Average Productivity, 2007 – 2011

Figure 12 Passengers per Service Hour (Productivity), 2007 – 2011



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. Several daily monitoring reports were only partially completed for the actual arrival and departures. Figure 13 provides a monthly summary based on a select number of recorded trip observations. Not all trips were monitored during the season.

Month	Number of Trips Ob-	%	%
Month	served	On-Time	Departing Late
May	42	88%	12%
June	166	81%	19%
July	81	91%	9%
August	100	91%	9%
September	36	75%	25%
TOTALS	425	86%	14%

Figure 13 Shuttle On-Time Performance, 2011 Season

Late departures tended to cluster midday between 11:00 AM and 2:00 PM. There were 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 is not permitted because of the steep and curvy roadway design. Pass-ups can occur on a regular basis during the holiday weekends. As many as 100-130 people were left standing in line after the bus arrived and departed full to capacity. Pass-ups tended to occur between 10:00 AM and 2:30 PM. On peak days, some passengers waited to board for up to three buses. Some of those waiting were discouraged and departed by car to Muir Woods instead of waiting for the Shuttle

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The total service cost for 2011 was \$366,934. This includes the operating costs, lease costs, and the cost of marketing the service and providing information. An increase of \$26,725 is attributed to higher Golden Gate Transit Contract and Operating costs. Figure 15 identifies the service hours, costs, revenue, and a series of key performance measures for the Shuttle for the past five seasons. It should be noted that the lower number of service hours is attributed to a lower number of service weekends.

Farebox Recovery

In its six years of service, the Muir Woods Shuttle has evolved from offering free rides in its inaugural year (2005), to charging a \$2.00 round trip cash fare in 2006 and 2007, and charging a \$3.00 round trip cash fare in 2008 through 2011. For all years where a fare was charged, seniors, youth, and disabled riders were offered a discounted \$1.00 fare. After four years of operation at the current fare level, the fare increase that took effect in 2008 has not had a dampening effect on ridership. The current \$3.00 fare is not a significant barrier to ridership or mode selection as ridership increased a remarkable 41% from 2009 to 2011 and 31% from 2010 to 2011.

Marin Transit could consider raising the roundtrip fare for the 2012 season. The current \$3.00

round trip fare is unique to this service. Marin Transit's standard fare is \$2.00 one way or \$5.00 for a day pass. As indicated by the record-high ridership, there is a unique demand for service to the Muir Woods Park. Considerations will include evaluation of an appropriate fare increase for the 2012 season.

As shown in Figure 15, a total of \$65,802 was collected in fares over the course of the 2011 season, compared to \$43,864 in 2010, \$39,805 in 2009, and \$44,064 in 2008. The 2011 season demonstrated record ridership and fare revenues.

Applying fare revenue to the full cost for service results in a net total cost for service of \$301,133 and a farebox recovery rate of 21.85%, which includes the contract and operating costs with the provider Golden Gate Transit as well as other direct costs for Marin Transit's ombudsperson for passenger assistance, Changeable Message Signs, and portable toilet rentals, and administrative expenses for management of the service.

With all expenses included, the farebox recovery rate for the Muir Woods Shuttle operation is about the same as 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 21.9% percent.

	2	2007		2008		2009		2010		2011	% Change 2010- 2011
Service Hours*			35 2					W			
TOTAL		1,739		2,112		2,159		2,115		2,108	-0.3%
Ridership							5		í.		
Annual Ridership		33,534		34,536		27,948		32,590		47,572	46.0%
Golden Gate Transit Contract Costs	1				1						
Operating Costs	\$	187,747	\$	204,216	\$	238,238	\$	240,073	\$	245,337	2.2%
Lease and Preparation Costs	\$	47,520	\$	59,135	\$	66,154	\$	37,078	\$	63,378	70.9%
Marketing and Information	\$	14,208	\$	14,918	\$	13,346	\$	3,835	\$	5,532	44.3%
SUBTOTAL	\$	249,475	\$	278,269	\$	317,738	\$	280,986	\$	314,248	11.8%
Other Costs			10 .				2	2	l		
Consultant Contract & Data Entry (2010)	\$	34,405	\$	12,500	\$	-	\$	1,302	\$	-	-100.0%
Additional Marketing	\$	10,000	\$	10,000	\$	-	\$	2,617	\$	1,928	-26.3%
Passenger Assistance (Ombudsperson)	\$	5,400	\$	5,600	\$	5,717	\$	5,344	\$	8,522	59.5%
Changeable Message Sign Rental and Operating Staff Costs	\$	32,500	\$	32,500	\$	32,500	\$	32,500	\$	20,330	-37.4%
Marin Transit Administration Costs	\$	15,000	\$	15,000	\$	15,000	\$	15,000	\$	19,218	28.1%
Portable Restroom Rental	\$	2,000	\$	2,500	\$	2,817	\$	2,460	\$	2,690	9.3%
SUBTOTAL	\$	99,305	\$	78,100	\$	56,032	\$	59,223	\$	52,687	-11.0%
TOTAL COSTS	\$	348,780	\$	356,369	\$	373,770	\$	340,209	\$	366,934	7.9%
Farebox Revenue	\$	28,504	\$	44,064	\$	39,805	\$	43,864	\$	65,802	50.0%
NET TOTAL COST	\$	320,276	\$	312,305	\$	333,965	\$	296,345	\$	301,133	1.6%

Figure 15 Muir Woods Shuttle Service Costs, 2007 – 2011

*Service hours for 2011 reflect fewer total service days (difference of one weekend in May) despite additional unscheduled service added on high demand holiday weekends.

Figure 16 Muir Woods Shuttle Service Costs, 2007 – 2011 (Continued)

	200	7	2008	2009		2010		2011	% Change 2010- 2011
Farebox Recovery Ratios									
Farebox Recovery/GGT Operating Cost	15	5.81%	21.58%	16.71%	6	18.27%	20	6.82%	9%
Farebox Recovery/GGT Contract Cost	11	.43%	15.84%	12.53%	6	15.61%	20.94%		5%
Farebox Recovery/Total Cost	8	8.17%	12.36%	10.65%	6	12.89%	% 21.85%		9%
Performance Measures									[
Cost/Service Hour	\$ 20	00.56 \$	168.74	\$ 173.12	\$	160.86	\$	174.07	8%
Cost/One Way passenger Trip	\$ 1	0.40 \$	10.32	\$ 13.37	\$	10.44	\$	7.71	-26%
Subsidized Cost/One Way Passenger Trip	\$	9.55 \$	9.04	\$ 11.95	\$	9.09	\$	6.33	-30%
Passengers/Revenue Hour	1	9.28	16.35	12.94		15.41		22.57	46%

Cost Per Service Hour

The cost per service hour increased 8% over the 2010 season. The increase was attributed to the increase in the GGT contract services.

Cost Per One-Way Passenger Trip

The cost per one-way passenger trip falls as ridership increases. As shown in Figure 15 and 16, this season represents the all-time low cost of \$7.71 per one-way passenger, primarily due to this season's Shuttle ridership increase.

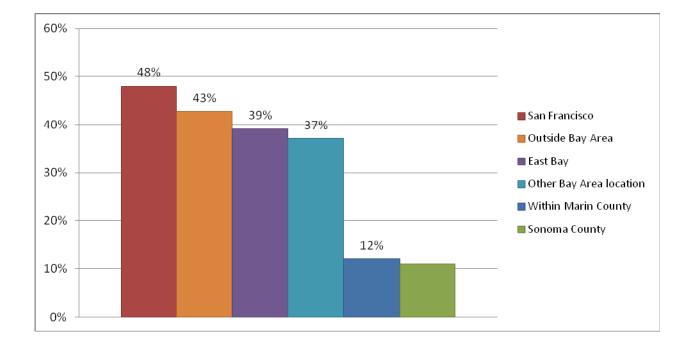
Subsidized Cost Per One Way Passenger Trip

The District's subsidy per passenger performance standard for the Muir Woods Shuttle is \$5 per passenger. The subsidized cost per one way passenger trip has fluctuated over the past four years. There was a more dramatic decrease of 24% from 2009 to 2010 because of reduced service delivery costs combined with increased ridership. At \$6.33 per one way passenger, this season reached a record low.

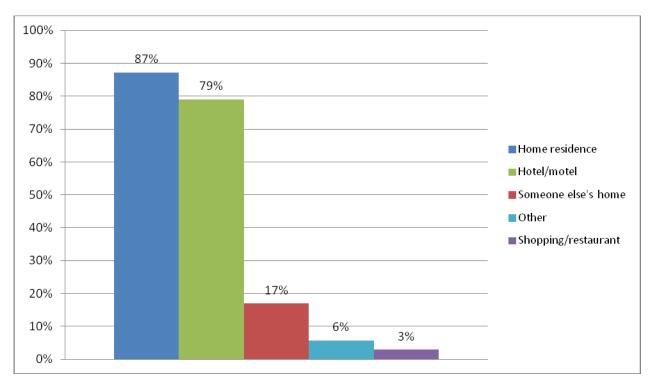
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2011 PASSENGER SURVEY FINDINGS

In 2011, Marin Transit administered an intercept mail-back passenger survey. The survey was identical to the survey administered in 2010. 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 2011. Four hundred seventy-three questionnaires were returned for analysis. The following provides an overview of survey findings organized by question.

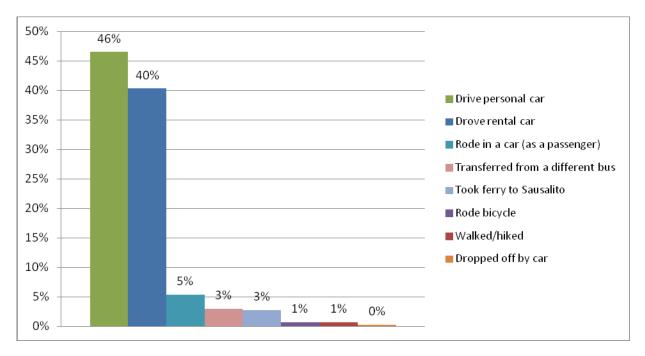


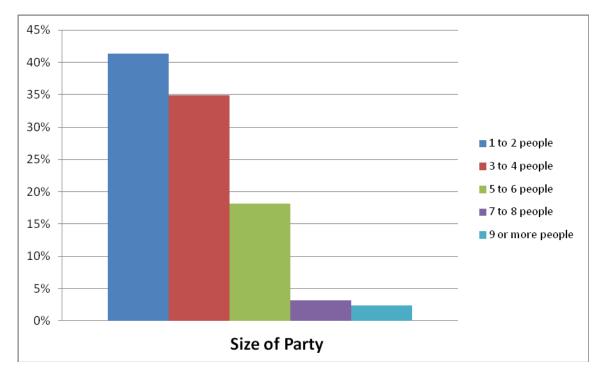
Question 3: Where did you come to Muir Woods from today?



Question 4: Where did you begin your trip?

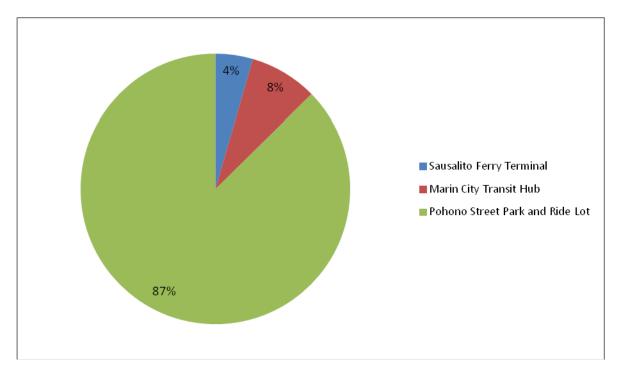
Question5: How did you get to the Muir Woods Shuttle?

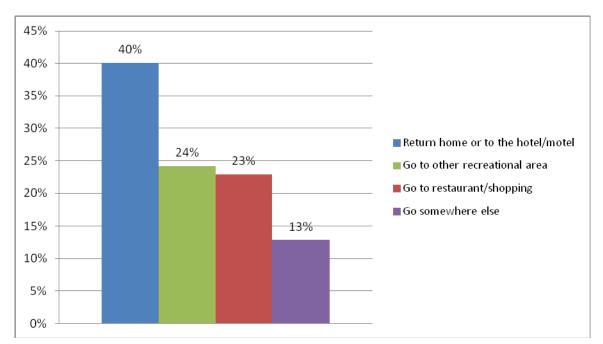




Question 6: What is the total number of people in your party?

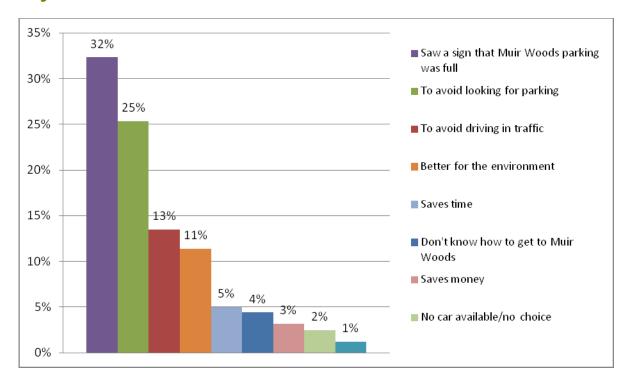
Question 7: Where did you get on the shuttle bus going to Muir Woods?

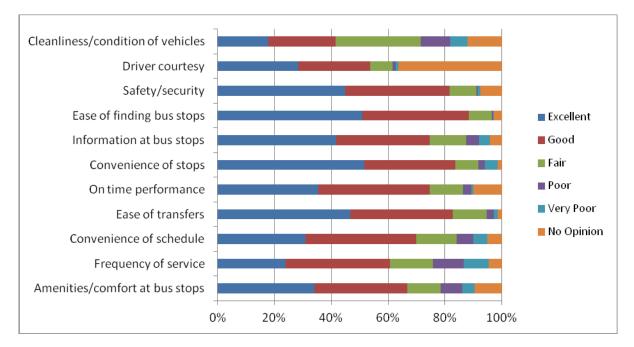




Question 8: After you leave Muir Woods today, where are you going next?

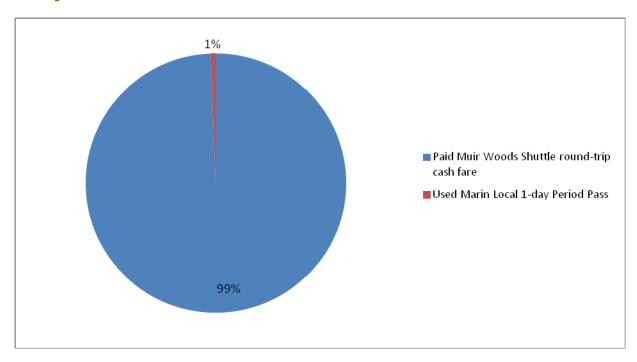
Question 9: Why did you choose to use the Muir Woods Shuttle today?

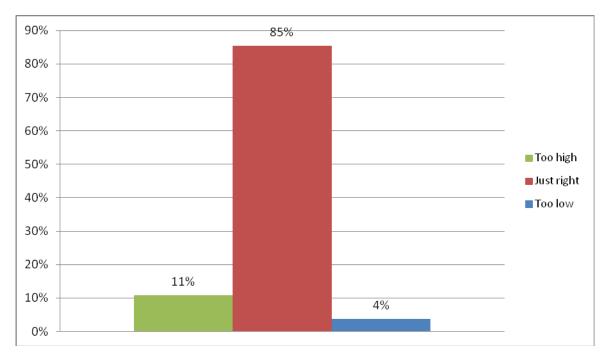




Question 10: Tell us what you think of the Shuttle Service?

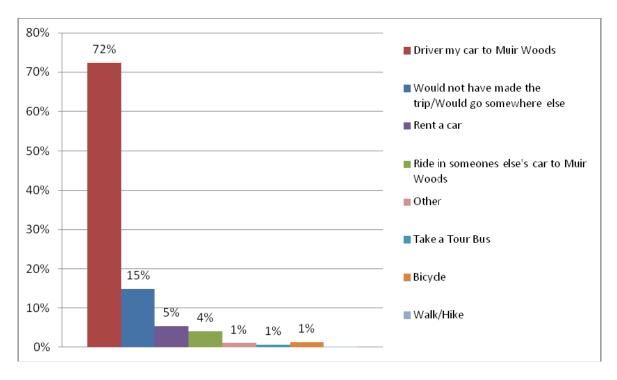
Question11: How did you pay your fare on the Muir Woods Shuttle today?



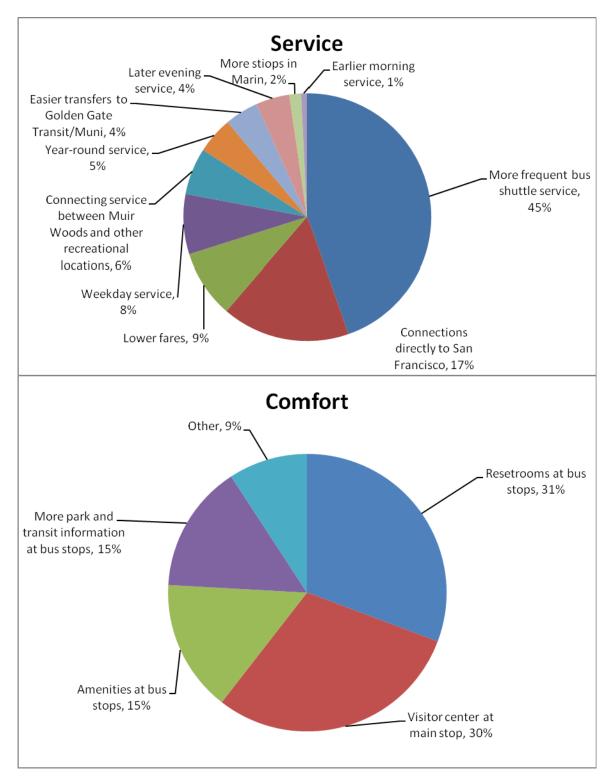


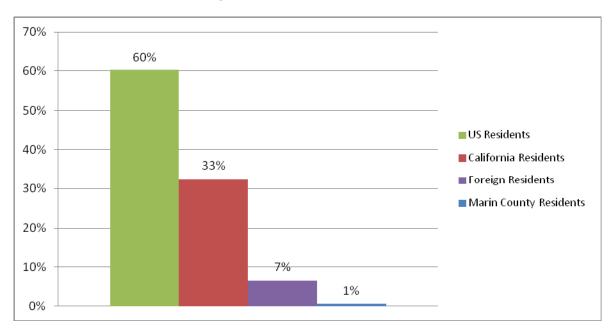
Question 12: What do you think of the fare for this service?

Question13: How would you have made this trip if you couldn't ride the shuttle?



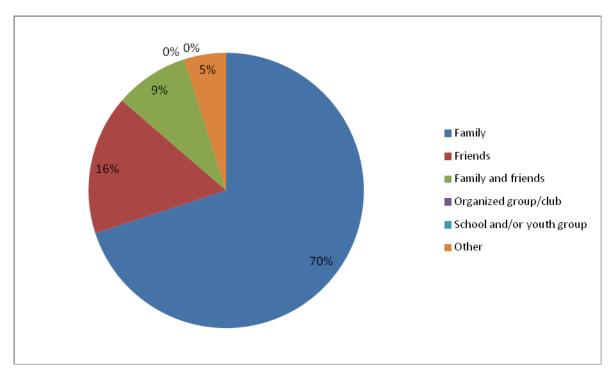
Question14: Which of the following improvements would make you more likely to use the shuttle again in the future in terms of Service and Comfort?



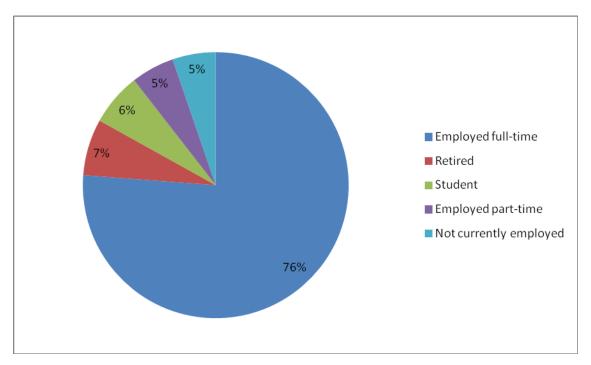


Question15: Where do you live?

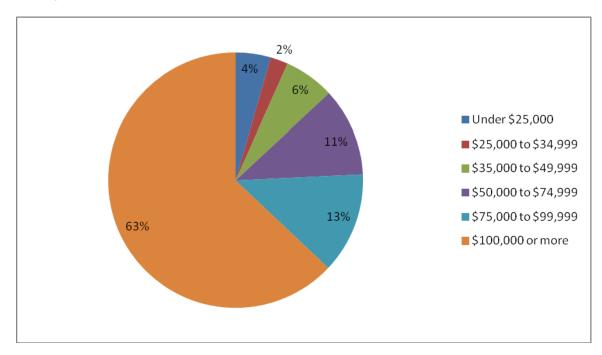
16. Which of the following best describes your group?

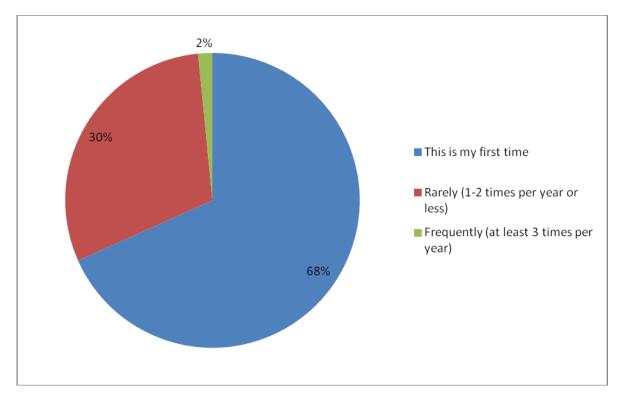


Question 19: Are you employed?



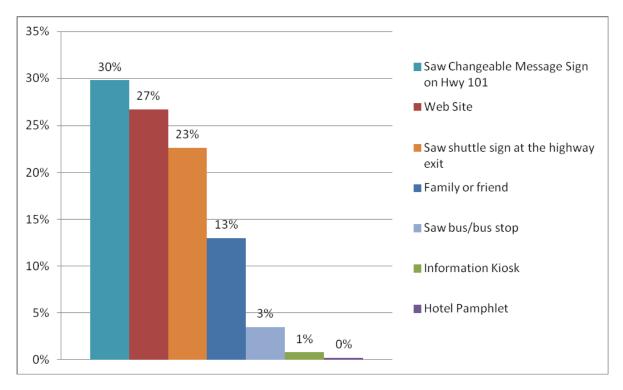




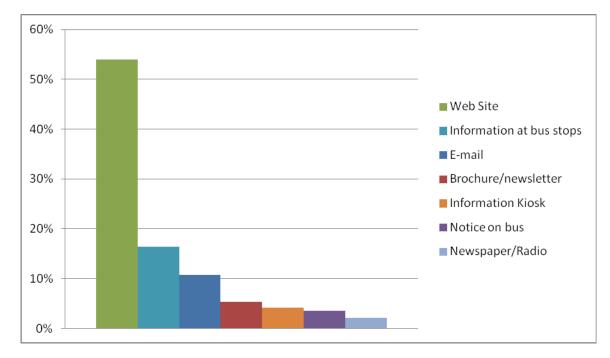


Question 21: How often do you visit Muir Woods?

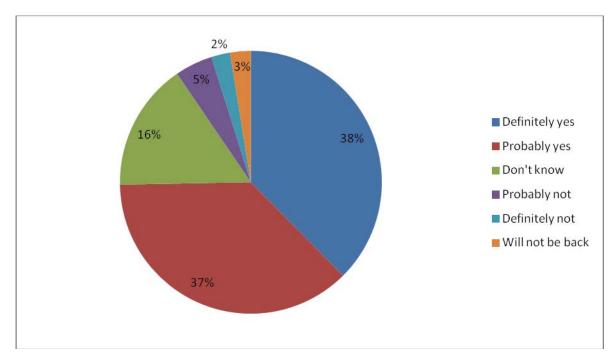
Question 22: How did you learn about this Shuttle?



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?

COMMENTS - grouped by category and duplicates removed					
Fare System					
Change the fare collection system. Too inefficient!					
Provide a ticket machine at bus stop, trash can at bus stop further back from bus shelter, use buses with front facing seats to reduce/prevent carsickness, provide carsickness avoidance tips.					
Pay for tickets before getting on the bus. Unfortunately, we came on a holiday weekend so there is a lot of traffic.					
Change machine would be good. Learned about shuttle on nps.gov website. Would like to use shuttle connecting between Muir Woods and Stinson Beach.					
Need change machine and/or ticket booth with credit card option					
Exact change requirement slows process and NOT convenient					
Need more fare paying options. The need to have the correct change for ticket purchase is limiting. Need easier and more flexible payment options.					
Marketing					
Used John Muir website.					
Learned about shuttle at Muir Woods - National Park website.					
Learned about shuttle from GGT.					
Learned about shuttle on mymuirwoods website.					
Learned about shuttle on muir woods website. add the street address or GPS coordinate to website to make it easier to find using a GPS.					
Make information available in SF hotels.					
Bus Stop Experience					
Long lines, but worth it!					
We waited for 2 shuttles in line before there was room. totally unacceptable, very bad experience.					
Buses dont have enough capacity. Too much waiting. Rather have more parking at woods. The Shuttle does not save time or money.					
Dangerous highway crossing Pohono.					
Great information at bus stop. Very nicel :)					
Service should return to the parking lot. Need more shelter please! Would like to be returned to pickup location. On Memorial Day weekend, we had to walk back in the rain, which was not safe!					
Grateful for shuttle - wish it picked up and dropped off at same place. That's confusing if you are not from here.					
Visitor center at stop would be good for getting exact change, bathroom, etc.					
The different pick up and drop off locations are inconvenient.					
Need to have more frequent service. The wait is too long. The Shuttle is good to have from environmental aspect yet need to meet visitors needs. Next time i will drive. Too slow to load bus, need better organization.					

Operations

Dont have the AC on the buses when it is cold outside! it was freezing in the bus, save energy by turning off the AC.

I like that the bus is very clean.

Excellent way to visit Muir Woods especially for overseas tourists.

Great service! It is good to provide a warning regarding curves of the road and avoiding vomiting.

Need more parking at Muir Woods so that we dont have to take the shuttle.

Driver was very careful through the work zone. Thank you!

Signage

Prefer to get info via street signs.

Need better signs to bus stop. Signs to bus stop were unclear - try including distance information on them.

Great signage on freeway 101.

Would like to see connection to Muir Beach. Thank you! Wonderful ride! Glad not to have to drive! Price was fabulous! Thank you for putting the sign on the freeway. That saved us a lot of work trying to drive to the park.

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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 the fare payment system, and reduce passenger pass-ups and wait times.

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.*

Fares and Fare Collection

Exact fare policy and fare collection remain an "Achilles heel" to Shuttle operations. Confusion over fare collection can result in delayed bus departures and visitor frustration or anxiety. *Marin Transit, along with NPS, 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. Consideration should also be given to conducting a possible fare increase.*

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 recommended to effectively address this problem*.

Changeable Message Signs (CMS)

The changeable message signs remain the most important marketing tool for Shuttle ridership. The current locations are effective as intercept sites. In the 2011 season, sign reliability significantly improved over previous years. Marin Transit will continue to rent CMS units for use in the 2012 season. The CMS are pre-set for automatic timed operations with over-ride control by Marin Transit and NPS. The CMS are programmed to go on at 9:30 AM and go off at 2:00 PM based on parking availability trends at Muir Woods.

Dealing with Extreme Crowds

Crowding on peak demand days remains a challenge because pass-ups increase the number of waiting passengers. As mentioned earlier in this section, Marin Transit is considering the provision of additional bus capacity to reduce crowding. Seating is a problem for those boarding at the Pohono site. As suggested in earlier Shuttle evaluations, consideration should be made in future seasons to provide additional shelter to make the wait more comfortable. The Shuttle ombudspersons will continue to play a significant role in managing the Pohono site crowds and assisting individuals by providing Park information while waiting for the shuttle. Marin Transit plans to install a real-time information sign to ease the frustration caused by not knowing when the next bus is expected to arrive if the buses are off schedule.

Coordinating with Local

Events and Transportation

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

The 2012 Mountain Play will be held on Mt. Tamalpais May 02, and 27, and June 3, 10, 16 and 17, 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 with a few people travelling to the play taking the Shuttle to the park by accident and vice versa. *This situation was adequately addressed in 2011 with signage and passenger information.*

Partnering with local art and music events that occur throughout the summer in southern Marin and Sausalito will raise awareness of the Muir Woods Shuttle, increase ridership. and help address congestion. *Marin Transit should explore, with the NPS, the provision of and funding responsibility for additional shuttle capacity.*

Monthly Service Evaluation

On time performance remains an issue due to unforeseen delays caused by congestion or accidents on Highway 1 and delays caused by confusion with the fare payment system (specifically the need for exact change). Marin Transit plans to install Real-Time Information Signs at the Pohono bus stop, which will ease passenger frustration when the buses are off schedule. As mentioned earlier in this report, Marin Transit is also seeking to improve the fare payment system. THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A: 2011 SHUTTLE PASSENGER SURVEY QUESTIONAIRE

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.

To	day's Date & Time.	Tell Us What You	Think of	the Sh	uttle	Servic	e:				
1.	What is today's date?	10. Please rate the shuttle service on each of the									
	At what time did you board the bus?	following:	Excellent			Poor	Very Poor	No Opinion			
Ple	ase Describe Your Trip TO Muir Woods Today.	On-time performance	1	2	3	4	5	6			
3.	Where did you come to Muir Woods from TODAY?	Frequency of service	1	2	з	4	5	6			
	U 1 Within Marin County (<i>City/Town</i>)	Convenience of Schedule	1	2	3	4	5	6			
	□ ₃ Sonoma County (<i>City/Town</i>) □ ₄ East Bay (<i>City/Town</i>)	Ease of finding bus stops	1	2	з	4	5	6			
	5 Other Bay Area location (City/Town)	Convenience of stops	1	2	3	4	5	6			
	Gutside Bay Area (<i>City/Town</i>)	Driver courtesy	1	2	3	4	5	6			
4.	Did your trip begin from? ? Someone else's home	Information at bus stops	1	2	3	4	5	6			
	□ 3 Hotel/motel □ 4 Shopping/restaurant	Cleanliness/ condition of vehicles	1	2	3	4	5	6			
	s Other (specify):	Safety/security	1	2	3	4	5	6			
	Please specify the location (street/cross street):	Ease of transfers	1	2	3	4	5	6			
5.	How did you get to the Muir Woods Shuttle?	Amenities/ comfort at bus stops	1	2	3	4	5	6			
	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	 How did you p today? ☐ 1 Paid Muir ☐ 2 Used Mar ☐ 3 Used Mar ☐ 4 Used Mar 	Woods S in Local in Local	Shuttle 1-Day 7-Day	round Perio Perio	d-trip c od Pas od Pas	ash fa ss ss				
9	Other (specify):										
		12. What do you th									
6.	What is the total number of people in your party	□ ₁ Too Low		tright		3 100 3 3 1 0 0	High				
	(including yourself?) Do any use a mobility device such as a wheelchair, walker or cane?	4 What is the most you would be willing to pay for for a roundtrip fare on this service? \$									
7.	Where did you get on the shuttle bus going to Muir Woods?	13. How would yo ride the shuttle	u have m				u coul	dn't			
	□ 1 Sausalito Ferry Terminal □ 2 Marin City Transit Hub □ 3 Pohono Street Park and Ride Lot	□ 1 Would not somewhe □ 2 Drive my c □ 2 Ride in so	have ma ere else car to Mu meone e	ir Woo Ise's c	ods ar to	Muir V	Voods	5			
8.	After you leave Muir Woods today, where are you going next?	\square_4° Rent a car \square_5° Take a Tour Bus \square_6° Bicycle \square_7° Walk/Hike \square_8° Other (<i>specify</i>)									
	My home or hotel/motel					-					
	□ ₂ Restaurant/shopping <i>(where?</i>) □ ₃ Recreational location (circle one or write in)	14. Which of the following improvements would make you more likely to use the shuttle again in the future?									
		Service:									
	Sausalito Muir Beach Stinson Beach	More frequ									
	Sonoma/Napa SF-Fisherman's Wharf Other SF		Easier transfers to Golden Gate Transit/Muni								
	Somewhere else (where?)		³ More stops in Marin <i>(where?)</i> Connecting service between Muir Woods and other recreational locations <i>(where?)</i>								
9.	Why did you choose to use the Muir Woods Shuttle	51.M			ns (v	here?))				
	today? (check all that apply)	□ ₅ Earlier mo	rning sei	vice							
	Don't know how to get to Muir Woods myself	Lower fare									
	To avoid driving in traffic	 Later evening service Weekday service Year-round service 10 Connections directly to San Francisco 									
	☐ 3 To avoid looking for parking										
	Saw a sign that Muir Woods parking was full										
	☐ ₅ Thought this was the only way to get to Muir Woods	Comfort:									
	\square_6 Better for the environment	LI 11 VISITOR CE	old drinks	, park o	pp (re	ation in	is, indo	tion)			
	Saves time	Amenities	at bus s	stops (shelte	r, bend	ches)				
	Saves money	, Restroom	s at bus	stops (shelte	r, bencl	hes)				
	No car available/no choice	☐ ¹³ ₁₄ More par	k and tra	nsit int	forma	ation a	t bus	stops			
	Other (specify):	D ₁₅ Other (sp	ecify:)								

Continues on Reverse -

Tell us a little about yourself:		
15. Where do you live? City State ZIP Country (if not US)	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):	
Thank you for taking transitSource for Marin Transit <th colspa<="" td=""><td>agreement ghway and</td></th>	<td>agreement ghway and</td>	agreement ghway and

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