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April 21, 2008

DMC # 2109-S

Mr. Wayne Y. Yoshioka, Director  
Department of Transportation Services  
City and County of Honolulu  
650 S. King Street, 3<sup>rd</sup> Floor  
Honolulu, Hawaii 96813

Attention: Mr. Kenneth Hamayasu

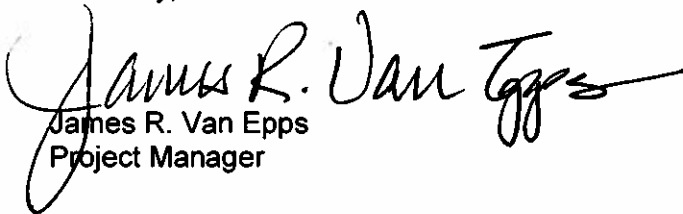
Subject: Honolulu High-Capacity Transit Corridor Project  
Agreement No. SC-DTS-0700001  
PB Project No. 16471A

Dear Mr. Yoshioka:

This letter transmits three copies of the Deliverable: Final HHCTCP Bus Fleet Management Plan, as a component of the overall Vehicle Fleet Management Plan (FMP), in accordance with the requirement in Subtask 1.2 under Task 1.0 Plans for PE/EIS Phase Inclusive of Federal transit Administration (FTA) Acceptance.

If you have questions or comments, please contact me at 768-6157.

Sincerely,

  
James R. Van Epps  
Project Manager

JRVE/cle

cc: Simon Zweighaft, RTD  
Project Document Management Center

Details:

Discipline: HHCTCP Bus Fleet Management Plan WBS# Section: 1.0 Task#: 1.2

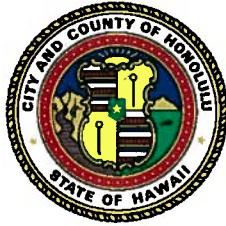
Subject Line: Final HHCTCP Bus Fleet Management Plan Schedule ID: EISCM350

*Over a Century of  
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# BUS FLEET MANAGEMENT PLAN

for the

## HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT



### City and County of Honolulu

Prepared by: Mark H. Scheibe Date: 16 June 2008  
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Approved by: Kenneth Hamayasu Date: June 16, 2008  
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Project Executive

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# **Honolulu High-Capacity Transit Corridor Project**

## **Bus Fleet Management Plan**

**April 2008**

City and County of Honolulu  
Department of Transportation Services

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Through the Honolulu High-Capacity Transit Corridor Project (HHCTCP), the City and County of Honolulu (City) is embarking on the development of a fixed-guideway system along an approximate 20-mile corridor from East Kapolei to Ala Moana Center. This 20-mile line is anticipated to be completed and open for service by the latter half of 2018 (FY 2019). As the line opens, transit service on O'ahu will change, with the fixed-guideway system taking over some of the load currently accommodated by trunk line bus routes and with other bus routes being restructured to facilitate transfers to fixed-guideway. As the fixed-guideway project is constructed and implemented, it is important to ensure that bus service is not degraded. To that end, this Bus Fleet Management Plan (BFMP) addresses all factors relevant to the City's abilities to maintain its current bus fleet, facilities, and levels of service throughout its service area and to provide the requisite capital and operating funds for that service. Additionally, the BFMP defines measures used for monitoring the quality of bus service. The BFMP describes the City's entire fixed-route bus fleet for a period from three-to-five years prior to construction of the fixed-guideway, over the duration of construction, and for at least one-to-three years after commencement of revenue operations. A separate fleet management plan for the fixed-guideway vehicles will be developed after the technology is selected.

The following sections of the BFMP include descriptions of:

- The existing fixed-route bus system;
- The current passenger demand and expected changes in passenger demand;
- The current fixed-route fleet and the plan for fleet replacement and expansion;
- Service quality and reliability measures; and
- The bus fleet maintenance plan.

Public transit on the island of Oahu is the responsibility of the City's Department of Transportation Services (DTS). The service is popularly known as *TheBus* for fixed route transit and *TheHandi-Van* for demand-responsive curb-to-curb service for Americans with Disabilities Act of 1990 (ADA) paratransit eligible individuals. Within DTS, the Public Transit Division (PTD) is responsible for managing the City's contract for bus and paratransit operations. By ordinance, the City is required to contract with a private, nonprofit corporation to manage, operate, and maintain the public transportation system on behalf of the City. Oahu Transit Services, Inc. (OTS) is the management firm operating *TheBus* and *TheHandi-Van*. OTS is the employer of record for all operating and maintenance personnel.

The service area for public transit encompasses the entire island of Oahu, which is approximately 600 square miles with approximately 910,000 residents. Most bus service is provided 21 to 22 hours per day with the exception of one bus route (#40/40A), which operates 24-hours per day. Paratransit service is provided during the same hours as the fixed route service. Current transit operating data described in the following sections is based on the tables of information DTS submits to the Federal Transit Administration's National Transit Database (NTD) for report year 2007 and previous years.

## 2.1 **TheBus Routes**

*TheBus* is currently operating 102 fixed routes and three (3) deviation routes (operated by the paratransit division) for a total of 105 routes. Of these, four (4) are limited stop routes (*CityExpress! A*, *CityExpress! B*, *CountryExpress! C* and *CountryExpress! E*) and 32 are peak period, peak direction only express routes. Three (3) of the express routes (Routes 201, 202 and 203 – all bound for Waikīkī) operate seven (7) days of the week. The 105 routes serve about 4,200 bus stops. Passenger amenities include approximately 980 passenger shelters and 2,400 benches. Table 2-1 presents a listing of all bus routes currently operated.

Table 2-1 identifies those routes serving the study area for the HHCTCP (denoted with a "y" for yes, "n" for no and "c" for connects). Many of the routes pass through the HHCTCP study area such as Route 40 and *CityExpress! A*. A route was identified as serving the HHCTCP corridor if at least 50 percent of its ridership is attributable to person trip origins within the study area. Routes identified with a "c" provide connections into the study area including all Community Circulators operating in Kapolei and Waipahu, Routes 4, 5, 6, 7, 10, 15, 17 and 31 in urban Honolulu, and Routes 71, 73 and 74 in Pearl City and 'Aiea. Express and local routes serving Windward and East Honolulu communities were not identified as operating in the study area even though they travel to downtown Honolulu, as impacts of the proposed fixed-guideway system are assumed to be minimal to their alignments or operating characteristics.



**Table 2-1: TheBus Routes**

ROUTE	DESCRIPTION	WITHIN PROJECT CORRIDOR	ROUTE	DESCRIPTION	WITHIN PROJECT CORRIDOR
1	Kaimukī - Kalihi	y	85	Windward Express - Kailua	n
1L	Downtown - Hawai'i Kai Limited	y	85A	Windward Express - Ha'ikū	n
2	Waikīkī - School	y	86	Windward - Pearl Harbor Express	n
3	Kaimukī - Salt Lake	y	86A	Kāne'ohe / Kahalu'u - Pearl Harbor Express	n
4	Nu'uānu - Punahou	c	88	Kahalu'u / 'Āhuimanu Express	n
5	Ala Moana - Mānoa	c	88A	North Shore Express	n
6	Pauoa - Woodlawn	c	89	Waimānalo Express	n
7	Kalihi Valley	c	90	Pearl City Express	y
8	Waikīkī - Ala Moana	y	91	'Ewa Beach Express	y
9	Pāloa Valley - Pearl Harbor	y	92	Makakilo Express	y
10	Kalihi - 'Ālewa Heights	c	93	Wai'anae Coast Express	y
11	Makalapa - Hālawā - 'Aiea Heights	y	93A	Wai'anae Coast - Pearl Harbor Express	y
13	Waikīkī - Liliha	y	95	Hawai'i Kai - Pearl Harbor Express	n
14	St. Louis - Kāhala - Maunalani	y	96	Waipi'o Gentry Express	y
15	Makiki - Pacific Heights	c	97	Village Park Express	y
16	Moanalua Valley	n	98	Wahiawā / Mililani Park & Ride Express	n
17	Makiki - Ala Moana	c	98A	Kunia / Wahiawā / Mililani - Waikīkī Express	n
18	University - Ala Moana	y	101	'Ewa Gentry Express	y
19	Waikīkī - Airport - Hickam	y	102	Villages of Kapolei Express	y
20	Waikīkī - Pearlridge	y	103	Paia / Waikēle Express	y
22	Beach Bus	n	201	'Ewa Beach / Waipahu - Waikīkī Express	y
23	Hawai'i Kai - Sea Life Park	n	202	Paia / Waipahu - Waikīkī Express	y
31	Tripler - Airport	c	203	Kalihi / School Street - Waikīkī Express	y
32	Kalihi - Pearlridge	y	231	Hawai'i Kai - Hahaione Valley	n
40/40A	Honolulu - Mākaha	y	232	Hawai'i Kai - Koko Marina	n
41	Kapolei - 'Ewa Beach	y	233	Kāhala Mall - 'Āina Haina	n
42	'Ewa Beach - Waikīkī	y	234	Kāhala Mall - Wai'ālae Nui	n
43	Waipahu - Honolulu - Ala Moana	y	235	Kāhala Mall - Wai'ālae Iki	n
44	Waipahu - 'Ewa Beach	c	236	Kāhala Mall - 'Āina Haina - Hawai'i Kai	n
52	Wahiawā - Circle Island	y	401	Wai'anae Valley - Wai'anae Transit Center	n
53	Honolulu - Pacific Palisades	y	402	Luakulei Homestead - Wai'anae Transit Center	n
54	Honolulu - Pearl City	y	403	Nānākuli - Mā'ili - Wai'anae	n
55	Kāne'ohe - Circle Island	n	411	Makakilo Heights - Kapolei Transit Center	c
56	Honolulu - Kailua - Kāne'ohe	n	412	Pānānā Street - Kapolei Transit Center	c
57/57A	Kailua - Waimānalo - Sea Life Park	n	413	Campbell Industrial Park - Kapolei Transit Center	c
62	Honolulu - Wahiawā Heights	n	414	Palahi'a Street - Kapolei Transit Center	c
65	Honolulu - Kāne'ohe - Kahalu'u	n	415	Kalaeloa - Kapolei Transit Center	c
70	Lanikai - Maunawili	n	432	East / West Waipahu	c
71	Pearlridge - Newtown	c	433	Waikēle - Waipahu Transit Center	c
72	Wahiawā - Whitmore	c	434	Village Park - Waipahu Transit Center	c
73	Leeward Community College	n	501*	Mililani Mauka Community Access	n
74	'Aiea Heights - Hālawā Heights	c	503*	Laurani Valley / Waipi'o Acres Community Access	n
76	Waialua - Hale'iwa	n	504*	Mililani South Community Access	n
77	Waimānalo - Kāne'ohe	n	A	City Express! - Waipahu - UH Mānoa	y
80	Hawai'i Kai Park & Ride Express	n	B	City Express! - Kalihi - Waikīkī	y
80A	Hawai'i Kai Park & Ride Express - UH	n	C	Country Express! - Mākaha / Kapolei - Honolulu	y
80B	Upper 'Āina Haina Express	n	E	Country Express! - 'Ewa Beach - Waikīkī	y
81	Waipahu Express	y	F2	UH Mānoa - Aloha Tower Ferry Terminal	c
82	Hawai'i Kai Park & Ride Express / Kalama Valley	n	F3	Waikīkī - Aloha Tower Ferry Terminal	c
83	Wahiawā Town Express	n	F11	Wai'anae - Kalaeloa Ferry Terminal	c
83A	Wahiawā / Mililani - Pearl Harbor Express	n	F12	Makakilo - Kalaeloa Ferry Terminal	c
84	Mililani Express	n	F13	Kapolei - Kalaeloa Ferry Terminal	c
84A	Wahiawā / Mililani Express	n			

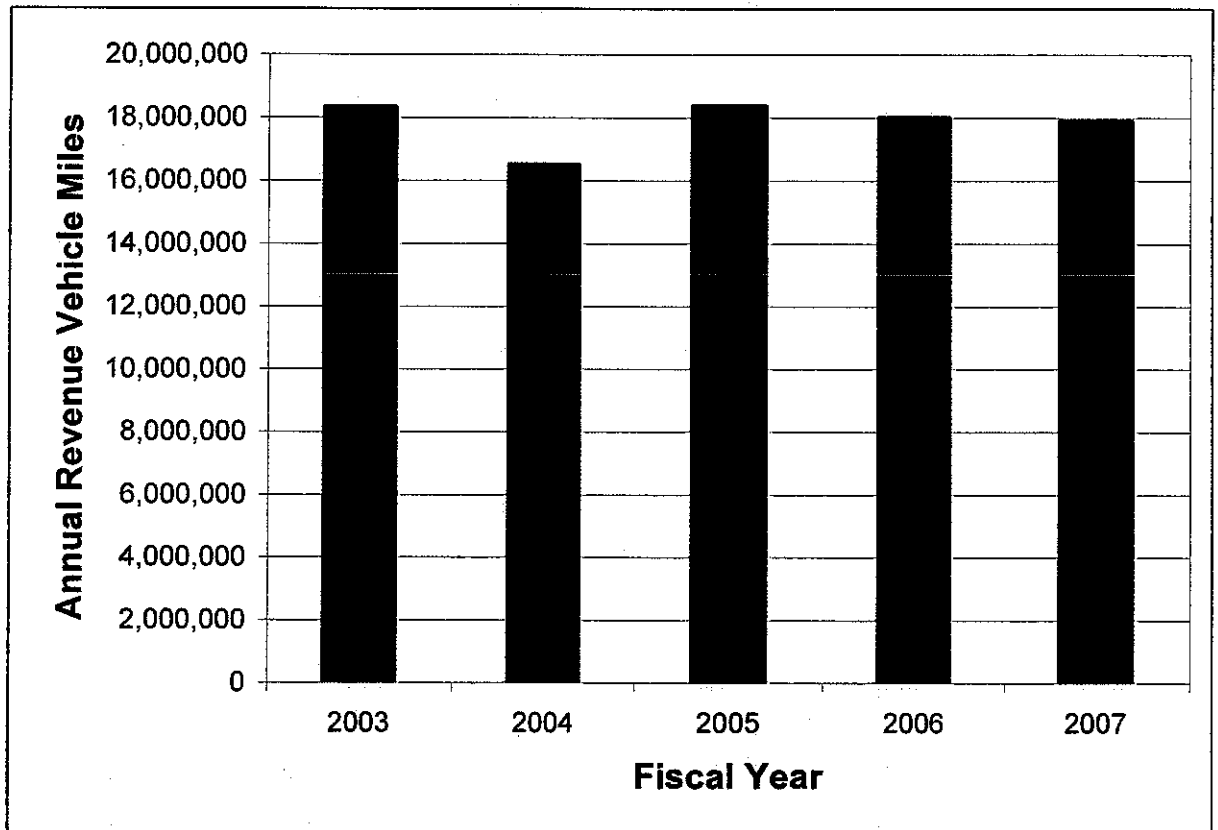
Source: DTS / TheBus; Effective 3/02/08

**Legend:**  
c – Connects  
n – No  
y – Yes  
\* – Deviation Route

## 2.2 Annual Revenue Vehicle Miles and Hours

The fixed route service had 17,923,724 annual revenue vehicle miles in FY 2007. Figure 2-1 shows that the annual revenue vehicle miles supplied have remained approximately the same over the past five years, except for FY 2004 which was affected by a 34-day strike by *TheBus* operators that ended on September 29, 2003.

Figure 2-1: Annual Revenue Vehicle Miles



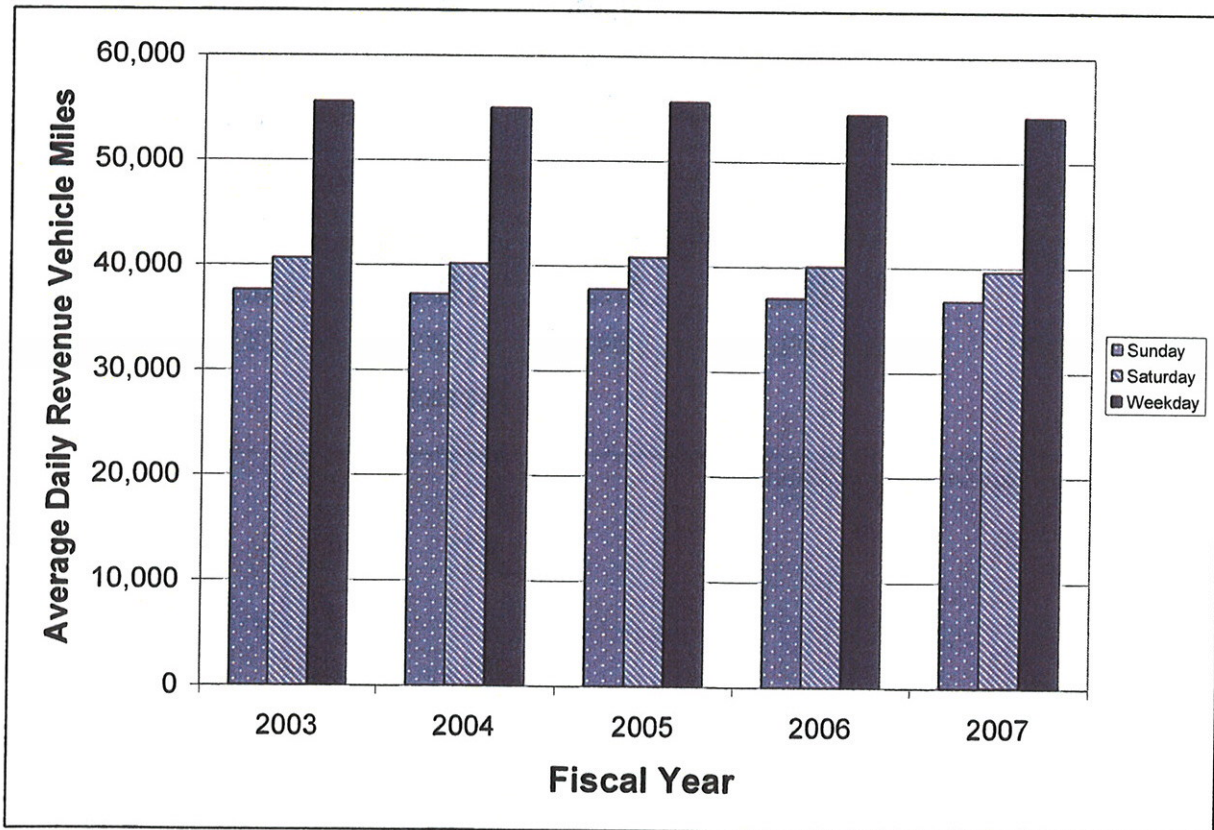
Source: National Transit Database

Figure 2-2 shows revenue vehicle miles supplied on an average weekday, average Saturday and average Sunday for the past five years. As can be seen, the service supplied has remained approximately constant over this time period. The average daily values for FY 2004 do not reflect the effect of a 34-day strike by *TheBus* operators that ended on September 29, 2003.

In FY 2007 average weekday revenue vehicle miles totaled 54,250. These miles were divided among route types as follows:

- Rapid Bus 11.2%
- Urban Trunk 24.6%
- Urban Feeder 5.8%
- Suburban Trunk 40.3%
- Suburban Feeder 2.2%
- Community Circulator 5.0%
- Peak Express 10.9%

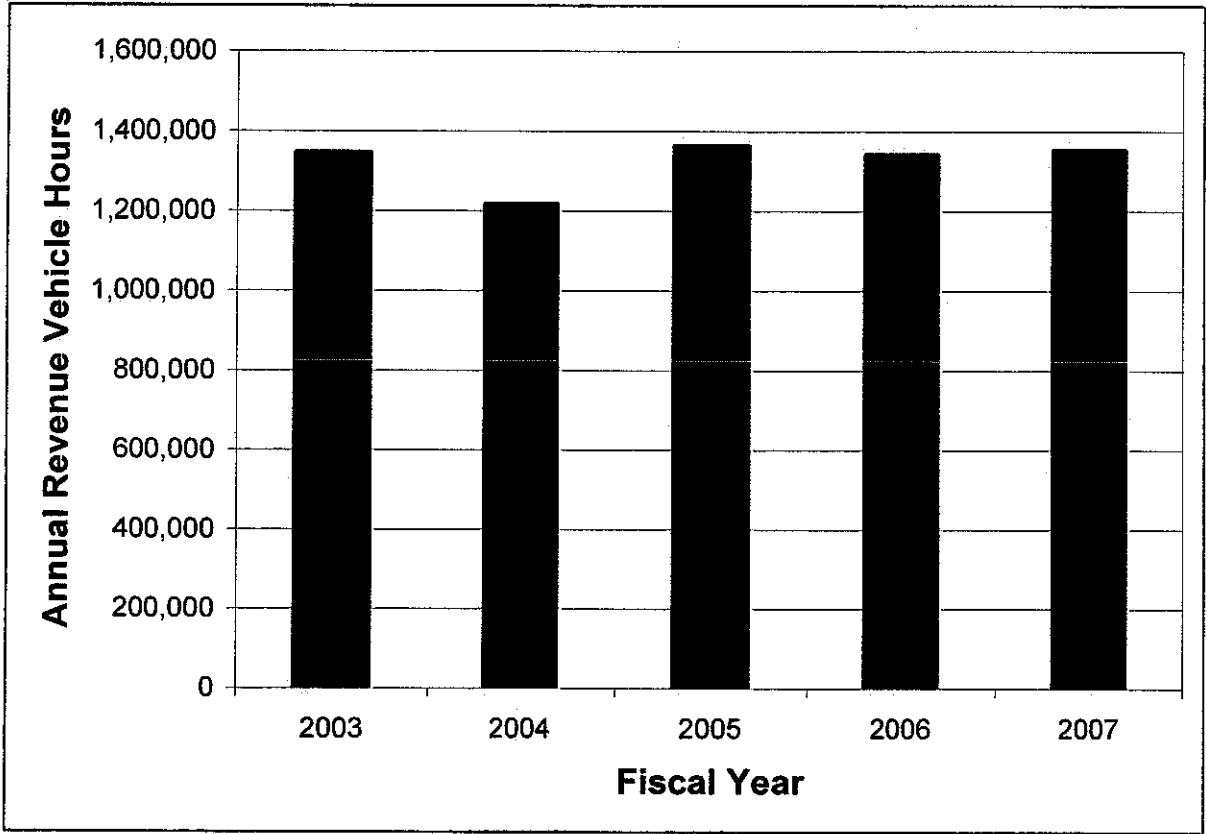
**Figure 2-2: Average Daily Revenue Vehicle Miles**



Source: National Transit Database

The fixed route service had 1,354,565 annual revenue vehicle hours in FY 2007. Figure 2-3 shows that the annual revenue vehicle hours supplied have remained approximately the same over the past five years, except for FY 2004 which was affected by a 34-day strike by *TheBus* operators that ended on September 29, 2003.

**Figure 2-3: Annual Revenue Vehicle Hours**



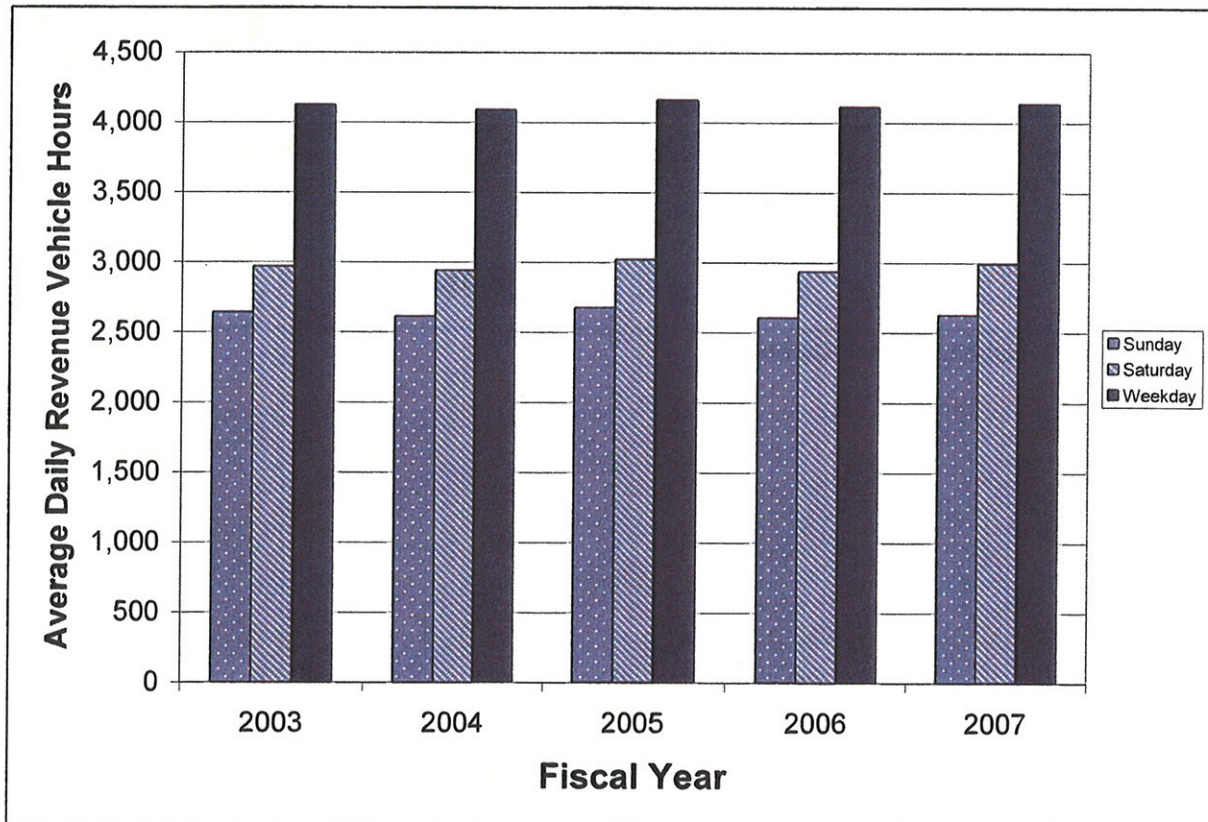
Source: National Transit Database

Figure 2-4 shows revenue vehicle hours supplied on an average weekday, average Saturday and average Sunday for the past five years. As can be seen, the service supplied has remained approximately constant over this time period. The average daily values for FY 2004 do not reflect the effect of a 34-day strike by *TheBus* operators that ended on September 29, 2003.

In FY 2007 average weekday revenue vehicle hours totaled 4,135. These hours were divided among route types as follows:

- Rapid Bus 10.6%
- Urban Trunk 35.7%
- Urban Feeder 6.0%
- Suburban Trunk 33.2%
- Suburban Feeder 1.9%
- Community Circulator 5.6%
- Peak Express 7.0%

**Figure 2-4: Average Daily Revenue Vehicle Hours**



Source: National Transit Database

## 2.3 TheBus Fare Structure

Bus fares are set by the Honolulu City Council by ordinance. Current bus fares pursuant to Section 13-2.1 of the Revised Ordinances of Honolulu are shown in Table 2-2 below, along with prior fare structures. The current fare structure went into effect on October 1, 2003.

**Table 2-2: TheBus Fare Structure**

[As of May 30, 2007. In dollars]

Effective date	One-way cash fare		Monthly pass	
	Adult <sup>1</sup>	Youth <sup>2</sup>	Adult <sup>1</sup>	Youth <sup>2</sup>
March 1, 1971	0.25	0.15	(X)	(X)
March 2, 1971	0.25	0.10	(X)	(X)
June 9, 1972 <sup>3</sup>	.25, .50	.10, .25	(X)	(X)
March 15, 1974	0.25	0.10	(X)	(X)
November 1, 1979	0.50	0.25	15.00	7.50
June 18, 1984	0.60	0.25	15.00	7.50
October 1, 1993	0.85	0.25	20.00	7.50
July 1, 1995	1.00	0.50	25.00	12.50
July 1, 2001	1.50	0.75	27.00	13.50
July 1, 2003	1.75	0.75	30.00	13.50
October 1, 2003 <sup>4</sup>	2.00	1.00	40.00	20.00

X Not applicable.

- "Adult" means any person over the age of 17 who does not qualify as a "youth".
- "Youth" means a person 6 through 17 years of age, subject to the presentation of a valid identification card establishing the age of the person. The term includes high school students, up to 19 years of age, with a valid high school identification card establishing the age of the student and the student's current enrollment, but excludes college, university and vocational training students if over the age of 17.
- Zone fares initiated and later eliminated.
- Other fares. Annual pass, adult: \$440.00, youth: \$220.00.  
Adult four-day pass: \$20.00 for a four consecutive day period.  
Senior citizen, a person 65 years of age or older:  
one-way fare: \$1.00 with valid TheBus senior card or valid US Medicare card;  
monthly pass: \$10.00 with valid State ID card, driver's license, birth certificate or passport;  
monthly pass sticker: \$5.00 with valid TheBus senior card;  
annual pass or renewal sticker: \$30.00 with approved application.  
Person with a disability:  
one-way fare: \$1.00 with valid disability bus pass or valid US Medicare card;  
monthly pass: \$10.00 with approved application or valid US Medicare card;  
monthly pass sticker: \$5.00 with valid disability bus pass;  
annual pass or renewal sticker: \$30.00 with approved application or valid US Medicare card.  
FootballExpress. One-way fare: \$3.00, roundtrip fare: \$6.00.

Source: City and County of Honolulu, Honolulu Public Transit Authority, records; Department of Transportation Services, records; TheBus Oahu Transit Services, Inc.

By City Council policy (Resolution No. 00-29, CD-1), the farebox recovery ratio is maintained between 27 percent to 33 percent of *TheBus* operations. Based on the NTP Report Year 2006 Closeout information, the farebox recovery ratio for *TheBus* was 30.1%. The fixed-guideway system is planned to operate with a unified fare structure with *TheBus*, with transfers and passes usable on both modes. The *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Report - November 1, 2006* projected the FY 2030 farebox recovery ratio for the 20-mile fixed-guideway alternative to be 28 percent.

Current transfer policy allows each customer to receive one free transfer upon boarding when paying a cash fare. The transfer is valid for a two hour period and may only be used once for travel in the same direction. Passengers paying cash and requiring a third bus to reach their destination would need to pay another cash fare. This limitation on using a transfer only once is currently under review and may be revised to allow more than one transfer within the time period.

A Four-Day pass, targeted to visitors, offering unlimited use for four (4) consecutive days is available for \$20.00. The Four-Day pass is used by approximately 300,000 passengers per year and generates approximately 1.5 percent of *TheBus* revenue, as shown in Table 2-3.

A new University Student Discount Bus Pass (UPASS) program was inaugurated in August 2005 offering college students a semester pass at a discount. The semester pass costs the student \$100.00. To date thirteen (13) higher education institutions have joined the UPASS program. The UPASS is used by approximately 1,200,000 passengers per year and generates approximately 3.6 percent of *TheBus* revenue, as shown in Table 2-3.

**Table 2-3: *TheBus* Annual Fare Revenue**

Fare Type	Annual Revenue	Percent of Total Fare Revenue
Adult Bus Pass	\$17,807,067	42.5%
Youth Bus Pass	\$2,239,860	5.4%
Senior Bus Pass	\$1,003,378	2.4%
Disabled Bus Pass	\$302,550	0.7%
UPass	\$1,515,580	3.6%
4-Day Pass	\$628,520	1.5%
Cash	\$18,088,481	43.2%
Stadium Express	\$82,927	0.2%
Other	\$196,156	0.5%
<b>Total</b>	<b>\$41,864,519</b>	<b>100.0%</b>

Source: Oahu Transit Services,  
for the 12 month period March 2007 through February 2008

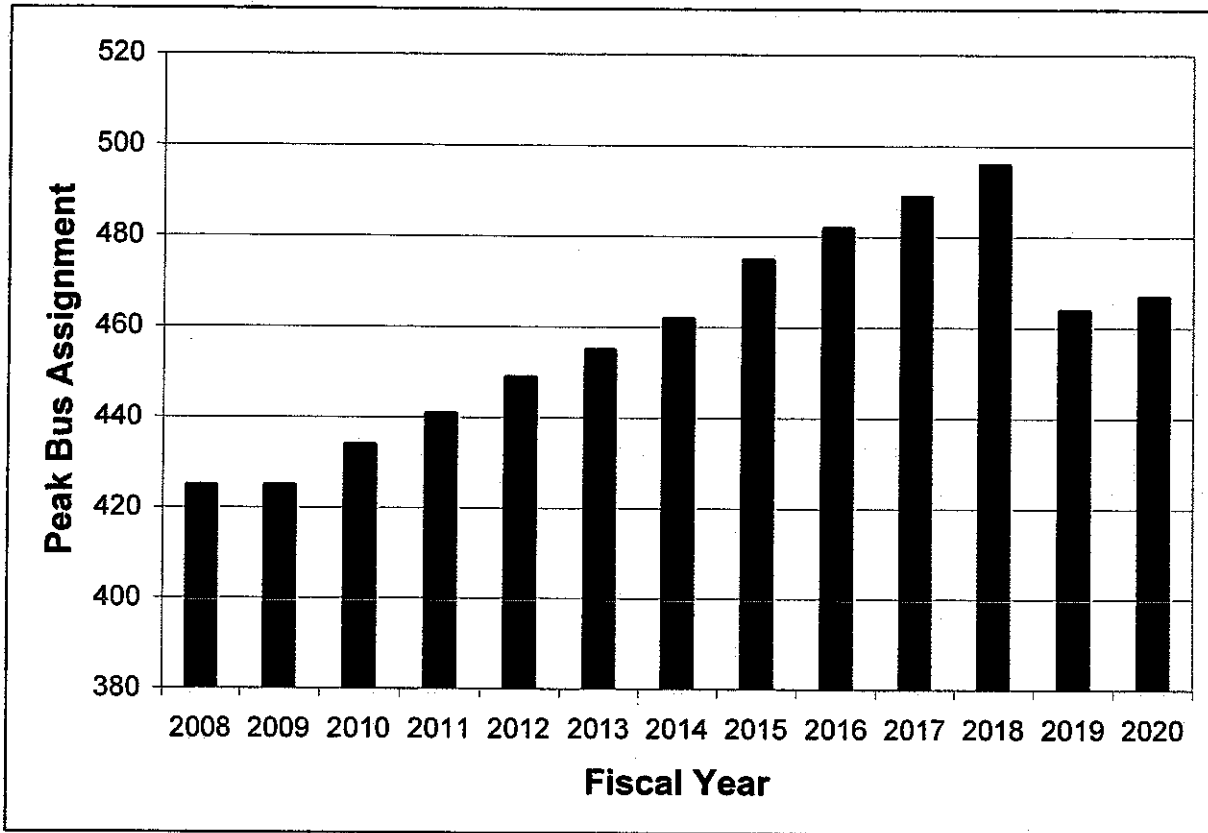
## 2.4 Service Changes

With implementation of the fixed-guideway line various fixed route bus lines will be restructured. The route restructuring will follow several guiding principles. They are defined as:

1. A route will be realigned and truncated at a fixed-guideway station if the estimated out of direction passenger travel time for local and community circulator routes is impacted by no more than five (5) minutes. The route is not realigned if the impact is eight (8) or more minutes.
2. Local routes will be either discontinued or reclassified as a feeder service where major local routes serve the same alignment as the fixed-guideway. The exception will be for those routes deemed essential to provide local bus stop service along the fixed-guideway alignment.
3. Peak period, peak direction express bus routes in competition with the fixed-guideway system will be discontinued in favor of the fixed-guideway alignment if the estimated passenger travel time is impacted by no more than an additional 15 minutes.
4. Community circulator routes will be reoriented and extended to serve a fixed-guideway station if the mileage impact is no more than an additional two (2) miles. The exception will be for those route changes deemed necessary, especially during the peak periods, to avoid a double transfer to reach a fixed-guideway station. This principle was increased to five (5) miles for the initial segment.
5. Community circulator routes will retain the same span of service and headways as assumed for the future Baseline service unless a route has the same alignment as the fixed-guideway and is eliminated or unless forecast ridership is such that additional service is warranted due to severe overcrowding.
6. The highly urban area routes will not be modified to directly link to a fixed-guideway station if they pass within three (3) blocks of a station and deviating the route has been deemed disruptive to the majority of the passengers.

Figure 2-5 shows how bus supply needs are anticipated to change from current conditions to those when the entire fixed-guideway line is in operation (FY 2019). The peak vehicle requirement is based on the Alternatives Analysis assumption that the fixed-guideway line is first opened for service upon completion of the entire 20-mile line. If the fixed-guideway line is opened in phases, then the changes in peak bus requirements would also occur in several increments as each new phase is opened. The peak vehicle requirements reflecting new ridership forecasts based on phased fixed-guideway operations will be developed during Preliminary Engineering (PE).



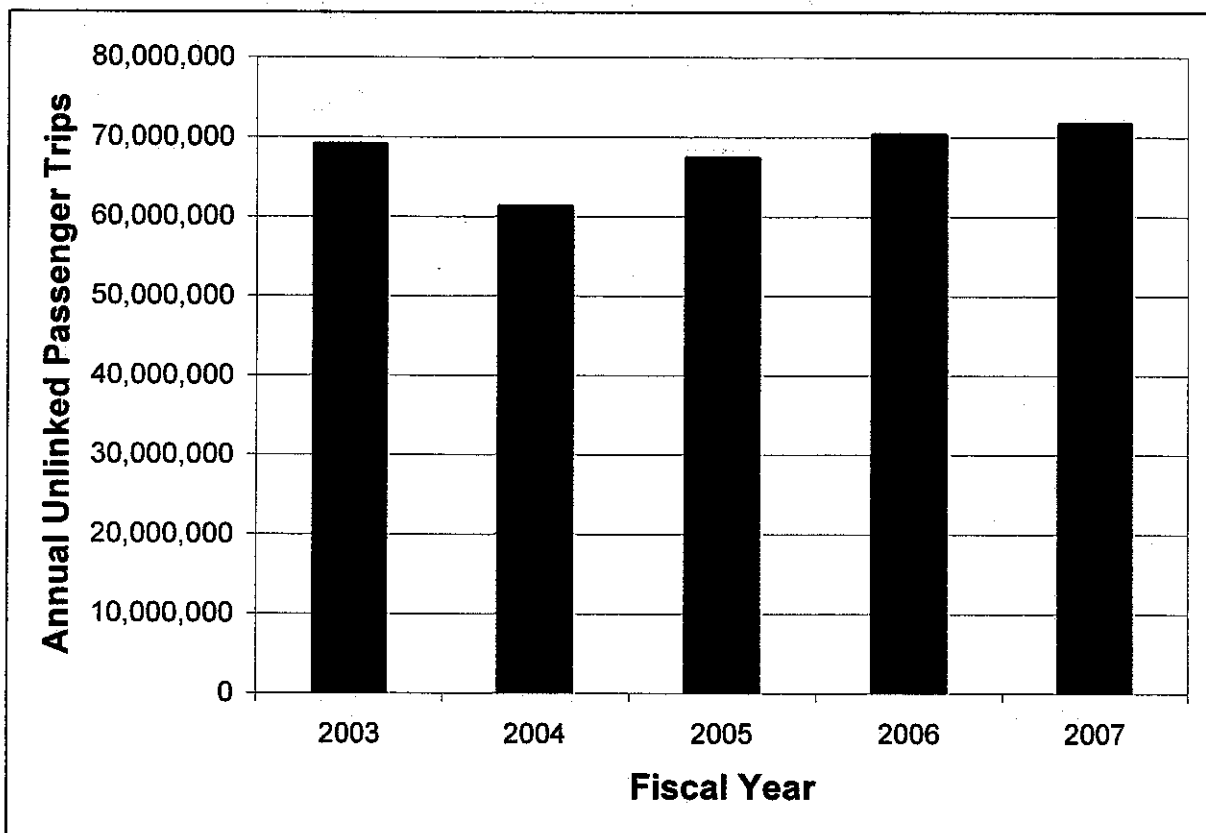


**Figure 2-5: Peak Vehicle Requirements**

### 3.1 Recent History of Fixed Route Ridership

*TheBus* reported 71,749,456 annual unlinked passenger trips for the fiscal year ending June 30, 2007. This is an increase of 1.9 percent (1,365,000 unlinked passenger trips) over FY 2006 (70,384,355 unlinked passenger trips), and 6.5 percent (4,340,000 unlinked passenger trips) over FY 2005 (67,406,827 unlinked passenger trips). Figure 3-1 presents this data for FY 2003 through FY 2007. FY 2004 was affected by a 34-day strike by *TheBus* operators that ended on September 29, 2003. This was followed by a fare increase that went into effect on October 1, 2003. The fare increase had minimal effect on ridership.

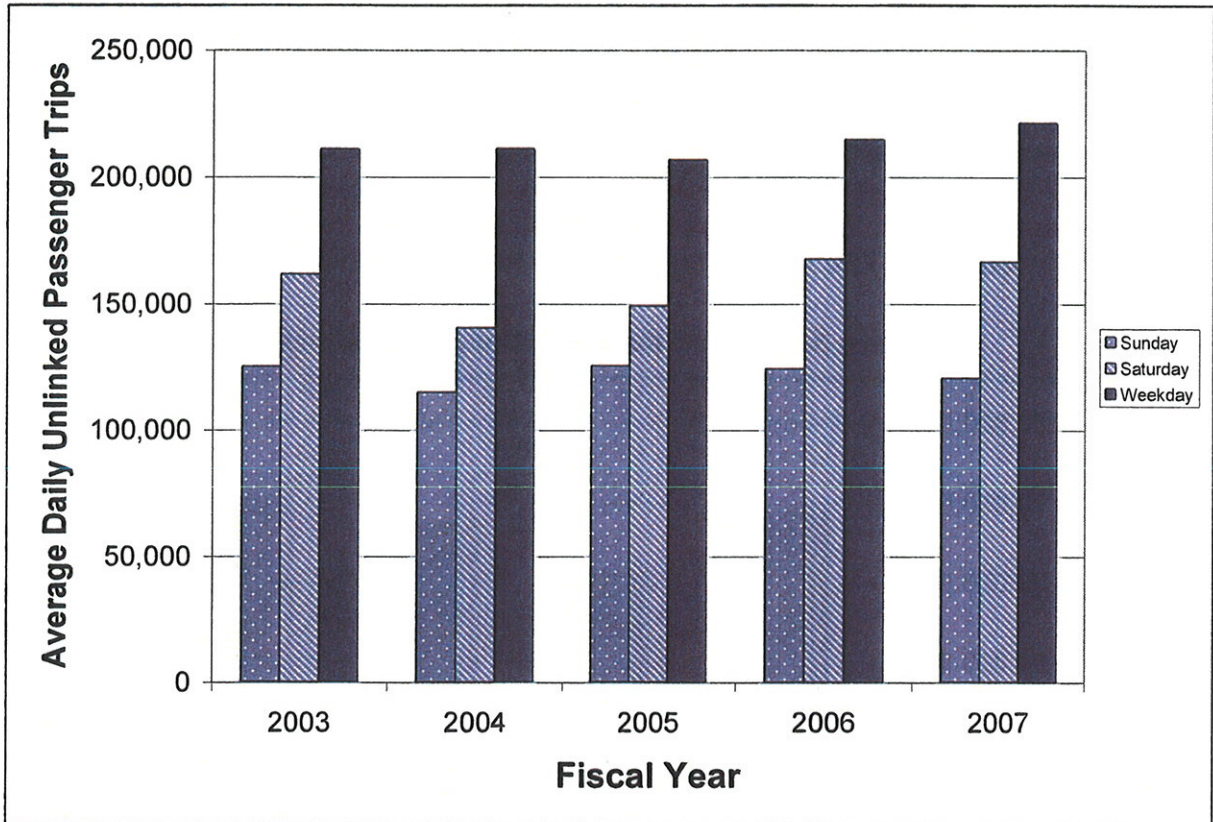
**Figure 3-1: Fixed Route Unlinked Passenger Trips**



Source: National Transit Database

Figure 3-2 shows unlinked passenger trips on an average weekday, average Saturday and average Sunday for the past five years.

**Figure 3-2: Average Daily Unlinked Passenger Trips**



Source: National Transit Database

### 3.2 Ridership Changes

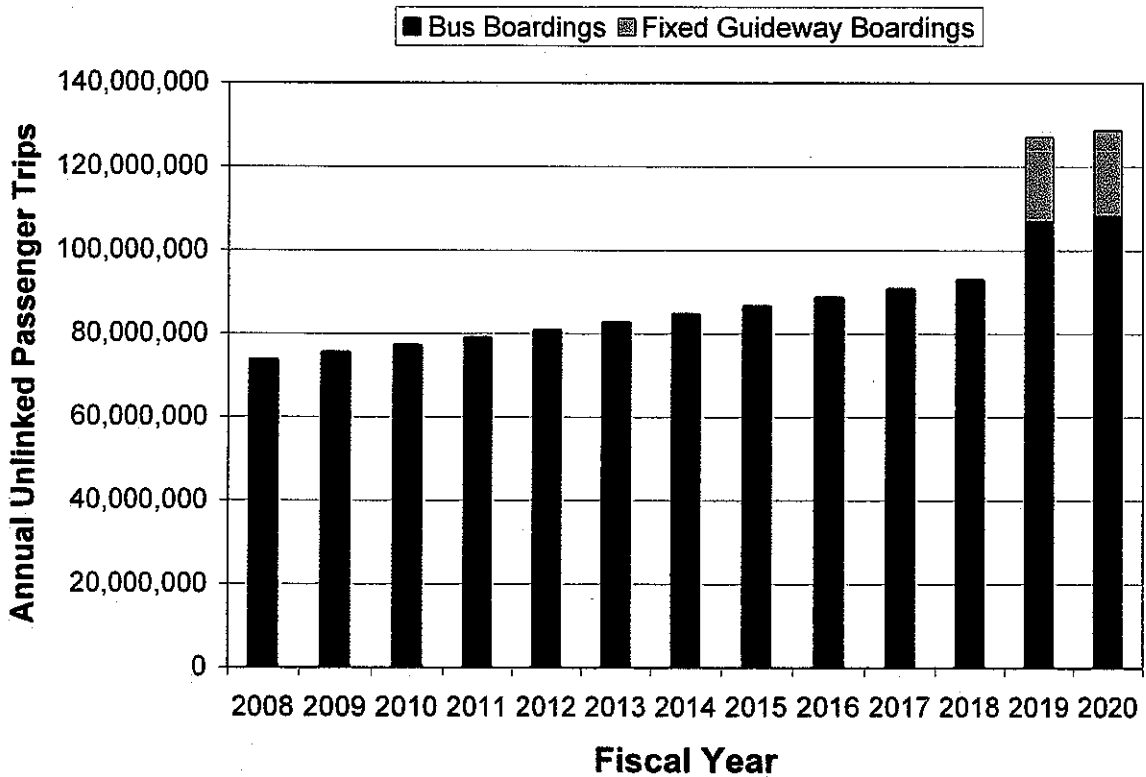
Ridership is expected to increase over time as overall travel demand grows on O’ahu. Future forecasts are prepared using procedures documented in the *Honolulu High-Capacity Transit Corridor Project Travel Forecasting Methodology Report – June 30, 2006*. The forecasts prepared in the Alternatives Analysis are documented in the *Honolulu High-Capacity Transit Corridor Project Alternatives Analysis Travel Demand Forecasting Results Report – December 2006*. As shown in Figure 3-3, ridership from FY 2008 through FY 2018 is expected to grow about 2.3 percent per year, somewhat slower than the growth from FY 2005 to FY 2007.

With implementation of the fixed-guideway system new riders are expected to take advantage of this new transit option. The fixed-guideway system will afford existing and new riders with reliable access and connectivity to many social, business, educational and recreational activities. The fixed-guideway system will interface with a modified fixed route bus network providing numerous options for existing and new riders. Assuming that the 20-mile fixed-guideway line is open

for service in FY 2019 upon completion of the entire line, a jump in ridership is forecast by the regional travel forecasting model during the first complete year that the line is open for service. Linked transit trips are expected to be about 8 percent greater with the fixed-guideway line in place than if it is not, reflecting new transit riders attracted by the transit system improvement. Due to increased transfers, a more sizable increase in unlinked trips is expected, as shown in the figure. The forecasts do not include the effect of special events ridership.

If the fixed-guideway line is opened in phases, then the ridership increase associated with the new system will occur in several increments as each new phase is opened. A phasing plan will be developed during PE which will incorporate new forecasts based upon the incremental increases.

**Figure 3-3: Anticipated Future Unlinked Passenger Trips**



## **4.1 Current Fixed Route Fleet**

*TheBus'* current active fixed-route fleet consists of 525 diesel buses. Of these, 72 are articulated 60-foot vehicles (including 10 hybrids); 416 are 40-foot vehicles (including 40 hybrids); 12 are 35-foot vehicles and 25 are 30-foot vehicles, as shown in Table 4-1. All buses are equipped with bicycle racks and are accessible through either lifts (325 buses) or ramps (200 buses). The fixed route service requires 424 vehicles operating in maximum service, which are deployed from two operating bases in Kalihi and Pearl City.

The Kalihi bus facility is located at 811 Middle Street. It was constructed in 1990 on a fifteen acre property. It includes administrative offices, a maintenance shop, fueling and wash areas, and parking for 300 buses. It is currently home base for 295 buses. Adjacent to the Kalihi bus facility is a unit repair shop.

The Pearl City bus facility is located at 1200 Waimano Home Road. It was constructed in 2001 on seventeen acres of a twenty-one acre parcel of land. It includes transportation offices, a fuel and wash area, central training rooms and a maintenance shop. It has capacity for 250 buses; it is currently home base for 230.

**Table 4-1: TheBus Active Fleet Inventory**

Year	Make	Length (feet)	Capacity <sup>1</sup>		Total	Quantity
			Seating	Standing		
1993	TMC	35'	35	28	63	12
1993	TMC	40'	43	28	71	31
1994 / 95	Gillig	40'	45	19	64	98
1995	Gillig	40'	46	19	65	34
1996	Gillig	40'	45	22	67	22
1997	Gillig	40'	45	19	64	47
1998	Gillig	40'	45	19	64	18
1998	Gillig	40' LF	40	34	74	3
1998	Gillig	30'	29	20	49	10
2000	New Flyer	60' LF	58	72	130	30
2000	Gillig	40'	45	18	63	34
2001 / 02	Gillig	40'	45	19	64	19
2002	Chance	30' LF	23	31	54	10
2002	New Flyer	60' LF	58	72	130	16
2002	Chance	30' LF	23	31	54	5
2003	Gillig	40'	45	21	66	15
2004	Gillig	40' LF	40	20	60	55
2004	New Flyer	60' LF	58	72	130	16
2004	New Flyer (Artic. Hybrid)	60' LF	58	72	130	10
2006	New Flyer (Std. Hybrid)	40' LF	37	37	74	40
Total Buses in Active Fleet:						525
LEGEND: LF-Low Floor			<sup>1</sup> Per manufacturers' data			

Source: National Transit Database, 2007

The current fixed route bus fleet provides service on weekdays, Saturdays, and Sundays. Table 4-2 shows the existing daily bus service characteristics.

**Table 4-2: Existing Average Daily Bus Service Characteristics**

	Average Weekday	Average Saturday	Average Sunday
Unlinked Passenger Trips	221,275	166,585	120,668
Vehicles in Operation			
AM Peak	383		
Midday	275	202	176
PM Peak	414		
Vehicle Miles	65,285	43,408	40,006
Revenue Vehicle Miles	54,250	39,562	36,772
Vehicle Hours	4,585	3,128	2,751
Revenue Vehicle Hours	4,135	2,991	2,625
Boardings per Revenue Mile	4.08	4.21	3.28

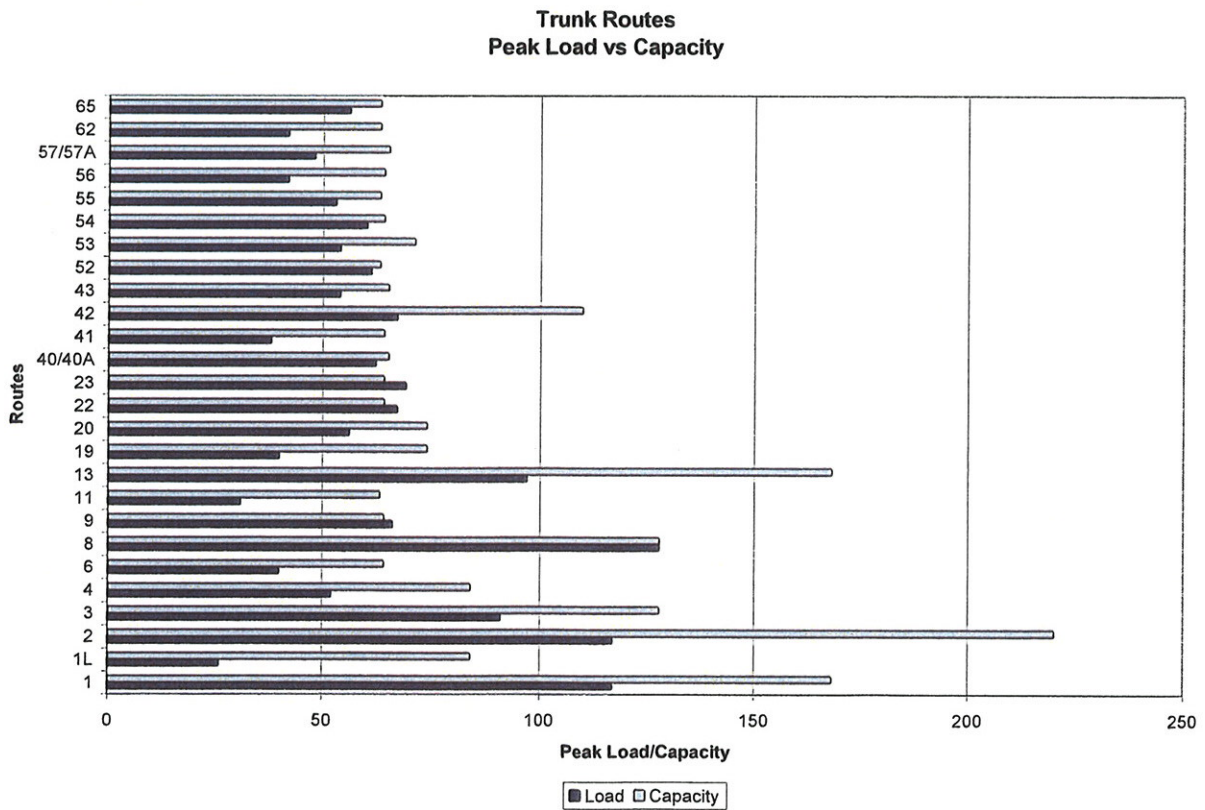
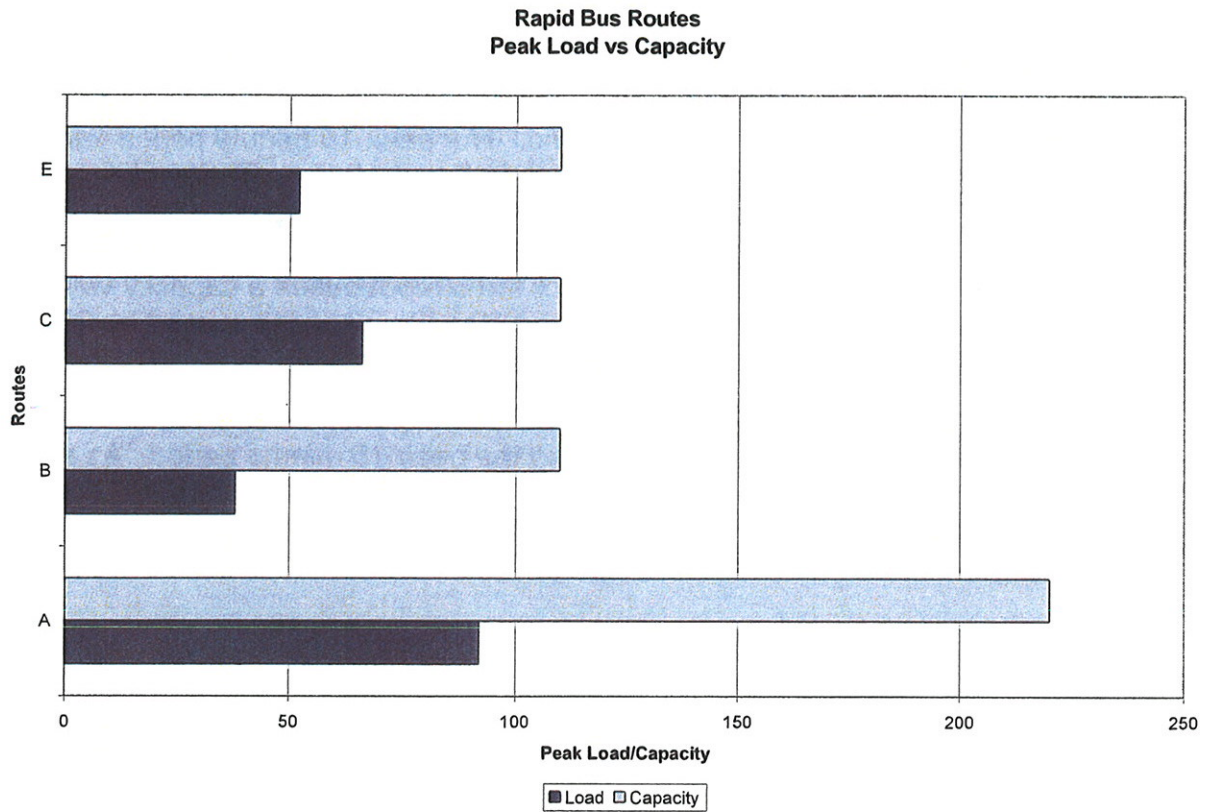
Source: National Transit Database, Report Year 2007 Working Data

## 4.2 Peak Vehicle Demand

Bus assignments are made to match bus capacity to expected demand. Peak load data by route is obtained from load checks. The peak 15 minute period is selected for each route to define demand. The peak 15 minute period varies by route but is usually within the period from 4:45 to 5:15 p.m. The peak load is compared to the capacity of the vehicles assigned to the specific route. The capacity used is the sum of seated plus standing capacity shown in Table 4-1, except for 60-foot articulated buses. For the 60-foot buses a capacity value of the seated capacity plus 70 percent of the standing capacity is used by OTS when developing the preferred vehicle assignment lists.

Figure 4-1 shows the comparison of peak load capacity versus demand for all fixed routes at the peak load point during the peak 15 minute period. As can be seen, only three routes operate slightly over capacity, trunk routes 9, 22 and 23. On these routes the peak load demand is approximately five percent over capacity.

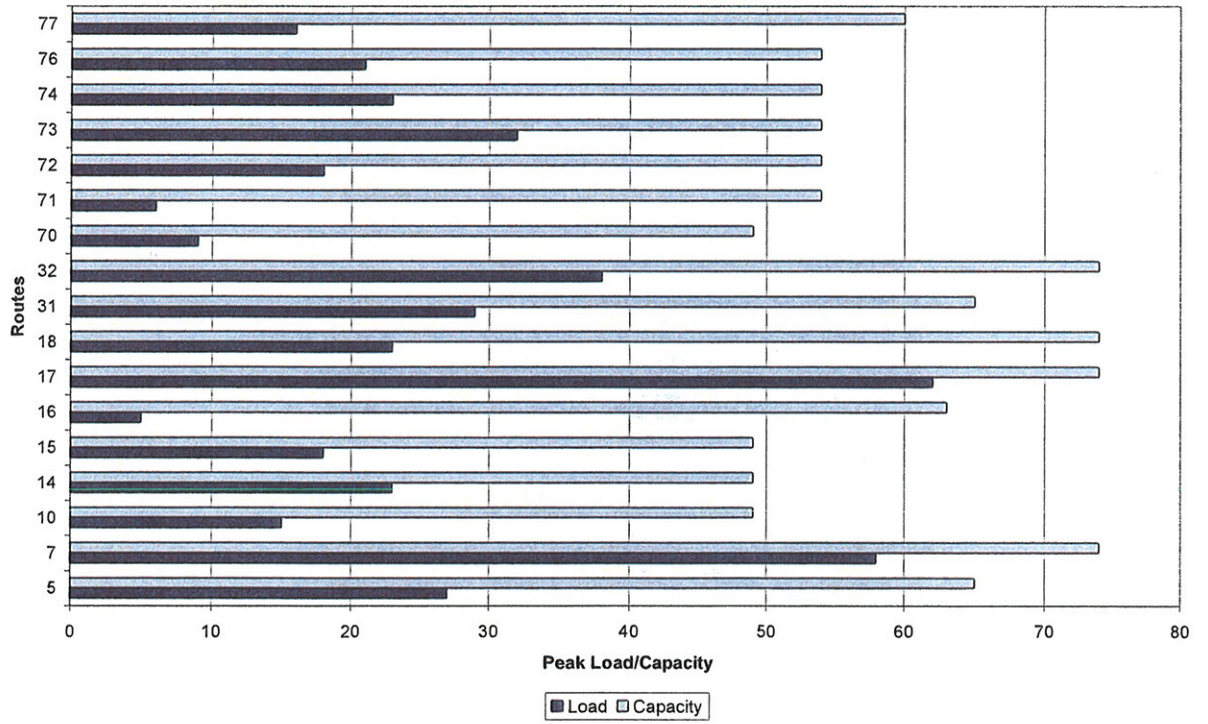
**Figure 4-1: Passenger Loading at Peak Load Point vs. Vehicle Capacity**



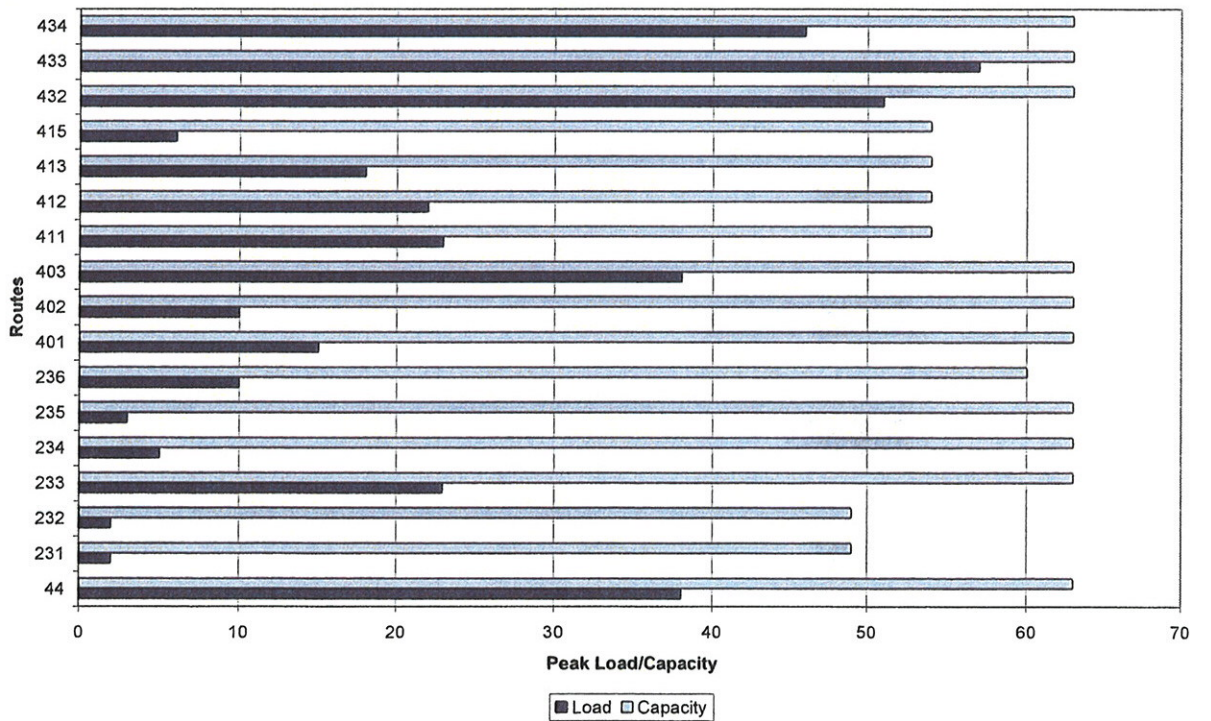


**Figure 4-1 continued**

**Feeder Routes  
Peak Load vs Capacity**

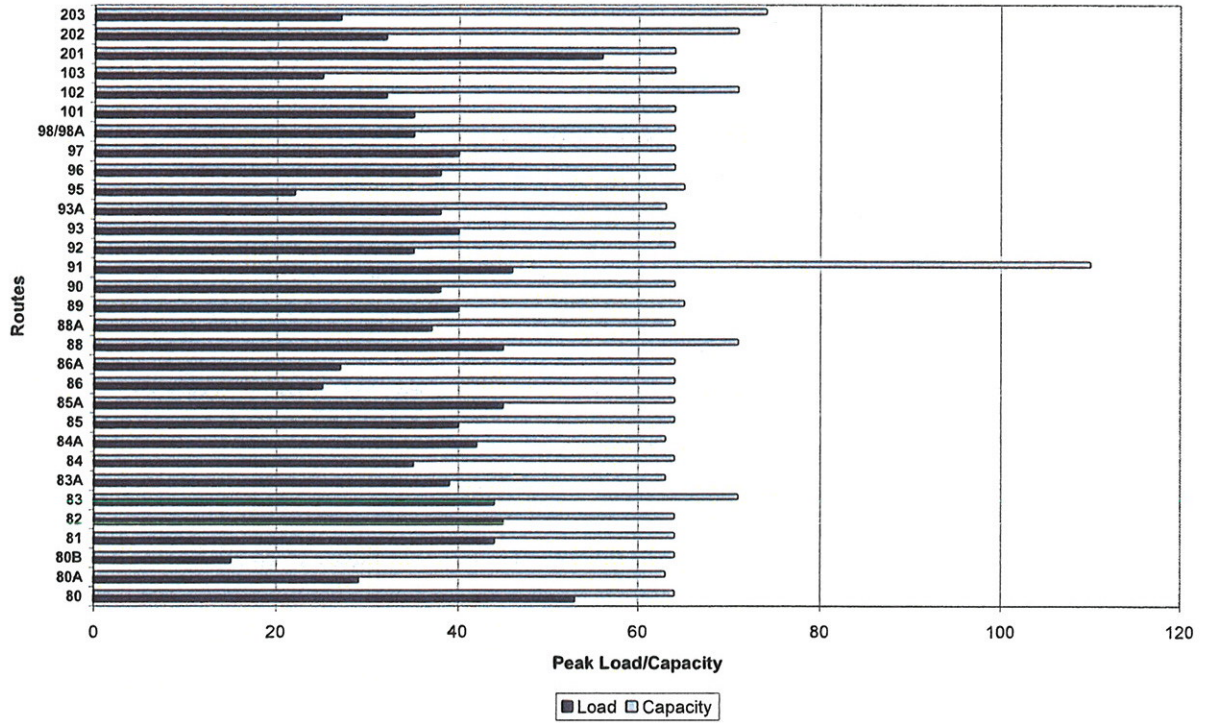


**Community Circulator Routes  
Peak Load vs Capacity**

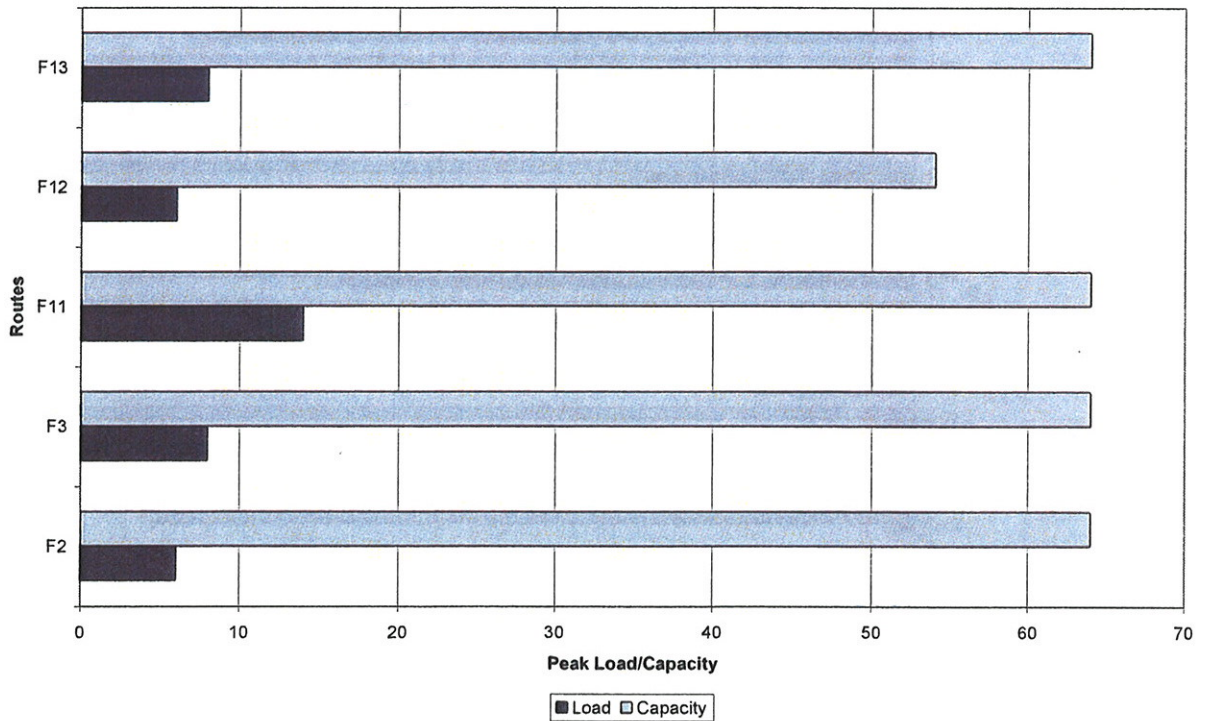


**Figure 4-1 continued**

**Peak Express Routes  
Peak Load vs Capacity**



**Ferry Connector Routes  
Peak Load vs Capacity**



### **4.3 Bus Fleet Replacement and Expansion**

Table 4-3 shows the plan for replacement and expansion of the fixed route bus fleet from FY 2003 through the beginning of operation of the entire 20-mile fixed-guideway line. As shown in the table (in the "Bus Manufacturer" column), both hybrid electric and standard diesel buses will be added to the fleet.

The *Honolulu High-Capacity Transit Corridor Project Financial Plan – November 2007* describes the capital and operating revenue sources used to fund the replacement and expansion program.

This BFMP and the Financial Plan will be refined during Preliminary Engineering to reflect phased operations of the proposed fixed-guideway system.

**Table 4-3: Fixed Route Bus Fleet Replacement and Expansion Plan**

BUDGET FY	DELIVERY FY	BUS MANUFACTURER	SIZE (FT)	AVAILABLE FOR USE IN FISCAL YEAR																
				2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	1983	Gillig	40'	50	11															
	1990	TMC	40'	35	16															
	1993	TMC	35'	12	12	12	12	12	12	2	0	0	0	0	0	0	0	0	0	0
	1993	TMC	40'	82	82	71	71	31	22	22	3	0	0	0	0	0	0	0	0	0
	1994/95	Gillig	40'	98	98	98	98	98	98	98	98	63	21	0	0	0	0	0	0	0
	1995	Gillig	40'	34	34	34	34	34	34	34	34	34	34	15	0	0	0	0	0	0
	1996	Gillig	40'	22	22	22	22	22	22	22	22	22	22	22	7	0	0	0	0	0
	1997	Gillig	40'	47	47	47	47	47	47	47	47	47	47	45	45	22	0	0	0	0
	1998	Gillig	40'	18	18	18	18	18	18	18	18	18	18	18	18	18	11	0	0	0
	1998	Gillig	40' LF	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0
	1998	Gillig	30'	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0
	2000	New Flyer	60' LF	30	30	30	30	30	30	30	30	30	30	30	30	15	0	0	0	0
	2000	Gillig	40'	34	34	34	34	34	34	34	34	34	34	34	34	34	34	3	0	0
	2001/02	Gillig	40'	19	19	19	19	19	19	19	19	19	19	19	19	19	19	0	0	0
	2002	Chance	30' LF	10	10	10	10	10	10	10	10	10	10	10	10	0	0	0	0	0
2001	2002	New Flyer	60' LF	16	16	16	16	16	16	16	16	16	16	16	16	16	15	0	0	0
2001	2002	Chance	30' LF	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0
2001	2003	Gillig	40'		15	15	15	15	15	15	15	15	15	15	15	15	15	15	4	0
2002	2004	Gillig	40' LF		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	46
2003	2004	New Flyer	60' LF		16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	0
2003	2004	New Flyer (Artic. Hybrid)	60' LF			10	10	10	10	10	10	10	10	10	10	10	10	10	8	0
2005	2006	New Flyer (Std. Hybrid)	40' LF					40	40	40	40	40	40	40	40	40	40	40	40	40
2006	2007	Artic. Diesel	60' LF						9	9	9	9	9	9	9	9	9	9	9	0
2007	2008	Artic. Hybrid Electric	60' LF							10	10	10	10	10	10	10	10	10	10	10
2008	2009	Artic. Hybrid Electric	60' LF								20	20	20	20	20	20	20	20	20	20
2008	2009	Standard Diesel	30' LF								10	10	10	10	10	10	10	10	10	10
2009	2010	Hybrid Electric	40' LF									50	50	50	50	50	50	50	50	50
2010	2011	Hybrid Electric	40' LF										50	50	50	50	50	50	50	50
2011	2012	Hybrid Electric	40' LF											50	50	50	50	50	50	50
2012	2013	Hybrid Electric	40' LF												50	50	50	50	50	50
2013	2014	Standard Diesel	30' LF													21	21	21	21	21
2013	2014	Artic. Hybrid Electric	60' LF													42	42	42	42	42
2014	2015	Artic. Hybrid Electric	60' LF														53	53	53	53
2015	2016	Standard Diesel	30' LF															12	12	12
2015	2016	Hybrid Electric	40' LF															7	7	7
2015	2016	Artic. Hybrid Electric	60' LF															50	50	50
2016	2017	Artic. Hybrid Electric	60' LF																36	36
2017	2018	Standard Diesel	30' LF																13	13
2017	2018	Artic. Hybrid Electric	60' LF																18	18
2018	2019	Hybrid Electric	40' LF																	10
2018	2019	Artic. Hybrid Electric	60' LF																	17

<b>Total Bus Fleet</b>	<b>525</b>	<b>553</b>	<b>525</b>	<b>525</b>	<b>525</b>	<b>525</b>	<b>525</b>	<b>525</b>	<b>534</b>	<b>546</b>	<b>554</b>	<b>562</b>	<b>572</b>	<b>575</b>	<b>583</b>	<b>592</b>	<b>595</b>	<b>595</b>	<b>595</b>
Total Active Fleet	525	536	496	499	525	501	501	510	522	530	538	548	563	572	580	591	559	559	559
Peak Vehicle Requirement	427	425	416	415	424	425	425	434	441	449	455	462	475	482	489	496	464	467	467
Spare Vehicles	98	111	80	84	101	76	76	76	81	81	83	86	88	90	91	95	95	92	92
Spare Ratio	23%	26%	19%	20%	24%	18%	18%	18%	18%	18%	18%	19%	19%	19%	19%	19%	20%	20%	20%
Active Fleet Average Age	8.4	6.6	7.3	8.3	8.3	8.7	9.4	9.6	9.3	8.8	8.3	8.0	7.6	7.2	6.5	6.7	6.5	6.8	6.8
Total Fleet Average Age	8.4	7.0	7.2	8.2	8.3	9.0	9.7	9.9	9.6	9.2	8.7	8.4	7.8	7.4	6.7	6.8	7.0	7.4	7.4

Spare Ratio = (Total Active Fleet minus Peak Vehicle Requirement) divided by Peak Vehicle Requirement.

## ***5 Performance Standards and Policies for Bus Operations***

---

The following measures currently are used in examining bus performance:

- On-Time Performance
- Vehicle Assignment
- Vehicle Headway
- Transit Amenities
- Transit Access/Coverage.

### **5.1 On-Time Performance**

The overall on-time performance standard for *TheBus* is expressed as *percent of trips that are on-time*. On-time for routes with service headways greater than 15 minutes is considered to be from one minute early to ten minutes late. This definition of on-time has been structured to be in compliance with the Title VI requirements. On-time performance for routes with service headways less than 15 minutes is not as important as the operational headway of all trips on those routes.

The standards are as follows:

<b>Period</b>	<b>Time</b>	<b>On-Time Performance Standard</b>
AM (Peak)	3:42 a.m. to 9:00 a.m.	70%
Base	9:00 a.m. to 2:00 p.m.	80%
PM (Peak)	2:00 p.m. to 6:00 p.m.	70%
Night	6:00 p.m. to end of service	80%

### **5.2 Vehicle Assignment**

Vehicle assignments are made according to the following criteria:

- Bus assignments are made to match bus capacity to expected demand.
- Articulated buses are assigned to City Express! and other high volume routes.
- Circulator buses (less than 40') are assigned to circulator and feeder routes.

- Routes that have narrow streets and tight corners may use smaller buses.
- Routes with overhanging trees may require buses with rounded roof edges.

### 5.3 Vehicle Headway

Vehicle headway standards are:

Route Type	Headway Standard
Urban Trunk	15 minutes
Suburban Trunk	30 minutes
Feeder & Circulator	60 minutes
Rapid Bus (Limited Stop)	
Urban	15 minutes
Suburban	30 minutes
Peak Period Express	Not Applicable

### 5.4 Passenger Amenities

Passenger amenities include benches, shelters, trash receptacles, landscaping, static information (such as a route map and schedule), and real-time information available through electronic message sign boards.

Installation of such amenities should not block the accessible landing area or pedestrian pathway around the stop, the immediate area around the transit bus shelter, or the curbside limits of the bus stop zone.

Transit shelters must be accessible to persons in wheelchairs, and provide adequate space for persons in wheelchairs to maneuver into the shelter and remain there fully sheltered.

The minimum standards for applying passenger amenities to any bus stop are as follows:

- All amenities shall continue compliance with Americans with Disabilities Act Accessibility Guidelines (ADAAG).
- Shelters – Transfer points, two or more bus routes that service a stop, and stops on bus routes with headways greater than 40 minutes.
- Benches – Transfer points, two or more bus routes that service a stop, and stops on bus routes with headways greater than 30 minutes.
- Trash receptacle – Transfer points, two or more bus routes that service a stop, and stops on bus routes with headways greater than 15 minutes and/or in the general vicinity of waste receptacle use generator(s).

### Restrictions

1. No amenities (i.e.; newspaper/print material vendor stands) should be chained to any pole where a bus stop sign is installed, a separately installed bus stop information display board within 10 feet of any transit bus shelter area, or on the curbside within a bus stop zone.
2. Fixed bicycle stands should not be installed where passengers enter or exit a bus within a bus stop zone.
3. No bicycles, mopeds, or scooters should be chained and left unattended leaning against any pole where a bus stop sign is installed, a separately installed bus stop information display board, or a transit bus shelter.

## **5.5 Transit Access/Coverage**

Bus service, including fixed route service and paratransit service, is provided to cover all inhabited parts of O'ahu. Paratransit service will continue to cover O'ahu with implementation of the fixed-guideway system.

Standards for transit access are:

- Access distance – Provide a bus stop within ¼ mile (1,320 feet) of 85% of bus riders.
- Major Activity Center Access – Provide a bus stop within 1,000 feet of major activity centers.
- Ease of Use – Make published route maps available to the public.

The OTS' Maintenance Department is responsible for the maintenance of the fixed route bus fleet.

OTS's Maintenance Goals and Objectives are listed on the following page.



## MAINTENANCE DEPARTMENT GENERAL OPERATING PROCEDURE



Policy Number: MTCE 2.400

Page: 1 of 1

Title: MAINTENANCE GOALS AND OBJECTIVES

Effective: 04/10/07

Supersedes: 06/01/06

### MISSION STATEMENT

Oahu Transit Services, Inc., under the policy guidance and direction of the City Department of Transportation Services and within the budgetary resources provided, is responsible for providing safe, secure, economical, efficient, effective and dependable public bus service to the community in an environmentally sensitive manner. We will follow a policy of nondiscrimination in employment and in the provision of TheBus service without regard to race, national origin, gender, income level, or disability status. Our business dealings will follow high standards of integrity and ethical business conduct. Our strength and our future growth lie with our employees who we will listen to and support. We value innovation and excellence in the provision of transit services and will seek to perpetuate the Aloha Spirit and the feeling of 'Ohana

#### Current Goals:

1. Convert the City and County of Honolulu's entire bus and support fleet of tires to Nitrogen vs. Compressed Air.
2. Increase intervals between engine overhauls.
3. Increase brake lining life.
4. Convert the entire revenue fleet to synthetic transmission fluid.
5. Energy conservation efforts.
6. Recycling.
7. 10,000 miles between mechanical road calls.
8. Minimum of 85 percent availability.
9. Overtime less than 5 percent.

#### Current Challenges:

1. Aging infrastructure at Kalihi-Palama facility.
2. Aging bus fleet.
3. Aging Handi-Van fleet.
4. Handi-Van relocation.
5. Non-revenue fleet replacement.
6. Maintenance equipment in general.
7. Manpower.

#### Future Goals:

1. Infrastructure improvements at the Kalihi-Palama facility.
2. Infrastructure improvements at the Pearl City facility.

## 6.1 Scheduled Maintenance Cycles

OTS performs a regular program consisting of several levels of inspection and maintenance of equipment and their components based on accumulated mileage. (Inspection forms are presented in Appendix A.)

As shown on Table 6-1, the oil drops are performed on an eight (8) step inspection schedule which is in 6,000 mile (6K) intervals. Each service interval progressively has added inspections, maintenance and/or repairs. When a vehicle reaches the 48,000 mile threshold (48K inspection), it goes through engine tune-ups and various component change-outs.

**Table 6-1: Bus Maintenance Cycles**

Inspection	Interval	Labor Hours	Work Description
Eight Step Inspection	6K Intervals up to 48K	1-8	Fluid changes with progressive levels of inspections, maintenance and repair
Brake Inspection	Weekly	0.3	Complete brake system inspection
Heating, Venting, Air Conditioning (HVAC) Inspection	6K Intervals	1-8	System inspection every 6K with an additional specialty shop inspection/maintenance/repair per mileage requirements.
Electrical Inspection	6K Intervals	1-8	System inspection every 6K with an additional specialty shop inspection/maintenance/repair per mileage requirements.
Wheelchair Inspection	6K Intervals	1-8	System inspection every 6K with an additional specialty shop inspection/maintenance/repair per mileage requirements.
Quality Assurance	Daily	0.5	Buses are sent to the Quality Assurance Section after repairs are completed in other repair sections before buses are put on the ready line.
Service Station/Interior Cleaning	Daily	0.3/1	Buses are sent through for fueling and cleaning daily.

In addition to the oil drop inspections, OTS also performs inspections by specialty shops that are mileage driven. The specialty shop inspections include the following:

- HVAC – 6,000 miles
- Electric – 6,000 miles
- Wheelchair Lift – 24,000 miles
- Quality Assurance – Situation Driven

Brake Inspection is performed weekly on all buses and each time a bus is sent for a Quality Assurance inspection.

Approximately 80 percent of the total bus fleet is routed through the Service Station on an average weekday for fueling and cleaning.

## 6.2 Maintenance Facilities and Labor

The daily inspections, fueling and cleaning of the bus fleet is performed by the two maintenance facilities located in Kalihi and Pearl City.

The power train and major component change-outs are completed by the operating divisions; however, the actual power train and major component overhauls are completed by a separate unit repair facility located adjacent to the Kalihi maintenance facility.

Articulated buses are stationed and maintained at both maintenance facilities.

The maintenance staff works on four shifts daily:

1. 0630–1500
2. 1500–2100
3. 1800–0200
4. 2230–0630

The distribution of vehicle and staff by division is shown in Table 6-2

**Table 6-2: Maintenance Division Capacity and Staffing**

Maintenance Division	Number of Assigned Buses					Maintenance Personnel			
	30 Ft	35 Ft	40 Ft	60 Ft	Total	Mechanics	Other Staff	Total	Staff per Bus
Kalihi	10	12	233	40	295	121	42	163	0.5525
Pearl City	15	0	183	32	230	121	31	152	0.6609
Unit Repair						32	9	41	0.0781

### 6.3 Scheduled Maintenance Demand

The number of buses pulled-in due to scheduled maintenance on an average weekday is shown in Table 6-3. On an average weekday approximately 137 buses are pulled in due to daily scheduled maintenance, excluding those buses merely undergoing fueling and cleaning.

**Table 6-3: Schedule Maintenance Demand**

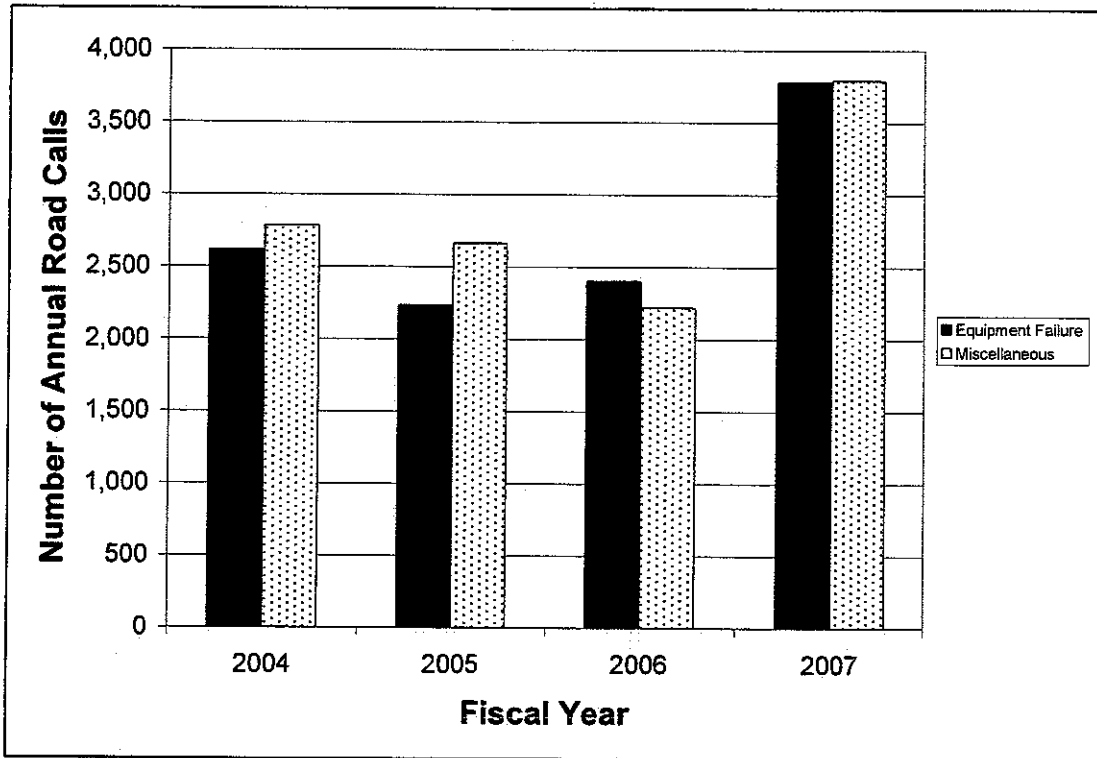
Activity	Number of Buses
Lubrication fluid changes	14
Brake inspections	105
HVAC inspections	10
Electrical inspections	10
Wheelchair lift inspections	13
Quality Assurance inspections	10
Service station/Interior cleaning	424

### 6.4 Unscheduled Maintenance

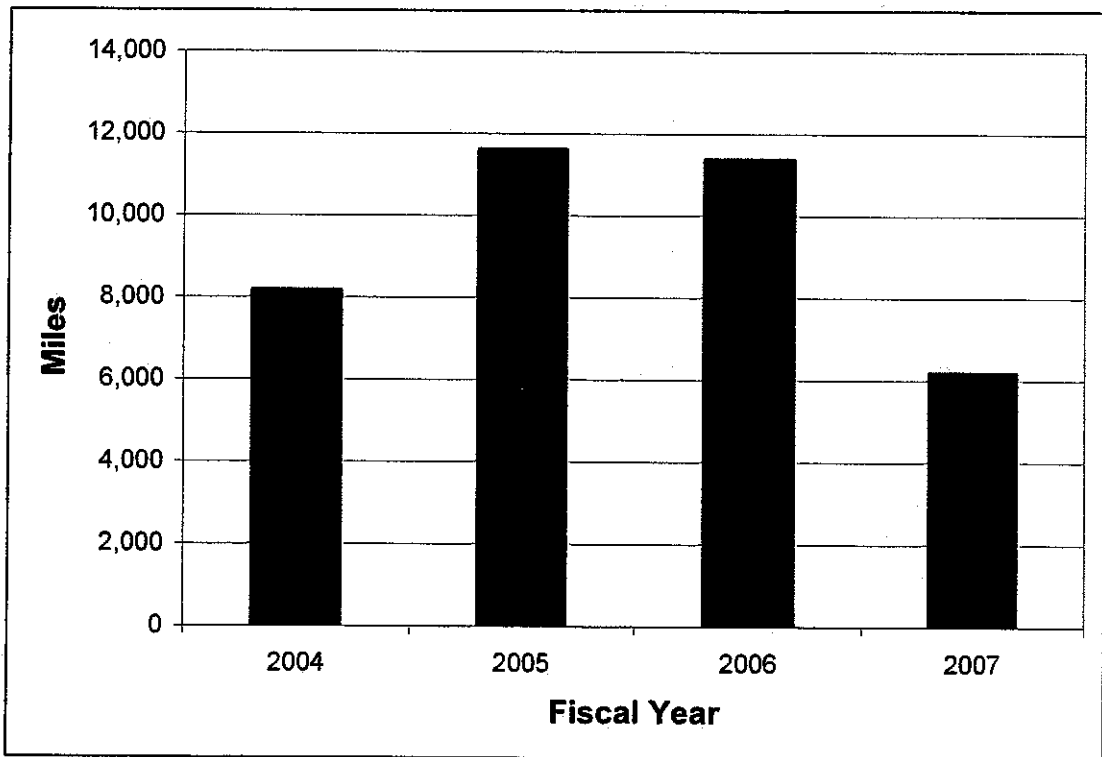
Unscheduled and corrective maintenance demands fall into two categories, equipment failures and miscellaneous reasons. Equipment failures include defects in the axles, body, doors, brakes, lighting system, cooling system, power train, heating system, air conditioning system, wheelchair lifts, steering system and other vehicle components. Miscellaneous reasons include flat tires, broken glass, graffiti removal, vandalism and accidents.

Figure 6-1 shows OTS' recent history of unscheduled maintenance road calls. The annual number of road calls is usually about equally divided between equipment failure and other miscellaneous reasons. The methodology of classifying road calls changed in FY 2007, so the results for that year cannot be compared directly to previous years.

Figure 6-2 shows the history of miles between mechanical road calls from FY 2004 through FY 2007. As noted with Figure 6-1, the methodology of classifying road calls changed in FY 2007 so the results for that year cannot be compared directly to previous years.



**Figure 6-1: Annual Summary of Road Calls**



**Figure 6-2: Miles Between Mechanical Road Calls**

## 6.5 Factors Affecting Maintenance Demand

Currently OTS is experiencing approximately 65 percent scheduled maintenance and 35 percent unscheduled maintenance. Ideally, per industry standards, the ratio should be 70 percent scheduled and 30 percent unscheduled. The maintenance department has set a goal to meet the industry standard in FY 2008.

Several factors contribute to elevated levels of unscheduled maintenance, including fleet age (the current fleet age is 8.4 years, with 33 percent of the fleet older than 12 years) and excessive mileage put on specific vehicle types due to scheduling obligations.

Under the current service structure, each bus averages slightly more than 40,000 miles per year. However certain vehicle types average over 60,000 miles per year, as shown in Table 6-4, which increases maintenance demand. The vehicles which average over 60,000 miles per year are assigned to long-distance routes. The 800 series buses serve Routes 52 (Wahiawā – Circle Island), 55 (Kāne’ohe – Circle Island), 62 (Honolulu – Wahiawā Heights), and 65 (Honolulu – Kāne’ohe – Kahalu’u). The 740 Pearl City series buses serve Route 40/40A (Honolulu – Mākaha). The 100 Pearl City series buses serve Routes CountryExpress! C, 42 (‘Ewa Beach – Waikīkī), and 91 ‘Ewa Beach Express. These routes can be seen on the system map presented as Figure 6-3.

**Table 6-4: Mileage Summary FY 2007**

Number Series	Year of Manufacture	Make	Miles	Vehicles	Average Miles per Bus
020	2002	Optima 30' LF	321,381	15	21,425
040	1998	Gillig 30'	456,082	10	45,608
050	1993	TMC 35'	208,608	12	17,384
070	2000	New Flyer 60' LF	685,542	30	22,851
100 Kalihi	2004	New Flyer 60' LF Hybrid	347,330	10	34,733
100 Pearl City	2002	New Flyer 60' LF	2,079,198	32	64,975
200	1993	TMC 40'	630,806	31	20,349
300	1997	Gillig 40'	2,405,037	68	35,368
500	2004	Gillig 40' LF	2,041,568	55	37,119
600 Kalihi	1995	Gillig 40'	993,454	45	22,077
600 Pearl City	1994	Gillig 40'	2,159,001	53	40,736
740 Kalihi	1995	Gillig 40'	881,013	25	35,241
740 Pearl City	1995	Gillig 40'	1,876,193	31	60,522
800	2000	Gillig 40'	4,674,076	68	68,736
900	2006	New Flyer 40' LF Hybrid	1,401,877	40	35,047
<b>TOTAL</b>			<b>21,161,166</b>	<b>525</b>	<b>40,307</b>

Figure 6-3: TheBus System Map



***Appendix A***  
***Maintenance Plan – Recurring Inspections***

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# MAINTENANCE DEPARTMENT GENERAL OPERATING PROCEDURE



Policy Number: MTCE 2.200

Page: 1 of 2

Title: MAINTENANCE PLAN – RECURRING  
INSPECTIONS

Effective: 06/01/06  
Supersedes: 07/01/03

## POLICY

An active preventative maintenance plan is critical in order to ensure that the bus fleet is maintained in optimum operating condition. In this regard, the maintenance divisions must utilize the following:

1. Manufacturer-specific maintenance plans as promulgated through maintenance manuals, both printed and CD-ROM based. Each time a new bus fleet is delivered, ample quantities of maintenance manuals are procured and distributed to the various shops as well as to division administrative offices.
2. "K" inspection checklists for inspections occurring at 3,000 miles; 6,000 miles; 12,000 miles; 24,000 miles; 36,000 miles; 48,000 miles and 72,000 miles. Copies of the most current fixed route checklists (Rev. 4/02) and paratransit checklists (Rev. 4/99) are attached. As changes occur, checklists will be revised and reissued.

Note:

- a) On new buses, oil is dropped at 3,000 miles; then the 6,000-mile schedule is followed.
- b) On new buses, synthetic transmission fluid is dropped at 3,000 miles; then the appropriate K- mile schedule is followed in compliance with factory-recommended filter changes.
- c) On new Hybrid buses, synthetic transmission fluid is dropped at 5,000 miles; then the 72,000-mile schedule is followed in compliance with recommended filter change intervals.

3. Wheelchair lift inspection checklist. A copy of the most current checklist (Rev. 4/02) is attached. As changes occur, this checklist will be revised and reissued.
4. Voith transmission inspection checklist. A copy of the most current checklist (Rev. 4/02) is attached. As changes occur, this checklist will be revised and reissued.

Policy Number: 2.200

Page: 2 of 2

Title: MAINTENANCE PLAN – RECURRING  
INSPECTIONS

Effective: 06/01/06

5. Transynd inspection checklist. A copy of the most current checklist (Rev. 4/02) is attached. As changes occur, this checklist will be revised and reissued.
6. Articulated joint inspection checklist. A copy of the most current checklist (7/03) is attached. As changes occur, this checklist will be revised and reissued.
7. Tune-up inspection checklist. A copy of the most current checklist (Rev. 4/02) is attached. As changes occur, this checklist will be revised and reissued.
8. As with any program, monitoring and follow-up are critical elements to the effectiveness of the preventative maintenance program. In this regard, we use the Vehicle Condition Report (VCR) card. The VCR card is filled out by drivers, collected at the end of the day and then distributed to the appropriate shops to take corrective action. A copy of the most current VCR is attached.

3,000 / 6,000 Miles Inspection

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK                      (2) = Adjusted/Repaired/Replaced                      (1) = Repairs Needed                      (N/A) = Not Applicable

**BOTTOM INSPECTIONS:**

- \_\_\_\_\_ Driver Seat Operation and Lube
- \_\_\_\_\_ Horn and Alarm
- \_\_\_\_\_ All Mirrors, Chimes and Visors
- \_\_\_\_\_ All Sign and Annunciator Operations
- \_\_\_\_\_ Windshield Wiper, Washer and Delay
- \_\_\_\_\_ Dash Control Switches, Knobs
- \_\_\_\_\_ Dash Warning, Indicator Lights
- \_\_\_\_\_ Door Control and Door Operation
- \_\_\_\_\_ Microphone Operation
- \_\_\_\_\_ Driver Light and Fan
- \_\_\_\_\_ A/C and Defroster Operation
- \_\_\_\_\_ Air Pressure Gauge
- \_\_\_\_\_ Volt Gauge (Charging System)
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Kneeling Operation
- \_\_\_\_\_ All Interior Lights
- \_\_\_\_\_ All Exterior Lights and Reflectors
- \_\_\_\_\_ Proper Height of Coach
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Engine, Trans and Differential Oil Leaks
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator/Air Compressor Leaks
- \_\_\_\_\_ Electrical Cables and Wiring
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Grease Coach, Jack Up Front End
- \_\_\_\_\_ Wheel Bearings/Seals and Oil Hubs
- \_\_\_\_\_ King Pin and Front Axle
- \_\_\_\_\_ Tie Rod Ends
- \_\_\_\_\_ Drag Link and Pitman Arm
- \_\_\_\_\_ Steering Box and U-Joints
- \_\_\_\_\_ All Bellows, Height Controls and Links
- \_\_\_\_\_ Stabilizer Bar and Links
- \_\_\_\_\_ Radius Rod and Bushings
- \_\_\_\_\_ Radius Rod Bolts and Nuts
- \_\_\_\_\_ Lateral Rod and Bushings
- \_\_\_\_\_ Lateral Rod Bolts and Nuts
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure and Trunnion
- \_\_\_\_\_ Shock Absorbers
- \_\_\_\_\_ Tire Condition
- \_\_\_\_\_ Wheel Splash Guard
- \_\_\_\_\_ Oil Sample Engine
- \_\_\_\_\_ Drain Engine Oil / R&R Engine Oil Filter
- \_\_\_\_\_ Drain Air Tanks Completely
- \_\_\_\_\_ Air Dryer
- \_\_\_\_\_ All Brake Adj/Lining/Cam Height
- \_\_\_\_\_ Driveline, U-Joints and Bolts
- \_\_\_\_\_ Air System Leaks (Lines, Valves & Chambers)

**TOP INSPECTIONS:**

- \_\_\_\_\_ All Door Props
- \_\_\_\_\_ Lube All Door Rollers/Tracks/Linkages
- \_\_\_\_\_ Rear Door Sensitive Edge and Bars
- \_\_\_\_\_ Lube Accel/Brake Pedal Pivots
- \_\_\_\_\_ Test Emergency Engine Shutdown
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Tilt Steering and Lube
- \_\_\_\_\_ Fire Extinguisher / Triangle Kit and Chalk
- \_\_\_\_\_ Stanchions and Subway Straps
- \_\_\_\_\_ All Interior Decals
- \_\_\_\_\_ Seats/Frame/Arm Rest
- \_\_\_\_\_ Wheelchair Folding Seats
- \_\_\_\_\_ Wheelchair Belts
- \_\_\_\_\_ Buzzer Cord and Touch Tape Strips
- \_\_\_\_\_ A/C Filter
- \_\_\_\_\_ Escape Latches and Roof Hatch
- \_\_\_\_\_ Glass and Window Operation
- \_\_\_\_\_ Floor Covering
- \_\_\_\_\_ Interior Body Damage
- \_\_\_\_\_ Car Cards and Lock Strips
- \_\_\_\_\_ Interior Bolts, Screws and Rivets
- \_\_\_\_\_ Battery Cable Connections
- \_\_\_\_\_ Bike Rack
- \_\_\_\_\_ All Compartment Door Latches
- \_\_\_\_\_ Exterior Body Screws, Bolts and Rivets
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ Wheelchair Oil Level
- \_\_\_\_\_ Alternator Belt
- \_\_\_\_\_ A/C Belt
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Muffler Mounts
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Oil Pressure and Gauge
- \_\_\_\_\_ Water Temperature Gauge
- \_\_\_\_\_ Engine and Trans Oil Leaks
- \_\_\_\_\_ Engine Water Leaks
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator and Air Compressor Leaks
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Air Cleaner Indicator
- \_\_\_\_\_ Engine Compartment Lights
- \_\_\_\_\_ Throttle Springs and Linkages
- \_\_\_\_\_ A/C Compressor
- \_\_\_\_\_ Accumulator Charge 50psi (TMC)
- \_\_\_\_\_ Fill Engine Oil
- \_\_\_\_\_ Test Engine Coolant  
Glycol \_\_\_\_\_ / Nitrite \_\_\_\_\_
- \_\_\_\_\_ Qts. Engine Oil
- \_\_\_\_\_ Qts. Trans Oil
- \_\_\_\_\_ Pts. Power Steering Oil
- \_\_\_\_\_ Pts. Wheelchair Oil

Mech. Signature: \_\_\_\_\_

Mech. Signature: \_\_\_\_\_

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK (2) = Adjusted/Repaired/Replaced (1) = Repairs Needed (N/A) = Not Applicable

**BOTTOM INSPECTIONS:**

- \_\_\_\_\_ Driver Seat Operation and Lube
- \_\_\_\_\_ Horn and Alarm
- \_\_\_\_\_ All Mirrors, Chimes and Visors
- \_\_\_\_\_ All Sign and Annunciator Operations
- \_\_\_\_\_ Windshield Wiper, Washer and Delay
- \_\_\_\_\_ Dash Control Switches, Knobs
- \_\_\_\_\_ Dash Warning, Indicator Lights
- \_\_\_\_\_ Door Control and Door Operation
- \_\_\_\_\_ A/C and Defroster Operation
- \_\_\_\_\_ Air Pressure Gauge
- \_\_\_\_\_ Volt Gauge (Charging System)
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Lube Wheelchair Ramp Pins
- \_\_\_\_\_ Kneeling Operation
- \_\_\_\_\_ Microphone Operation
- \_\_\_\_\_ Driver Light and Fan
- \_\_\_\_\_ All Interior Lights
- \_\_\_\_\_ All Exterior Lights and Reflectors
- \_\_\_\_\_ Proper Height of Coach
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Engine, Trans and Differential Oil Leaks
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator/Air Compressor Leaks
- \_\_\_\_\_ Electrical Cables and Wiring
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Oil Sample Engine and Trans
- \_\_\_\_\_ Drain Engine and Trans Oil
- \_\_\_\_\_ R&R Engine and Trans Oil Filters
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ Grease Coach, Jack Up Front End
- \_\_\_\_\_ Wheel Bearings/Seals and Oil Hubs
- \_\_\_\_\_ King Pin and Front Axle
- \_\_\_\_\_ Tie Rod Ends
- \_\_\_\_\_ Drag Link and Pitman Arm
- \_\_\_\_\_ Steering Box and U-Joints
- \_\_\_\_\_ All Bellows, Height Controls and Links
- \_\_\_\_\_ Air System Leaks (Lines, Valves & Chambers)
- \_\_\_\_\_ Stabilizer Bar and Links
- \_\_\_\_\_ Radius Rod and Bushings
- \_\_\_\_\_ Radius Rod Bolts and Nuts
- \_\_\_\_\_ Lateral Rod and Bushings
- \_\_\_\_\_ Lateral Rod Bolts and Nuts
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure and Trunnion
- \_\_\_\_\_ Shock Absorbers
- \_\_\_\_\_ Tire Condition
- \_\_\_\_\_ Wheel Splash Guard
- \_\_\_\_\_ Drain Air Tanks Completely
- \_\_\_\_\_ Air Dryer
- \_\_\_\_\_ All Brake Adj/Lining/Cam Height
- \_\_\_\_\_ Driveline, U-Joints and Bolts

**TOP INSPECTIONS:**

- \_\_\_\_\_ All Door Props
- \_\_\_\_\_ Lube All Door Rollers/Tracks/Linkages
- \_\_\_\_\_ Rear Door Sensitive Edge and Bars
- \_\_\_\_\_ Lube Accel/Brake Pedal Pivots
- \_\_\_\_\_ Test Emergency Engine Shutdown
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Tilt Steering and Lube
- \_\_\_\_\_ Fire Extinguisher / Triangle Kit and Chalk
- \_\_\_\_\_ Stanchions and Subway Straps
- \_\_\_\_\_ All Interior Decals
- \_\_\_\_\_ Seats/Frame/Arm Rest
- \_\_\_\_\_ Wheelchair Folding Seats
- \_\_\_\_\_ Wheelchair Belts
- \_\_\_\_\_ Buzzer Cord and Touch Tape Strips
- \_\_\_\_\_ A/C Filter
- \_\_\_\_\_ Escape Latches and Roof Hatch
- \_\_\_\_\_ Glass and Window Operation
- \_\_\_\_\_ Floor Covering
- \_\_\_\_\_ Interior Body Damage
- \_\_\_\_\_ Car Cards and Lock Strips
- \_\_\_\_\_ Interior Bolts, Screws and Rivets
- \_\_\_\_\_ Battery Cable Connections
- \_\_\_\_\_ Bike Rack
- \_\_\_\_\_ All Compartment Door Latches
- \_\_\_\_\_ All Access Door Hinges and Lube
- \_\_\_\_\_ Body Screws, Bolts and Rivets
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ Power Steering Filter
- \_\_\_\_\_ Wheelchair Pump Filter
- \_\_\_\_\_ Wheelchair Oil Level
- \_\_\_\_\_ Alternator Belt
- \_\_\_\_\_ A/C Belt
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Muffler Mounts
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Oil Pressure and Gauge
- \_\_\_\_\_ Water Temperature Gauge
- \_\_\_\_\_ Engine and Trans Oil Leaks
- \_\_\_\_\_ Engine Water Leaks
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator and Air Compressor Leaks
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Air Cleaner Indicator
- \_\_\_\_\_ Engine Compartment Lights
- \_\_\_\_\_ Throttle Springs and Linkages
- \_\_\_\_\_ A/C Compressor
- \_\_\_\_\_ Fill Engine and Trans Oil
- \_\_\_\_\_ Trans Filter
- \_\_\_\_\_ Engine Spinner
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ R&R Power Steering Filter
- \_\_\_\_\_ Accumulator Charge 50psi (TMC)
- \_\_\_\_\_ Qts. Engine Oil
- \_\_\_\_\_ Qts. Trans Oil
- \_\_\_\_\_ Pts. Power Steering Oil
- \_\_\_\_\_ Pts. Wheelchair Oil

Mech. Signature: \_\_\_\_\_

Mech. Signature: \_\_\_\_\_

**VOITH TRANSMISSION - 36,000 Miles Inspection**

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK                      (2) = Adjusted/Repaired/Replaced                      (1) = Repairs Needed                      (N/A) = Not Applicable

**BOTTOM INSPECTIONS:**

- \_\_\_\_\_ Driver Seat Operation and Lube
- \_\_\_\_\_ Horn and Alarm
- \_\_\_\_\_ All Mirrors, Chimes and Visors
- \_\_\_\_\_ All Sign and Annunciator Operations
- \_\_\_\_\_ Windshield Wiper, Washer and Delay
- \_\_\_\_\_ Dash Control Switches, Knobs
- \_\_\_\_\_ Dash Warning, Indicator Lights
- \_\_\_\_\_ Door Control and Door Operation
- \_\_\_\_\_ A/C and Defroster Operation
- \_\_\_\_\_ Air Pressure Gauge
- \_\_\_\_\_ Volt Gauge (Charging System)
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Lube Wheelchair Ramp Pins
- \_\_\_\_\_ Kneeling Operation
- \_\_\_\_\_ Microphone Operation
- \_\_\_\_\_ Driver Light and Fan
- \_\_\_\_\_ All Interior Lights
- \_\_\_\_\_ All Exterior Lights and Reflectors
- \_\_\_\_\_ Proper Height of Coach
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Engine, Trans and Differential Oil Leaks
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator/Air Compressor Leaks
- \_\_\_\_\_ Electrical Cables and Wiring
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Oil Sample Engine and Trans
- \_\_\_\_\_ Drain Engine and Trans Oil
- \_\_\_\_\_ R&R Engine and Trans Oil Filters
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ Grease Coach, Jack Up Front End
- \_\_\_\_\_ Wheel Bearings/Seals and Oil Hubs
- \_\_\_\_\_ King Pin and Front Axle
- \_\_\_\_\_ Tie Rod Ends
- \_\_\_\_\_ Drag Link and Pitman Arm
- \_\_\_\_\_ Steering Box and U-Joints
- \_\_\_\_\_ All Bellows, Height Controls and Links
- \_\_\_\_\_ Air System Leaks (Lines, Valves & Chambers)
- \_\_\_\_\_ Stabilizer Bar and Links
- \_\_\_\_\_ Radius Rod and Bushings
- \_\_\_\_\_ Radius Rod Bolts and Nuts
- \_\_\_\_\_ Lateral Rod and Bushings
- \_\_\_\_\_ Lateral Rod Bolts and Nuts
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure and Trunnion
- \_\_\_\_\_ Shock Absorbers
- \_\_\_\_\_ Tire Condition
- \_\_\_\_\_ Wheel Splash Guard
- \_\_\_\_\_ Drain Air Tanks Completely
- \_\_\_\_\_ Air Dryer
- \_\_\_\_\_ All Brake Adj/Lining/Cam Height
- \_\_\_\_\_ Driveline, U-Joints and Bolts

**TOP INSPECTIONS:**

- \_\_\_\_\_ All Door Props
- \_\_\_\_\_ Lube All Door Rollers/Tracks/Linkages
- \_\_\_\_\_ Rear Door Sensitive Edge and Bars
- \_\_\_\_\_ Lube Accel/Brake Pedal Pivots
- \_\_\_\_\_ Test Emergency Engine Shutdown
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Tilt Steering and Lube
- \_\_\_\_\_ Fire Extinguisher / Triangle Kit and Chalk
- \_\_\_\_\_ Stanchions and Subway Straps
- \_\_\_\_\_ All Interior Decals
- \_\_\_\_\_ Seats/Frame/Arm Rest
- \_\_\_\_\_ Wheelchair Folding Seats
- \_\_\_\_\_ Wheelchair Belts
- \_\_\_\_\_ Buzzer Cord and Touch Tape Strips
- \_\_\_\_\_ A/C Filter
- \_\_\_\_\_ Escape Latches and Roof Hatch
- \_\_\_\_\_ Glass and Window Operation
- \_\_\_\_\_ Floor Covering
- \_\_\_\_\_ Interior Body Damage
- \_\_\_\_\_ Car Cards and Lock Strips
- \_\_\_\_\_ Interior Bolts, Screws and Rivets
- \_\_\_\_\_ Battery Cable Connections
- \_\_\_\_\_ Bike Rack
- \_\_\_\_\_ All Compartment Door Latches
- \_\_\_\_\_ All Access Door Hinges and Lube
- \_\_\_\_\_ Body Screws, Bolts and Rivets
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ Power Steering Filter
- \_\_\_\_\_ Wheelchair Pump Filter
- \_\_\_\_\_ Wheelchair Oil Level
- \_\_\_\_\_ Alternator Belt
- \_\_\_\_\_ A/C Belt
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Muffler Mounts
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Oil Pressure and Gauge
- \_\_\_\_\_ Water Temperature Gauge
- \_\_\_\_\_ Engine and Trans Oil Leaks
- \_\_\_\_\_ Engine Water Leaks
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator and Air Compressor Leaks
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Air Cleaner Indicator
- \_\_\_\_\_ Engine Compartment Lights
- \_\_\_\_\_ Throttle Springs and Linkages
- \_\_\_\_\_ A/C Compressor
- \_\_\_\_\_ Fill Engine and Trans Oil
- \_\_\_\_\_ Trans Filter
- \_\_\_\_\_ Engine Spinner
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ R&R Power Steering Filter
- \_\_\_\_\_ Accumulator Charge 50psi (TMC)
- \_\_\_\_\_ Qts. Engine Oil
- \_\_\_\_\_ Qts. Trans Oil
- \_\_\_\_\_ Pts. Power Steering Oil
- \_\_\_\_\_ Pts. Wheelchair Oil

Mech. Signature: \_\_\_\_\_

Mech. Signature: \_\_\_\_\_

24,000 / 48,000 Miles Inspection

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK (2) = Adjusted/Repaired/Replaced (1) = Repairs Needed (N/A) = Not Applicable

**BOTTOM INSPECTIONS:**

- \_\_\_\_\_ Driver Seat Operation and Lube
- \_\_\_\_\_ Horn and Alarm
- \_\_\_\_\_ All Mirrors, Chimes and Visors
- \_\_\_\_\_ All Sign and Annunciator Operations
- \_\_\_\_\_ Windshield Wiper, Washer and Delay
- \_\_\_\_\_ Dash Control Switches, Knobs
- \_\_\_\_\_ Dash Warning, Indicator Lights
- \_\_\_\_\_ Door Control and Door Operation
- \_\_\_\_\_ A/C and Defroster Operation
- \_\_\_\_\_ Air Pressure Gauge
- \_\_\_\_\_ Volt Gauge (Charging System)
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Lube Wheelchair Ramp Pins
- \_\_\_\_\_ Kneeling Operation
- \_\_\_\_\_ Microphone Operation
- \_\_\_\_\_ Driver Light and Fan
- \_\_\_\_\_ All Interior Lights
- \_\_\_\_\_ All Exterior Lights and Reflectors
- \_\_\_\_\_ Proper Height of Coach
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Engine, Trans and Differential Oil Leaks
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator/Air Compressor Leaks
- \_\_\_\_\_ Electrical Cables and Wiring
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Oil Sample Engine and Trans
- \_\_\_\_\_ Drain Engine and Trans Oil
- \_\_\_\_\_ R&R Engine and Trans Oil Filters
- \_\_\_\_\_ Drain and Fill Differential Oil
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ Grease Coach, Jack Up Front End
- \_\_\_\_\_ Wheel Bearings/Seals and Oil Hubs
- \_\_\_\_\_ King Pin and Front Axle
- \_\_\_\_\_ Tie Rod Ends
- \_\_\_\_\_ Drag Link and Pitman Arm
- \_\_\_\_\_ Steering Box and U-Joints
- \_\_\_\_\_ All Bellows, Height Controls and Links
- \_\_\_\_\_ Air System Leaks (Lines, Valves & Chambers)
- \_\_\_\_\_ Stabilizer Bar and Links
- \_\_\_\_\_ Radius Rod and Bushings
- \_\_\_\_\_ Radius Rod Bolts and Nuts
- \_\_\_\_\_ Lateral Rod and Bushings
- \_\_\_\_\_ Lateral Rod Bolts and Nuts
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure and Trunnion
- \_\_\_\_\_ Shock Absorbers
- \_\_\_\_\_ Tire Condition
- \_\_\_\_\_ Wheel Splash Guard
- \_\_\_\_\_ Drain Air Tanks Completely
- \_\_\_\_\_ Air Dryer
- \_\_\_\_\_ All Brake Adj/Lining/Cam Height
- \_\_\_\_\_ Driveline, U-Joints and Bolts

**TOP INSPECTIONS:**

- \_\_\_\_\_ All Door Props
- \_\_\_\_\_ Lube All Door Rollers/Tracks/Linkages
- \_\_\_\_\_ Rear Door Sensitive Edge and Bars
- \_\_\_\_\_ Lube Accel/Brake Pedal Pivots
- \_\_\_\_\_ Test Emergency Engine Shutdown
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Tilt Steering and Lube
- \_\_\_\_\_ Fire Extinguisher / Triangle Kit and Chalk
- \_\_\_\_\_ Stanchions and Subway Straps
- \_\_\_\_\_ All Interior Decals
- \_\_\_\_\_ Seats/Frame/Arm Rest
- \_\_\_\_\_ Wheelchair Folding Seats
- \_\_\_\_\_ Wheelchair Belts
- \_\_\_\_\_ Buzzer Cord and Touch Tape Strips
- \_\_\_\_\_ A/C Filter
- \_\_\_\_\_ Escape Latches and Roof Hatch
- \_\_\_\_\_ Glass and Window Operation
- \_\_\_\_\_ Floor Covering
- \_\_\_\_\_ Interior Body Damage
- \_\_\_\_\_ Car Cards and Lock Strips
- \_\_\_\_\_ Interior Bolts, Screws and Rivets
- \_\_\_\_\_ Battery Cable Connections
- \_\_\_\_\_ Bike Rack
- \_\_\_\_\_ All Compartment Door Latches
- \_\_\_\_\_ All Access Door Hinges and Lube
- \_\_\_\_\_ Body Screws, Bolts and Rivets
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ Power Steering Filter
- \_\_\_\_\_ Wheelchair Pump Filter
- \_\_\_\_\_ Wheelchair Oil Level
- \_\_\_\_\_ Alternator Belt
- \_\_\_\_\_ A/C Belt
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Muffler Mounts
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Oil Pressure and Gauge
- \_\_\_\_\_ Water Temperature Gauge
- \_\_\_\_\_ Engine and Trans Oil Leaks
- \_\_\_\_\_ Engine Water Leaks
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure and Trunnion
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator and Air Compressor Leaks
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Air Cleaner Indicator
- \_\_\_\_\_ Engine Compartment Lights
- \_\_\_\_\_ Throttle Springs and Linkages
- \_\_\_\_\_ A/C Compressor
- \_\_\_\_\_ Fill Engine and Trans Oil
- \_\_\_\_\_ Trans Filter
- \_\_\_\_\_ Engine Spinner
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ R&R Power Steering Filter
- \_\_\_\_\_ Accumulator Charge 50psi (TMC)
- \_\_\_\_\_ Qts. Engine Oil
- \_\_\_\_\_ Qts. Trans Oil
- \_\_\_\_\_ Pts. Power Steering Oil
- \_\_\_\_\_ Pts. Wheelchair Oil
- \_\_\_\_\_ Pts. Differential Oil

Mech. Signature: \_\_\_\_\_

Mech. Signature: \_\_\_\_\_

TRANSYND - 72,000 Miles Inspection

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK                      (2) = Adjusted/Repaired/Replaced                      (1) = Repairs Needed                      (N/A) = Not Applicable

**BOTTOM INSPECTIONS:**

- \_\_\_\_\_ Driver Seat Operation and Lube
- \_\_\_\_\_ Horn and Alarm
- \_\_\_\_\_ All Mirrors, Chimes and Visors
- \_\_\_\_\_ All Sign and Annunciator Operations
- \_\_\_\_\_ Windshield Wiper, Washer and Delay
- \_\_\_\_\_ Dash Control Switches, Knobs
- \_\_\_\_\_ Dash Warning, Indicator Lights
- \_\_\_\_\_ Door Control and Door Operation
- \_\_\_\_\_ A/C and Defroster Operation
- \_\_\_\_\_ Air Pressure Gauge
- \_\_\_\_\_ Volt Gauge (Charging System)
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Lube Wheelchair Ramp Pins
- \_\_\_\_\_ Kneeling Operation
- \_\_\_\_\_ Microphone Operation
- \_\_\_\_\_ Driver Light and Fan
- \_\_\_\_\_ All Interior Lights
- \_\_\_\_\_ All Exterior Lights and Reflectors
- \_\_\_\_\_ Proper Height of Coach
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Engine, Trans and Differential Oil Leaks
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator/Air Compressor Leaks
- \_\_\_\_\_ Electrical Cables and Wiring
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Oil Sample Engine and Trans
- \_\_\_\_\_ Drain Engine and Trans Oil
- \_\_\_\_\_ R&R Engine and Trans Oil Filters
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ Grease Coach, Jack Up Front End
- \_\_\_\_\_ Wheel Bearings/Seals and Oil Hubs
- \_\_\_\_\_ King Pin and Front Axle
- \_\_\_\_\_ Tie Rod Ends
- \_\_\_\_\_ Drag Link and Pitman Arm
- \_\_\_\_\_ Steering Box and U-Joints
- \_\_\_\_\_ All Bellows, Height Controls and Links
- \_\_\_\_\_ Air System Leaks (Lines, Valves & Chambers)
- \_\_\_\_\_ Stabilizer Bar and Links
- \_\_\_\_\_ Radius Rod and Bushings
- \_\_\_\_\_ Radius Rod Bolts and Nuts
- \_\_\_\_\_ Lateral Rod and Bushings
- \_\_\_\_\_ Lateral Rod Bolts and Nuts
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure and Trunnion
- \_\_\_\_\_ Shock Absorbers
- \_\_\_\_\_ Tire Condition
- \_\_\_\_\_ Wheel Splash Guard
- \_\_\_\_\_ Drain Air Tanks Completely
- \_\_\_\_\_ Air Dryer
- \_\_\_\_\_ All Brake Adj/Lining/Cam Height
- \_\_\_\_\_ Driveline, U-Joints and Bolts

**TOP INSPECTIONS:**

- \_\_\_\_\_ All Door Props
- \_\_\_\_\_ Lube All Door Rollers/Tracks/Linkages
- \_\_\_\_\_ Rear Door Sensitive Edge and Bars
- \_\_\_\_\_ Lube Accel/Brake Pedal Pivots
- \_\_\_\_\_ Test Emergency Engine Shutdown
- \_\_\_\_\_ Wheelchair Lift and Safety Operation
- \_\_\_\_\_ Tilt Steering and Lube
- \_\_\_\_\_ Fire Extinguisher / Triangle Kit and Chalk
- \_\_\_\_\_ Stanchions and Subway Straps
- \_\_\_\_\_ All Interior Decals
- \_\_\_\_\_ Seats/Frame/Arm Rest
- \_\_\_\_\_ Wheelchair Folding Seats
- \_\_\_\_\_ Wheelchair Belts
- \_\_\_\_\_ Buzzer Cord and Touch Tape Strips
- \_\_\_\_\_ A/C Filter
- \_\_\_\_\_ Escape Latches and Roof Hatch
- \_\_\_\_\_ Glass and Window Operation
- \_\_\_\_\_ Floor Covering
- \_\_\_\_\_ Interior Body Damage
- \_\_\_\_\_ Car Cards and Lock Strips
- \_\_\_\_\_ Interior Bolts, Screws and Rivets
- \_\_\_\_\_ Battery Cable Connections
- \_\_\_\_\_ Bike Rack
- \_\_\_\_\_ All Compartment Door Latches
- \_\_\_\_\_ All Access Door Hinges and Lube
- \_\_\_\_\_ Body Screws, Bolts and Rivets
- \_\_\_\_\_ Body Damage
- \_\_\_\_\_ Power Steering Filter
- \_\_\_\_\_ Wheelchair Pump Filter
- \_\_\_\_\_ Wheelchair Oil Level
- \_\_\_\_\_ Alternator Belt
- \_\_\_\_\_ A/C Belt
- \_\_\_\_\_ All Hoses and Clamps
- \_\_\_\_\_ Exhaust Pipes and Clamps
- \_\_\_\_\_ Muffler Mounts
- \_\_\_\_\_ Outrigger Bolts and Mounts
- \_\_\_\_\_ Oil Pressure and Gauge
- \_\_\_\_\_ Water Temperature Gauge
- \_\_\_\_\_ Engine and Trans Oil Leaks
- \_\_\_\_\_ Engine Water Leaks
- \_\_\_\_\_ Engine and Trans Mounts
- \_\_\_\_\_ Frame Structure
- \_\_\_\_\_ Hydraulic Hoses and Leaks
- \_\_\_\_\_ Water Pump, Radiator and Water Leaks
- \_\_\_\_\_ Fan Blades, Hubs and Drive
- \_\_\_\_\_ All Fuel Lines and Connections
- \_\_\_\_\_ Alternator and Air Compressor Leaks
- \_\_\_\_\_ All Engine/Trans Bolts and Nuts
- \_\_\_\_\_ Air Cleaner Indicator
- \_\_\_\_\_ Engine Compartment Lights
- \_\_\_\_\_ Throttle Springs and Linkages
- \_\_\_\_\_ A/C Compressor
- \_\_\_\_\_ Fill Engine and Trans Oil
- \_\_\_\_\_ Trans Filter
- \_\_\_\_\_ Engine Spinner
- \_\_\_\_\_ Flush Steering System
- \_\_\_\_\_ R&R Power Steering Filter
- \_\_\_\_\_ Accumulator Charge 50psi (TMC)
- \_\_\_\_\_ Qts. Engine Oil
- \_\_\_\_\_ Qts. Trans Oil
- \_\_\_\_\_ Pts. Power Steering Oil
- \_\_\_\_\_ Pts. Wheelchair Oil

Mech. Signature: \_\_\_\_\_

Mech. Signature: \_\_\_\_\_

24,000 Miles Wheelchair Inspection

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK (2) = Adjusted/Repaired (1) = Repairs Needed (4) = Send to Other Department

- 1. \_\_\_\_\_ Clean all chains, sprockets and rails
- 2. \_\_\_\_\_ Power on pushbutton "ON" only with front doors fully open
- 3. \_\_\_\_\_ Handrails secure and tight
- 4. \_\_\_\_\_ Clearance between handrails and front door panels
- 5. \_\_\_\_\_ Clearance between blue plastic bundle and lift during in-and-out travel of lift platform
- 6. \_\_\_\_\_ Stow latch for adjustment, wear and operation
- 7. \_\_\_\_\_ Sensitive edge/switch mat operation and override functions
- 8. \_\_\_\_\_ Lift travel, uneven movement or binding while cycling 3x
- 9. \_\_\_\_\_ Ramp/barrier locked when in raised position
- 10. \_\_\_\_\_ Ramp/barrier switch and linkage for wear or damage
- 11. \_\_\_\_\_ Bridge/barrier switch and linkage for wear or damage
- 12. \_\_\_\_\_ Slave chains for correct tension, wear or damage
- 13. \_\_\_\_\_ Master chains for wear or damage
- 14. \_\_\_\_\_ Master chain limit switch for damage
- 15. \_\_\_\_\_ Master chain limit switch activating arm position correct
- 16. \_\_\_\_\_ Stow/floor level switch and cams for wear or damage
- 17. \_\_\_\_\_ Hydraulic lines and fittings for wear or leaks
- 18. \_\_\_\_\_ Lift cylinders for leaks
- 19. \_\_\_\_\_ Stow/deploy motor chain for wear or damage
- 20. \_\_\_\_\_ Stow/deploy motor drive gears for slipping wear or damage
- 21. \_\_\_\_\_ Stow/deploy chains for correct tension, wear or damage
- 22. \_\_\_\_\_ Stow/deploy channel sprockets for alignment
- 23. \_\_\_\_\_ Stow/deploy switch, arm and elec. cable for wear or damage
- 24. \_\_\_\_\_ Stow cam for secure mounting, wear or damage
- 25. \_\_\_\_\_ Deploy cam for secure mountings
- 26. \_\_\_\_\_ Lift tray components for wear, damage, leaks, etc.
- 27. \_\_\_\_\_ Lube master, drive, slave and stow/deploy chains
- 28. \_\_\_\_\_ Torque shaft crutch
- 29. \_\_\_\_\_ Lube ramp/bridge barrier actuating cams and pins
- 30. \_\_\_\_\_ Lube ramp/barrier support pivot (hinge)
- 31. \_\_\_\_\_ Lube bridge/barrier pivot points, bolts and linkage
- 32. \_\_\_\_\_ Lube stow latch pivot
- 33. \_\_\_\_\_ Lube main lift cylinder anchor pins

Nos. 28 and 30 ..... CHAIN LUBE  
 No. 31 ..... MARINE GREASE  
 Nos. 32, 33 and 34 ..... ANTI-SEIZE (MOLYBDENUM DISULFIDE)

Mechanic Signature: \_\_\_\_\_

Mechanic Signature: \_\_\_\_\_



24,000 / 48,000 Miles Inspection

# TUNE-UP

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK

(2) = Adjusted/Repaired

(1) = Repairs Needed

(N/A) = Not Applicable

- \_\_\_\_\_ Injector Condition
- \_\_\_\_\_ Injector Timing
- \_\_\_\_\_ Injector Wiring and Harness
- \_\_\_\_\_ Valve Clearance
- \_\_\_\_\_ Valve Springs
- \_\_\_\_\_ Valve Bridges
- \_\_\_\_\_ Injector Rack Bridges
- \_\_\_\_\_ Control Tubes
- \_\_\_\_\_ Fuel Rods
- \_\_\_\_\_ Rocker Arms
- \_\_\_\_\_ Rocker Arm Shafts
- \_\_\_\_\_ Rocker Arm Buttons
- \_\_\_\_\_ Rocker Arm Adjusting Screw
- \_\_\_\_\_ Push Rods
- \_\_\_\_\_ Camshaft and Rollers
- \_\_\_\_\_ Cam Followers
- \_\_\_\_\_ Governor Cover
- \_\_\_\_\_ Governor Weights

- \_\_\_\_\_ Throttle Linkage
- \_\_\_\_\_ Throttle Return Spring
- \_\_\_\_\_ Fast Idle Cylinder
- \_\_\_\_\_ Engine Stop Cylinder
- \_\_\_\_\_ Throttle Pedal Assembly
- \_\_\_\_\_ Front Throttle Valve
- \_\_\_\_\_ Rear Throttle Slave Cylinder
- \_\_\_\_\_ Intake Hoses and Clamps
- \_\_\_\_\_ Exhaust Piping and Clamps
- \_\_\_\_\_ RPM Idle and Max No Load
- \_\_\_\_\_ Road Test
- \_\_\_\_\_ Steam Clean Engine Assembly
- \_\_\_\_\_ Rear Seat Hinges
- \_\_\_\_\_ Rear Seat Safety Prop
- \_\_\_\_\_ Engine Access Panel
- \_\_\_\_\_ Engine Access Opening
- \_\_\_\_\_ Engine Safety Guard and Brackets

Comments: \_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mechanic Signature: \_\_\_\_\_

6,000 / 60,000 Miles Inspection

ARTICULATED JOINT

BUS # \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ DATE \_\_\_\_\_

VRO # \_\_\_\_\_ TOTAL TIME \_\_\_\_\_ MECHANIC'S NAME \_\_\_\_\_

(3) = If OK                      (2) = Adjusted/Repaired                      (1) = Repairs Needed                      (N/A) = Not Applicable

**6,000 Miles:**

- \_\_\_\_\_ Check all fastener torques
- \_\_\_\_\_ Check rear fastening screws (515 ft-lbs.)
- \_\_\_\_\_ Check front fastening screws (370 ft-lbs.)
- \_\_\_\_\_ Check cover M10 screws (22 ft-lbs.) +/- 5%
- \_\_\_\_\_ Check support plate securing screws (check for fastener security only)
- \_\_\_\_\_ Check folding bellows for firm seating

**60,000 Miles:**

- \_\_\_\_\_ Perform 6,000 mile torque check
- \_\_\_\_\_ Perform 6 month cleaning procedure
- \_\_\_\_\_ Insert 200 g. approved lubricant into the grease distributor
- \_\_\_\_\_ Perform "Backlash Adjustment"
- \_\_\_\_\_ Perform "Hydraulic Control Unit Maintenance"

**6-Month Articulated Joint Area Cleaning:**

1. Open folding bellows insert floor
2. Clean interior of all dirt
3. Open platform service plate and remove all dirt from hydraulic area
4. Close all access doors

**Mechanic Signature:** \_\_\_\_\_