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Submitted to:
Rhode Island
Turnpike and Bridge Authority

Newport Pell Bridge Traffic and Revenue Study

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Submitted by:

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EXECUTIVE SUMMARY

Jacobs Engineering conducted a traffic and toll revenue study for the Claiborne Pell Newport Bridge ("Newport Pell Bridge" or "Pell Bridge") upon the request of the Rhode Island Turnpike and Bridge Authority (RITBA). This study is being conducted in support of the upcoming issuance of the Series 2010 bonds to be issued by the Authority. Jacobs analyzed traffic and toll revenue data for the Newport Pell Bridge to determine historical trends, and conducted surveys to gather information on user characteristics and travel time.

As indicated in this report, the current local, national and global economic conditions are unparalleled in recent history. Jacobs has also conducted extensive research in relevant historical and forecasted socioeconomic parameters in order to make a viable estimate of future traffic and toll revenues.

This information was used to develop a traffic and revenue model to estimate annual traffic and toll revenue for Fiscal Year 2010 (i.e., July 2009 – June 2010) through Fiscal Year 2039. Forecasts were made for two different toll scenarios: one with no programmed increases after the recent September 8, 2009 increase (the Base Case), which caused tolls to at least double for about 43 percent of vehicles crossing the bridge, and one that includes increases every three years after, as shown in Table 1. As indicated, the next toll increase would be in September 2012 (Fiscal Year 2013). Annual transactions and toll revenues for both scenarios are summarized in Table 2. The forecasts account for diversion or loss of traffic due to increased tolls, growing E-ZPass market share, increased participation in discounted plans, and the discontinuation of the Commuter Rebate Plan and commencement of two new board-approved commuter plans on February 15, 2010.

Table 1: Proposed Toll Schedule with Future Toll Increases

	2009	2010	2013	2016	2019	2022	2025	2028	2031	2034	2037
Two-Axle Vehicles at $2.00 (cash)	$ 2.00	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle Vehicles at $2.00 (E-Z)	$ 2.00	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle AWAY Vehicles at $1.75 (E-Z)	$ 1.75	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle HOME Vehicles at $1.75 (E-Z)	$ 1.75	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle HOME Vehicles at $0.91 (E-Z)	$ 0.91	$ 0.91	$ 1.00	$ 1.25	$ 1.50	$ 1.50	$ 1.75	$ 1.75	$ 1.75	$ 2.00	$ 2.00
Two-Axle HOME Vehicles at $.83 (E-Z)	$ 0.83	$ 0.83	$ 1.00	$ 1.25	$ 1.50	$ 1.50	$ 1.75	$ 1.75	$ 1.75	$ 2.00	$ 2.00
3+ Axle Vehicles (cash) - PER AXLE	$ 1.00	$ 2.00	$ 2.25	$ 2.50	$ 2.75	$ 3.00	$ 3.25	$ 3.50	$ 3.75	$ 4.00	$ 4.25
3+ Axle Vehicles (E-Z) - PER AXLE	$ 1.00	$ 2.00	$ 2.25	$ 2.50	$ 2.75	$ 3.00	$ 3.25	$ 3.50	$ 3.75	$ 4.00	$ 4.25
*NEW High Frequency 30-Day Unlimited**	$ -	$ 40	$ 48	$ 60	$ 72	$ 72	$ 84	$ 84	$ 84	$ 96	$ 96
*NEW Low Frequency 6 trip/30 Days***	$ -	$ 5.46	$ 6.58	$ 8.22	$ 9.87	$ 9.87	$ 11.51	$ 11.51	$ 11.51	$ 13.16	$ 13.16

* Commuter Rebate Plan discontinued as of February 15, 2010

** New commuter plans begin February 15, 2010

Table 2: Projected Annual Traffic and Gross Toll Revenues

Fiscal Year	Base Case*		With Toll Increases**	
	Annual Transactions (000s)	Annual Gross Toll Revenue (Ms)	Annual Transactions (000s)	Annual Gross Toll Revenue (Ms)
2009	9,941	$12.7	9,941	$12.7
2010	9,464	$16.9	9,464	$16.9
2011	9,498	$18.0	9,498	$18.0
2012	9,660	$18.1	9,660	$18.1
2013	9,824	$18.4	9,696	$20.3
2014	9,900	$18.5	9,765	$21.0
2015	9,976	$18.7	9,866	$21.3
2016	10,051	$18.9	9,822	$23.8
2017	10,118	$19.0	9,882	$24.7
2018	10,185	$19.2	9,977	$24.9
2019	10,253	$19.3	9,952	$27.5
2020	10,321	$19.5	10,014	$28.4
2021	10,388	$19.6	10,104	$28.7
2022	10,453	$19.8	10,161	$30.1
2023	10,516	$19.9	10,220	$30.8
2024	10,577	$20.1	10,286	$31.0
2025	10,637	$20.2	10,246	$33.7
2026	10,697	$20.3	10,300	$34.6
2027	10,756	$20.5	10,379	$34.9
2028	10,816	$20.6	10,432	$36.4
2029	10,877	$20.7	10,487	$37.1
2030	10,937	$20.9	10,551	$37.3
2031	10,997	$21.0	10,590	$38.8
2032	11,058	$21.2	10,645	$39.5
2033	11,118	$21.3	10,709	$39.8
2034	11,179	$21.4	10,682	$42.6
2035	11,239	$21.6	10,736	$43.6
2036	11,300	$21.7	10,813	$44.0
2037	11,360	$21.8	10,867	$45.5
2038	11,421	$22.0	10,922	$46.3
2039	11,481	$22.1	10,985	$46.6

** No toll increases beyond the September 8, 2009 (FY 2010) increase*

*** Toll increases every 3rd year after the FY 2010 toll increase*

Due to the implementation of the new toll schedule on September 8, 2009, which raised tolls for all non-discounted E-ZPass and cash-paying passenger cars from $1.75 or $2.00 to $4.00, and doubled tolls for trucks, FY10 toll revenue is anticipated to grow 34 percent despite a forecasted 4.8 percent decrease in toll transactions.

As a result of the current economic recession combined with the recent toll increase, Jacobs is forecasting a decline in tolled traffic for the short-term, with a return to FY 2009 levels not occurring until FY 2015 for the Base Case - the scenario with no further toll increases - and FY 2018 for the toll increase scenario. It is anticipated that the recession and toll increase will continue to be detrimental to transaction levels for FY10, with modest recovery thereafter. The Base Case number of transactions is not expected to reach its peak FY 2005 level until FY 2022, representing seventeen years of no traffic growth. The number of transactions with the toll increase scenario is not expected to reach its peak FY 2005 level until FY 2027, signifying 22 years of no traffic growth.

1. Introduction

Jacobs Engineering Group was retained by the Rhode Island Turnpike and Bridge Authority (RITBA) to conduct this investment-grade study of traffic and toll revenue on the Newport Pell Bridge.

The Newport Pell Bridge, the only toll facility in Rhode Island, is one of three bridges providing access to Aquidneck Island; the other two are the toll-free Mount Hope and Sakonnet River Bridges, as shown in Figure 1. The Newport Pell Bridge spans the East Passage of the Narragansett Bay connecting the City of Newport on Aquidneck Island and the Town of Jamestown on Conanicut Island. The four-lane (two per direction) bridge opened to traffic on June 28, 1969.

Figure 1: Location Map

Jacobs developed estimates of future traffic and toll revenue based upon an understanding of historical experience as well as the changing economic environment. Also included in the analysis are the implementation of E-ZPass in December 2008 and the discontinuation of tokens in January 2009, which changed toll rates for some customers; and the September 8, 2009 toll increase, which doubled the tolls for all cash customers, and more than doubled the tolls for E-ZPass customers without a Rhode Island transponder or not meeting residency or frequency requirements.

During the course of the work effort, Jacobs compiled historical traffic and toll revenue data from RITBA by month and/or year detailed to payment and vehicle class. Jacobs also conducted an internet survey to determine some of the characteristics of bridge users, and a travel time survey to determine feasibility of other routes to the island. Traffic and toll revenue information from other New England toll authorities was also studied to gain understanding of tolled traffic trends in the region, and to see how traffic has reacted to toll increases.

Socioeconomic information was compiled to develop trend lines between past economic indicators and traffic levels, and to forecast future traffic growth. The current local, national and global economic conditions are unparalleled in recent history. For this analysis, Jacobs has continued its extensive research into the most relevant historical and forecasted socioeconomic parameters in order to make a viable estimate of future traffic and toll revenues. On December 1, 2008 a recession was officially declared by the US government, with its beginning in December 2007. While various economic forecasters predict that recovery is imminent, there remain questions as to how long it will take to recover, and whether we will return to the trend line of recent years. As traffic is a not simply a function of gross domestic product (GDP) but production levels and other factors, a detailed review was undertaken and described herein.

A traffic and toll revenue model with resulting traffic and toll revenue estimates and projections was developed for the Newport Pell Bridge based on data through August 2009. The work, analyses, and results for the existing toll bridge are of investment-grade quality and suitable for financing. As part of the analyses a static trend line-based traffic and toll revenue model for the Newport Pell Bridge was developed. This model has the ability to adjust projections based on various economic parameters and is segmented by the type of vehicle and payment type.

As a result of the short term economic forecasts as well as the toll increase for commercial vehicles, cash-paying vehicles, and non-Rhode Island E-ZPass users implemented in September 2009, Jacobs is forecasting a decline in tolled traffic on the facility in 2010, with a return to 2009 levels not occurring until Fiscal Year 2015 for the Base Case (i.e., no further toll increases) scenario. Due to the new September 2009 toll rates, overall toll revenue across all projected years is expected to increase. The background and methodology that lead to Jacobs' traffic and toll revenue projections for the Newport Pell Bridge are presented herein, as well as a sensitivity analysis where key model inputs were varied to determine their effect on toll revenues.

2. Review of Recent and Historical Data

Historical toll, traffic, and toll revenue data were provided by RITBA for Jacobs to use in developing a thorough understanding of the current state of the Newport Pell Bridge toll facility. Additionally, an internet survey - advertised through roadside signs - was undertaken to sample the travel characteristics of bridge users, and travel time surveys were conducted to determine time differences among alternative routes. These items are detailed in the following sections.

2.1 Historical Toll Rates

The Newport Pell Bridge had no toll increases for nearly 40 years after tolling began in 1970. However, in the past year there were two changes to the toll schedule, as shown in Table 3. In mid-December 2008 E-ZPass – the electronic toll collection system used at most toll facilities throughout the Northeastern U.S. – was installed on the bridge, and by February 1, 2009 tokens were no longer accepted. The price of tokens had been $10 for 11 tokens, or $0.91 cents each, or $50 for 60 tokens, which calculates to $0.83 each. The average price paid per token was $0.90. Those passenger cars switching from tokens to cash payment saw their toll increase to $2.00, while those with out-of-state E-ZPass tags experienced a toll increase to $1.75. Residents who obtained RI E-ZPass tags were now charged $0.83 – a slight decrease for some – while customers with RITBA commuter plan tags would pay $0.91 per crossing once they received their frequency rebate after making 31 one-way trips in 30 days. Rhode Island E-ZPass tagholders without resident status or the commuter plan rebate (referred to herein as “standard plan” customers) were charged the same as out-of-state E-ZPass customers, $1.75.

On September 8, 2009, a toll increase was implemented, raising the tolls to $4.00 for all cash and non-discounted E-ZPass passenger cars. Trucks saw a similar increase, a doubling from $1.00 to $2.00 per axle. Resident and commuter plan tolls remained at $0.83 and $0.91, respectively, though in October 2009 the requirement for the frequency rebate was reduced to 26 one-way trips in a 30-day period. RI E-ZPass standard plan passenger cars, as well as out-of-state E-ZPass passenger cars, saw the highest increase, from $1.75 to $4.00 to cross the bridge.

Table 3: Newport Pell Bridge Historical Toll Rates

Vehicle Type / Payment Type		Old Toll Rate before Dec 16, 2008	Old Toll Rate Dec 16, 2008-Sept 7, 2009	**New Toll Rate as of Sept 8, 2009**
2-Axle Passenger Cars	Cash	$2.00	$2.00	**$4.00**
	Token	$0.90[1]	N/A [2]	**N/A**
	AWAY E-ZPass	N/A	$1.75	**$4.00**
	HOME (RI) Standard E-ZPass[3]		$1.75	**$4.00**
	HOME (RI) Commuter Plan E-ZPass		$0.91[4]	**$0.91**
	HOME (RI) Resident Plan E-ZPass		$0.83[5]	**$0.83**
Trucks and Other 3+ Axle Vehicles	Price PER AXLE (Any Payment Method)	$1.00	$1.00	**$2.00**

[1] Average token price; tokens cost $1.00 for one, $10 for 11, and $50 for 60.
[2] Tokens were eliminated as a payment form on February 1, 2009
[3] Customers lacking residency status or not able to meet frequency requirements of the Commuter Plan.
[4] Commuter Plan customers pay $1.75/trip, but receive a $0.85/trip rebate when they make 31 trips in a 30-day period
[5] Must produce proof of RI residency

It is important to note that other electronic toll collection tags that are part of the E-ZPass Interagency Group (IAG), such as Massachusetts Turnpike's Fast Lane and Illinois Tollway's I-Pass, are also accepted at the Newport Pell Bridge and are considered equivalent to E-ZPass.

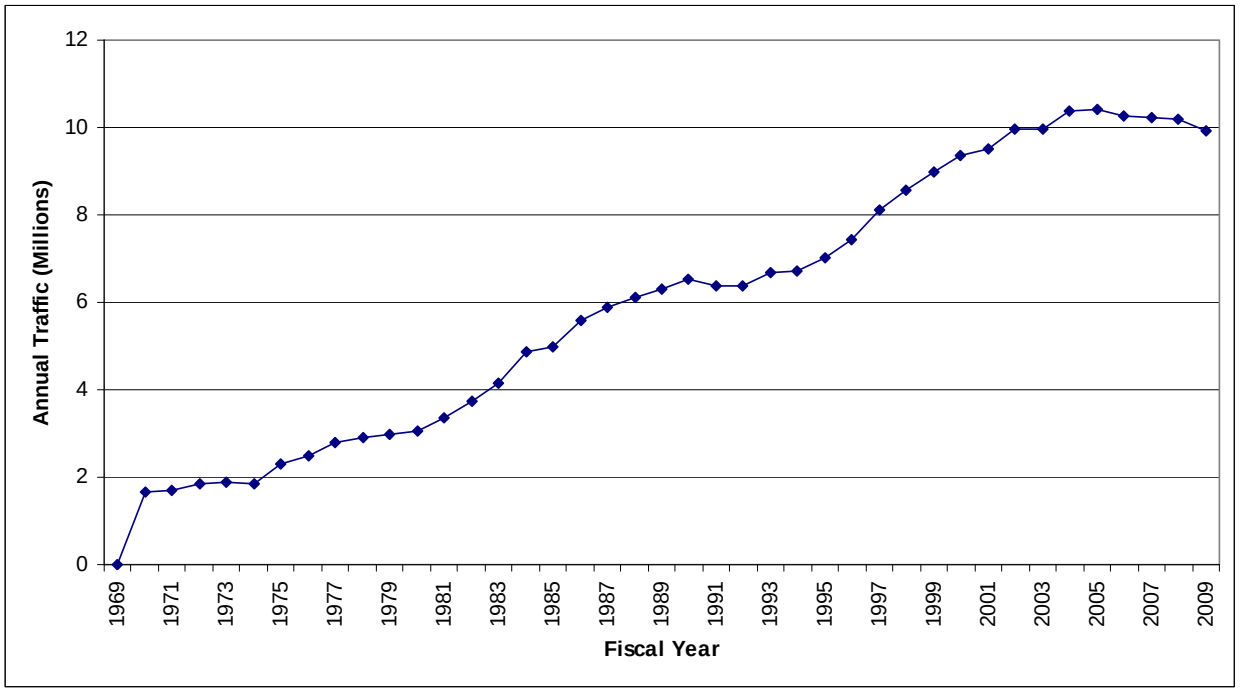
2.2 Historical Traffic

This section provides a summary of historical transaction data for the Newport Pell Bridge. Data summaries include annual and monthly transaction data and E-ZPass trends.

2.2.1 Annual Toll Transactions

Toll transactions on the Newport Pell Bridge increased steadily for many years since tolling began in 1970, as illustrated in Figure 2. There was some flattening of traffic in 1991 and 1992; this was due to construction on the old Jamestown Bridge and Route 1A on the mainland, both which lead up to the Newport Pell Bridge. Traffic growth resumed as repairs were completed and the new, wider Jamestown Bridge opened in 1993. In recent years there has been a slow decline in traffic, attributable to high gas prices, economic recession, and other factors that have similarly affected the nationwide vehicle-miles traveled (VMT). Also of note is the unprecedented flattening of traffic that predates the current recession, starting in 2005. A similar flattening trend has also been seen in nationwide VMT. The recessionary periods and factors that have been affecting both the Newport Pell Bridge and nationwide travel will be reviewed in the economic section of this report.

Figure 2: Newport Pell Bridge Historical Annual Transactions



RITBA divides traffic in its annual reports into three types: two-axle cash (which includes both cars and two-axle trucks), two-axle E-ZPass (formerly token), and "all other" which includes all vehicles with three or more axles regardless of payment type. The following tables show a breakdown of annual transactions by type from 1997 to 2009, as well as annual percent changes.

As seen in Table 4 and Table 5, traffic grew at a strong rate from 1997 through 2002, averaging 4.2 percent per year. Then in 2002 through 2005, the growth rate declined to 1.2 percent per year. Total traffic peaked at 10.4 million vehicles in 2005, but has declined ever since; in 2005 through 2009, there was an average annual traffic loss of 1.1 percent.

Two-axle vehicles followed a growth/loss pattern similar to the total traffic. Differences in cash versus token growth were likely caused by seasonal and weather conditions. Summer traffic on the Newport Pell Bridge is much higher than winter traffic and had a higher percentage of cash customers, as visitors and other infrequent users were less likely than regular, year-round customers to buy bulk tokens to reduce their toll rate. Therefore, if summer weather was especially dry and warm, as it was in 1999, or especially cloudy and rainy, as it was in 2003[1], there was a disparity in cash versus token transaction growth.

[1] Based on data compiled from www.wunderground.com/history

Vehicles with three or more axles (i.e., "all others") comprise about 1.2 to 1.6 percent of traffic; this percentage has generally been growing over time. The number of toll transactions in this category grew steadily from 1997 through 2006, averaging 5.1 percent growth per year. From 2006 through 2009, the truck transactions averaged 4.4 percent loss per year.

E-ZPass was introduced, and tokens discontinued, about halfway through FY 2009. Because many former token users did not acquire E-ZPass, the number of two-axle cash trips increased by nearly 26 percent, while there was nearly 10 percent loss in the token/E-ZPass category. Overall there was a 2.3 percent loss in two-axle vehicles from FY 2008 to FY 2009, partly because of underlying growth factors and partly due to the increased toll for former token customers that did not acquire and/or could not qualify for a resident or commuter plan RI E-ZPass transponder.

Table 4: Newport Pell Bridge Historical Transactions by Type in Thousands

Fiscal Year	2-Axle			All Others	Total Traffic
	Cash	Token/EZ	Total		
1997	1,731	6,272	8,002	102	8,105
1998	1,823	6,636	8,459	102	8,561
1999	1,949	6,922	8,871	108	8,979
2000	2,018	7,218	9,236	116	9,352
2001	2,042	7,345	9,387	121	9,508
2002	2,129	7,714	9,843	133	9,976
2003	2,055	7,781	9,837	139	9,976
2004	2,111	8,099	10,210	155	10,364
2005	2,090	8,152	10,242	157	10,399
2006	2,064	8,042	10,106	160	10,266
2007	2,091	7,996	10,087	151	10,238
2008	2,081	7,949	10,030	154	10,184
2009	2,620	7,180	9,801	140	9,941

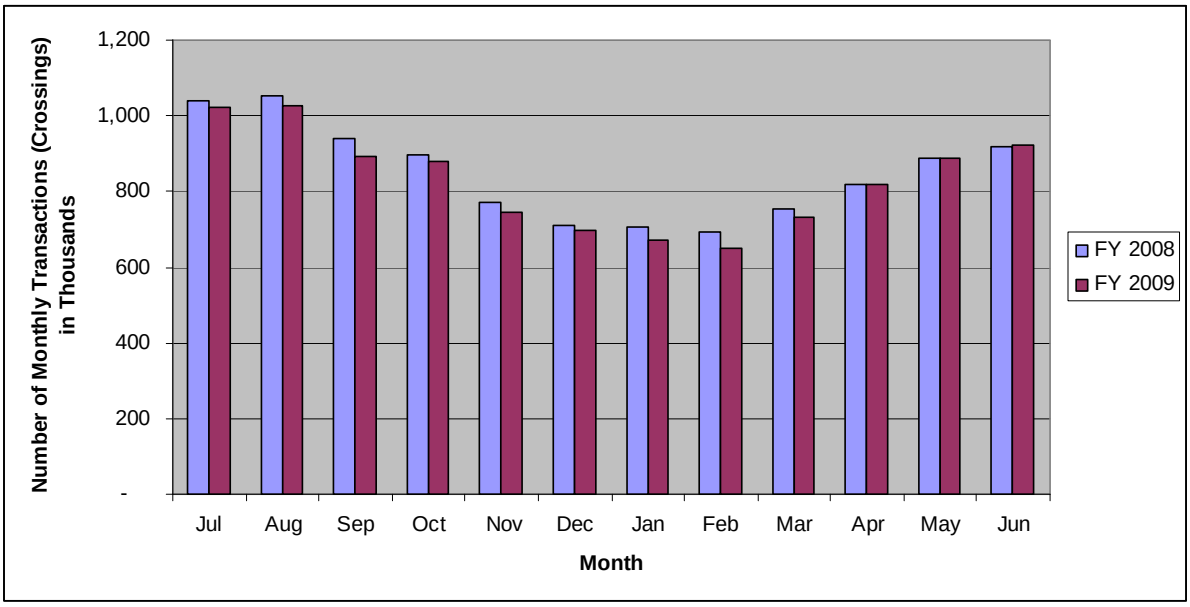
Table 5: Newport Pell Bridge Historical Transaction Growth Rate over Previous Year

Fiscal Year	2-Axle			All Others	Total Traffic
	Cash	Token/EZ	Total		
1998	5.3%	5.8%	5.7%	-0.1%	5.6%
1999	6.9%	4.3%	4.9%	5.9%	4.9%
2000	3.5%	4.3%	4.1%	6.9%	4.2%
2001	1.2%	1.7%	1.6%	4.8%	1.7%
2002	4.3%	5.0%	4.9%	9.4%	4.9%
2003	-3.5%	0.9%	-0.1%	4.9%	0.0%
2004	2.7%	4.1%	3.8%	11.1%	3.9%
2005	-1.0%	0.7%	0.3%	1.6%	0.3%
2006	-1.3%	-1.3%	-1.3%	2.1%	-1.3%
2007	1.3%	-0.6%	-0.2%	-5.7%	-0.3%
2008	-0.5%	-0.6%	-0.6%	2.0%	-0.5%
2009	25.9%	-9.7%	-2.3%	-9.2%	-2.4%

2.2.2 Monthly Traffic Variations

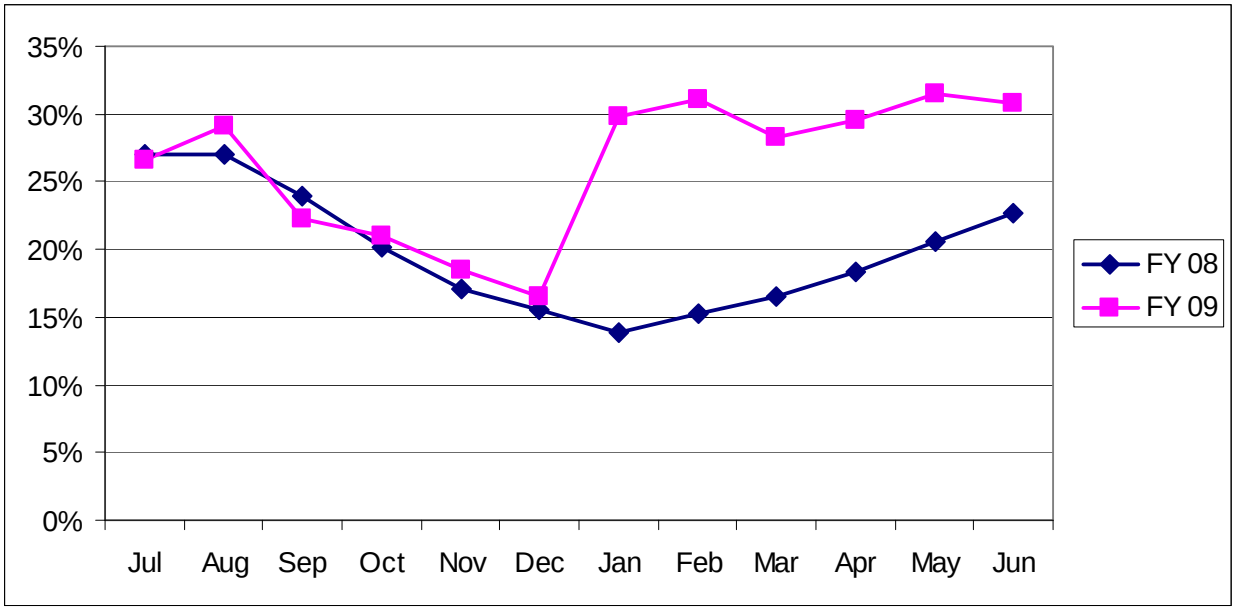
The Newport Pell Bridge exhibits significant disparity between its summer and winter traffic, due to Newport being a major tourist destination in the Northeast, especially in the warmer months. Figure 3 charts the monthly toll transactions over the past two fiscal years. December through February are the low months, with about 650,000 to 700,000 crossings (transactions), while July and August are the high months with a little over 1,000,000 crossings. April, with just over 800,000 crossings, is close to the average monthly traffic for each year.

Figure 3: Newport Pell Bridge Monthly Transaction Variation



There are also monthly variations in how people pay for their trip. Figure 4 shows the percent of transactions that are two-axle vehicles paying with cash. When there were tokens and no E-ZPass, about 14 percent and 28 percent paid by cash in the low and high months, respectively. As seen in the figure, FY 08 and FY 09 followed a similar seasonal pattern, however, once E-ZPass began and tokens were eliminated, the cash payers increased by more than 15 percentage points. It appears that by March or April 2009 E-ZPass was ramped up, and the cash-payers leveled off at a line parallel to FY 2008.

Figure 4: Two-Axle Vehicles Paying with Cash, as a Percent of the Total

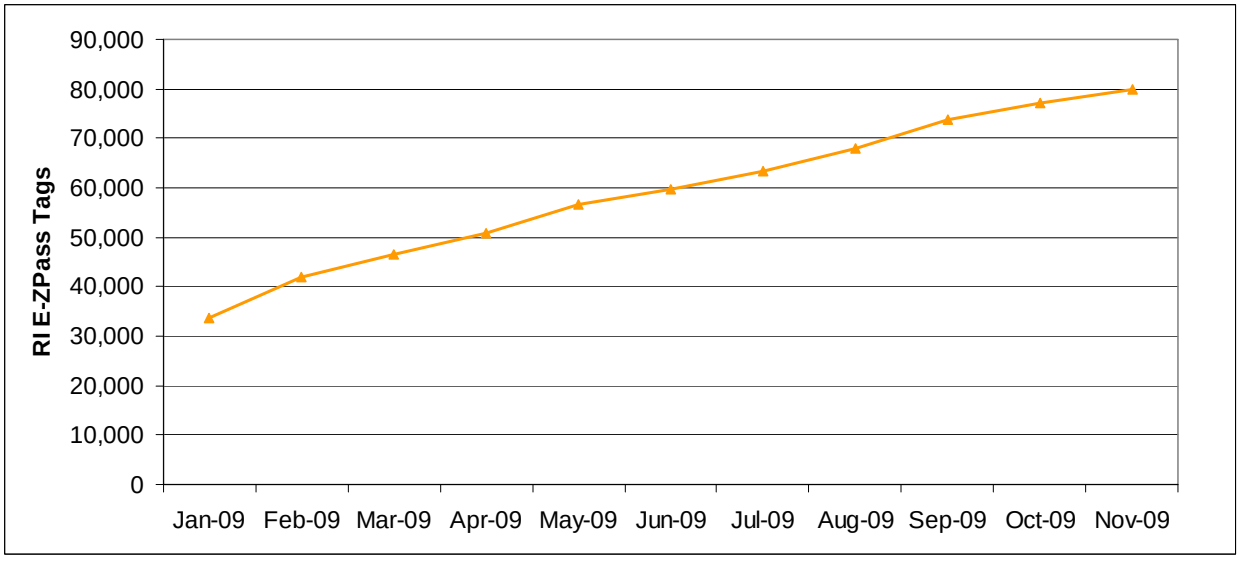


This data was later used to develop Pro Forma estimates for FY 2009 (i.e., estimated traffic assuming E-ZPass were ramped up for the full year), the base from which future year estimates were projected.

2.2.3 E-ZPass Trends

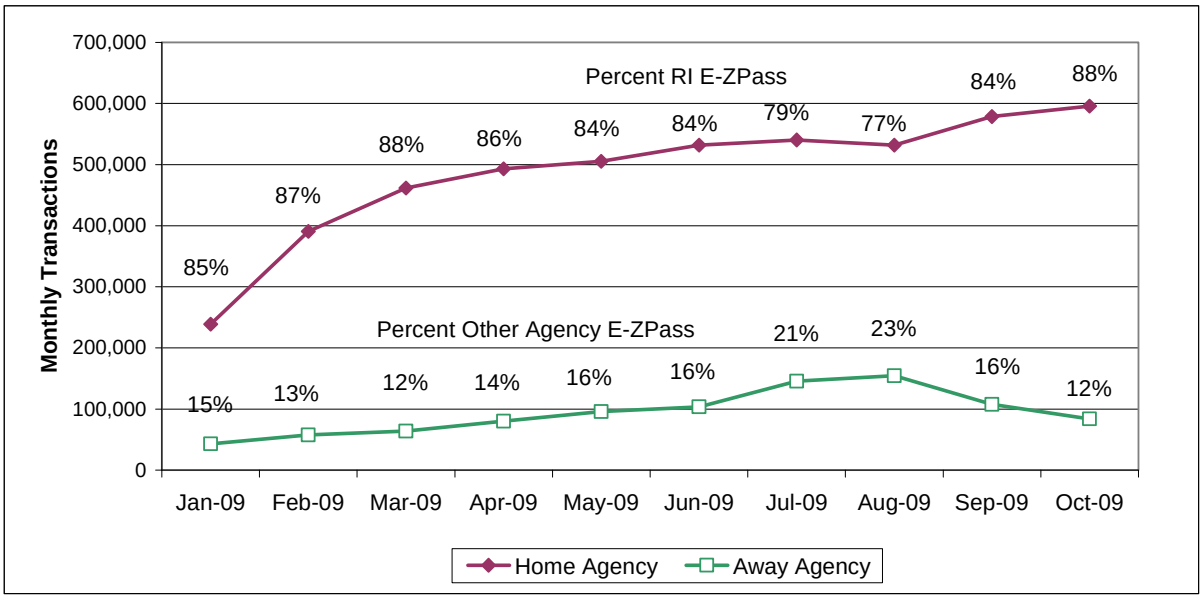
Since the implementation of E-ZPass in December of 2008, the number of Rhode Island E-ZPass transponders in circulation has been growing steadily, as shown in Figure 5. By the end of November 2009, there were nearly 80,000 transponders in use.

Figure 5: RI E-ZPass Transponders in Circulation



The growth in RI E-ZPass transactions does not match the growth in RI transponders, as customers who travel frequently were more likely to acquire the transponders early on. The number of transactions at the Newport Pell Bridge made by Rhode Island E-ZPass ("Home") versus other ("Away") transponders is shown in Figure 6. In January 2009, the first month after E-ZPass began at the Newport Pell Bridge, there were nearly 250,000 transactions made by RI transponders versus nearly 50,000 transactions made by Away transponders. RI E-ZPass transactions grew sharply to 400,000 in February. While RI E-ZPass was in a ramp up stage in its first few months, by April it appears to have normalized. During the peak summer months, RI E-ZPass transactions grew to around 550,000 while there were about 150,000 Away transactions. The jump in RI E-ZPass transactions in September to 580,000 and in October to 600,000 signify that the September 8 toll increase may have spurred some qualified individuals to apply for the resident discount or commuter plan to avoid the much higher tolls they would otherwise pay.

Figure 6: Home (Rhode Island) Versus Away E-ZPass Monthly Toll Transactions on the Newport Pell Bridge



2.3 Historical Toll Revenue and Average Tolls

Table 6 displays the annual Newport Pell Bridge toll revenue from FY 1997 through FY 2009. Because there were no toll increases until FY 2009, toll revenue experienced a trend similar to traffic from FY 1997 through FY 2008, increasing from $10.1 million in FY 1997 to $12.1 million in FY 2005, then declining slowly to $11.9 million in FY 2008. In FY 2009, there was a 6.4 percent increase in toll revenue to $12.7 million due to the introduction of E-ZPass halfway through the fiscal year with a change in toll rates for former token users.

Table 6: Newport Pell Bridge Historical Transactions by Type in Thousands

Fiscal Year	2-Axle			All Others	Total Revenue
	Cash	Token/EZ	Total		
1997	$ 3,462	$ 6,272	$ 9,733	$ 342	$ 10,075
1998	$ 3,645	$ 6,636	$ 10,282	$ 352	$ 10,634
1999	$ 3,898	$ 6,922	$ 10,820	$ 370	$ 11,190
2000	$ 4,036	$ 6,704	$ 10,740	$ 393	$ 11,132
2001	$ 4,084	$ 6,628	$ 10,713	$ 408	$ 11,120
2002	$ 4,258	$ 6,951	$ 11,210	$ 449	$ 11,658
2003	$ 4,111	$ 7,003	$ 11,114	$ 470	$ 11,584
2004	$ 4,221	$ 7,288	$ 11,510	$ 532	$ 12,042
2005	$ 4,180	$ 7,337	$ 11,517	$ 546	$ 12,063
2006	$ 4,127	$ 7,238	$ 11,365	$ 595	$ 11,960
2007	$ 4,182	$ 7,196	$ 11,378	$ 595	$ 11,973
2008	$ 4,161	$ 7,154	$ 11,314	$ 578	$ 11,893
2009	$ 5,241	$ 6,851	$ 12,092	$ 562	$ 12,654

By dividing annual toll revenue by annual transactions we are able to obtain average tolls, as shown in Table 7. While two-axle cash tolls have remained constant at $2.00 from FY 1997 through FY 2009, average token prices changed from $1.00 in the late 1990s to $0.90 in FY 2001, as bulk token discounts were introduced in FY 2000. In FY 2009, with the conversion to E-ZPass, the average toll for 2-axle vehicles paying by token or E-ZPass increased to $0.95 because all electronic toll passenger cars without a discounted RI E-ZPass saw their tolls increase to $1.75, which apparently outweighed the reduction to $0.83 for residents with RI E-ZPass.

Table 7: Newport Pell Bridge Historical Average Toll

Fiscal Year	2-Axle			All Others	Overall Average
	Cash	Token/EZ	Total		
1997	$ 2.00	$ 1.00	$ 1.22	$ 3.35	$ 1.24
1998	$ 2.00	$ 1.00	$ 1.22	$ 3.45	$ 1.24
1999	$ 2.00	$ 1.00	$ 1.22	$ 3.42	$ 1.25
2000	$ 2.00	$ 0.93	$ 1.16	$ 3.39	$ 1.19
2001	$ 2.00	$ 0.90	$ 1.14	$ 3.36	$ 1.17
2002	$ 2.00	$ 0.90	$ 1.14	$ 3.38	$ 1.17
2003	$ 2.00	$ 0.90	$ 1.13	$ 3.38	$ 1.16
2004	$ 2.00	$ 0.90	$ 1.13	$ 3.44	$ 1.16
2005	$ 2.00	$ 0.90	$ 1.12	$ 3.48	$ 1.16
2006	$ 2.00	$ 0.90	$ 1.12	$ 3.71	$ 1.17
2007	$ 2.00	$ 0.90	$ 1.13	$ 3.94	$ 1.17
2008	$ 2.00	$ 0.90	$ 1.13	$ 3.75	$ 1.17
2009	$ 2.00	$ 0.95	$ 1.23	$ 4.02	$ 1.27

2.4 Heavy Vehicles

As shown previously in Table 7, the average toll for three or more axle vehicles has generally increased over the years, meaning that the average axle count has also increased in this category. It would make sense that a higher average axle count would be due to recent truck restrictions on the

Sakonnet River Bridge, one of the alternate routes to the island. While the Newport Pell and Mount Hope Bridges restrict vehicles to less than 40 tons, the Sakonnet River Bridge, under construction in recent years, has reduced its restriction from 38 tons to 22 tons in August of 2007, then again to 18 tons and less than three axles in June 2008.

2.5 Characteristics of Bridge Users

An internet-based survey was conducted to obtain information on patron travel characteristics such as frequency of travel, origin/destination, and familiarity with electronic tolling, among others, for the three Aquidneck Island bridges. The survey was conducted through an online survey website (Zoomerang.com), and advertised via strategically placed roadside variable message signs (VMS), approximate locations of which are shown in Figure 7. These signs alternated between the message "Take Travel Survey" and "Visit Survey-U.com" for roughly seven weeks, beginning in early September and ending in mid-October (9/7/09 – 10/18/2009).

The survey posed the following questions to Aquidneck Bridge users:

- Question 1: What bridge did you use on your most recent trip to or from Aquidneck Island?
- Question 2: What was the primary purpose of this trip across the bridge?
- Question 3: How often do you make this same type of trip across the bridge?
- Question 4: Where did this trip begin?
- Question 5: Where did this trip end?
- Question 6: In what state is your vehicle registered?
- Question 7: Do you use E-ZPass or FAST LANE here or anywhere else you travel?
- Question 8: How many people, including the driver, were in your vehicle during this trip?

Slightly over 300 customers took part in the online survey pertaining to Aquidneck Island Bridges. Roughly 140 of these survey respondents answered questions about their travel on the Newport Pell Bridge specifically.

Figure 7: Approximate Variable Message Sign Locations

2.5.1 The Relationship of Toll Facility Customers, Trips and Frequency of Travel

In order to fully benefit from a discussion of travel characteristics for Newport Pell Bridge traffic, one must first understand the relationship between *customers* of a toll facility, *trips* they make on that facility, and their frequency of travel. Travel surveys are generally conducted on toll facilities to determine the frequency of travel. These surveys are usually conducted on an average travel day and the customers sampled in the survey are assumed to be representative of the entire driving population of that facility. One of the questions asked in that survey is "how often do you use the toll facility?" (e.g. once per day, once per week, twice per month, once per month, twice per year). The number of survey respondents in each of the frequency categories is then used to calculate the distribution of trips made on the facility. To determine the annual number of customers who would make those trips, one needs to expand the number of trips or people surveyed on that day by considering the number of customers per trip for each frequency of travel category. For example, a driver making a trip once a day represents only *one* customer for that trip in a given year, whereas a driver making the trip once a week represents *seven* customers for that trip in a given year. Table 8 is a *sample* of trip distribution by frequency of travel, and illustrates the relationship between trips and customers.

Table 8: Sample of the Relationship of Trips vs. Customers

Frequency of Travel	Average Daily Trips	Percent of Trips	Customers for One Trip	Annual Customers	Percent of Customers
1 trip per Day	1,000	33%	1	1,000	2%
1 trip per Week	800	27%	7	5,600	9%
2 trips per Month	600	20%	15	9,000	14%
1 trip per Month	400	13%	30	12,000	19%
2 trips per Year	200	7%	182	36,400	57%
Total	3,000	100%		64,000	100%

As seen in the sample shown in Table 8, of the 3,000 drivers on a given day, 1,000 of them reported making the trip daily. This daily frequency of travel represents 33 percent of all trips made on that facility but only two percent of the total annual customers, as the 1,000 trips are made every day by the same 1,000 customers. Conversely, 200 drivers responded that they made the trip twice per year; they represent seven percent of the total trips made on that facility. However, 182 annual customers are needed to make this trip since it is only made twice per year (365 days per year / 2 trips per year = 182 customers) and thus 36,400 annual customers or 57 percent of all annual customers make up this frequency of travel category. It is clear that while frequent customers of a toll facility make the majority of the *trips* on that facility, they are only a small part of the total *customers* of that facility.

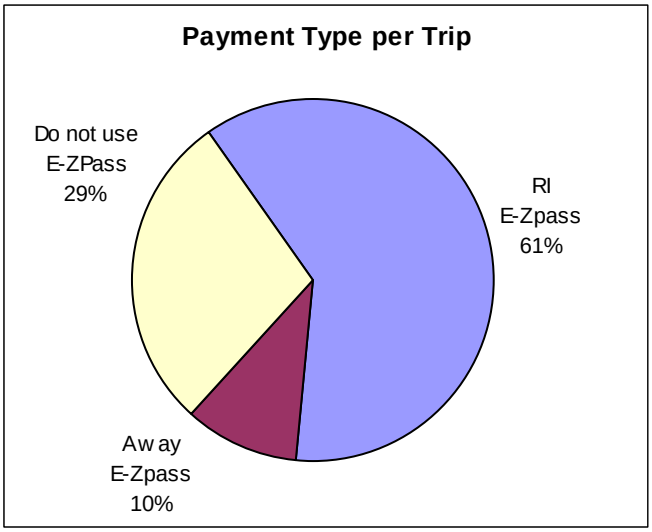
On the other hand, while less frequent customers account for less number of trips, they make up the majority of the total customers of the facility. This relationship between customers, trips and frequency of travel is representative of most toll facilities, including Rhode Island's bridges.

2.5.2 Survey Findings

The raw survey results themselves should not be interpreted at face value. Due to the nature of this type of customer survey, the results must first be adjusted for any known shortfalls in survey market penetration, as well as converted into profiles of the actual trips on a facility.

Since E-ZPass statistics for the Newport Pell Bridge were known, the raw survey data was first calibrated to E-ZPass market shares for the fiscal year 2009, shown in Figure 8. About 61 percent of Newport Pell trips have E-ZPass accounts with the state of Rhode Island. An additional ten percent have E-ZPass compatible accounts with other states, and 29 percent of trips do not use E-ZPass. Of particular note, only one survey respondent claimed to have never heard of E-ZPass, all others indicated that they had heard of E-ZPass.

Figure 8: E-ZPass Use



In conjunction with the calibration step, the survey responses (people) were converted to represent trips on the Newport Pell Bridge, based on the relationships explained in the previous section. The expansion of raw data by customer is shown in Table 9, based on an estimated Average Annual Daily Traffic (AADT) volume of 27,250 vehicles.

Noting that the survey advertisements were most visible to frequent customers of the facility and those located within the local metropolitan area, an adjustment was necessary to account for those occasional customers that were less likely to respond to the survey. Based on empirical data from other similar toll facilities, the distribution of trips was adjusted to what in our opinion would be more representative of the actual traffic on the Newport Pell Bridge, also shown in Table 9. The

Newport Pell Bridge exhibits characteristics of both a commuter facility, as well as a vacation facility. In other words, the trip profile seen on the bridge is composed of many frequent travelers (commuters) and a large number of occasional travelers (vacationers) but relatively few of the trip categories in between. More than two-thirds of all trips are made by customers that travel two or more times per week, and nearly twenty percent of trips are made by customers that travel less than once per month.

Table 9: Raw Frequency Data Converted to Average Daily Trips on the Newport Pell Bridge

Frequency of Travel	Raw Percentage of Trips	Adjusted Percentage of Trips
4 or more times per week	86%	60%
2 - 3 times per week	10%	10%
1 time per week	2%	6%
1 - 3 times per month	2%	6%
Less than 1 time per month, but more than 2 times per year	<0.5%	8%
2 times or less per year	<0.5%	10%
Total	**100%**	**100%**

The total number of customers that utilize a facility far exceeds the AADT of traffic on that facility. As discussed previously, for each trip that is repeated daily there is one customer, similarly for each trip that occurs once per week there are seven customers. When all trips on a facility are converted to customers the total number is often very large. Table 10 shows the results of the analysis to estimate the total distribution of customers that use the Newport Pell Bridge annually, and these distributions are illustrated in Figure 9 and Figure 10. In total over 800,000 distinct customers are estimated to use the crossing annually, with an overwhelming majority of them traveling infrequently. Of particular note is that although roughly three-quarters of all of the trips on the Newport Pell Bridge are made by customers traveling at least once per week, these customers represent only about five percent of all distinct users of the bridge.

Table 10: Distribution of Trips and Customers on the Newport Pell Bridge					
Frequency of Travel	**Annual Trips**	**Percent of Trips**	**Trips per person Annually**	**Annual Customers**	**Percent of Customers**
4 or more times per week	5,968,000	60%	300	20,000	2%
2 - 3 times per week	995,000	10%	130	8,000	1%
1 time per week	597,000	6%	52	11,000	1%
1 - 3 times per month	597,000	6%	24	25,000	3%
Less than 1 time per month, but more than 2 times per year	796,000	8%	6	133,000	15%
2 times or less per year	995,000	10%	1.5	663,000	77%
Total	**9,948,000**	**100%**		**860,000**	**100%**

Figure 9: Travel Frequency of Trips

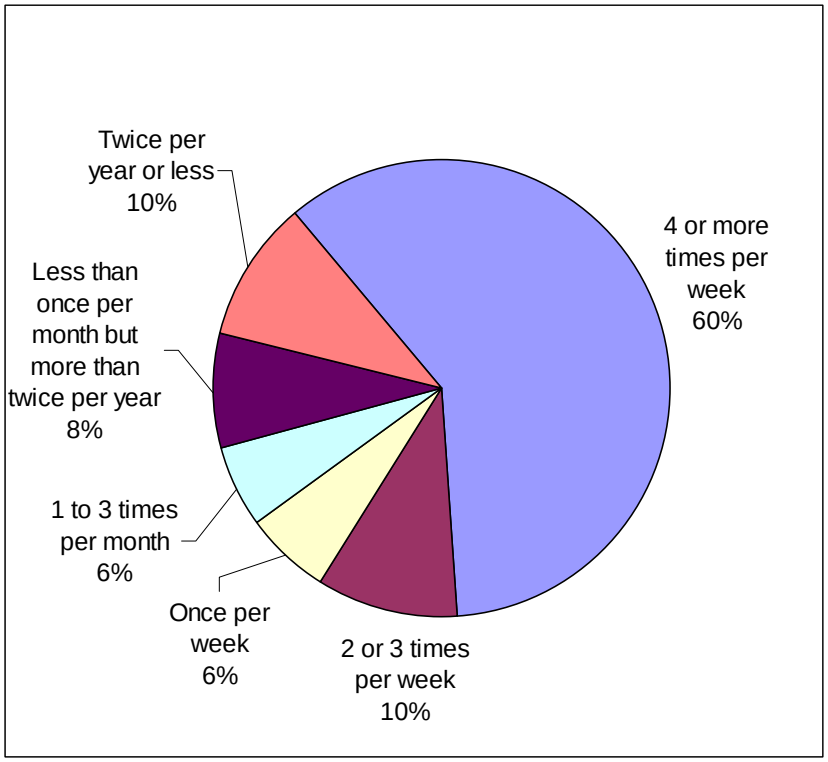
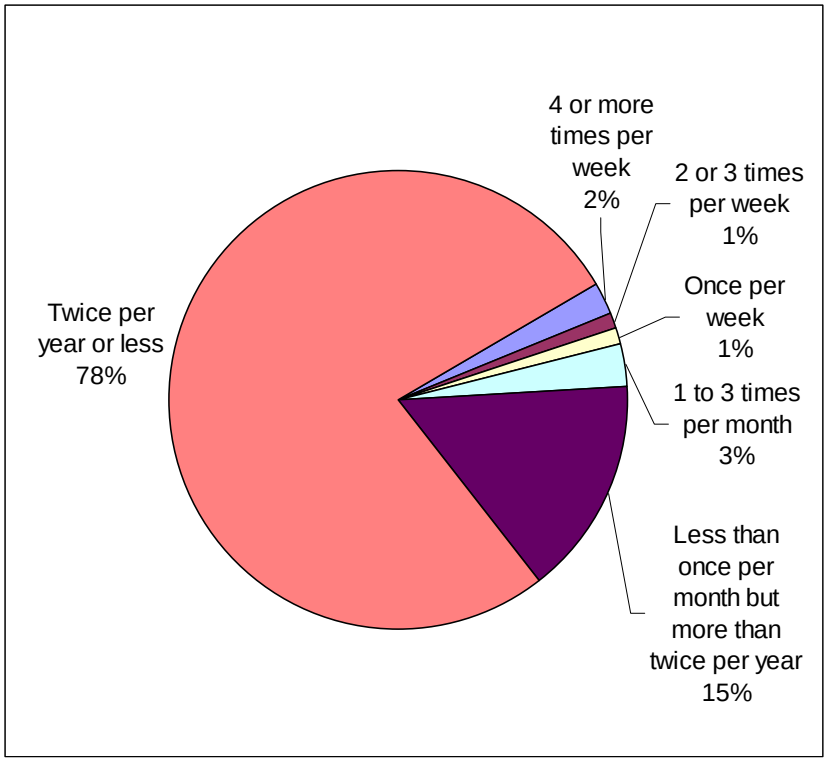
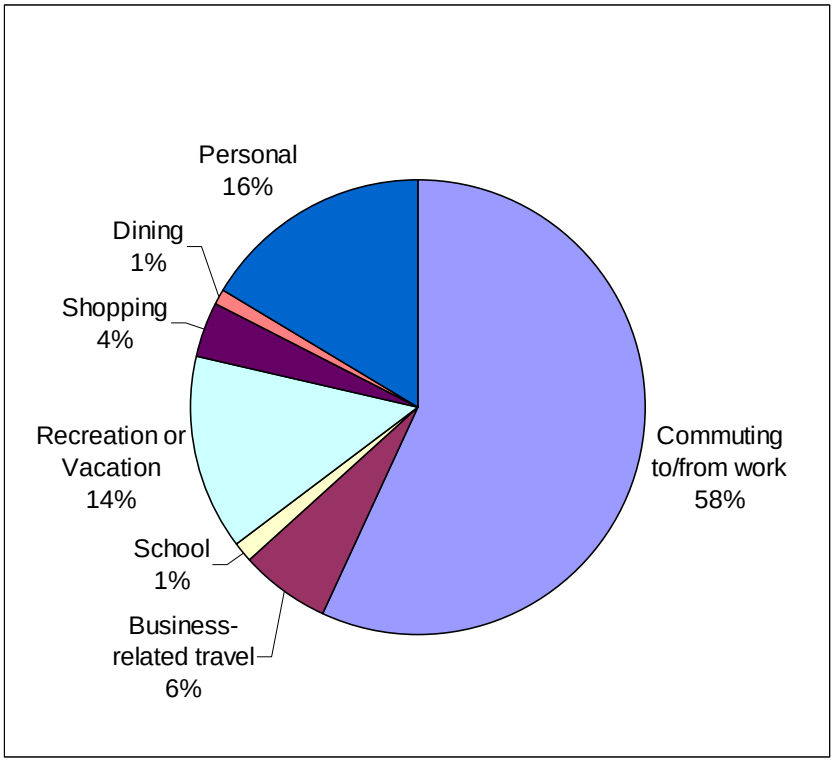


Figure 10: Travel Frequency of People



The purpose of more than half of the trips across the Newport Pell Bridge is commuting to or from work. Another 7 percent of trips are for business-related or school travel, bringing the total of work and school-related trips to almost two-thirds of all trips. Further breakdown of trip purposes is provided in Figure 11.

Figure 11: Trip Purpose



The majority of all trip origins, destinations, and vehicle registrations were found to be in Rhode Island, as shown in Figure 12 through Figure 14. Roughly 25 percent of trips originate in the State of Connecticut, while only about one percent of trips appear to be destined for Connecticut. This is likely due to the survey signs being displayed only for those crossing the bridge into Newport, and not in the opposite direction, since roughly 25 percent of vehicles were also reported as registered in Connecticut (similar to the Connecticut share of origins). About ten percent of trips appear to originate or terminate in Massachusetts, which is relatively on par with the vehicle registration data. More than ten percent of trips are made by vehicles registered in states other than Rhode Island, Connecticut, and Massachusetts.

Figure 12: Trip Origin

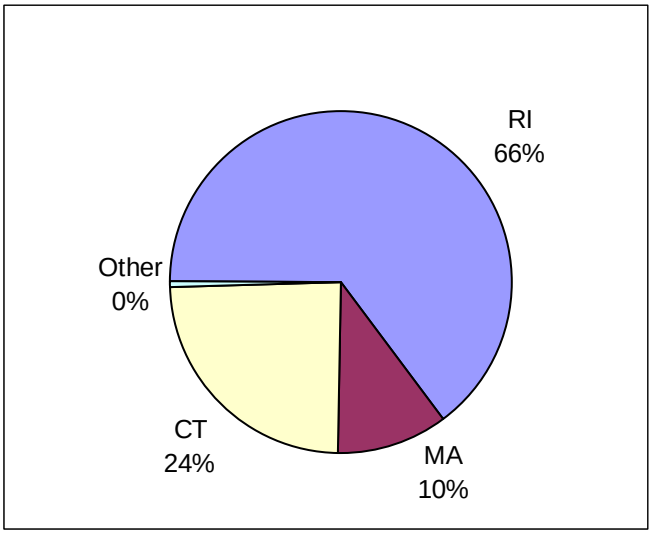


Figure 13: Trip Destination

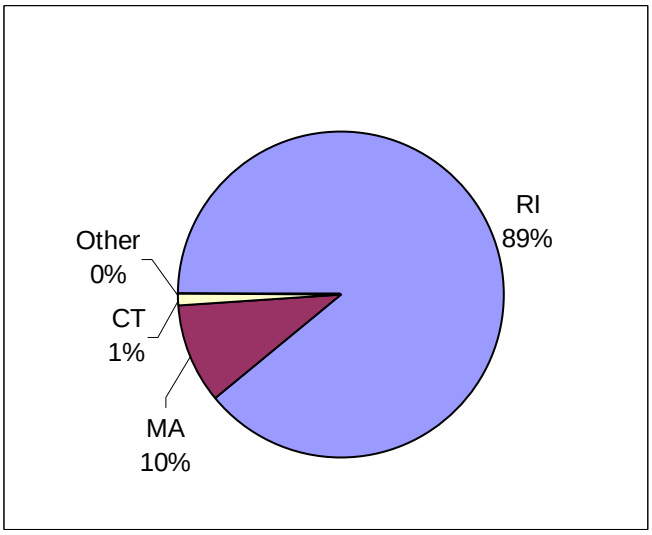
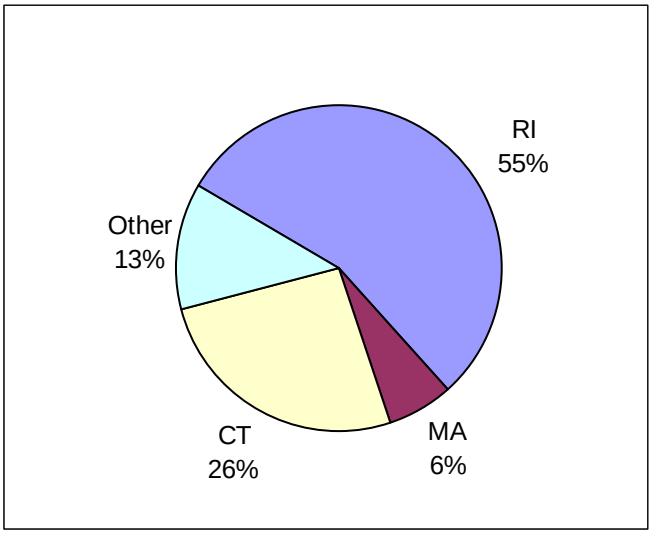
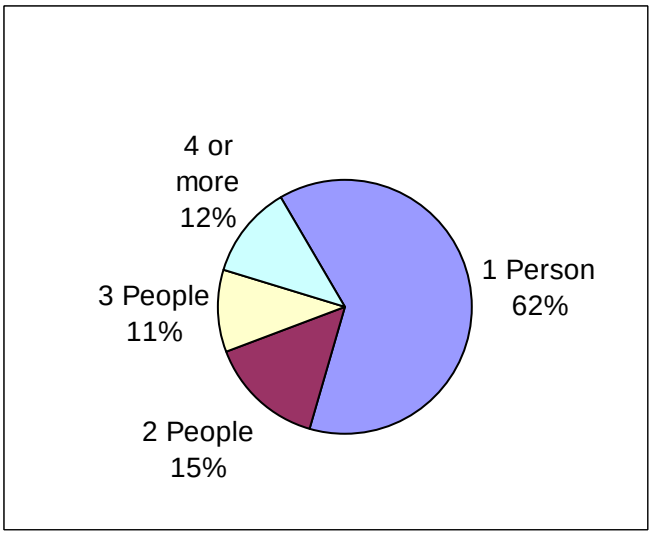


Figure 14: Vehicle Registration



Nearly two-thirds of all trips across the Newport Pell Bridge are made by single occupant vehicles, as shown in Figure 15. Roughly 15 percent of trips have two occupants, while an unusually high 23 percent have three or more persons per vehicle. This high percentage of three and four persons per vehicle is most likely due to Newport, RI being a family vacation destination.

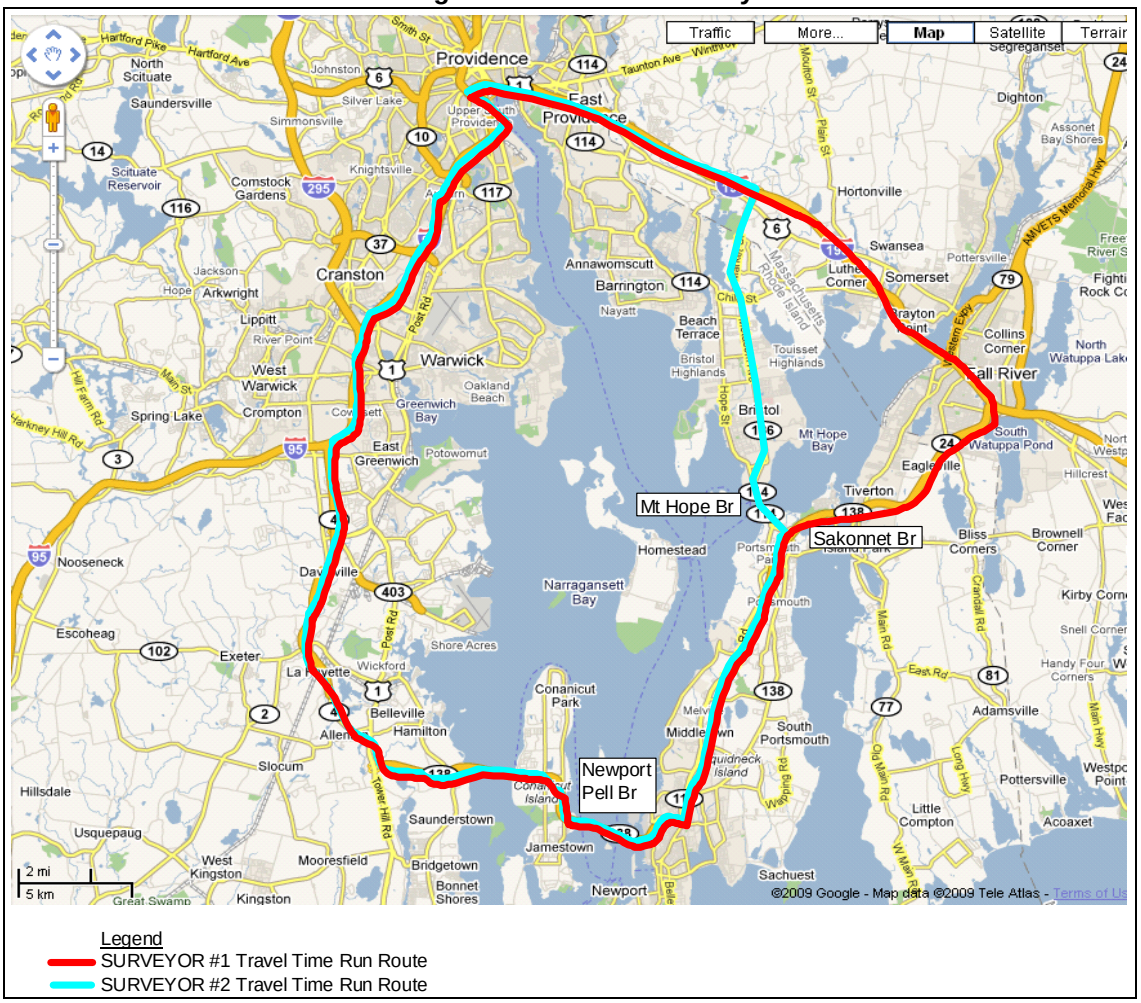
Figure 15: Vehicle Occupancy



2.6 Travel Time

Travel time surveys were conducted to gather information about the speeds on competing routes during different times of day. This information is helpful in determining potential traffic re-routing in the case of a toll increase at the Newport Pell Bridge or the introduction of tolls at the other bridges, and could also be used to determine the validity of the statewide (RISM) model. Weekday travel time surveys were conducted by two surveyors on both Tuesday, August 25, 2009 and Wednesday, August 26, 2009. Each surveyor had a *Geostats* GPS device on their vehicle which recorded their location and the time every few seconds. From this, we were able to determine their speed and travel time along each part of their route. The surveyors each drove one loop from Providence to Aquidneck Island and back to Providence during the AM peak, midday, and PM peak, covering the routes both clockwise (day 1) and counterclockwise (day 2). Figure 16 shows the general map of the routes they covered.

Figure 16: Travel Time Survey Routes



The data collected from each driver was analyzed and broken out such that the travel time required for competing routes could be directly compared. The analysis focused on two primary origins, from

the west (Intersection of I-95 and Route 4), and from the north (Intersection of I-95 and I-195 in Providence). Travel times from these origins to a similar destination in Newport (Intersection of West Main Street at Admiral Kalbfus Avenue) were compared over the three available bridges. These routes are illustrated in Figure 17, and a comparison of average travel times is provided in Table 11.

Figure 17: Common Routes to and from Newport

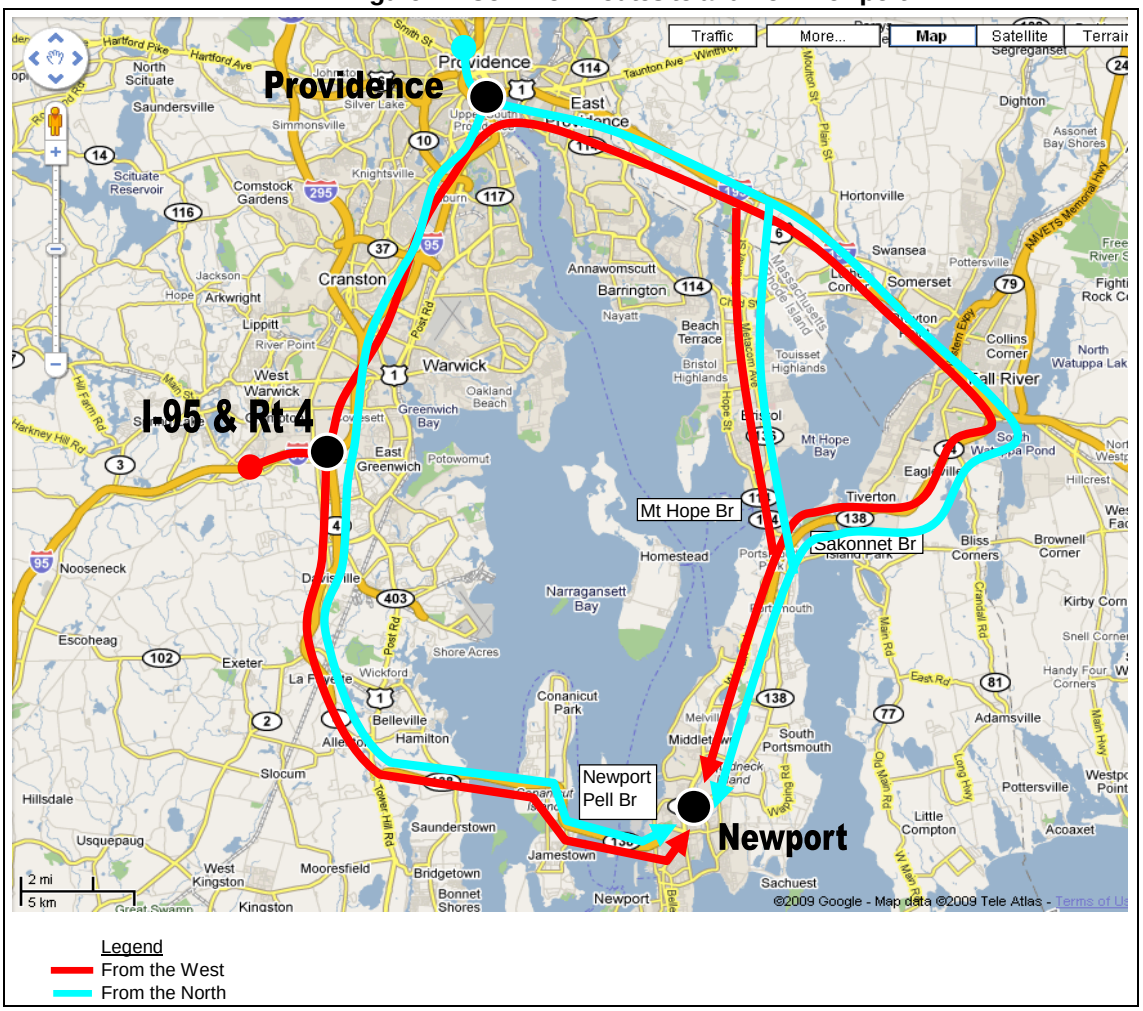


Table 11: Summary of Travel Times to and from Newport, RI

From Newport	**To:**	**I-95 @ Rt 4**	**Providence**
	Via Newport Pell Bridge	25-35 min*	35-45 min*
	Via Mt Hope Bridge	60-65 min	45-55 min
	Via Sakonnet Bridge	55-65 min	40-50 min
To Newport	**From:**	**I-95 @ Rt 4**	**Providence**
	Via Newport Pell Bridge	25-35 min	35-45 min
	Via Mt Hope Bridge	60-70 min	45-55 min
	Via Sakonnet Bridge	50-60 min	40-50 min

** one wed pm trip took 44 minutes to I-95 and 60 minutes to Providence*

General Notes:
Newport measured as roughly W Main street at Admiral Kalbfus Ave
Providence measured as roughly I-95 at I-195

The data collected shows that for travel to and from Newport to/from the north and west, the Newport Pell Bridge is almost always the quickest route based on average travel times. For travel to or from the west, the Newport Pell Bridge is more than 15 minutes faster than paths through Providence and over the Mount Hope or Sakonnet Bridges. On the other hand, for travel to and from the north (via Providence) the Newport Pell Bridge offers a lesser time savings, an average of five to ten minutes. Additionally, the data shows that the Sakonnet Bridge offers a slight time savings over the Mount Hope Bridge for any travel via Providence.

3. Economic and Demographic Factors

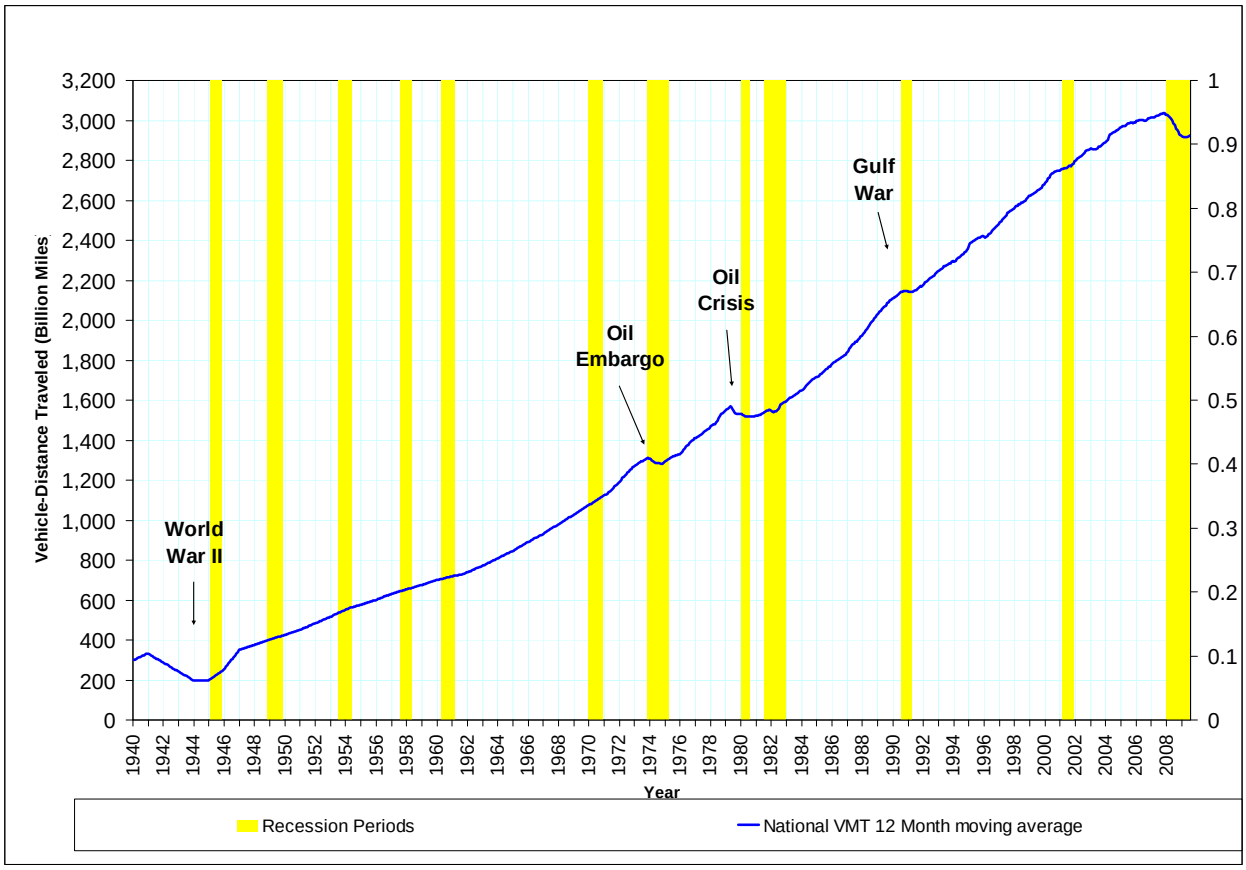
During the course of this study, Jacobs analyzed key socioeconomic factors related to the growth in traffic and toll revenues for the Newport Pell Bridge. Factors that are relevant to the long term background growth of traffic on the facilities were studied, as was the relationship of traffic to specific economic indices for passenger car and truck traffic. Jacobs also researched the possible causes of why people in the U.S. are driving less, and what this means for the future of road travel. In addition, Jacobs conducted extensive background research into the specific dynamics of past economic recessions in order to better understand the current phenomenon and to aid in giving context to the most recent economic downturn when compared with past recessions. The analyses are summarized in the following sections.

3.1 National Trends in Vehicle Miles Traveled

The United States has experienced a never before seen flattening, then drop, in vehicle-miles traveled (VMT) on its highways over the past several years. Jacobs reviewed and compiled available reports and data to investigate the possible factors contributing to this phenomenon.

Figure 18 depicts the 12-month moving total of national travel mileage from 1940 through August 2009 on all U.S. highways. As seen in this figure, there were temporary reductions in VMT during World War II, oil crises and economic recessions. Despite these temporary "dips", the VMT continued to grow rapidly over the years. It shows that, in recent years, with the exception of short, flat periods during the 1991 and 2001 recessions (each less than one year), VMT grew at a steady pace through about 2005. VMT then grew at a much slower pace through 2008. The increase in gas prices and the downturn in economic activity that took hold in late 2008 resulted in a significant reduction in total national travel mileage after December 2007 peak. While VMT declined throughout 2008, it has remained flat in 2009 until the summer months, when there was a slight increase over the previous year. This perceived growth is due in part to the large reduction in summer gas prices from 2008 to 2009. Comparing July 2009 to July 2008, there has been an increase in VMT of 1.4% in the Northeastern U.S.

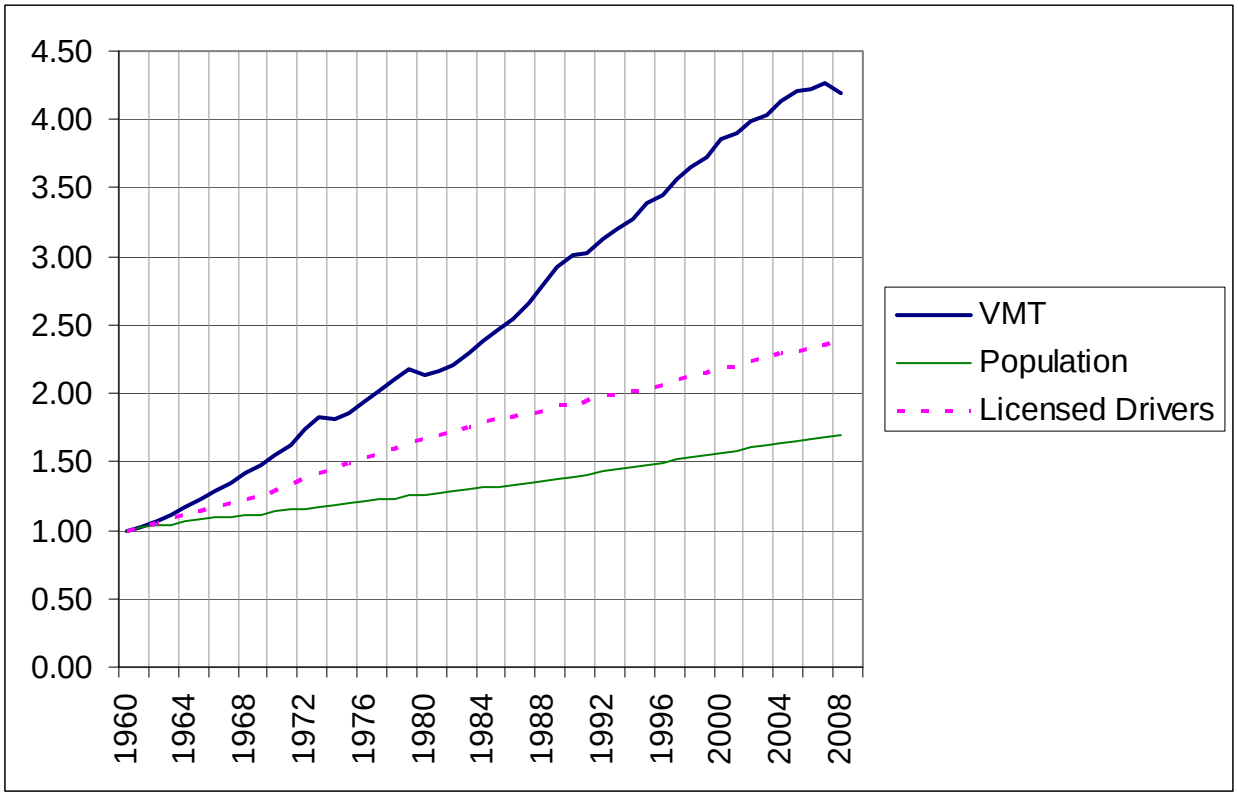
Figure 18: US Annual Vehicle Miles Traveled (VMT)



Source: FHWA

For the sake of comparison, Figure 19 relates the VMT to the U.S. population as well as to the number of licensed drivers. As indicated, the VMT has been growing at a much faster rate than both.

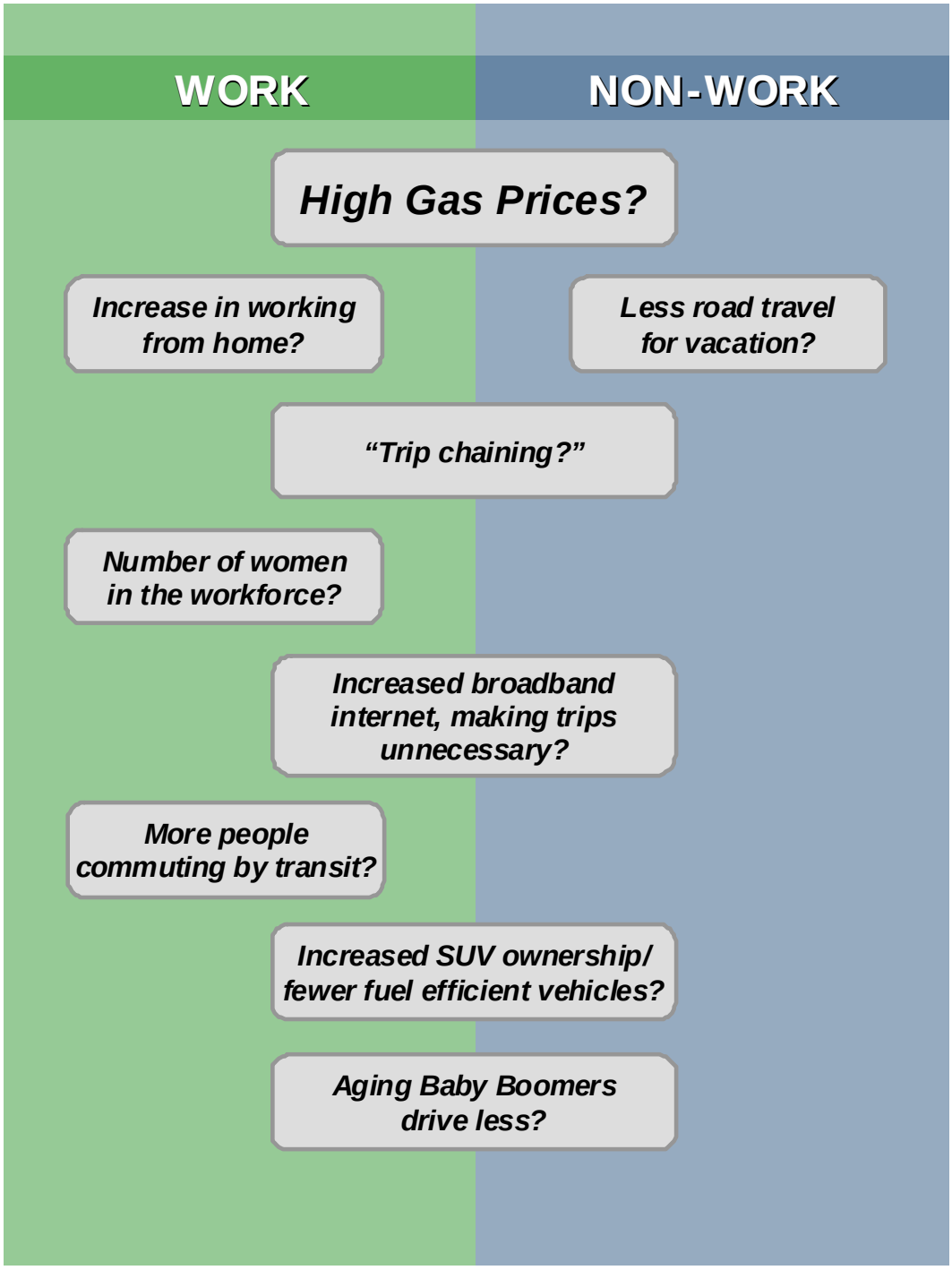
Figure 19: US Population and Licensed Drivers vs. VMT (Indexed to 1960=1)



Sources: FHWA; U.S. Census

Figure 20 lists a number of factors that may have caused the recent VMT and Newport Pell Bridge transaction leveling and decrease in traffic. These have been separated into factors that could affect work and non-work trips, with some affecting both trip types. The jump in gas prices in recent years is often seen as the logical culprit in the reduction of VMT, and gas prices are at least partially responsible for a change in some other factors listed, such as higher transit usage, working from home, and trip chaining (i.e., combining several purposes into one trip), however, there have been other changes in recent years that have affected travel and will continue to affect it in the long term. Historical statistics for some of these factors are compared to VMT throughout this section to provide context to the current experience.

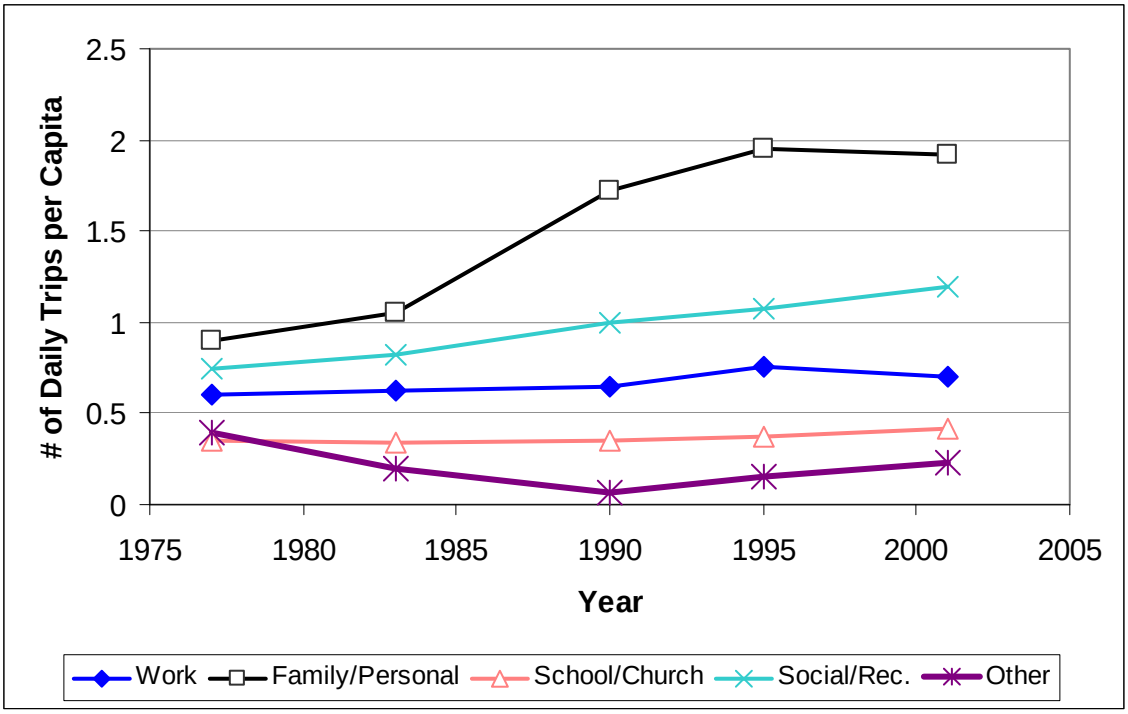
Figure 20: Possible Factors Contributing to Recent VMT Phenomenon



3.1.1 Work vs. Non-Work Travel

As shown in the previous figure, changes to certain sociological, economic, and technological factors either affect work travel, non-work travel or both. Work travel in 2001 constituted about 16 percent of trips but as Figure 21 shows, that is attributable to the dramatic growth in other activities rather than diminished work travel.[2] While data for more recent years is not available, evidence suggests that it is these discretionary trips that have been substantially reduced over the past several years, perhaps to pre-1990 levels.

Figure 21: Historical Daily Trips per Capita by Purpose



Source: Commuting in America III, Transportation Research Board

The 2001 National Household Travel Survey converted the number of trips by purpose and distance into vehicle miles traveled, as shown in Table 12. Commutation trips comprise only slightly over one-quarter of all VMT. This section will concentrate on factors that affect the primary trip purposes.

[2] Alan Pisarski, " Commuting in America III," *Transportation Research Board*, 2006

Table 12: Share of VMT by Purpose

Purpose	Share of VMT
To/from work	27.0%
Other family/personal business	18.7%
Shopping	14.5%
Other social/recreational	13.2%
Visit friends/relatives	9.4%
Work-related business	8.4%
School/church	3.7%
Medical/dental	2.2%
Vacation	1.8%
Other	1.0%

Source: 2001 National Household Travel Survey, U.S. Department of Transportation

3.1.2 Fuel Cost Impacts on Travel

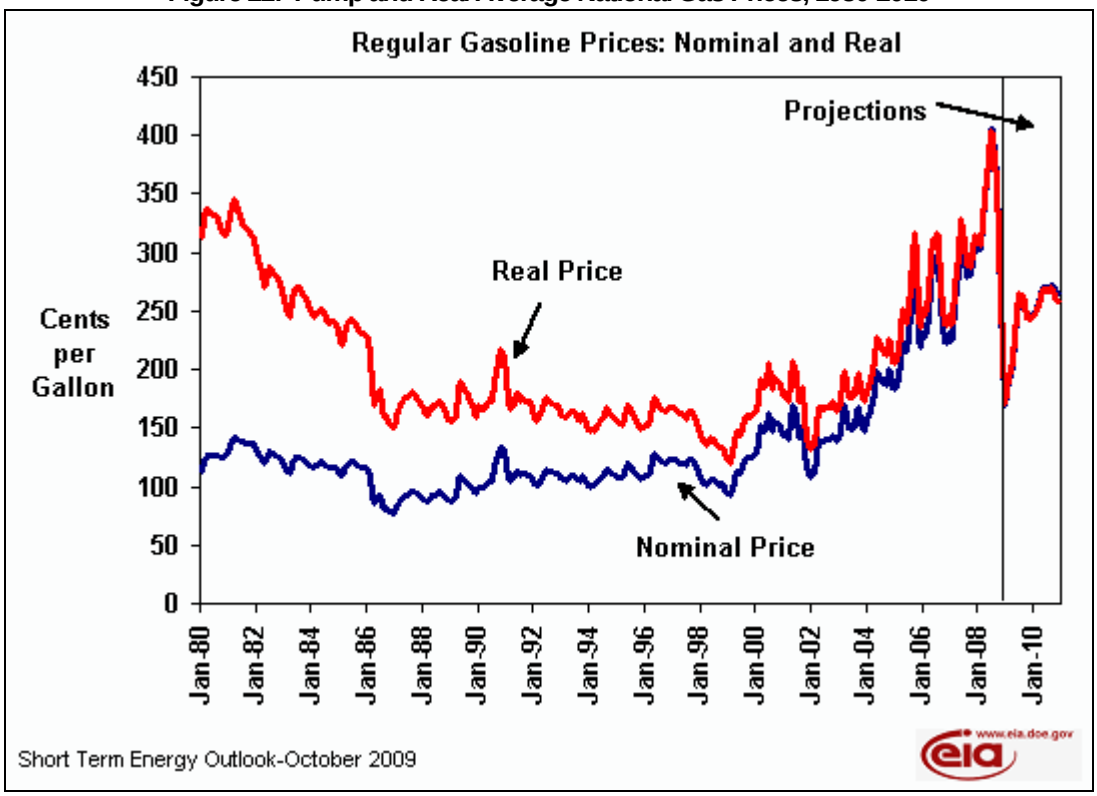
Until the significant reduction in gasoline prices in late 2008, inflation-adjusted gas prices had approached, then exceeded, the 1981 levels that were produced as a result of the 1979 oil shock. The worldwide price for crude oil in July 2008 was $147/barrel. Crude oil prices dropped significantly to $42/barrel in January 2009, but have recovered somewhat, gradually increasing to $69/barrel in June 2009. The summer of 2008 spike had a noticeable effect on travel nationwide, an effect usually seen during recessionary periods.

The latest fall in real and nominal gas prices illustrate the current recessionary state of the national economy. Since peaking for the year at $71.0/barrel in August 2009, crude oil prices have declined slightly to $67.4/barrel in October 2009. For the year, the Energy Information Administration (EIA) of the U.S. Department of Energy forecasts that crude oil prices will average $59.9/barrel for 2009 and $72.0/barrel in 2010. EIA anticipates that the projected increase in global consumption will result in a 21 percent increase in crude oil prices from 2009 to 2010.

In addition, EIA's most recent forecast, which was published on October 6, 2009 anticipated that gasoline prices in the U.S. would average $2.36/gallon in 2009 and $2.65/gallon in 2010. EIA also expects that diesel fuel prices will average $2.43/gallon in 2009 and $2.78/gallon in 2010. Figure 22 illustrates the following recent trend: (i) real and nominal gasoline prices increased gradually from 2000 to 2007; (iii) gasoline prices soared to historically high levels in mid-2008; (iii) gasoline prices

then decreased steeply in late 2008 and remained relatively flat in 2009, and (iv) gasoline prices are expected to increase in 2010.

Figure 22: Pump and Real Average National Gas Prices, 1980-2010



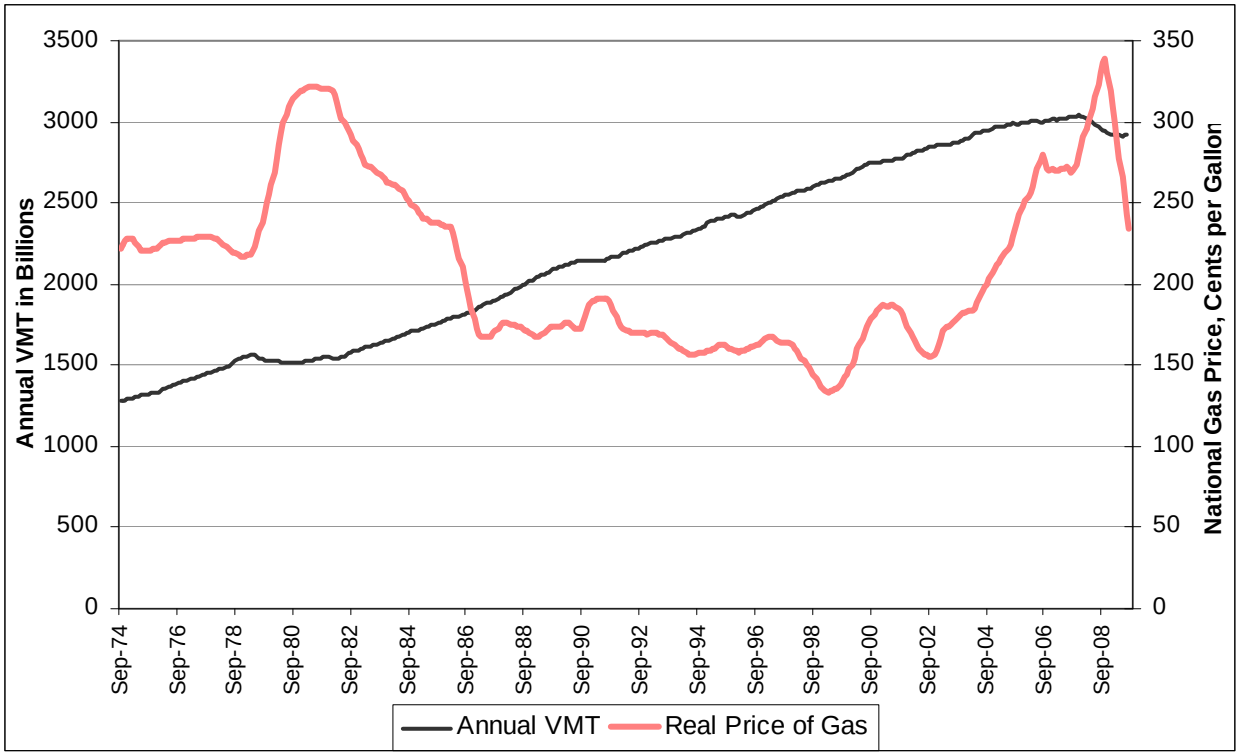
Source: Energy Information Administration (EIA), US Department of Energy

The level of global fuel consumption and future price levels will largely depend upon the timing and pace of the recovery in global economic output. Recent forecasts such as the *Blue Chip Economic Indicators, January 2010* anticipate that recent economic recovery is anticipated to be sustained in 2010. If economic growth rebounds sooner than expected, then the demand for crude oil may outpace production, leading to rising prices. In the event that there is a steep increase in crude oil prices, then there may be a sharp decrease in vehicle miles traveled (VMT), similar to what occurred in 2008. Figure 18 (shown previously on page 28) depicts the 12-month moving average of total national travel mileage from January 1984 to August 2009 on all U.S. highways. This figure shows that traffic trends were flat during the 1981 recession (less than one year) and during the 1991 recession (also less than one year). The increase in gas prices and the downturn in economic activity which took hold in late 2007 have resulted in a significant reduction in total VMT in the United States. In mid 2009, the decline in VMT slowed its decline and began to flatten. As of October 2009, there has been a slight increase in VMT.

Studies have been conducted to determine the effect of gas prices on road travel; however, none were recent enough to see the jump from about $1.25 per gallon of regular gasoline in 2002 to $4.25 in

2008. As seen in the previous figure, while the nominal price of gas remained relatively stable throughout the 80s and 90s, the real price (in 2008$) actually *decreased* over that period. The 2007 real price of gas was similar to that of 1980-1981. Figure 23 compares real gas prices and VMT.

Figure 23: Gas Prices vs. VMT, 1973-2009, 12-Month Moving Average



Sources: FHWA, EIA

The figure shows little overall correlation between historical gas prices and VMT. But it appears when the price reaches a certain threshold, as it did in 1980 and 2008, traffic begins its decline. The unprecedented spike in gas prices over the past six years has made people today more aware of gas prices, the fuel efficiency of their vehicles, and the possibility of changing their driving behavior to compensate. The automotive industry is responding to higher gas prices and consumer demand by manufacturing more fuel-efficient vehicles and offering alternative fuel compounds.

3.1.3 Working from Home

The Reason Foundation's November 2005 report entitled, "The Quiet Success: Telecommuting's Impact on Transportation and Beyond," states that:

- Roughly 4.5 million Americans telecommute most work days.
- Roughly 20 million telecommute for some period at least once per month.
- Nearly 45 million telecommute at least once per year.

With cell phones, high-speed internet, and laptop computers it has become increasingly easier for certain employment sectors – especially sales, management and technology - to work from home. Those who work from home save on the time and expense of commuting.

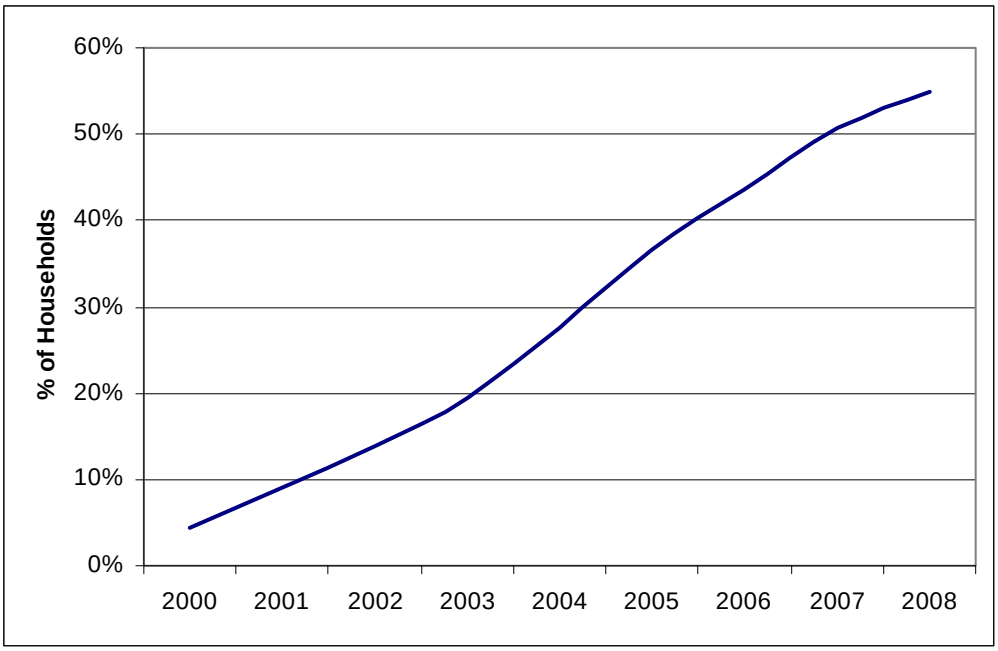
U.S. Census numbers indicate there has been more than a 40 percent growth in telecommuting between 1980 and 2000. In 2000 this constituted 3.3 percent of the work market share. In 2007, 4.1 percent of workers over age 16 claimed to work from home. While the telecommuting share is expected to increase, if all current telecommuters traveled to work it would only make about a one (1) percent difference in overall VMT.

3.1.4 Internet

The advent of the internet more than ten years ago brought about a whole new information age whereby many people now use it as their main source of information, and increasingly for communication and as a "store" to browse for and purchase goods. With more and more households and offices connecting to broadband – which receives web pages significantly faster than the older dialup version – a person can complete errands, do social networking, and find entertainment without ever leaving their seat. In theory, it makes some vehicle trips unnecessary, and as seen earlier on page 31, it is likely these discretionary trips that have been reduced in the past few years.

The total number of broadband lines in the United States has grown from almost 6.8 million lines in December 2000 to 121 million in December 2007 – an increase of nearly 1,700 percent - according to the FCC. U.S. households with broadband internet increased from less than five (5) percent in 2000 to more than 55 percent in 2008 as shown in Figure 24. The FCC's proposed National Broadband Plan - and $7.2 billion of economic stimulus dollars - aims to bring broadband internet access to currently underserved areas of the U.S.

Figure 24: Growth in Households with Broadband Internet



Source: National Telecommunications and Information Association

3.1.4.1 Behavior of Internet Users

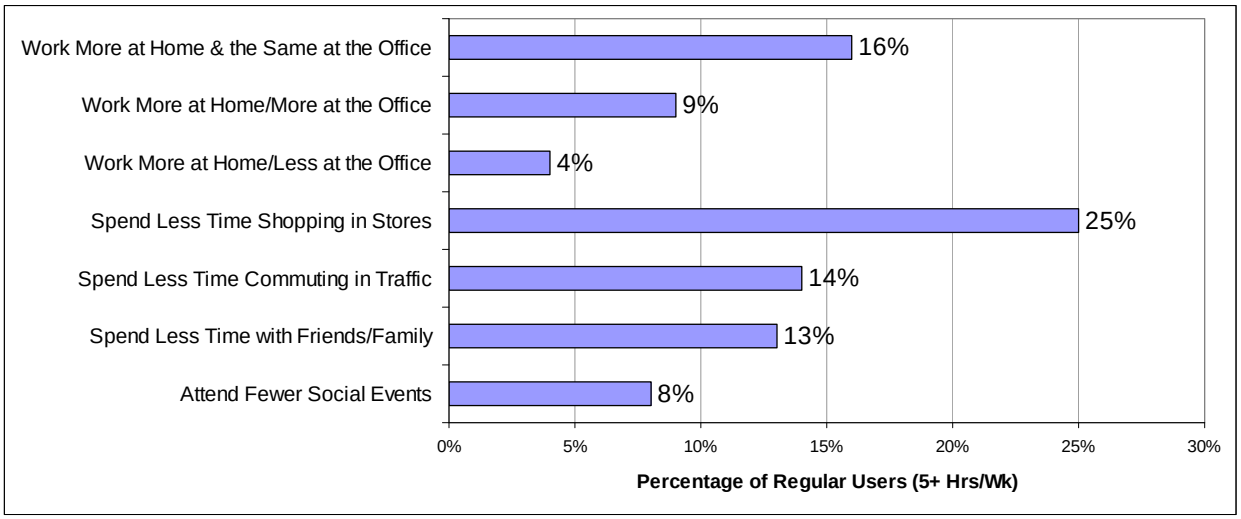
According to Nielsen Online, Americans currently spend an average of nearly 68 hours per month on the internet – more than two hours per day – at home and/or work. There has been a shift in how people spend their time since the days before internet.

A 2000 study by the Stanford Institute for the Quantitative Study of Society (SIQSS) included a survey of more than 4,000 adults nationwide to determine how internet has affected society. The study revealed that the more time people spend on the internet:

- the more they lose contact with their social environment
- the more time they spend working, both at home and at the office
- the less time they spend shopping in stores
- the less time they spend commuting in traffic

Figure 25 shows how survey respondents answered when asked how the internet has changed their behavior. Of these regular internet users, 25 percent reported spending less time shopping in stores and 14 percent reported spending less time commuting in traffic. While making some tasks more convenient, the internet has also taken away time once spent doing other things, and has contributed to us becoming a more isolated society where there is less of a necessity to leave home or the office as much as before.

Figure 25: Behavioral Changes of Internet Users



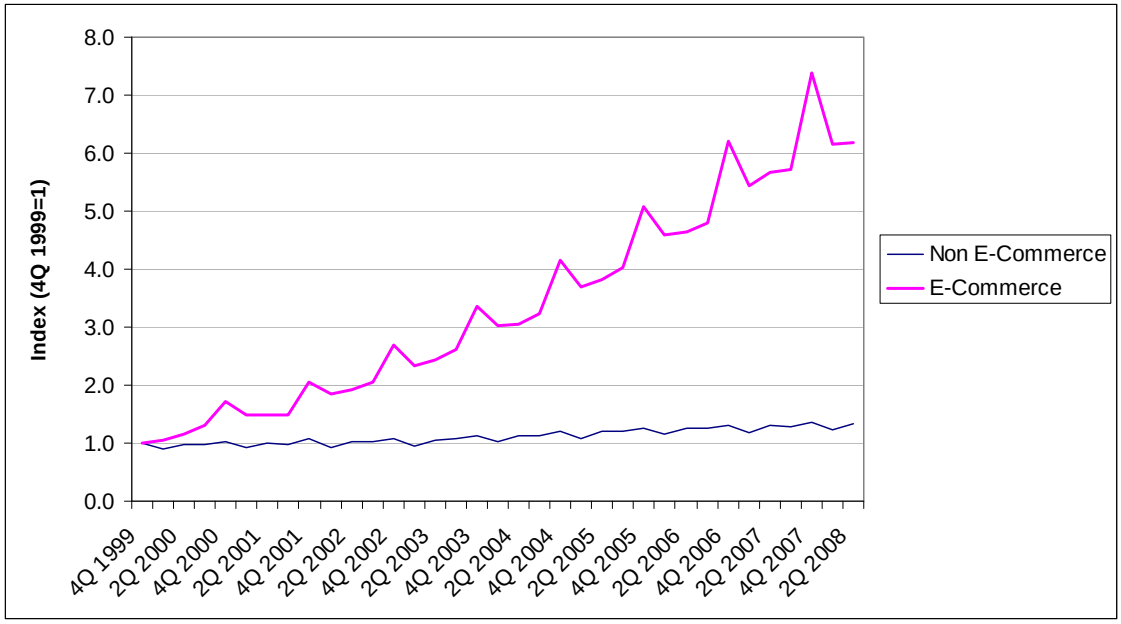
Source: "Internet and Society: A Preliminary Report," Stanford Institute for the Quantitative Study of Society (SIQSS), 2000

Further demonstrating the effects of internet on society, a 2008 study by the Center for the Digital Future at USC states that 15 percent of internet users are currently a member of one or more online communities, typically relating to a person's hobbies or social or professional lives. Of online community members, 16 percent report that being a member of online communities has decreased their participation in offline communities. Fifty-five (55) percent of online community members claim to feel as strongly about their online communities as they feel about their real-world communities - an increase from 43 percent in 2006.

3.1.4.2 Online Retail Sales

The share of retail dollars spent on the internet has grown from less than one (1) percent in 1999 to more than 3.5 percent in 2008. Figure 26 shows how e-commerce sales have grown since 1999 relative to non e-commerce sales. E-commerce sales are now nearly seven times those in 1999. This is expected to grow as more and more people become comfortable with buying products and services over the internet.

Figure 26: US Retail Sales, 1999-2008, E-Commerce vs. Non E-Commerce (Indexed to 4Q 1999=1)

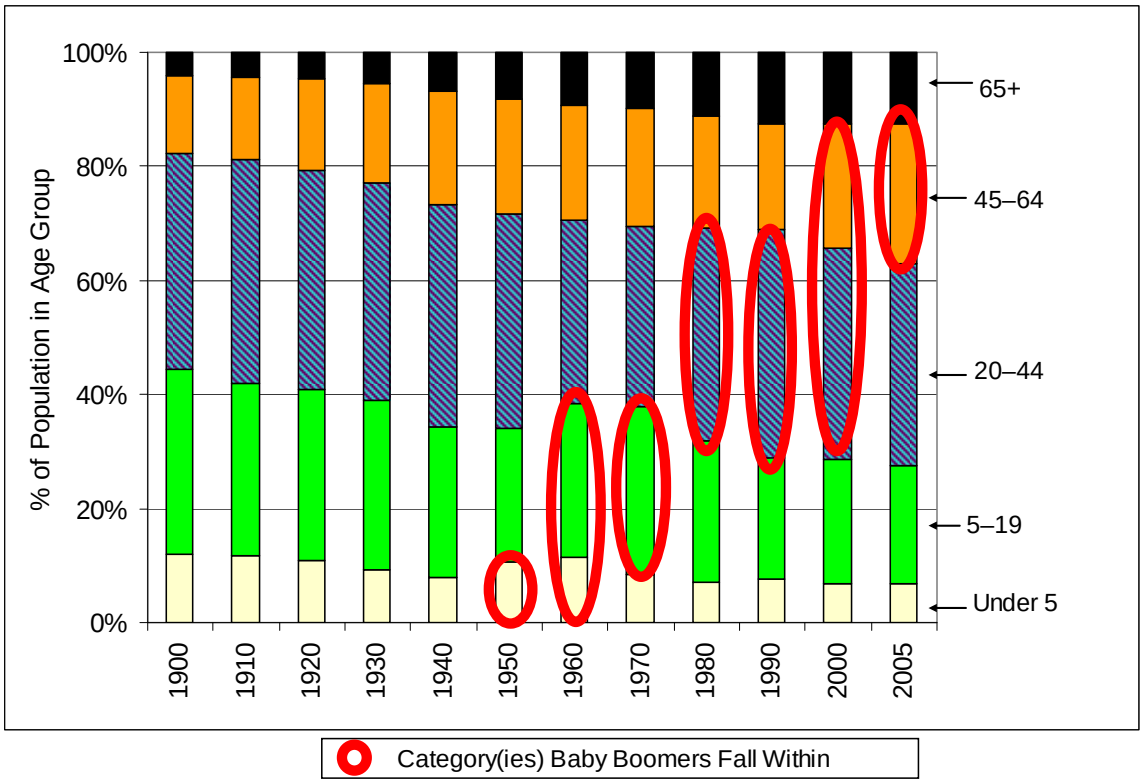


Source: U.S. Census

3.1.5 Age of Population

Shifts in the age of the U.S. population are also likely contributing to the recent VMT phenomenon. Figure 27 shows how the percent population in each age group has changed over time. The post-World War II baby boom brought about a spike in birth rates between 1946 and 1964. The age group that produces the most VMT – the 20 to 44 group – has seen a decline in the share of the population it represents since 1990. Meanwhile, the 45 to 64 and 65+ age groups, who drive less and less each year, have grown in proportion.

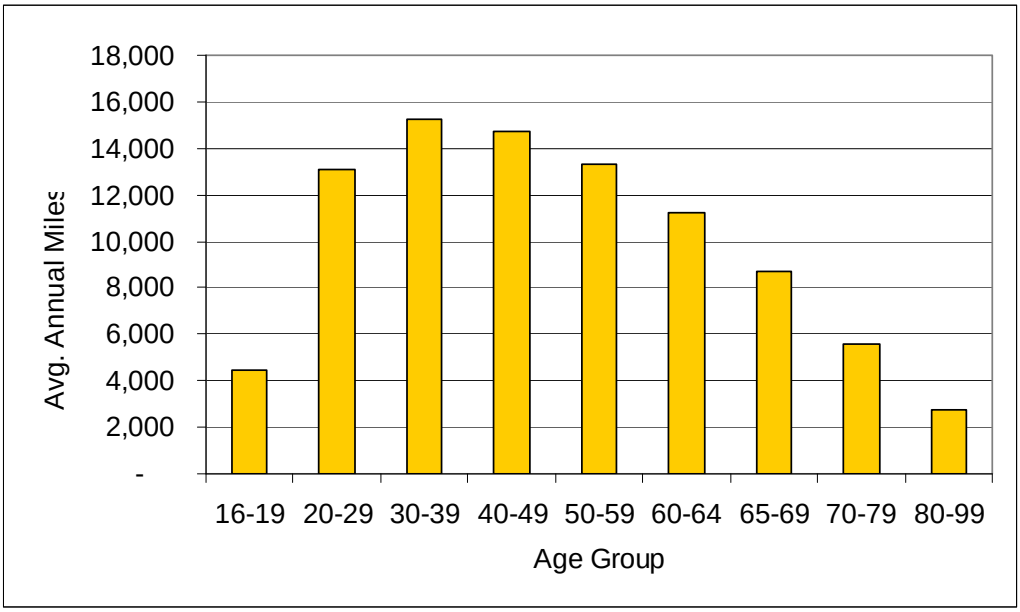
Figure 27*: US Population Distribution by Age Group*



Source: US Census

Figure 28 represents results from the 2001 National Household Travel Survey. It shows how the aging population of drivers – since older drivers drive fewer miles annually - is contributing to the decline in VMT. The 30-39 age group had the highest annual VMT per person, and the youngest of the baby boomers are now age 45.

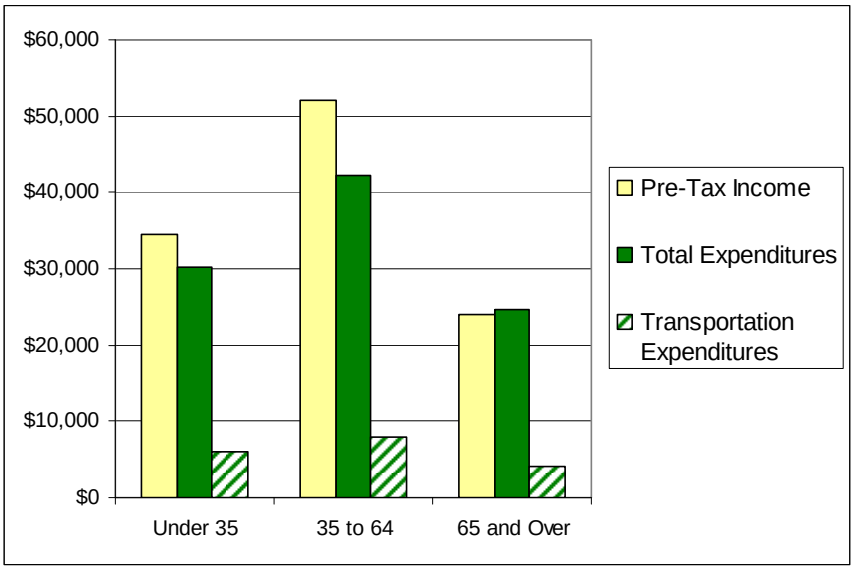
Figure 28: Average VMT per Person by Age Range



Source: 2001 National Household Travel Survey, U.S. Department of Transportation

Overall income and spending by age group – including transportation spending – is a major contributor to the decline in driving. The Bureau of Labor and Statistics compiled data on spending patterns by age in the year 2000, shown in Figure 29. Due mainly to retirement, income per household for those age 65 and over was less than half that for the 35-to-64 age group. Expenditures on all items by the 65 and over population was 59 percent of the 35-to-64 age group, and transportation spending was about half. As the oldest of the baby boomer generation have already begun retiring from their jobs, and will reach age 65 in 2011, the trends suggest that consumer spending has and is likely to continue declining in the near future.

Figure 29: Household Income and Expenditures by Age Group, 2000

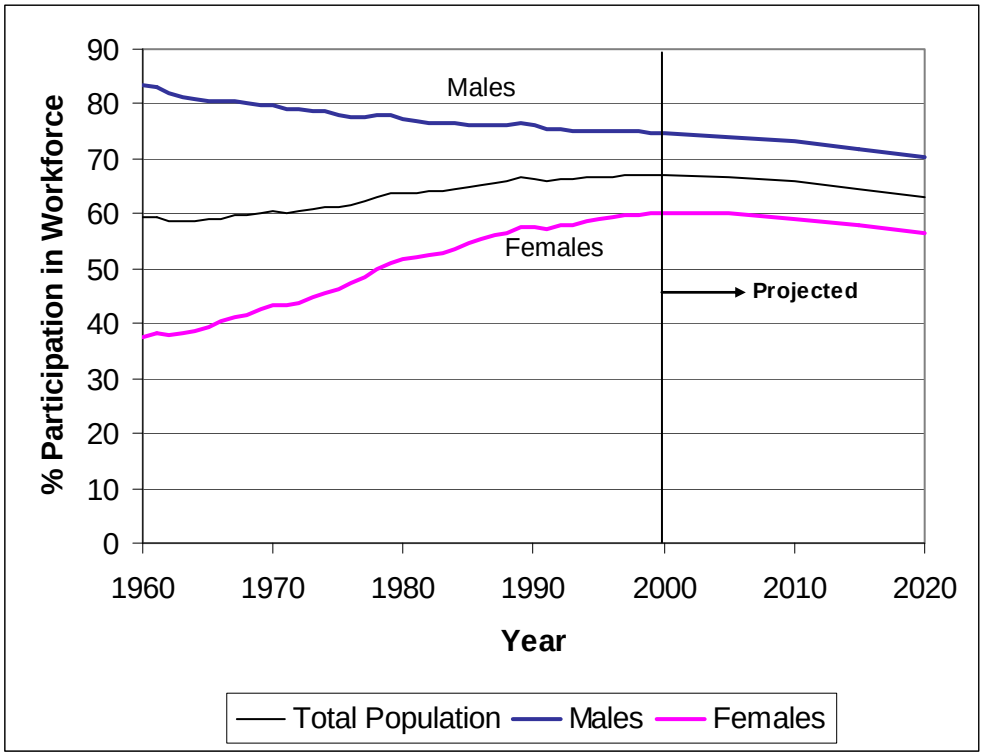


Source: US Department of Labor Bureau of Labor Statistics

3.1.6 Women in the Workforce

Female participation in the U.S. workforce increased dramatically from the mid-1960s to the early 1990s, from 38 percent to 58 percent, which likely contributed to the large growth in vehicle miles during that period. The participation in the workforce of each sex now remains flat at 60 percent of women and 75 percent of men, as shown in Figure 30, and is expected to decline as the baby boomer population ages. The flattening percentage of women in the workforce has recently, and will in the near future, cause a slowdown in commuter trip growth.

Figure 30: Participation in the Workforce



Source: US Department of Labor Bureau of Labor Statistics, 2000

3.1.7 The Future of Road Travel

The future of U.S. road travel has been adversely affected as discussed above. Since July 2008, gas prices have begun a steady, yet unexpected, decline, an economic recession was declared, and consumer spending reached an all-time low. While these factors have affected the recent VMT, other, more predictable factors will contribute to the future growth in driving. Broadband internet is making it easier to shop, work, access your social network, conduct personal business, and access entertainment from home, likely causing a reduction in discretionary road trips; its market share continues to grow. The percent of women in the workforce, which has been growing over the past 40 years, has flattened. The baby boomer generation has just begun to retire, and evidence shows that older people drive less and spend less on transportation. While some of these factors will not reduce overall travel because population continues to grow, they will inevitably reduce the huge VMT growth seen in previous years.

The implications of these dynamics are clear: while VMT will likely continue to increase over time, one can no longer assume that the growth in road travel will be what it once was. Table 13 presents the trends in national vehicle miles traveled since 1980. The annual percent change in VMT, year over year is shown, as well as the average annual percent over a five, ten and twenty year period. The consistent decreasing trend in growth rates, most easily identified in the 20 year average annual change is the prominent feature of the table. The long term trends readily exhibit decreasing growth rates.

At this national level vehicle miles traveled is exhibiting a new long term growth rate or a "new normal" from which future forecasts should benefit. Based on the data shown in Table 13 the general growth rate of VMT has decreased from 3 percent to approximately 2.3 to 2 percent, taking into account the recent recession.

Table 13: National Vehicle Miles Traveled and Average Annual Percent Change

Year	VMT (Billions)	VMT APC	5 Year VMT AAPC	10 Year VMT AAPC	20 Year VMT AAPC
1980	1,521				
1981	1,550	1.9%			
1982	1,592	2.7%			
1983	1,649	3.5%			
1984	1,717	4.1%			
1985	1,775	3.4%	3.1%		
1986	1,838	3.5%	3.5%		
1987	1,924	4.7%	3.9%		
1988	2,026	5.3%	4.2%		
1989	2,107	4.0%	4.2%		
1990	2,148	1.9%	3.9%	3.5%	
1991	2,172	1.1%	3.4%	3.4%	
1992	2,247	3.5%	3.2%	3.5%	
1993	2,297	2.2%	2.5%	3.4%	
1994	2,358	2.7%	2.3%	3.2%	
1995	2,423	2.8%	2.4%	3.2%	
1996	2,482	2.4%	2.7%	3.0%	
1997	2,560	3.1%	2.6%	2.9%	
1998	2,625	2.5%	2.7%	2.6%	
1999	2,679	2.1%	2.6%	2.4%	
2000	2,747	2.5%	2.5%	2.5%	3.0%
2001	2,796	1.8%	2.4%	2.6%	3.0%
2002	2,855	2.1%	2.2%	2.4%	3.0%
2003	2,890	1.2%	1.9%	2.3%	2.8%
2004	2,964	2.6%	2.0%	2.3%	2.8%
2005	2,989	0.8%	1.7%	2.1%	2.6%
2006	3,014	0.8%	1.5%	2.0%	2.5%
2007	3,030	0.5%	1.2%	1.7%	2.3%
2008	2,925	-3.5%	0.2%	1.1%	1.9%

3.2 Review of National, State, and County Economic and Demographic Trends

This section analyzes the economic trends in Rhode Island, New England and the U.S. as well as the demographic trends at the state and county levels which may impact traffic levels on the Newport Pell Bridge. In particular, this chapter includes a review and summary of local economic and demographic factors, such as the change in fuel costs, vehicle-miles traveled (VMT), population, employment, income, vehicle ownership, and commuter patterns in Rhode Island. Historical data for these parameters range from 1990 to 2008, while forecast data have been compiled through 2030.

3.2.1 General Economic Conditions in the United States

The United States has experienced a downturn in general economic conditions that began in late 2007. Table 14 summarizes the historical and consensus forecast of the top economic analysts for year-over-year growth in real Gross Domestic Product (GDP) and the Industrial Production in the U.S. Except for 2001-2, real GDP and industrial production grew steadily each year from 2000 to 2007. In 2008, GDP increased by 1.1 percent, while industrial production decreased by -1.8 percent. For 2009, it is expected that GDP will decrease by -2.5 percent and industrial production will decrease by an additional -10.1 percent. However, economic output is expected to recover in 2010 with a 2.5 percent increase in real GDP. Real GDP is anticipated to increase by 3.1 percent in 2011, 3.3 percent in 2012, and 3.0 percent in 2013, tapering down to 2.6 percent by 2020. Industrial production is also expected to increase by 3.3 percent in 2010, 4.2 percent in 2011, and slowing growth rates into the future with long term growth oat approximately 2.6 percent

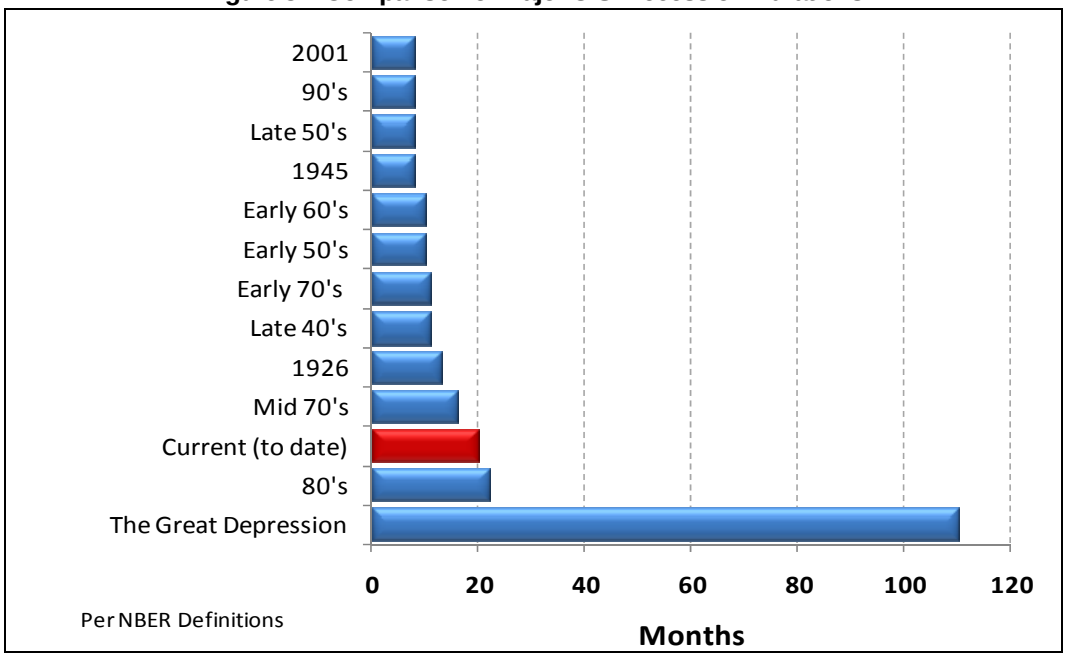
Table 14: Historical and Consensus Forecast of Growth in Real Gross Domestic Product and Industrial Production in the U.S., 2000 – 2020

Year	Real GDP Growth in 2000$[1] (Year/Year)	Industrial Production (Year/Year)[2]
2000	3.7%	5.2%
2001	0.8%	0.4%
2002	1.6%	-3.3%
2003	2.5%	1.1%
2004	3.6%	2.5%
2005	2.9%	3.3%
2006	2.8%	2.2%
2007	2.0%	1.7%
2008	1.1%	-1.8%
Forecast[2]		
2009	-2.5%	-10.1%
2010	2.5%	3.3%
2011	3.1%	4.2%
2012	3.3%	4.1%
2013	3.0%	3.6%
2014	2.8%	3.2%
2015	2.7%	2.9%
2016-20	2.6%	2.8%

[1] Bureau of Economic Analysis (BEA), US Department of Commerce.
[2] Blue Chip Economic Indicators, Consensus Forecast, October 10, 2009

Through September 2009, the length of the current recession stood at 22 months. As a result, it is now the 3rd longest recession in the last 100 years and approached the recession of the early 1980s with respect to duration and severity. On October 29, 2009 the recession was declared statistically over when the 3rd quarter of 2009 exhibited 3.5 percent annualized growth. Figure 31 compares the duration of the current recession with previous recessions in the U.S. since 1940 and with the Great Depression of the 1930s.

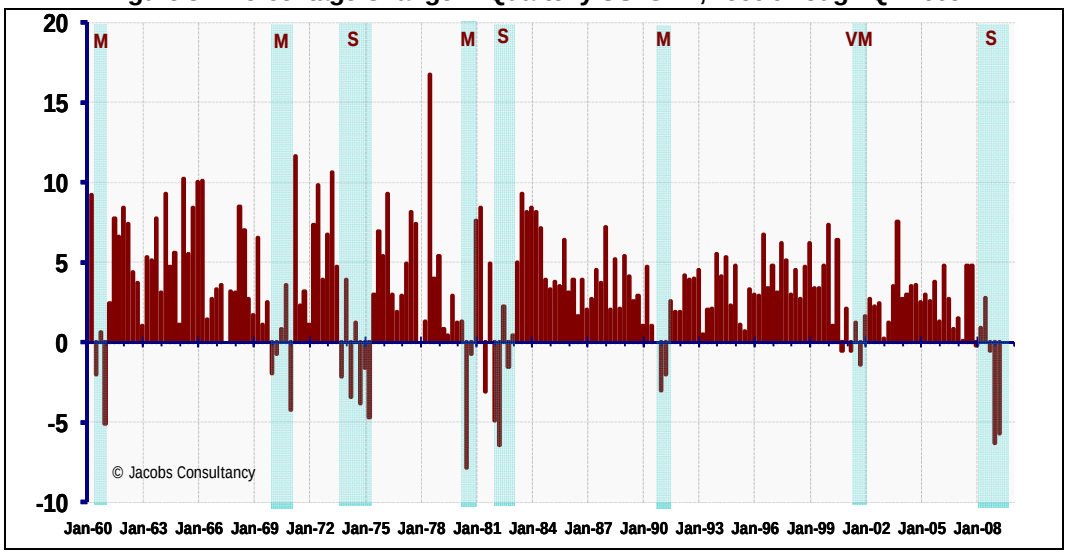
Figure 31: Comparison of Major U.S. Recession Durations



Sources: Recession.org and U.S. National Bureau of Economic Research (NBER)

Figure 32 shows the depth and duration of the current U.S. recession in relation to the previous seven recessions. Recessions are noted by blue-colored bars and the severity of each recession is evaluated using the National Bureau of Economic Research (NBER) definitions; Sharp ("S"), Mild ("M") or Very Mild ("VM").

Figure 32: Percentage Change in Quarterly US. GDP, 1960 through Q1 2009



Source: Jacobs Consultancy

Based on data compiled by the Bureau of Economic Analysis (BEA), both the state and regional economies grew steadily from 2000 to 2007. This growth has occurred despite the recession that took

hold at the start of the decade. As an aggregate, Gross Regional Product (GRP) in New England (Rhode Island, Massachusetts, Connecticut, New Hampshire, Vermont and Maine) increased by average annual rate of 1.9 percent from 1999 to 2008. During this period, total economic output in Rhode Island also increased at an average annual rate of 1.9 percent. In large measure, economic growth in Rhode Island is supported by economic activity in Massachusetts and Connecticut, which increased at an average annual growth rate of 2.0 percent and 1.5 percent, respectively, from 1999 to 2008. Table 15 summarizes the growth in real Gross State Product (GSP) for Rhode Island, Connecticut, Massachusetts, and GRP for the New England region during the most recent ten year period.

Table 15: Annual Change in Real Output in Rhode Island, Connecticut, Massachusetts, and New England 1999 – 2008 (2000$ Millions)

Year	Rhode Island	Connecticut	Massachusetts	New England
1999	31,608	153,298	255,189	531,902
2000	33,609	160,436	274,949	565,835
2001	34,176	161,197	276,634	570,313
2002	34,918	158,628	274,997	568,750
2003	36,488	159,456	280,881	579,651
2004	37,830	165,828	286,541	597,196
2005	37,752	169,094	289,869	605,048
2006	38,475	174,310	297,634	620,103
2007	38,456	178,470	306,503	634,166
2008	38,126	177,717	312,476	640,735

Source: Bureau of Economic Analysis (BEA)

The recovery from the recession is technically underway with the results of 3rd quarter 2009 GDP estimates, but understanding the type of recovery is critical to understanding the impact on traffic. It is projected that employment will be slow to recover, as efficiencies and inventory depletion will grow the overall economy before employers will risk financial exposure with the hiring of new employees. From the September 2009 issue of *Blue Chip Economic Indicators*, a clearinghouse of over 50 economic forecasting entities, over 81 percent of experts questioned agreed that the recession is over. Approximately the same percentage predicts that the unemployment rate will not fall back beneath 7 percent on a sustained basis until the second half of 2012. It is employment that both allows and necessitates vehicle travel and a jobless recovery does not translate into recovery of traffic levels.

3.2.2 Fuel Prices

In conjunction with national trends, gasoline prices in Rhode Island increased steadily beginning in the fall of 2005 through mid-2008 before dropping significantly during the latter part of last year due to lower demand. Based on data provided by the American Automobile Association (AAA), retail gasoline prices peaked at $4.05/gallon in June 2008 before falling back to around $1.60/gallon in

December 2008. Average gasoline prices in Rhode Island were $2.73/gallon as of January 7, 2010. National average gasoline prices have typically within a few cents of the Rhode Island average.

3.2.3 Regional Vehicle Miles Traveled

Similar to national trends, total VMT has increased modestly for each of the five counties in Rhode Island from 2000 to 2007, total VMT in Rhode Island increased at an average annual rate of 0.54 percent. Despite the current decline in economic conditions, recent forecasts anticipate that VMT will continue to increase throughout the state. In particular, the Rhode Island Statewide Planning Office estimates that VMT will increase statewide by an average annual rate of 0.91 percent from 2010 to 2030. Table 16 summarizes the VMT forecast compiled by the Rhode Island Statewide Planning Office.

Table 16: Historical and Forecast Vehicle Miles Traveled (Millions) by County, 2000 – 2030

Year	Bristol	Kent	Newport	Providence	Washington	Total
2000	524	4,035	1,354	12,147	2,627	20,687
2007	546	4,139	1,402	12,637	2,751	21,475
2010	558	4,272	1,424	12,928	2,827	22,009
2015	574	4,490	1,472	13,488	2,998	23,022
2020	595	4,741	1,532	14,133	3,201	24,202
2025	616	4,988	1,596	14,821	3,399	25,420
2030	639	5,146	1,653	15,413	3,554	26,405

Source: Rhode Island Statewide Planning Office

3.2.4 Population Trends

Between 1990 and 2008, population in the state of Rhode Island increased slightly from approximately 1.00 million to 1.05 million residents, or approximately 3,100 new inhabitants per annum. From 1990 to 2005, the annual average growth rate for population in Rhode Island was 0.38 percent. However, total population in the state decreased by nearly 12,000 residents from 2005 to 2008. Providence County accounts for nearly 60 percent of Rhode Island's population with another 16 percent living in Kent County. The remainder of the state's population resides in Washington County (12 percent), Newport County (8 percent) and Bristol County (5 percent). Despite the recent decrease in population, the most recent forecast prepared by the Rhode State Planning Office projects that the state's population will increase to 1.141 million by 2030. Table 17 shows historical and projected population by county.

Table 17: Historical and Projected Population in Rhode Island by County, 1990 – 2030						
Year	**Bristol**	**Kent**	**Newport**	**Providence**	**Washington**	**Total**
1990	48,859	161,135	87,194	596,270	110,006	1,003,464
2000	50,648	167,090	85,433	621,602	123,546	1,048,319
2005	51,166	168,895	85,998	628,617	127,765	1,062,441
2008	49,838	168,058	80,478	626,150	126,264	1,050,788
2010	51,596	170,396	86,470	634,457	131,280	1,074,199
2015	52,241	172,648	87,174	643,208	136,542	1,091,813
2020	52,961	175,158	87,960	652,970	142,415	1,111,464
2025	53,577	177,306	88,632	661,312	147,433	1,128,260
2030	54,026	178,874	89,125	667,414	151,104	1,140,543

Source: Rhode Island Statewide Planning Office

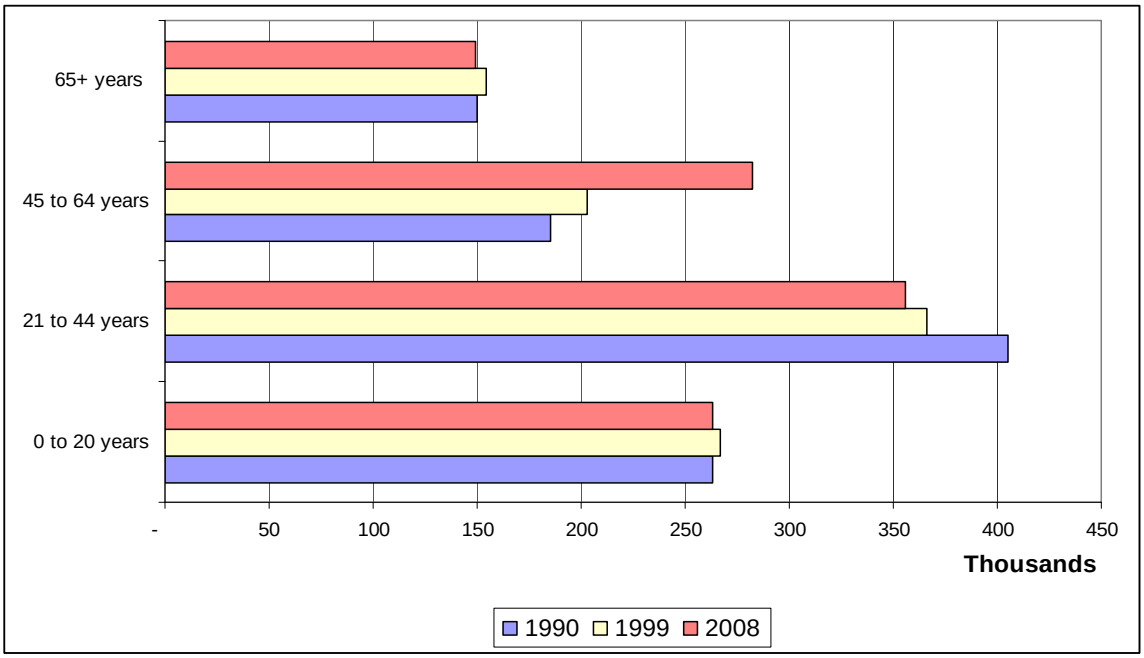
Table 18 and Table 19 provide the year over year absolute and average annual percent growth for the Rhode Island Counties, respectively.

Table 18: Historical and Projected Population Growth in RI by County, 1990 – 2030						
Year	**Bristol**	**Kent**	**Newport**	**Providence**	**Washington**	**Total**
90-00	1,789	5,955	-1,761	25,332	13,540	44,855
00-05	518	1,805	565	7,015	4,219	14,122
05-08	-1,328	-837	-5,520	-2,467	-1,501	-11,653
08-10	1,758	2,338	5,992	8,307	5,016	23,411
10-15	645	2,252	704	8,751	5,262	17,614
15-20	720	2,510	786	9,762	5,873	19,651
20-25	616	2,148	672	8,342	5,018	16,796
25-30	449	1,568	493	6,102	3,671	12,283
08-30	4,188	10,816	8,647	41,264	24,840	89,755

Table 19: Historical and Projected Population Average Annual Percent Growth in RI by County, 1990 – 2030						
Year	**Bristol**	**Kent**	**Newport**	**Providence**	**Washington**	**Total**
90-00	0.4%	0.4%	-0.2%	0.4%	1.2%	0.4%
00-05	0.2%	0.2%	0.1%	0.2%	0.7%	0.3%
05-08	-0.9%	-0.2%	-2.2%	-0.1%	-0.4%	-0.4%
08-10	1.7%	0.7%	3.7%	0.7%	2.0%	1.1%
10-15	0.2%	0.3%	0.2%	0.3%	0.8%	0.3%
15-20	0.3%	0.3%	0.2%	0.3%	0.8%	0.4%
20-25	0.2%	0.2%	0.2%	0.3%	0.7%	0.3%
25-30	0.2%	0.2%	0.1%	0.2%	0.5%	0.2%
08-30	0.4%	0.3%	0.5%	0.3%	0.8%	0.4%

From 1990 to 2008, the median age of the state's population increased from 33.8 years to 38.8 years. The increase in the median age can largely be attributed to the growth in the 45 to 64 age group, which increased by 53 percent during this period. The 45 to 64 age group, which accounted for 18.4 percent of total statewide population in 1990, increased to 26.9 percent of total population in 2008. In contrast, the number of Rhode Island residents in the 20 to 44 age group has decreased by -12.2 percent since 1990. By 2008, the 20 to 44 age group accounted for 33.9 percent of total population, down from 40.4 percent in 1990. Figure 33 summarizes the distribution of Rhode Island's population by age group. This is significant for long term traffic forecasting efforts because of trip making characteristics by age presented earlier in Figure 28, where motorists' vehicle miles traveled peaks in their 30's. As the aging trend continues in Rhode Island, it is predicted that VMT will flatten.

Figure 33: RI Population Distribution by Age, 1990 – 2008



Source: US Census Bureau

From 1990 to 2005, Newport County, the site of the Newport Pell Bridge, experienced a net decrease of 6,700 residents or roughly negative 7.7 percent. Notwithstanding, the Rhode Island State Planning Office projects that Newport County will add 8,600 residents by 2030. From 2005 to 2008, the distribution of population within Newport County has followed statewide trends as the median age increased by 2.1 years from 41.4 years to 43.5 years. Moreover, the 44 to 64 age group and the 65+ age group increased by 4.6 percent and 11.7 percent, respectively.

Within the larger region which includes Connecticut, Rhode Island, and the metropolitan Boston area in Massachusetts, total population increased from 8.34 million in 1990 to 8.98 million in 2005. This represents an annual average growth rate of 0.48 percent. Table 20 summarizes the historical and

forecast population increases in Rhode Island, Connecticut, and the Boston metropolitan area. By 2030, total population in these states is expected to increase to approximately 9.6 million. Table 21 and Table 22 provide the absolute growth and average annual percent growth between the years, respectively. To note in Table 22 is the lowering of already modest historical growth rates.

Table 20: Historical and Projected Population in Rhode Island and in Adjacent States, 1990 – 2030

Year	Rhode Island	Metro Boston	Connecticut	Total
1990	1,003,464	4,056,947	3,287,116	8,347,527
2000	1,048,319	4,309,456	3,408,029	8,765,804
2005	1,062,441	4,418,117	3,494,925	8,975,483
2010	1,074,199	4,526,777	3,534,086	9,135,062
2015	1,091,813	4,599,150	3,573,885	9,264,848
2020	1,111,464	4,671,523	3,622,774	9,405,761
2025	1,128,260	4,723,543	3,669,990	9,521,793
2030	1,140,543	4,775,562	3,702,400	9,618,505

Sources: U.S. Census Bureau, RI Statewide Planning Office, University of Connecticut, (UCONN), and Boston Metropolitan Area Planning Council (MAPC)

Table 21 :Historical and Projected Population Growth in RI and in Adjacent States, 1990 – 2030

Year	Rhode Island	Metro Boston	Connecticut	Total
90-00	44,855	252,509	120,913	418,277
00-05	14,122	108,661	86,896	209,679
05-10	11,758	108,660	39,161	159,579
10-15	17,614	72,373	39,799	129,786
15-20	19,651	72,373	48,889	140,913
20-25	16,796	52,020	47,216	116,032
25-30	12,283	52,019	32,410	96,712

Table 22: Historical and Projected Population Average Annual Percent Growth in RI and in Adjacent States, 1990 – 2030

Year	Rhode Island	Metro Boston	Connecticut	Total
90-00	0.4%	0.6%	0.4%	0.5%
00-05	0.3%	0.5%	0.5%	0.5%
05-10	0.2%	0.5%	0.2%	0.4%
10-15	0.3%	0.3%	0.2%	0.3%
15-20	0.4%	0.3%	0.3%	0.3%
20-25	0.3%	0.2%	0.3%	0.2%
25-30	0.2%	0.2%	0.2%	0.2%

3.2.5 Employment Trends

In 2008, the largest industrial sectors in Rhode Island were educational and health care services (26.3 percent of total employment), manufacturing (12.4 percent), retail trade (11.1 percent), arts, entertainment, recreation, accommodation, and food services (10.1 percent), professional services (9.9 percent), and financial services (7.6 percent). The single largest employer was the state government, which accounted for nearly 16,000 jobs or about 3 percent of total statewide employment. The next largest employer was Lifespan, which operates 6 hospitals in the Providence area and 2 hospitals in Newport County. Table 23 summarizes the fifteen largest employers in Rhode Island.

Table 23: Largest 15 Employers in Rhode Island, 2008

Employer	Employment	Headquarters	Industry
Rhode Island State Government	15,978	Providence, RI	Government
Lifespan	11,772	Providence, RI	Health
U.S. Government	9,700	Washington, DC	Government
Roman Catholic Diocese of Providence	6,200	Providence, RI	Religion
Care New England	6,193	Providence, RI	Health
CVS	5,984	Woonsocket, RI	Retail Trade
Citizens Financial Group. Inc.	5,500	Scotland, UK	Financial Services
Brown University	4,877	Providence, RI	Education
Stop & Shop Supermarket Co.	4,385	Quincy, MA	Retail Services
Bank of America	4,000	Charlotte, NC	Financial Services
Rhode Island ARC	2,851	Cranston, RI	Health
University of Rhode Island	2,545	S. Kingstown, RI	Education
Fidelity Investments	2,300	Boston, MA	Financial Services
General Dynamics Corp.	2,143	Falls Church, CA	Manufacturing
Wal-Mart	2,084	Bentonville, AR	Retail Trade

Source: Rhode Island Economic Development Corporation (RIEDC), December 2008

From 2000 to 2007, total statewide employment increased by nearly 22,000 jobs, representing annual average increase of 0.59 percent during this period. Despite the recession that took hold during the earlier part of this decade, employment increased from 2001 to 2003. Although total statewide employment decreased slightly in 2004, it rebounded the following year and continued to increase through 2007. However, the current recession, which started in late 2007, has had a significant impact on employment in Rhode Island. From the start of the recession through August 2009, an estimated 36,650 jobs have been lost statewide. Total employment in August 2009 remains below 2000 levels. Table 24 summarizes historical employment by county.

Table 24: Total Employment by RI County, 2000 – August 2009						
Year	**Bristol**	**Kent**	**Newport**	**Providence**	**Washington**	**Total**
2000	25,853	89,172	43,290	295,688	66,756	520,759
2001	25,799	89,217	42,843	295,725	67,094	520,678
2002	26,344	89,706	42,918	298,537	68,215	525,720
2003	26,506	91,140	43,165	303,219	69,236	533,266
2004	26,477	89,721	42,113	299,341	68,395	526,047
2005	26,875	91,278	42,318	303,801	69,652	533,924
2006	27,274	92,687	42,531	309,288	70,852	542,632
2007	26,363	92,771	43,247	309,259	70,930	542,570
2008	25,411	89,421	41,686	298,092	68,616	523,226
8/2009	24,522	86,295	40,228	287,672	67,203	505,920
Job Losses Since 2007	-1,841	-6,476	-3,019	-21,587	-3,727	-36,650

Source: Bureau of Labor Statistics (BLS)

Due to the large number of jobs losses, Rhode Island has one of the highest unemployment rates in the United States. Prior to the start of the recession, the 2007 unemployment rate in Rhode Island was 5.2. By August 2009, the statewide unemployment rate has more than doubled, increasing to 12.6 percent. Employment losses have occurred in all five counties. In August 2009, the unemployment rate ranged from 9.7 percent in Washington County to 13.8 percent in Providence County. The most recent forecasts prepared by the Rhode Island Budget Office anticipate that employment will continue to decrease through 2009 and in 2010. However, total employment is expected to increase by 0.7 percent in 2011 and continue to increase from 2012 through 2014. In contrast, the unemployment rate in New England and in the United States in August 2009 was 8.5 percent and 9.6 percent, respectively. Table 25 summarizes projected employment growth rates for Rhode Island from 2009 to 2014.

Table 25: Forecast Change in RI Employment, FY09 – FY 2014						
Year	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Employment Growth Rate	-2.8%	-0.9%	0.7%	1.3%	1.5%	1.1%

Source: Rhode Island Budget Office, November 2008

3.2.6 Wages and Income

In 2008, the median household income in Rhode Island was $55,701, which was the 14th highest median household income in the United States. From 2002 to 2008, median household income increased by 2.87 percent in real terms. Moreover, per capita income was approximately $29,011 in 2008. Personal income, which is the sum of wages and salaries, rents, capital gains, interest, dividends, and personal transfers, has increased by roughly 3 to 5 percent each year since 2002. Despite the current economic downturn, personal income increased by 2.7 percent in 2008. Table 26

summarizes the annual increase in personal income, per capita income, and median household income in Rhode Island from 2002 to 2008.

Table 26: Per Capita and Median Household Income in RI, 2002 – 2008

Year	2002	2003	2004	2005	2006	2007	2008
Personal Income (%)	3.6%	4.3%	5.0%	2.8%	5.3%	5.2%	2.7%
Per Capita Income	24,484	24,669	25,087	27,217	25,937	27,777	29,011
Median Household Income	45,634	48,854	48,722	51,458	51,814	53,568	55,701

Sources: U.S. Census Bureau

Using forecasts prepared by the Rhode Island Budget Office, personal income is projected to increase by 1.3 percent in 2009, 2.6 percent in 2010, and continue to increase by over 4.5 percent from 2011 through 2014. Moreover, the Rhode Island Budget Office anticipates that wages and salaries will increase by a 0.8 percent in 2009, 0.7 percent in 2010, and 2.9 percent in 2011. Table 27 summarizes the state's forecasts for personal income as well as wages & salaries from 2009 through 2014.

Table 27: Forecast Change in RI Income, FY09 – FY 2014

Year	2009	2010	2011	2012	2013	2014
Personal Income (%)	1.3%	2.6%	4.5%	4.8%	4.6%	3.2%
Wages & Salaries (%)	0.8%	0.7%	2.9%	4.2%	4.1%	2.8

Source: Rhode Island Budget Office, November 2008

3.2.7 Households

Based on the data assembled by the Rhode Island Statewide Planning Office, the total number of households in Rhode Island increased from 408,424 in 2000 to 430,970 in 2007. This translates into an average annual increase of 0.77 percent. During this period, average household size decreased from 2.57 persons to 2.48 persons. The Rhode Island Statewide Planning Office forecasts that the total number of households will increase to 440,602 by 2010 and 505,627 by 2030. By 2030, average household size is expected to decrease to 2.26 persons. Table 28 summarizes historical and forecast household data.

Table 28: Historical and Forecast Number of Households in RI, 2000 – 2030		
Year	**Households**	**Household Size**
2000	408,424	2.57
2003	418,131	2.53
2005	424,558	2.50
2007	430,970	2.48
2010	440,602	2.44
2015	456,287	2.39
2020	473,449	2.35
2025	490,149	2.30
2030	505,627	2.26

Source: Rhode Island Statewide Planning Office

3.2.8 Vehicle Ownership

In 2007, there were nearly 700,000 vehicles registered in the state of Rhode Island. From 2000 to 2007, approximately 41,192 additional vehicles were registered in the state, representing an average of 5,900 vehicles per annum. During this period, vehicle registration increased at an average annual rate of 0.87 percent. The Rhode Island Statewide Planning Office forecasts that the total number of registered vehicles will increase to 838,803 by 2030, representing an annual average growth rate of 0.79 percent. From 2000 to 2030, the number of vehicles per household is estimated to remain fairly static, slightly increasing from 1.61 to 1.66. Table 29 summarizes historical and forecast vehicle ownership in Rhode Island.

Table 29: Historical and Forecast Vehicle Ownership in RI, 2000 – 2030		
Year	**Rhode Island**	**Vehicles/Household**
2000	658,520	1.61
2003	676,165	1.62
2005	687,954	1.62
2007	699,712	1.62
2010	717,385	1.63
2015	746,484	1.64
2020	778,355	1.64
2025	809,596	1.65
2030	838,803	1.66

Source: Rhode Island Statewide Planning Office

3.2.9 Commuting Patterns

According to the U. S. Census Bureau, approximately 81 percent of Rhode Island residents commuted in a single occupancy vehicle (SOV) in 2008. During this period, another 8 percent carpooled, 4 percent worked from home, 3 percent walked, and another 3 percent used public transportation. It should be noted that the number of commuters who work from home increased

from 12,000 to 19,000 from 2002 to 2008. Average commuting time is typically between 22 to 23 minutes. Table 30 summarizes historical commuting patterns by transportation mode from 2002 to 2008.

Table 30: Rhode Island Commuting Patterns, 2002 – 2008

	2002	2003	2004	2005	2006	2007	2008
Workers 16 yrs. +	495,494	502,797	492,837	500,588	514,823	502,606	509,180
Car, truck, or van: drove alone	80.45%	83.08%	79.20%	79.33%	81.09%	80.70%	80.80%
Car, truck, or van: carpooled	7.65%	8.10%	8.96%	8.68%	8.86%	8.80%	8.00%
Public transportation	2.30%	1.69%	2.10%	2.58%	2.64%	2.70%	2.70%
Walked	1.68%	1.58%	1.63%	2.47%	3.00%	3.40%	3.10%
Other means	1.70%	0.96%	1.08%	1.48%	1.76%	1.20%	1.70%
Worked at home	2.46%	2.25%	2.75%	2.70%	2.65%	3.30%	3.70%
Mean travel time to work (minutes)	22.2	21.8	23.1	22.7	22.3	23	23.1

Source: US Census Bureau

The majority of Rhode Island residents, 91.7 percent, commuted within the state in 2000, the most recent year that this data is available. The remaining 8.3 percent of Rhode Island commuters work out-of-state in Boston or nearby suburbs; Worcester, Massachusetts; Hartford, Connecticut or New London County, Connecticut. Less than 1 percent of Rhode Island residents commuted to states other than Rhode Island, Massachusetts, or Connecticut.

3.2.10 Economic Development

In order to spur economic activity and reduce unemployment, the state government has identified the following long-term economic objectives: (i) the development and continued operation of fully serviced industrial sites; (ii) the reuse of industrial facilities in the central cities; (iii) capital improvements for pollution abatement; and (iv) the expansion of resource-based industries, particularly tourism, marine shipping, and fishing. In addition, the RI Statewide Planning Office has established the goals of creating 34,200 new jobs by 2020, encourage sustainable industrial and commercial development, and maintain a business environment conducive to the growth of suitable industry and commerce.

3.2.11 Travel and Tourism

Tourism is an important industry in Rhode Island, accounting for $1.87 billion economic output or 4.5 percent of Gross State Product (GSP) in 2007. Tourist attractions within Rhode Island include beaches, historical sites, gambling, water recreation, and outdoor activities. Average expenditures per visitor in 2007 were estimated to be $384. During that same year, the tourism industry provided 40,635 jobs as well as $1.13 billion in wage and salaries. From 2005 to 2007, the number of total

visitors to Rhode Island remained relatively stable at nearly 8 million visitors. Table 31 summarizes the size and estimated economic impact of the tourism industry in Rhode Island.

Table 31: Estimated Impact of the Tourism Industry in RI, 2005 to 2007

	2005	2006	2007
# Business Visitors (Millions)	1.7	1.7	1.7
# Leisure Visitors (Millions)	6.1	6.1	6.2
# Total Visitors (Millions)	7.8	7.8	7.9
Output ($ Billions)	N/A	1.78	1.87
Wages & Salaries ($ Billions)	N/A	1.08	1.13
Employment	N/A	40,297	40,635

Source: Rhode Island Tourism Division

3.2.12 Newport County

Newport County, located adjacent to Narragansett Bay, includes the cities of Newport, Portsmouth, and Middletown located on Aquidneck Island, which can be accessed by the Newport Pell Bridge from Jamestown as well as the Mt. Hope Bridge and Sakonnet River Bridge along the northern end of the island. The county also includes the cities of Jamestown, Tiverton, and Little Compton on the mainland. In addition to the bridges, the Rhode Island Public Transit Authority (RIPTA) also provides trolley service, and seasonal ferry service from Providence to Newport. The tourism industry is an important component of the local economy. Attractions include historical mansions, yachting, music and film festivals and the International Tennis Hall of Fame and Museum.

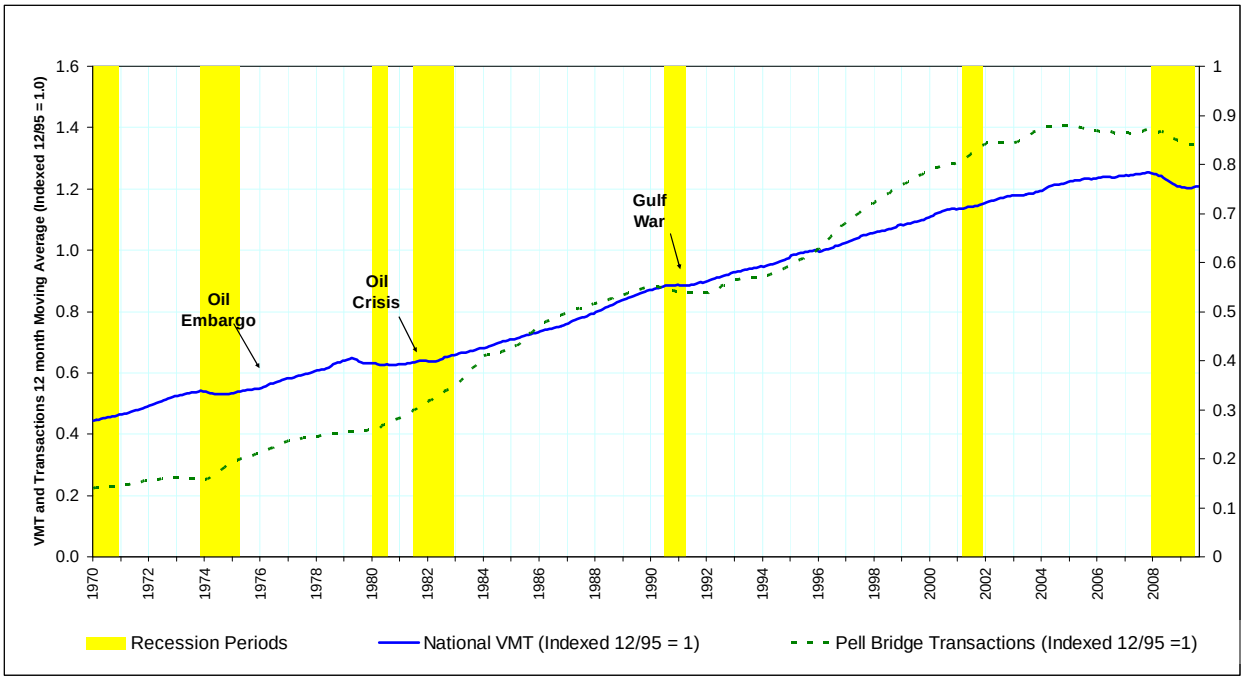
In 2008, Newport County had a total population of approximately 80,000. There are approximately 1,200 businesses that operate in Newport County, most of which are small businesses. Defense, retail trade, and tourism are the leading industries in Newport County. The largest single employer is the Naval Undersea Warfare Center, which employs approximately 2,700 employees. The second and third largest employers are the Newport Hospital and the City of Newport, which each have approximately 800 employees. As part of efforts to encourage economic development, the state government is planning to undertake $1.8 million in infrastructure improvements for the Aquidneck Corporate Park. The facility supports industrial activities related to the defense, marine environmental and manufacturing industries. The proposed improvements are expected to create or preserve 292 jobs in and around the City of Middletown.

3.3 Nationwide Historical Traffic and Economic Recessions

The government has declared that the United States was in a recession from December 2007 through October 2009. This recession is reflected in all transportation and economic indicators, but is seen most clearly in the number of vehicle-miles traveled (VMT) on highways. This is explicitly visible in Figure 34, annual VMT (a 12-month moving total) for the years 1970 through 2009 which shows

the flattening of the VMT curve around 2005 with a significant drop as of late 2007. In addition to national VMT, annual transactions for the Newport Pell Bridge are shown to understand the correlation between national and local trends. Both trend lines are indexed such that the 12-month moving average for December 1995 is equal to 1.0. Growth is similar for both indices, leveling off in 2005 and decreasing in 2007. Overall the trends are similar apart from two time periods when growth on the Newport Pell Bridge outpaced national VMT, the early 1980's and from 1995 to 2003. Additionally the past recessions are highlighted to show the impact on VMT during these periods. There is a generally leveling of traffic during these periods which was analyzed in more detail in this section.

Figure 34: Annual VMT and Pell Bridge Traffic 1970-2009 (12-month moving total)



Jacobs has analyzed the current economic situation as it compares to major historical recessions in the past century. The most significant declines in historical VMT were four (4) points in time: during World War II, the 1970s and 1980s oil crises and in the early 1990s during the Gulf War. In 2006 and 2007, VMT remained the same as late 2005 levels, and in by March 2008 it began to decline. In November 2008 traffic was 3.6 percent below the previous year's, and by the summer of 2009 some improvement was seen; July 2009 numbers were down just 1.7% from the previous year. As stated previously, some of this improvement may be due to the large reduction in gas process from the summer of 2008 to the summer of 2009.

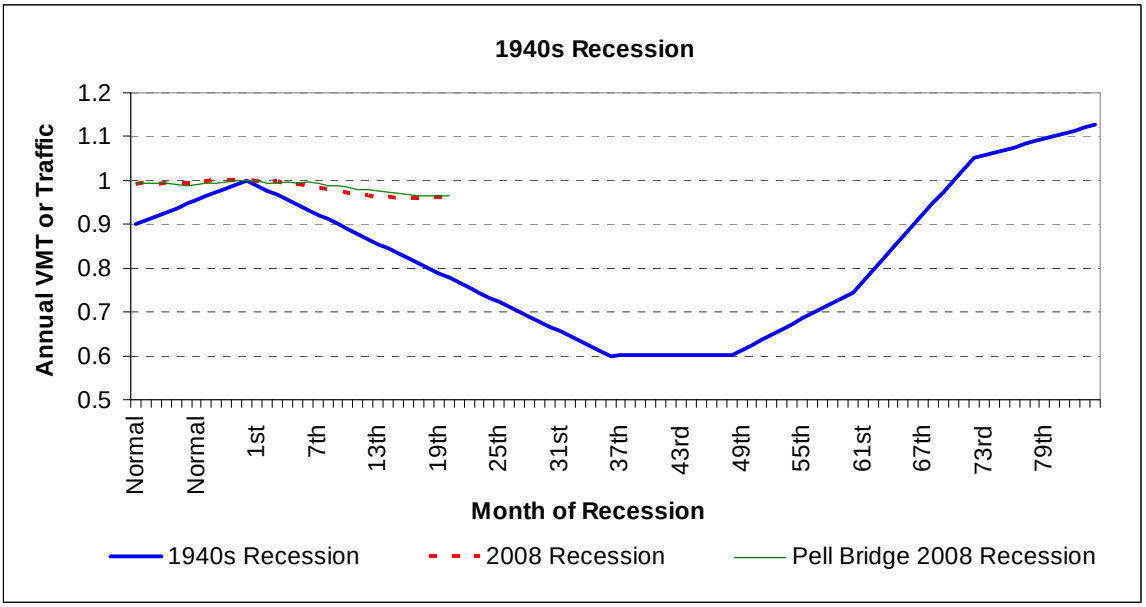
Annual VMT data were compiled from 1940 to July 2009. A review of VMT from 2006 to 2009 revealed that nationwide VMT was rising until October 2007 when it reached its peak and then began

to decline. December 2007 officially marked the beginning of the first recession of the twenty-first century. The 2008 recession VMT is illustrated as the dashed trend line on Figure 35 through Figure 38, indexed from November 2007. The Newport Pell Bridge transactions are indexed to its pre-recession peak in October 2007, as represented by the green line.

3.3.1 Comparative Recession Analysis

The recession of 1940 occurred in the middle of World War II. Figure 35 demonstrates how the escalation of the War corresponds with the rapid decline in traffic as it reached a sharp peak in the beginning of 1941 before experiencing a steep decline to early 1944. At this point traffic is seen to have reached a plateau at approximately 200 billion vehicle-miles traveled. This is almost five (5) years of declining traffic levels until late 1945 when VMT began to rise again.

Figure 35: VMT of the 1940s Recession vs. VMT of the 2008 Recession, Indexed



Again, the above figure and subsequent figures show the vehicle-miles traveled indexed to the first month of each recession, and the Newport Pell Bridge traffic was indexed to its pre-recession peak in October 2007, for comparative purposes.

Both the recessions in the 1970s and 1980s were partially due to the oil crises. Figure 36 shows that traffic began to decline in late 1973. Two (2) years later traffic started to rise making this recession's recovery shorter in comparison to both the 1940s and what later came in the early 1980s.

Figure 36: VMT of the 1970s Recession vs. VMT of the 2008 Recession, Indexed

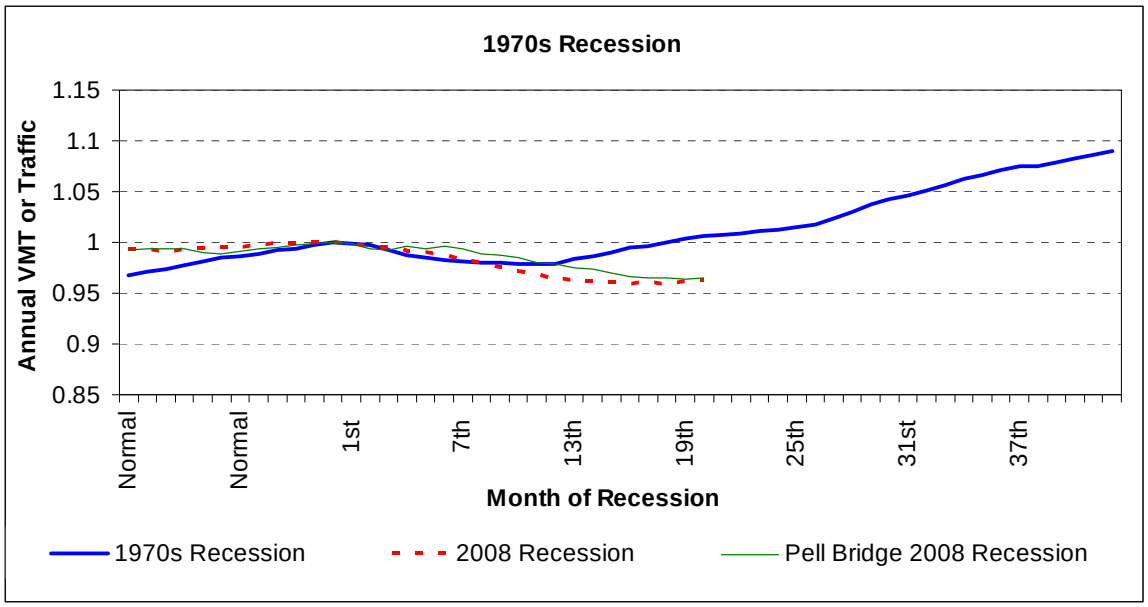
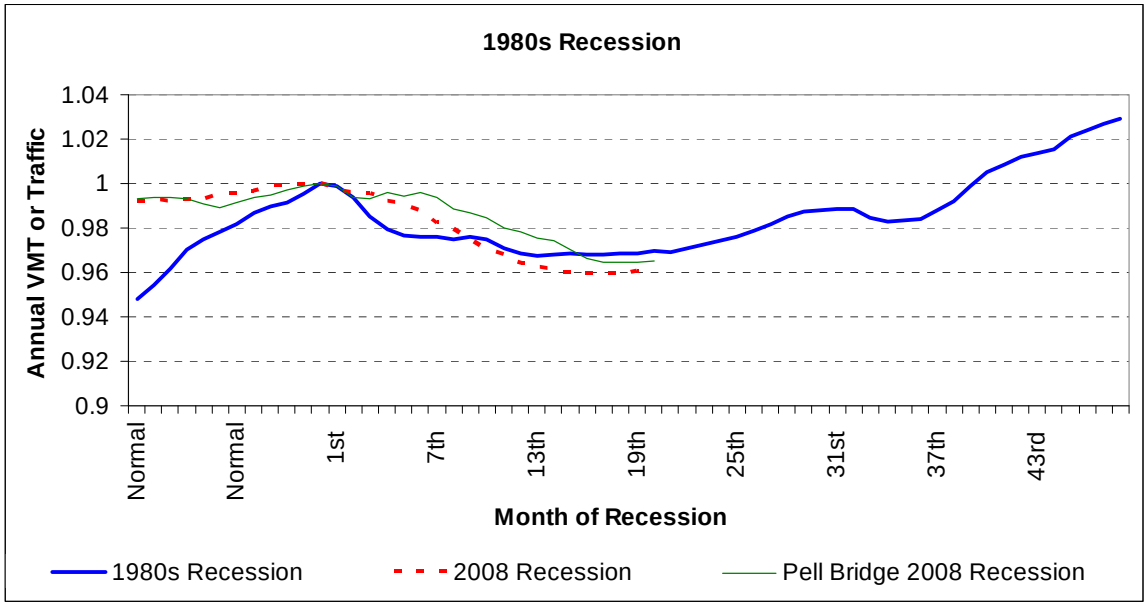


Figure 37 illustrates the recession of the early 1980s. Traffic reached its peak in the beginning of 1979 at approximately 1,569 billion vehicle miles traveled, and quickly fell to its low point in 1980. Traffic saw a slight increase in early 1980, but proceeded to decline further for almost two (2) years. This further decline created more volatility in traffic causing a longer and more gradual visible ascent to recovery.

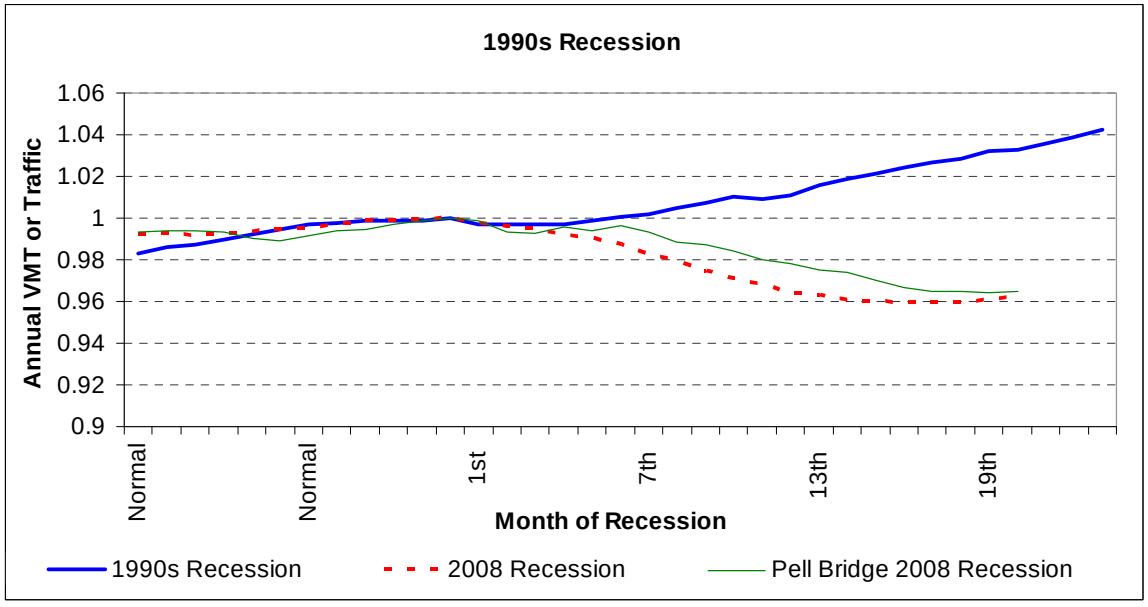
In both Figure 36 and Figure 37, the 2008 VMT trend line continues to decline at the point where it crosses the lowest, respective, historical point in VMT. This is most visible in Figure 36 but Figure 37 illustrates a constant decline in VMT in the 1980s, which can be more easily compared to the current 2008 trend line because of their parallel steady decreases in traffic.

Figure 37: VMT of the 1980s Recession vs. VMT of the 2008 Recession, Indexed



Most recently, the current economic situation can be looked at in comparison to the last recession that occurred in the 1990s, shown in Figure 38. This recession coincided with the Gulf War. The early 1990s VMT decline was small in that it lasted less than a year before returning to its previous traffic level in June 1991. The 2008 recession traffic reduction appears to be far greater than that in the early 1990s.

Figure 38: VMT of the 1990s Recession vs. VMT of the 2008 Recession, Indexed



3.3.2 Newport Pell Bridge Forecasted Traffic and Its Relationship to Economic Recessions

Based on the recessionary analysis in the previous section, it is the opinion of Jacobs that the current economic recession is best compared to the 1980s recession. Note that it took over five (5) years for traffic to return to the pre-recession levels during that period. This comparison will serve as the baseline recession to model for the 2009 long-term projections.

Clearly, there is a great deal of uncertainty in the type of recovery the economy can expect. Based upon the most recent reports of economic recovery without job recovery for at least the next two years coupled with the higher than average unemployment levels in Rhode Island a slow recovery is reasonable to expect for the State and for the Newport Pell Bridge.

4. Roadway Network

The following sections discuss the network of roadways servicing the region around the Newport Pell Bridge, as well as planned improvements in the region.

4.1 Rhode Island

The State of Rhode Island is served by Interstates 95, 195, and 295. Arterials connecting these major roadways with local routes to Aquidneck Island include Route 4 and Route 24. From these, traffic is channeled onto Aquidneck Island via Route 138 (Newport Pell and Sakonnet Bridges) and Route 114 (Mount Hope Bridge). A map of the area is shown in Figure 39.

Figure 39: Area Map

Source: Google Maps

In 2005, Rhode Island had a total of 6,556 centerline road miles within the state. This includes approximately 1,222 miles of roadway in rural areas and 5,194 miles of roadway in urban areas.

Within the total road network, there are approximately 156 centerline road miles of interstate highways, freeways, and expressways. The Rhode Island Department of Transportation (RIDOT) also includes 141.1 miles of ramps and U-turns within its classification of the statewide road network. Table 32 summarizes the highway network in the Rhode Island.

Table 32: Rhode Island Roadway Functional Classification

	Rural		Urban		Other		Total	
	Miles	% Total	Miles	% Total	Miles	% Total	Miles	% Total
Interstate	21.4	0.3%	49.8	0.8%	N/A	0.0	71.2	1.1%
Principal Arterial	48.0	0.7%	85.4	1.3%	N/A	0.0	133.4	2.0%
Minor Arterial	65.1	1.0%	357.6	5.5%	N/A	0.0	422.7	6.4%
Major Collector	145.3	2.2%	361.1	5.5%	N/A	0.0	506.4	7.7%
Minor Collector	125.0	1.9%	608.9	9.3%	N/A	0.0	733.9	11.2%
Off System (Local)	817.0	12.5%	3.731.0	56.9%	N/A	0.0	4548.0	69.4%
Ramps and U-turns	N/A	0.0	N/A	0.0	141.1	2.2%	141.1	2.2%
Total	**1221.8**	**18.6%**	**5,193.7**	**79.2%**	**141.1**	**2.2%**	**6,556.7**	100.0%

Sources: The Rhode Island Statewide Planning Office in conjunction with Rhode Island Department of Transportation (RIDOT) and the Federal Highway Administration

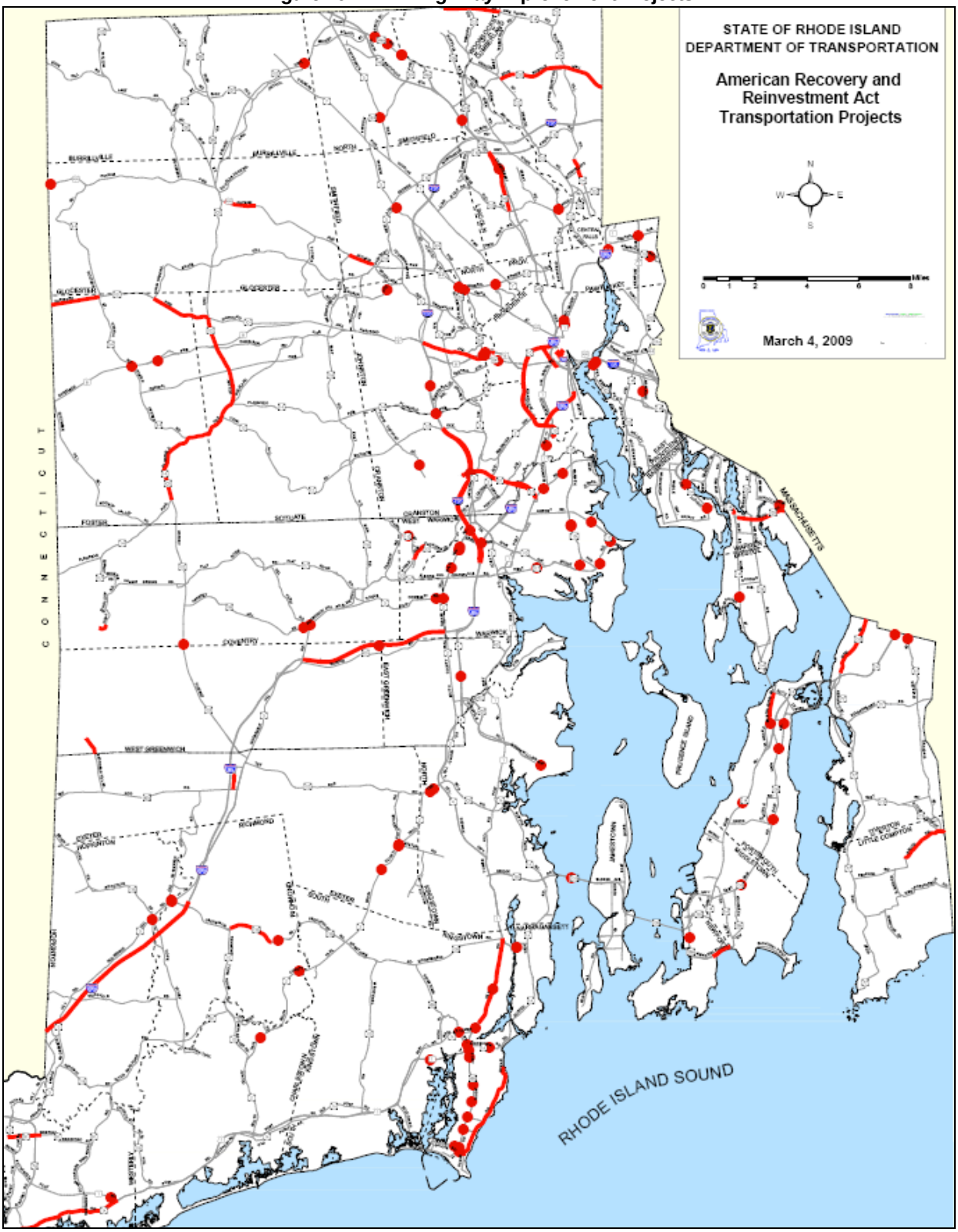
The state government has recently embarked on a number of highway and transit projects throughout the state, which are being partially or fully funded by the American Recovery and Reinvestment Act (ARRA) of 2009. ARRA is providing $137.0 million for 50 highway and road projects as well as $29.5 million in grants to the Rhode Island Public Transit Authority (RIPTA). Figure 40 summarizes the highway projects that will be undertaken from 2009 to 2011. Planned highway and road projects within Newport County receiving ARRA funding include the following:

- improvements to East Main Road (Rte 138) and Bristol Ferry Road (Rte 114) in Portsmouth;
- improvements to Memorial Boulevard (Rte 138A) in Newport;
- Main Road in Tiverton (Rte 138); and
- the Jamestown Bridge (Rte 138).

None of these projects are expected to have any significant impact on Newport Pell Bridge traffic and toll revenues.

In addition to the projects highlighted in Figure 40, the Rhode Island State Model (RISM) shows a number of other highway network improvements planned for the region. Most of these are related to improvements in ramp design or highway alignment, and although the projects will have an impact to other regions of the state (such as the re-alignment of I-195 in Providence) there is no foreseeable impact on the Newport Pell Bridge traffic or toll revenues. However, there is one ongoing project that may have an impact on Newport Pell Bridge – the replacement of the Sakonnet Bridge.

Figure 40: ARRA Highway Improvement Projects



Source: Rhode Island Department of Transportation (RIDOT)

4.2 Sakonnet River Bridge Replacement

The state has commissioned a new bridge to replace the deteriorating Sakonnet River Bridge. The new Sakonnet Bridge is expected to open in Fiscal Year 2012. Until then, various disruptions in bridge operations have affected the circulation of traffic in the area.

During recent years, the Sakonnet Bridge has experienced numerous lane closures for the purpose of bridge inspections. Lane closures were intermittent, but the majority of lane closures took place on weekdays between the hours of 9 AM and 3 PM. During these lane closures, it is possible that a small amount of passenger car traffic rerouted over the Mount Hope and Newport Pell Bridges. However, since these lane closures primarily took place during non-peak travel periods, and the closest alternative is the Mount Hope Bridge, it is unlikely that a significant number of passenger cars traveled the extra distance to the Newport Pell Bridge.

As a result of bridge inspections, several restrictions have been placed on the existing Sakonnet Bridge as safety measures. Beginning in summer 2007, the weight restriction for the bridge was lowered from 38 tons to 22 tons. During the summer of 2008, the weight restriction was reduced again to 18 tons, and in addition vehicles with trailers or more than three axles were prohibited from using the bridge. Until the new bridge is completed, these prohibited vehicles (mainly commercial vehicles) must instead use the Mount Hope or Newport Pell Bridges to travel to and from the Aquidneck Island. When the new Sakonnet Bridge opens, some of these temporarily displaced commercial vehicles are likely to return to using the Sakonnet Bridge rather than continuing to use the Mount Hope or Newport Pell Bridges. This change in commercial traffic patterns has had a small impact on the Newport Pell Bridge traffic and toll revenue in recent years; while there has been no significant change in commercial volumes during the Sakonnet construction (truck traffic has decreased nationwide due to the recession), the average number of axles on Newport Pell Bridge trucks has increased in the past several years. After the new Sakonnet Bridge opens, it is expected that the average axles per truck on the Newport Pell Bridge will decline to pre-construction levels, affecting truck toll revenues.

Since the new Sakonnet Bridge will have the same number of lanes as the current Sakonnet Bridge, no noticeable change in traffic volumes is anticipated.

5. Traffic and Toll Revenue Forecasts

For the purpose of developing traffic and toll revenue projections for the Newport Pell Bridge, Jacobs developed a spreadsheet model using the knowledge gained from analysis of historical transaction and toll revenue data, regional traffic data, socioeconomic data and economic projections. This chapter presents the Newport Pell Bridge traffic and toll revenue forecasts, the methodology and assumptions used to make these forecasts, and a sensitivity analysis of certain key assumptions.

5.1 Toll Rates

This section presents the Newport Pell Bridge toll rate assumptions and compares current rates to other bridge and tunnel crossings in the northeast.

5.1.1 Future Toll Rate Assumptions

Transaction and toll revenue projections were developed over 30 years for two future toll rate alternatives:

- A "Base Case" which assumes that tolls will not change beyond the rates implemented on September 8, 2009
- A "Toll Increase Alternative" which assumes tolls will increase roughly 10 percent every three years, with the next increase occurring in September 2012 (FY 2013)

For the Toll Increase Alternative, the future year tolls are presented in Table 33. It was assumed that the rate change would occur in September of the fiscal years shown. The new discount plan prices are shown in the bottom two rows of the table; these are further discussed on page 76.

Table 33: Future Toll Rates Assumed with Toll Increase Alternative

	2009	2010	2013	2016	2019	2022	2025	2028	2031	2034	2037
Two-Axle Vehicles at $2.00 (cash)	$ 2.00	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle Vehicles at $2.00 (E-Z)	$ 2.00	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle AWAY Vehicles at $1.75 (E-Z)	$ 1.75	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle HOME Vehicles at $1.75 (E-Z)	$ 1.75	$ 4.00	$ 4.50	$ 5.00	$ 5.50	$ 6.00	$ 6.50	$ 7.00	$ 7.50	$ 8.00	$ 8.50
Two-Axle HOME Vehicles at $0.91 (E-Z)	$ 0.91	$ 0.91	$ 1.00	$ 1.25	$ 1.50	$ 1.50	$ 1.75	$ 1.75	$ 1.75	$ 2.00	$ 2.00
Two-Axle HOME Vehicles at $.83 (E-Z)	$ 0.83	$ 0.83	$ 1.00	$ 1.25	$ 1.50	$ 1.50	$ 1.75	$ 1.75	$ 1.75	$ 2.00	$ 2.00
3+ Axle Vehicles (cash) - PER AXLE	$ 1.00	$ 2.00	$ 2.25	$ 2.50	$ 2.75	$ 3.00	$ 3.25	$ 3.50	$ 3.75	$ 4.00	$ 4.25
3+ Axle Vehicles (E-Z) - PER AXLE	$ 1.00	$ 2.00	$ 2.25	$ 2.50	$ 2.75	$ 3.00	$ 3.25	$ 3.50	$ 3.75	$ 4.00	$ 4.25
*NEW High Frequency 30-Day Unlimited**	$ -	$ 40	$ 48	$ 60	$ 72	$ 72	$ 84	$ 84	$ 84	$ 96	$ 96
*NEW Low Frequency 6 trip/30 Days***	$ -	$ 5.46	$ 6.58	$ 8.22	$ 9.87	$ 9.87	$ 11.51	$ 11.51	$ 11.51	$ 13.16	$ 13.16

* Commuter Rebate Plan discontinued as of February 15, 2010

** New commuter plans begin February 15, 2010

5.1.2 Reasonableness of Tolls / Comparison to Other Facilities

Figure 41 compares current round trip passenger car toll rates on toll crossings throughout the northeast that accept E-ZPass. Both one-way and two-way facilities are represented; for facilities that toll in both directions the amount shown in the Figure is the one-way toll multiplied by two. For toll facilities that offer E-ZPass discounts, the figure shows the incremental amount added to the E-ZPass toll rate to determine the total cash toll rate. The Newport Pell Bridge, with a one-way full-

price toll of $4.00 (round trip = $8.00), has a full-price, round-trip toll similar to or lower than the nine major crossings in New York City; however, Newport Pell's reduced E-ZPass rate of $0.83 per crossing ($1.66 round trip) for residents and $0.91 per crossing ($1.82 round trip) for frequent customers is only a fraction of the discounted rates on the NYC crossings and is on par with the discounted rates at other E-ZPass crossings. Overall, it can be said that the Newport Pell Bridge passenger car toll rates are reasonable compared to rates at other E-ZPass toll facilities.

Figure 41: Comparison of Current Round Trip Passenger Car Tolls on E-ZPass Crossings

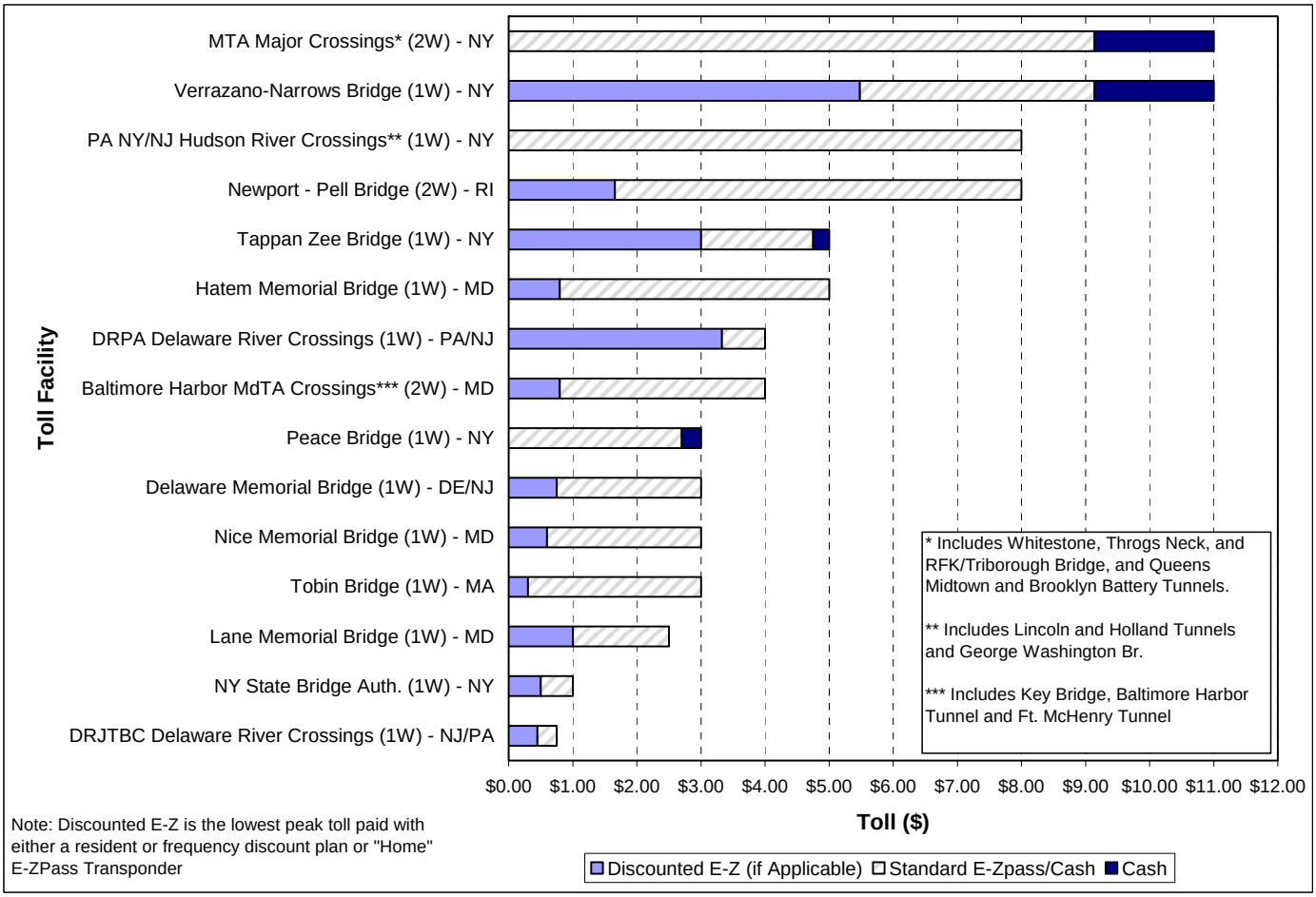
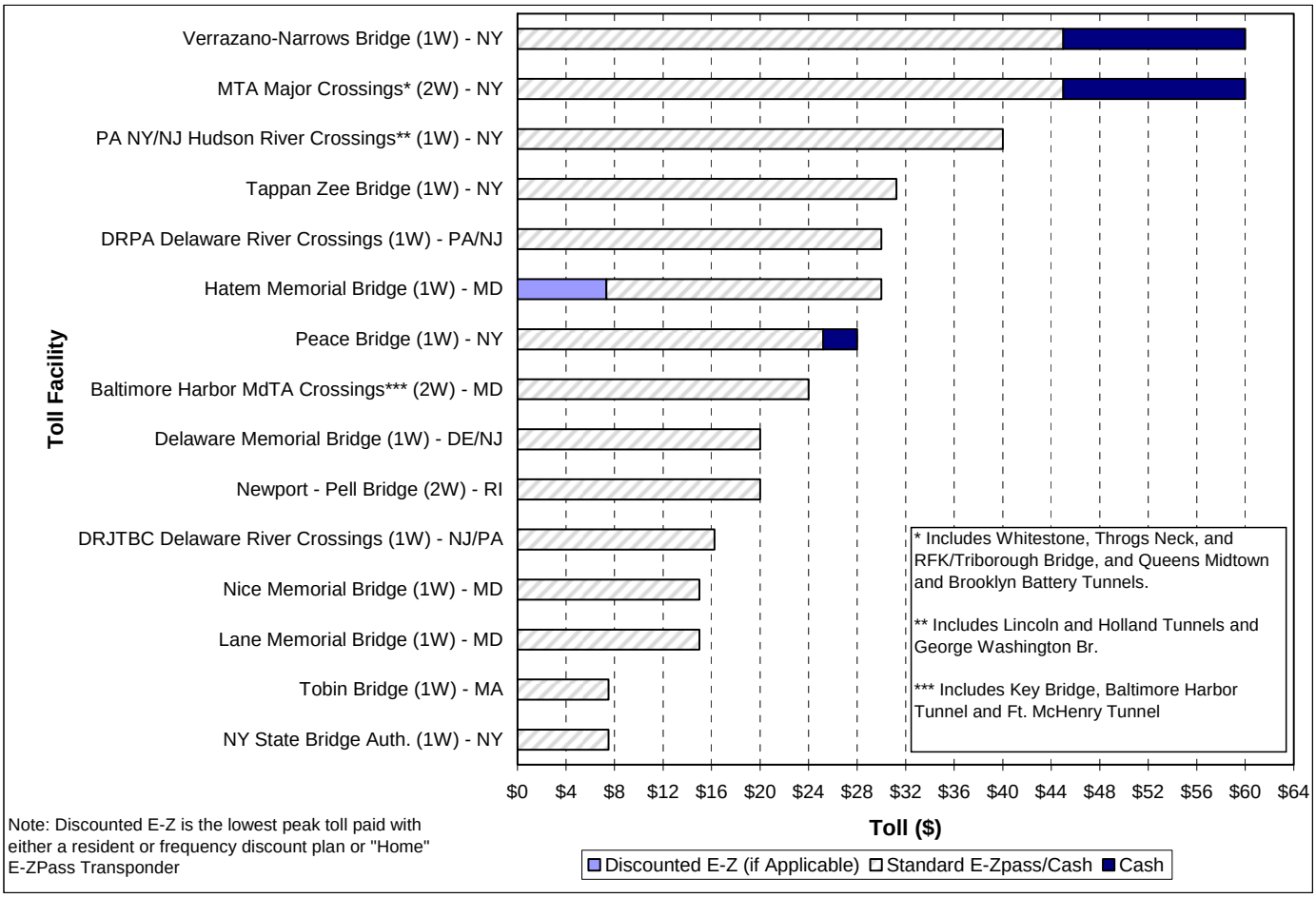


Figure 42 shows a similar comparison for five-axle vehicles. The Newport Pell Bridge charges $10.00 in each direction, or $20 for a round trip. This is on the lower end of five-axle tolls charged among various E-Pass crossings. It can be said that the Newport Pell Bridge commercial vehicle toll rates are reasonable compared to other E-ZPass toll facilities.

Figure 42: Comparison of Current Round Trip 5-Axle Vehicle Tolls on E-ZPass Crossings



5.2 Traffic and Toll Revenue Model: Methodology and Assumptions

The traffic and toll revenue model with resulting transaction and toll revenue estimates and projections were made for the Newport Pell Bridge based on data through August 2009, including the full 2009 fiscal year. As part of the analysis a traffic and toll revenue model for the existing RITBA toll facility was developed. This model has the ability to adjust projections based on various economic parameters and toll rates and is segmented by the type of vehicle and payment type.

The spreadsheet-based traffic and toll revenue model uses actual traffic and to revenue data provided by RITBA as its foundation. These data were provided by month from FY06 through August 2009 and annually since tolling began in 1970. The model forecasts transactions by the following vehicle and payment classes:

- Two-Axle Vehicles paying with Cash (Class 1&2)
- Two-Axle Trucks paying with E-ZPass (Class 2)

- Two-Axle AWAY E-ZPass Vehicles (Class 1)
- Two-Axle HOME E-ZPass Non-Discounted Vehicles (Class 1)
- Two-Axle HOME E-ZPass Commuter Plan Discounted Vehicles (Class 1)
- Two-Axle HOME E-ZPass Resident Rate Vehicles (Class 1)
- 3+ Axle Vehicles paying with Cash
- 3+ Axle Vehicles paying with E-ZPass

Passenger car and commercial vehicle transactions were forecasted based upon historical and projected correlation with the Gross Domestic Product and Industrial Production Index, respectively. The forecasts by vehicle type were then disaggregated into applicable payment categories based upon historical and projected participation trends. The forecasted transactions by payment type were then converted to toll revenue estimates based on the historical and projected average toll by the respective vehicle and payment classes.

The model adjusted the forecasts to acknowledge the toll increase for all cash customers and E-ZPass customers without a RI Resident or Commuter Plan, effective September 8, 2009. In addition, since E-ZPass is new to the facility (it began in December 2008), it was necessary to develop a Pro Forma estimate for FY 2009, on which to build all future year traffic forecasts. This Pro Forma estimate assumed no tokens were in use and E-ZPass was ramped up for the full fiscal year. Since the toll increases on the Newport Pell Bridge were too recent to determine the effects on traffic, data from other New England facilities was used to estimate the impact of the toll increase, and a reduction of transactions was imposed to the post-toll increase traffic of FY10.

Additionally, the model takes into account the slight changes that RITBA made to the Commuter Plan effective October 2009. Under the new plan, commuters now only need 26 trips in a 30-day period to qualify for the frequency rebate, whereas earlier they needed to make 31 trips. Also, by February 15, 2010 this Commuter Plan will be replaced by two new commuter frequency discount plans, one covering unlimited trips in a 30-day period and the other charging one price that covers six trips in a 30-day period. These changes, further described on page 76, were reflected in the model.

The following sections present further detail on the growth assumptions, vehicle types and payment methods, and toll elasticity.

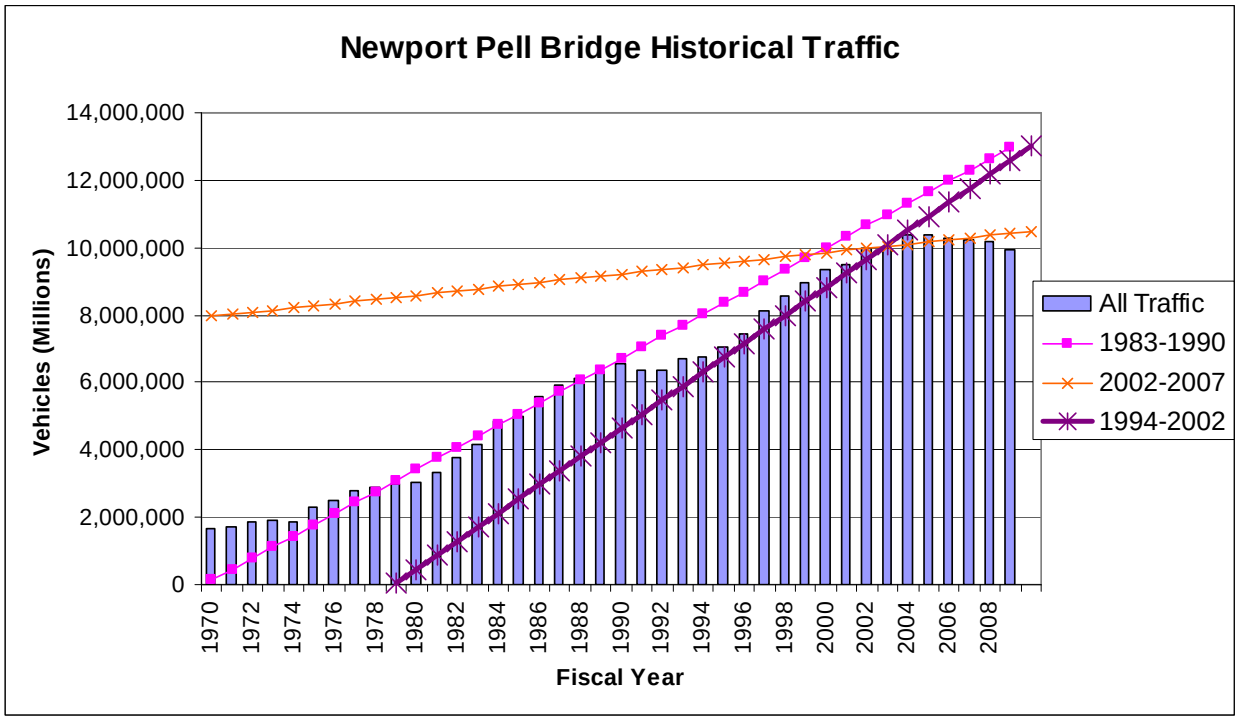
5.2.1 Growth Assumptions

The following sections discuss the assumptions made regarding future traffic growth on the Newport Pell Bridge.

5.2.1.1 Recent Recessionary Effects

In Section 3.3.2 the estimated impact of and subsequent emergence from the recession was discussed in the context of traffic levels on the Newport Pell Bridge. It is anticipated that traffic levels will stop decreasing in 2010 with very modest gains during the recovery. These modest gains are not based upon a return to previous growth levels experienced in the 80's and 90's, but instead those experienced recently so that they represent the "new normal" introduced in the discussion of national VMT. Figure 43 presents an analysis of historical traffic on the Newport Pell Bridge. The blue columns represent traffic levels by fiscal year from 1970 to 2009. The various lines represent the growth rate over the time period identified.

Figure 43: Newport Pell Bridge Historical Traffic Analysis



The purpose of the analysis is to show the past does not necessarily reflect the future. The recent leveling off of national VMT that predated increased gas prices and the economic recession discussed in a previous section is consistent with Figure 43. The new long term growth rates should be more reflective of the recent past (2002 to 2007), rather than the much higher growth rates of earlier decades, especially as the area served by the Newport Pell Bridge matures.

5.2.1.2 Correlation to Economic Factors

The first step in developing the traffic and toll revenue projections was to develop a base of FY 1988 through FY 2009 toll transactions. Historical car toll transaction growth was then correlated to gross domestic product (GDP) and historical truck growth was correlated to increases in the U.S. total industrial production (IPI).

Future car and truck toll transactions were projected separately by applying the historical correlations to projected GDP and total IPI growth rates estimated by industry experts in the *Blue Chip Economic Indicators*. FY 2010 toll transaction growth was further reduced due to the recent dampening effects of the economic downturn on travel. In addition, it is expected in the following years that overall traffic growth will not be as high as it has been throughout the 1990s through the first half of this decade, due to such factors as Baby Boomers retiring and driving less and new technology making road travel less necessary (as discussed in the socioeconomic chapter of this report). Therefore, some dampening was also applied to traffic growth rates over the long term.

5.2.2 Vehicle Types and Payment Methods

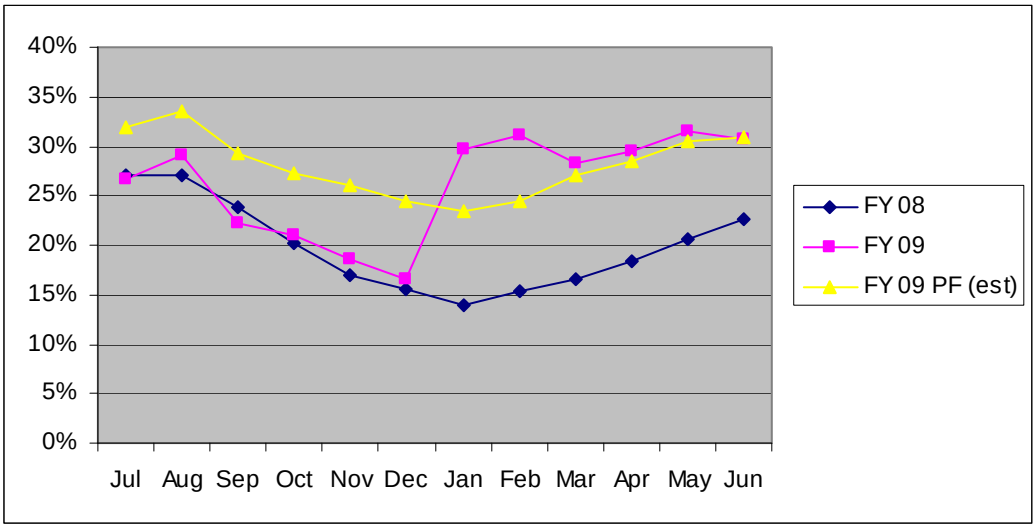
Because E-ZPass is fairly new to the Newport Pell Bridge, and also because different payment methods and vehicle types react differently to toll increases, it was necessary to make a number of assumptions regarding the split of traffic among the different types of customers and payment methods.

Since all future year forecasts are grown from a FY 2009 base, which only had half a year of E-ZPass, it was first necessary to develop estimates for a FY 2009 Pro Forma scenario – one where E-ZPass was assumed to be in use, and tokens eliminated, for the full fiscal year.

5.2.2.1 Fiscal Year 2009 Pro Forma Assumptions

As shown in Figure 44, while tokens were in use, the percent of passenger cars paying with cash ranged from about 25 to 30 percent at the height of the summer to 15 percent or less in the winter months. When E-ZPass was implemented, cash-paying traffic shot up to more than 30 percent during the winter months. As more and more people acquired a transponder, the FY 2009 share paying by cash normalized at a line parallel to the FY 2008 share. Using this data, Jacobs estimated the share paying by cash if E-ZPass had been in use, without tokens, for the full year. This estimate, represented by the yellow line on Figure 44, runs parallel to the actual cash shares for FY 08 and 09.

Figure 44: Two-Axle Vehicles Paying with Cash, Actual FY 2008-2009 and Estimated FY 2009 Pro Forma



Records of E-ZPass transactions from recent months were queried and summarized to determine what percent of two-axle E-ZPass transactions were made by Home (RI) versus Away (other) E-ZPass. Home E-ZPass transactions were split among standard (then $1.75), qualifying Commuter Plan ($0.91) and RI Resident Plan ($0.83) trips. Class 2 E-ZPass transactions (two-axle trucks, then $2.00) were also included in these splits. Vehicles with three or more axles were split by cash or E-ZPass, though they are charged the same toll regardless of payment method. While data was only available for the spring and summer months, the transaction splits during the fall months were estimated to be similar to the spring, and the winter months were estimated to lean more towards Resident and Commuter Plan trips. Table 34 shows the monthly estimates of how two-axle cash, two axle E-ZPass, and three or more axle vehicle transactions were split among payment types.

Table 34: Estimated Splits Among Payment and Vehicle Types, FY 2009 Pro Forma

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Two-Axle Vehicles at $2.00 (cash)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Two-Axle Vehicles at $2.00 (E-Z)	3.1%	3.1%	3.0%	2.9%	2.8%	2.7%	2.7%	2.7%	2.8%	2.9%	3.0%	3.1%
Two-Axle AWAY Vehicles at $1.75 (E-Z)	20.0%	21.6%	18.5%	12.7%	8.3%	8.3%	8.3%	8.2%	9.3%	12.7%	15.3%	15.9%
Two-Axle HOME Vehicles at $1.75 (E-Z)	2.0%	2.0%	2.0%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	2.0%	2.0%
Two-Axle HOME Vehicles at $0.91 (E-Z)	0.9%	0.9%	1.0%	1.2%	1.5%	1.6%	1.7%	1.7%	1.5%	1.2%	1.2%	1.0%
Two-Axle HOME Vehicles at $.83 (E-Z)	74.0%	72.5%	75.5%	81.2%	85.5%	85.5%	85.5%	85.5%	84.5%	81.2%	78.5%	78.0%
3+ Axle Vehicles (cash)	31%	30%	28%	27%	25%	22%	22%	23%	24%	28%	36%	34%
3+ Axle Vehicles (E-Z)	69%	70%	72%	73%	75%	78%	78%	77%	76%	72%	64%	66%

Both the estimated splits shown in Figure 44 and Table 34 were used to break down the FY 09 monthly traffic into the eight vehicle/payment types. Since some vehicles were paying more once E-ZPass was implemented, the July through December numbers were slightly reduced. Using estimated toll elasticities, it was determined that the effect of the E-ZPass implementation, with its higher rates for some vehicles, was a loss of about 70,000 vehicles in FY 2009, a 0.7 percent overall traffic loss.

By multiplying the estimated 2009 Pro Forma transactions by the FY 2009 toll rates (post-E-ZPass implementation), the FY 2009 Pro Forma revenue was determined. A gain of 3.8 percent, or about $0.4 million, was estimated with the Pro Forma scenario. Table 35 compares the FY 2009 Pro Forma traffic and revenue to the actual FY 2009 traffic and revenue.

Table 35: FY 2009 Pro Forma vs. Actual Traffic and Revenue

	Annual Transactions (000s)	Annual Revenue (Ms)
FY 2009 Actual	9,941	$12.7
FY 2009 Pro Forma	9,871	$13.1
Difference	*-0.7%*	*3.8%*

Jacobs used the 2009 Pro Forma numbers as a base from which future year traffic forecasts were developed.

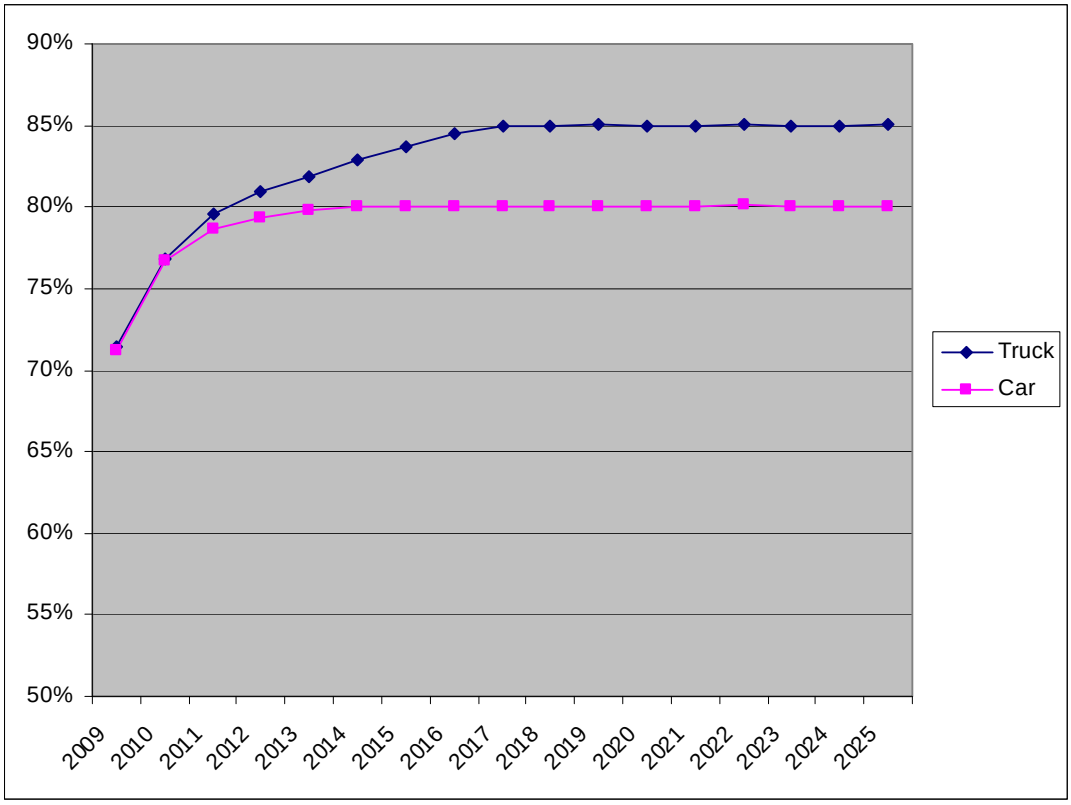
5.2.2.2 Future Year E-ZPass Assumptions

Because of the disparity in toll prices among passenger cars – which has grown larger recently with the September 8 toll increase – it is prudent to look at certain customer characteristics to most accurately split vehicles into the correct payment categories in the future year forecasts. This section presents Jacobs' assumptions for the future E-ZPass market share, plus the split among various E-ZPass plans.

5.2.2.2.1 Future E-ZPass Market Share

In August 2009, 67 percent of two-axle vehicles and 77 percent of vehicles with three or more axles (typically trucks) that cross the Newport Pell Bridge paid with E-ZPass. The Pro Forma estimate for FY 2009 was about 72 percent of trucks and cars. These market shares are expected to grow at a diminishing rate to an estimated maximum of 80 percent for cars and 85 percent for trucks, as shown in Figure 45 (because trucks represent a very small percentage of traffic, the overall E-ZPass share would look similar to the share for cars). These shares are commensurate with other toll facilities in the Northeast that have been studied by Jacobs.

Figure 45: Estimated Future E-ZPass Market Share on Newport Pell Bridge



5.2.2.2.2 Shift to Current Discounted RI E-ZPass Plans

Data was obtained on E-ZPass transponder usage, home agency, state of residence, and toll rates paid over recent months prior to the toll increase in order to estimate the future split among the various E-ZPass plans. Jacobs summarized the frequency of use of Home and Away E-ZPass tags to determine if there were customers eligible to take part in one of the RI E-ZPass discount programs that were currently paying full price. With the doubling of tolls, it is likely that a number of these would switch to a discounted RI E-ZPass, leading to lower toll revenues.

Table 36 shows the estimated annual percent of full-price transactions per category that are made by customers with 26 or more Newport Pell Bridge crossings per month, and therefore could be part of the current RI E-ZPass Commuter Plan. Seven percent of "Away" tagholders and 28 percent of "Home" tagholders currently paying full price were found to be eligible for the plan. The table also shows an estimate of the percent of these eligible trips assumed to switch to the program in FY 2010 and FY 2011. From Jacobs' experience, even with significant savings, not many tagholders acquire a second E-ZPass transponder to get a discount; it is much less likely that these "Away" tagholders versus "Home" tagholders will make the switch. Overall, it was estimated that 25,000 vehicle trips would switch from their current full-price E-ZPass plan to the RI Commuter Plan in FY 2010, and an additional 12,000 would make the switch in FY 2011. After that point, it is assumed that no additional shift would occur.

Table 36: Estimates of Full-Price Vehicles Moving to Commuter Plan (in thousands)

	Starting Trips	Trips Eligible for Commuter Plan		% of These Assumed to Move to Commuter Plan		Annual Transactions Assumed to Move to Commuter Plan (000s)	
		%	Vehicle Trips (000s)	in FY10	in FY11	in FY10	in FY11
Two-Axle AWAY Vehicles Paying Full Price	928	7%	65	**10%**	**5%**	7	3
Two-Axle HOME Vehicles Paying Full Price	132	28%	37	**50%**	**25%**	18	9
Total	1,061		102			25	12

Additionally, there are a number of Rhode Island residents that are paying full price for their trip when they could be part of the Resident Discount Plan. As shown in Table 37, 35 percent of Home E-ZPass trips that are paying full price are made by customers that have Rhode Island addresses attached to their account, and therefore are likely eligible for the resident discount. To estimate how many of these Home vehicle trips would move to the Resident Plan, Jacobs also looked at how frequently these customers crossed the Newport Pell Bridge. Some 68 percent of trips were made by customers with 20 or more trips a month, which, at $4.00 per trip currently, is a needless loss of significant money for the customer. Spurred on by the recent toll increase, it was estimated that half of these relatively frequent users would make the switch to the Resident Plan in FY 2010. Overall, this calculates to 11.9 percent of full-price Home E-ZPass vehicles making the switch, or 16,000 trips annually. A lesser amount – 3,000 – was estimated to make this switch in FY 2011.

Rhode Island-based vehicles with an Away (i.e., non-Rhode Island) E-ZPass are much more difficult to estimate, since their address information is kept private from RITBA. Overall it was assumed that five percent of these transactions (46,000) would move to the RI Resident Discount category in FY 2010, and 1.3 percent (10,000) would move in FY 2011.

Table 37: Estimates of Full-Price Vehicles Moving to Resident Discount Plan (in thousands)

	Starting Trips	% with RI Address	% of These Making 20+ Trips/Mo.	% of These Assumed to Move to RI Resident E-Z	Overall % Assumed to Move to Resident Plan		Annual Transactions Assumed to Move to Resident Plan (000s)	
					in FY10	in FY11	in FY10	in FY11
Two-Axle AWAY Vehicles Paying Full Price	928	*50%*	*50%*	20%	**5.0%**	**1.3%**	46	11
Two-Axle HOME Vehicles Paying Full Price	132	35%	68%	50%	**11.9%**	**3.0%**	16	3
Total	1,061						62	13

Note: Address information for Away vehicles are kept private, therefore, the shaded numbers are a very rough estimate that lean toward a conservative revenue forecast.

5.2.2.2.3 New Commuter E-ZPass Plans

The RITBA board approved two new commuter plans in late December, 2009. While the $0.83 resident plan will continue to be in effect, the two new plans will replace the current $0.91/26 trips commuter rebate plan. The two new plans, slated to take effect on February 15, 2010, are as follows:

- A "low-frequency plan", which requires at least 6 trips per 30-day period to get the full discount. For a prepaid price of $5.46, participating customers who travel 6 times within 30

days would in essence be paying $5.46/6 = $0.91 per trip. Participants who cross the bridge only twice in 30 days would also be charged $5.46 ($5.45/2 = $2.73/trip), however, this is still an advantage over the current $4.00 toll per trip without a discount plan. After the sixth trip or the 30th day – whichever comes first – the cycle will restart, with another $5.46 charged upfront to their account, with 30 days to make another 6 trips.

- A "high-frequency plan" where $40 prepaid will cover unlimited trips within a 30-day period. With one of these plans, only very frequent users would benefit; the average cost per trip would be as shown in Table 38.

Table 38: Price per Crossing with New $40 Unlimited Trips Commuter Plan

Crossings / 30 Days	Round Trips / 30 Days	Price Per Crossing
40	20	$ 1.00
44	22	$ 0.91
48	24	$ 0.83
50	25	$ 0.80
55	27.5	$ 0.73
60	30	$ 0.66

As seen in the table, the more trips that are made, the less the cost per trip. With a $40 plan, participants with at least 22 round trips per 30 days would pay the current commuter plan toll of $0.91. Customers that make fewer trips than this can still pay the discounted toll of $0.91 if they were to participate in the 6 trip/30 day plan. However, there are apt to be some commuters who will choose the unlimited trips plan due to its simplicity, without worrying about how many trips they are actually making; this plan may promote some additional travel to and from Aquidneck Island by regular bridge users. Jacobs does not believe that the potential to switch the E-ZPass tag between cars will be enough of an issue to make any revenue difference.

Jacobs developed a model to shift RI E-ZPass customers based on their monthly trip frequency into the plan that benefits them most. The model used actual Newport Pell Bridge passenger car E-ZPass frequency data from October 2009 (an average month). The following assumptions were included:

- Only Class 1 vehicles (passenger cars) with a RI E-ZPass tag could be eligible for the plan.
- Every "Home" (i.e., RI E-ZPass) customer that would benefit from a discount plan would participate in the plan that benefits them most.
- Some "Away" (i.e., Non-RI E-ZPass) tagholders could also benefit from a plan, but they must get a RI tag to participate. Only a certain share of these would actually go out and purchase a RI tag; it is more likely that frequent customers to the Newport Pell Bridge would acquire the RI tag than infrequent customers. We estimated that the following percent of

Away trips that would be eligible for the plan – assuming they got a RI E-ZPass tag – would acquire a RI tag and participate.

Table 39: Percent of Non-Rhode Island E-ZPass Trips Assumed to Switch to RI E-ZPass to be Eligible for New Commuter Discount

Trip Frequency / Month	Percent of Eligible Trips Assumed to Switch to RI E-ZPass
Very Low Freq (1-4 trips/mo)	2%
Low Freq (5-9 trips/mo)	10%
Medium Freq (10-25 trips/mo)	50%
High Freq (26+ trips/mo)	75%

- A toll elasticity of -0.08 was included in the estimates (see page 78 for more explanation of toll elasticity). This was used to adjust the traffic volumes whenever there was a change in toll rate due to implementation of the new plan.
- Since the current commuter rebate plan would be eliminated, these trips would be charged the standard toll of $4.00/trip unless they participated in the new plan.

Jacobs' commuter plan model estimates that the effect of new plans will be a decrease in overall revenue of about 3 to 4 percent.

5.2.2.3 Heavy Vehicles

The truck size restriction on the Sakonnet Bridge due to its reconstruction, as described earlier on page 66, likely caused the average number of axles to increase on the Newport Pell Bridge in recent years. As shown in Table 7 on page 13, the average toll rate – and therefore axle count – for vehicles with three or more axles has increased in recent years. In the forecasts, it was assumed that the axle count will remain at 4.02 - the same as in FY 2009 - until FY 2012, the expected year of completion for the new Sakonnet Bridge, when it is estimated that the Newport Pell Bridge average 3+-axle truck size will be reduced to 3.70 axles. It is assumed that the new Sakonnet River Bridge have truck weight and restrictions similar to the Newport Pell Bridge and Mount Hope Bridges, allowing trucks with three or more axles.

5.2.3 Toll Elasticity

As stated previously, there were no toll increases for nearly 40 years on the Newport Pell Bridge until this past year. The effects of the toll changes due to E-ZPass implementation and the end of tokens in December 2008 and January 2009 are difficult to determine, as this change occurred in the middle of a recession when traffic was declining nationwide. It is still too early to determine the full effects of the September 8, 2009 toll increase. There are differences between September of 2009 and September of 2008 – a large difference in gas prices and a shift in Labor Day – that also make it

difficult to identify the effect of the toll increase alone. Jacobs has recently completed traffic and toll revenue projections for other New England toll facilities; using pre- and post-toll increase data from these facilities, combined with knowledge of how traffic has reacted to toll increases at other locations, Jacobs formulated estimates on how Newport Pell Bridge traffic would change after the September 2009 increase, as well as any future proposed increases.

"Toll elasticity" is a factor that quantifies how traffic reacts to a change in tolls. It is defined as the percent traffic change if there were a 100 percent increase (i.e., a doubling) in toll rates. Jacobs recently completed studies for the New Hampshire Turnpike System and the Massachusetts Turnpike that involved proposed toll changes. Looking at their actual traffic numbers for the year before and after their 2007 and 1990 toll increases, respectively, and removing the effects of background growth, their toll elasticities were calculated to the numbers shown in Table 40; the assumed Newport Pell Bridge toll elasticities are also shown in the table.

Table 40: Actual and Assumed Toll Elasticities

Payment/ Vehicle Type	Actual Toll Elasticity		**Estimated Toll Elasticity**
	New Hampshire Turnpike	Mass Pike	**Newport Pell Bridge**
Auto Cash	-0.19	-0.12	**-0.15**
Auto E-ZPass	+0.03		**-0.08**
Truck Cash	-0.21		**-0.21**
Truck E-ZPass	-0.15		**-0.15**

As the table shows, the New Hampshire toll elasticity is similar – when combined – to the Mass Pike's overall elasticity of -0.12. It also shows that for the New Hampshire Turnpike there was actually a tiny increase in passenger car E-ZPass traffic when the overall tolls were increased; this is likely because all passenger cars with a NH tag receive a 30 percent discount. On the other hand, Newport Pell Bridge users do not receive a discount simply by acquiring a RI tag; they must be residents or frequent users. Therefore, it was assumed they would have a small negative toll elasticity. Passenger car cash elasticity for the Newport Pell Bridge was assumed to be slightly lower (i.e., less elastic) than New Hampshire, as it has a higher share of infrequent trips/vacationers than New Hampshire, who may not know about toll rate increases.

While toll facilities experience a loss in traffic when tolls are increased, some of this lost traffic comes back within a few years. This phenomenon is typically seen on facilities in built-up areas that are no longer experiencing high annual growth rates. Jacobs assumed that half the amount of traffic lost would return gradually over three years after the toll increase year.

Using these factors, it was estimated that 6.6 percent of annual traffic would divert from the Newport Pell Bridge due to the September 8, 2009 toll increase (considering traffic for a full year after the increase, and removing the effects of any other factors, such as background growth or increased E-

ZPass market share). While recent daily numbers may indicate a gain over last year's traffic, this is misleading; the peaking gas prices last summer caused traffic to dip, especially vacation traffic. Therefore, we cannot rely on these early post-toll increase numbers to be indicative of the toll increase's effect on a full year of traffic.

5.3 Traffic and Toll Revenue Forecasts

Newport Pell Bridge transaction and gross toll revenue forecasts are presented in Table 41 for both the Base Case and toll increase scenarios.

Table 41: Newport Pell Bridge Traffic and Gross Toll Revenue Forecasts

Fiscal Year	Base Case*		With Toll Increases**	
	Annual Transactions (000s)	Annual Toll Revenue (Ms)	Annual Transactions (000s)	Annual Toll Revenue (Ms)
2009	9,941	$12.7	9,941	$12.7
2010	9,464	$16.9	9,464	$16.9
2011	9,498	$18.0	9,498	$18.0
2012	9,660	$18.1	9,660	$18.1
2013	9,824	$18.4	9,696	$20.3
2014	9,900	$18.5	9,765	$21.0
2015	9,976	$18.7	9,866	$21.3
2016	10,051	$18.9	9,822	$23.8
2017	10,118	$19.0	9,882	$24.7
2018	10,185	$19.2	9,977	$24.9
2019	10,253	$19.3	9,952	$27.5
2020	10,321	$19.5	10,014	$28.4
2021	10,388	$19.6	10,104	$28.7
2022	10,453	$19.8	10,161	$30.1
2023	10,516	$19.9	10,220	$30.8
2024	10,577	$20.1	10,286	$31.0
2025	10,637	$20.2	10,246	$33.7
2026	10,697	$20.3	10,300	$34.6
2027	10,756	$20.5	10,379	$34.9
2028	10,816	$20.6	10,432	$36.4
2029	10,877	$20.7	10,487	$37.1
2030	10,937	$20.9	10,551	$37.3
2031	10,997	$21.0	10,590	$38.8
2032	11,058	$21.2	10,645	$39.5
2033	11,118	$21.3	10,709	$39.8
2034	11,179	$21.4	10,682	$42.6
2035	11,239	$21.6	10,736	$43.6
2036	11,300	$21.7	10,813	$44.0
2037	11,360	$21.8	10,867	$45.5
2038	11,421	$22.0	10,922	$46.3
2039	11,481	$22.1	10,985	$46.6

** No toll increases beyond the September 8, 2009 (FY 2010) increase*

*** Toll increases every 3rd year after the FY 2010 toll increase*

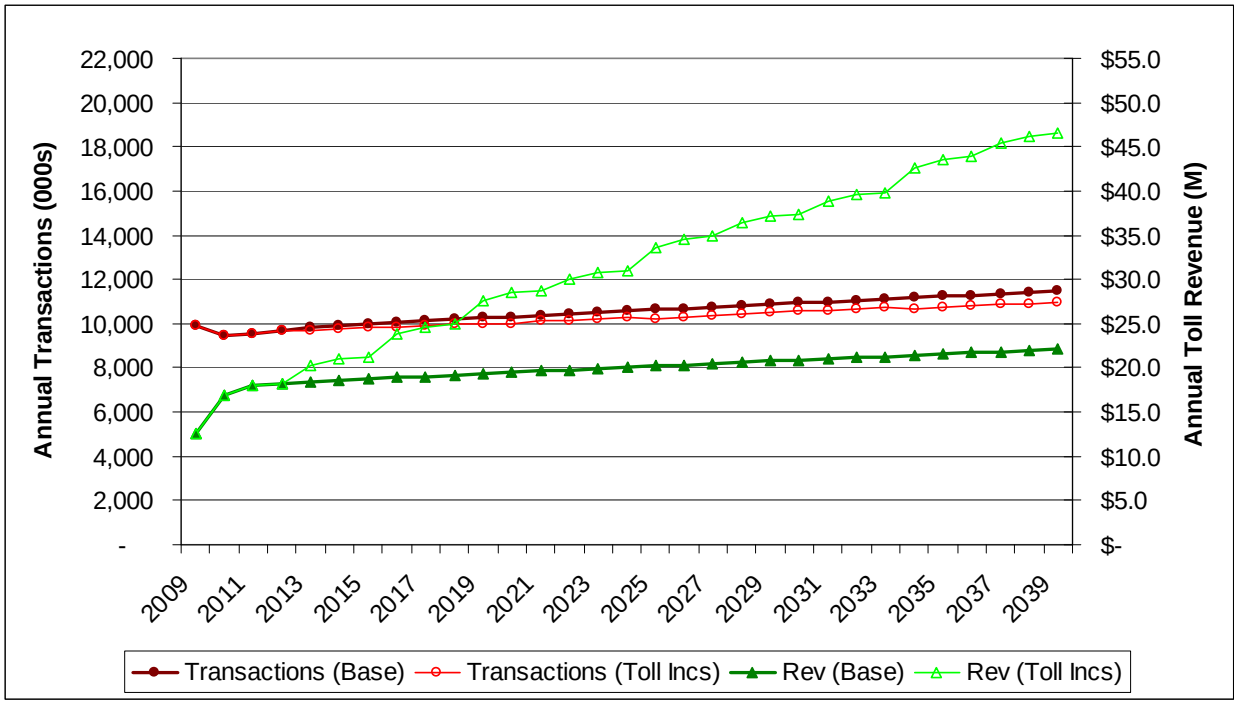
Jacobs is forecasting a decline in tolled traffic for the short-term, resulting from current economic conditions combined with the recent toll increase, with a return to FY 2009 levels not occurring until FY 2015 for the Base Case (FY 2018 for the toll increase case). It is anticipated that the economy and the September 8, 2009 toll increase will continue to be detrimental to transaction levels for FY10, with modest recovery thereafter.

Due to the implementation of the new toll schedule in September 2009, FY10 toll revenue is anticipated to grow 34 percent while the number of toll transactions decreases by 4.8 percent. For the following three years, as some of the traffic that initially left due to the toll increase returns, the average annual growth in transactions and toll revenue is 1.3 percent and 2.9 percent, respectively, assuming Base Case tolls. After this post-toll increase traffic rebound, annual traffic growth is projected to decline from 0.8 percent in 2014 to 0.5 percent in 2032 with the Base Case toll scenario.

For the scenario with toll increases every three years, between FY 2010 and FY 2013 the average annual growth in transactions and revenue is 0.8 percent and 6.3 percent, respectively, mainly due to the FY 2013 toll increase. By the 2030s revenue is expected to be double that of the Base Case scenario.

Figure 46 compares the forecasted toll transactions and revenue on the Newport Pell Bridge for the two different toll scenarios.

Figure 46: Comparison Forecasted Traffic and Toll Revenues



5.4 Sensitivity Analyses

Sensitivity analyses are typically conducted to test the effect of varying key model inputs on gross toll revenues. For the Newport Pell Bridge, three different types of sensitivity analysis were performed: one that changes background growth, one that assumes more or fewer vehicles will pay a discounted toll, and one that assumes different toll elasticity than the Base Case. Fiscal Year 2012 was chosen as the analysis year because (A) it has the same toll revenue for both the Base Case and toll increase scenarios, as the next toll increase in the toll increase scenario is in FY 2013, and (B) with recent events such as the implementation of E-ZPass, the September 2009 toll increase, and the economic downturn, plus the February 15, 2010 commencement of new commuter plans, the sensitivities are most pertinent to the short-term future forecasts.

5.4.1 Background Growth Rates

Background traffic growth rates on the Newport Pell Bridge, as stated earlier in this report, were based on historic correlations of car and truck traffic to GDP and IPI, respectively. Future growth rates combined the correlation factors with the *Blue Chip* forecasts of GDP and IPI. For the FY 2010 Base Case, car traffic was estimated to be flat and truck traffic down 4.6 percent from FY 2009. In FY 2011 and 2012, traffic background growth was expected to return to more normal long-term growth levels for this facility (0.6 to 0.7 percent for cars and 2.5 to 3.1 percent for trucks).

For the upside growth sensitivity case, the most optimistic GDP and IPI forecasts from the January 2010 *Blue Chip Economic Indicators* were used to develop background growth rates. The top ten forecasts for GDP averaged 3.4% growth for 2010 and 3.9% for 2011, while the top ten IPI forecasts averaged 5.8 for 2010 and 6.6 for 2011. The upside background growth rates developed from these numbers were 0.3 to 0.8 percent annual growth for car traffic. For truck traffic, a 2.9 percent loss was used for the upside case in 2010 followed by annual growth of 4.2 and 4.9 percent in 2011 and 2012, respectively.

For the downside case, it was assumed that there would be annual traffic loss similar to what the Newport Pell Bridge experienced between 2005 and 2008: a 0.7 percent annual loss in car traffic and a 0.6% percent annual loss in truck traffic (note that the FY 2010 toll increase would cause additional traffic loss).

Table 42 shows the Base Case, upside and downside background growth assumptions and their resulting gross toll revenue estimates. Assuming the small negative growth rates at the Newport Pell Bridge will continue results in a 2012 annual toll revenue number of $17.5 million, 3.6 percent less than the Base Case toll revenues, while the higher growth assumptions result in 2012 toll revenue of $18.3 million, 0.9 percent above Base Case toll revenues.

Table 42: Background Growth Sensitivity

Case	Background Growth Assumptions	FY 2010	FY 2011	FY 2012	Resulting 2012 Annual Revenue (Ms)	Difference from Base Case
Base Case	Car	0.00%	0.60%	0.70%	$ 18.1	
	Truck	-4.60%	2.50%	3.10%		
Upside Sensitivity: "Higher Growth"	Car	0.30%	0.70%	0.80%	$ 18.3	0.9%
	Truck	-2.90%	4.20%	4.90%		
Downside Sensitivity: "Lower Growth"	Car	-0.70%	-0.70%	-0.70%	$ 17.5	-3.6%
	Truck	-4.60%	-0.60%	-0.60%		

5.4.2 Discounted Traffic Share

As there is a large disparity between full-price and discounted toll rates, accuracy in toll revenue forecasting is highly dependent on estimating the correct share of traffic that will be paying the discounted rate. For this sensitivity test, Jacobs varied the overall E-ZPass market share within reasonable limits, and made high and low estimates of the number of eligible full-price E-ZPass trips that would switch to a RI E-ZPass discount plan to save money. The details of the assumptions and the resulting revenues are shown in Table 43. Combining all the low discount share assumptions, $19.6 million in toll revenues is estimated for FY 2012, 7.8% above the base case forecast. A combination of all the high discounted trip share assumptions produces an estimated $16.2 in toll revenues, 10.7% below the Base Case.

Table 43: Discounted Traffic Share Sensitivity

Case	Estimated 2012 E-ZPass Market Share		Eligible Trips Switching to $0.91 Commuter Plan, FY10		Frequent Users with RI Addresses Switching to Resident Plan, FY 10		Eligible Away E-Zpass Customers Joining New RI Discount Plans*	Resulting 2012 Annual Revenue (Ms)	Difference from Base Case
Base Case	Car	79.4%	Away	10.0%	Away	20.0%	2% to 75%	$ 18.1	
	Truck	80.9%	Home	50.0%	Home	50.0%	based on trip frequency		
Upside Sensitivity: "Low Discounted Trip Share"	Car	75.0%	Away	5.0%	Away	10.0%	0% to 30%	$ 19.6	7.8%
	Truck	75.0%	Home	30.0%	Home	30.0%	based on trip frequency		
Downside Sensitivity: "High Discounted Trip Share"	Car	85.0%	Away	25.0%	Away	50.0%	5% to 90%	$ 16.2	-10.7%
	Truck	85.0%	Home	90.0%	Home	90.0%	based on trip frequency		

* Requires opening a RI E-Zpass account

5.4.3 Toll Elasticity

As seen previously in Table 40, the Base Case toll elasticities range from -0.08 for E-ZPass passenger cars to -0.21 for trucks paying with cash. For the upside sensitivity case, Jacobs cut the toll elasticity in half, meaning that half as much traffic would be lost due to a toll increase. For the downside sensitivity, the toll elasticities were doubled. Results are as shown in Table 44. Halving

the toll elasticity results in a 2012 annual toll revenue number of $18.9 million, 3.9 percent more than the Base Case toll revenues, while doubling the toll elasticity results in 2012 toll revenue of $17.0 million, 6.2 percent less than Base Case toll revenues.

Table 44: Toll Elasticity Sensitivity

Case	Toll Elasticity Assumptions				Resulting 2012 Annual Revenue (Ms)	Difference from Base Case
	2-Axle Cash / 2-Axle Trucks	Car E-ZPass	3+ Axle Cash	3+ Axle E-ZPass		
Base Case	-0.15	-0.08	-0.21	-0.15	$ 18.1	
Upside Sensitivity: "Low Toll Elasticity:	-0.08	-0.04	-0.11	-0.08	$ 18.9	3.9%
Downside Sensitivity: "High Toll Elasticity"	-0.30	-0.16	-0.42	-0.30	$ 17.0	-6.2%

6. Operations and Maintenance Forecasts

This section presents a review of historical and projected RITBA operational expenditures consisting of personnel services costs, insurance costs, repairs and maintenance costs, E-ZPass costs, and other costs for both the Newport Pell and Mount Hope bridges.

6.1 Historical O&M

Historical RITBA operating expenditures are shown below in Table 45.

Table 45: Historical RITBA Operating Expenditures, FY 2000-2009 (in thousands)

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Personnel services	$ 1,395	$ 1,544	$ 1,461	$ 1,556	$ 1,597	$ 1,771	$ 1,671	$ 1,947	$ 1,918	$ 2,548
Insurance	347	352	648	1,011	1,273	1,185	991	1,464	1,281	1,254
Repairs and maintenance	-	-	149	137	101	163	128	750	553	453
E-ZPass	-	-	-	-	-	-	-	-	-	*
Other	760	1,228	1,168	1,022	1,320	1,592	1,258	567	499	1,485
Total Operating expenditures	$ 2,503	$ 3,124	$ 3,426	$ 3,725	$ 4,290	$ 4,711	$ 4,049	$ 4,728	$ 4,252	$ 5,739

Note: Excludes depreciation and environmental remediation as shown in financial statements
** 2009 E-ZPass expenditures have not been separated out; they are included under the other categories.*

The following describes the expense items included under each O&M category.

- **Personnel Services Costs**
  Personnel services costs include salaries, wages, employee benefits, and payroll taxes for all employees, such as federal and state taxes, health and welfare benefits, employee insurance, and pension contributions. All administrative, operations, and maintenance staff including seasonal and part-time labor are projected to increase annually over the forecast period.

- **Insurance Costs**
  Insurance costs include all insurance policies held by the Authority covering the bridges, buildings, property, equipment, as well as other business-related policies.

- **Repairs and Maintenance Costs**
  Maintenance and repair costs covered under this heading include routine maintenance activities conducted by RITBA personnel for projects not included in the current Board-approved Ten Year Renewal and Replacement Plan. RITBA has developed ongoing preventative maintenance programs for both the Newport Pell and Mount Hope Bridges which are proactive in ensuring safety, structural integrity, security and aesthetics of the facilities. These programs have provided an efficient method and a successful process through which these Authority assets are maintained over time.

General maintenance items budgeted for on an annual basis and carried out by Authority staff include such items as preventive maintenance of bridge bearings, repair of potholes on approach roadways, routine inspection of bridge expansion and contraction joints, toll plaza snow removal, painting of bridge rails, signage maintenance on bridges, etc., as well as maintenance expenses for RITBA-owned vehicles and equipment. The Authority contracts with an electrical contractor for routine electrical work which is also included in this category, as are maintenance supplies, spare parts, and uniforms.

- **E-ZPass Costs**
  E-ZPass costs mainly consist of transaction-based processing costs and system maintenance costs, both of which are provided to the Authority through outsourced contracts. The Authority entered into a three-year renewable contract with Affiliated Computer Services (ACS) to process E-ZPass transactions, open and close accounts, maintain the account information database, distribute transponders, resolve disputes and receive and post prepaid toll revenue. The Authority also entered into a contract with Caseta Technologies to implement all of the electronic toll system and to provide ongoing maintenance services into FY 2012. In addition, the Authority must also pay credit card fees and the cost to purchase E-ZPass transponders. The cost of the transponder, however, is passed on to the customer ($20.95 for a typical transponder). Other E-ZPass costs include E-ZPass IAG Subscription fees, trailer expenses to house customer service staff, and postage costs.

- **Other Costs**
  Other costs mainly consist of utilities, professional services costs, and other miscellaneous expenses. Utility costs include electricity, water, telephone, and general office consumables.

  Professional services outsourced by the RITBA include consulting contracts for legal, audit, insurance, marketing, financial, and consulting engineering support. Trustee fees and advertising costs are also included, as is an allocation to the Rhode Island State Police for enforcement.

  Other miscellaneous expenses include travel and meeting expenses, dues and subscription fees, and various office supplies and other miscellaneous expenses. Marketing contributions and Host Community fees are also included in this category.

As seen in Table 45, historical operating costs have generally grown reasonably over time. Significant increases did occur, however, from 2008 to 2009, mostly driven by the implementation of the E-ZPass system. Personnel increases were necessary for customer service activities and other operational requirements. Employee benefits also increased by more than 20 percent over 2008 levels. Professional services expenses were higher in 2009 due to labor contract renegotiations and in response to the class action suit related to the local discount program.

6.2 Forecasted O&M

The recent implementation of E-ZPass has increased overall O&M expenditures; these expenditures will be carried out into the future. Table 46 presents Jacobs' estimates of future E-ZPass costs; it should be noted that while the number of transactions differs between the Base Case and toll increase scenarios analyzed in this study, there is material difference in O&M costs between the two.

The O&M costs are expected to decrease from $2.2 million in FY 2010 to $1.5 million in 2013 due to a reduction in transponder purchases and the reduction in ACS transaction processing costs. RITBA currently pays ACS $0.134 per E-ZPass transaction, but with the terms of the contract this will be reduced to $0.093 by 2013, and further reduced to $0.018 should the number of E-ZPass transactions reach 10 million in a year (note: Newport Pell Bridge E-ZPass transactions are not expected to reach this number for any year in the 30-year forecast).

As E-ZPass customers must purchase their own tag (typically $20.95), RITBA's transponder costs are expected to equal their transponder revenues (see "Net Revenues" on page 91). Table 46 also shows that every eight years starting in 2017 there is a "bump" in transponder costs; these include replacement costs due to the estimated eight-year life span of an E-ZPass tag.

Total forecasted E-ZPass costs are expected to increase from $1.5 million in FY 2013 to $1.8 million in FY 2020 to $3.2M in FY 2039.

Table 46: Forecast of E-ZPass Costs (in thousands)

Fiscal Year	Transaction Processing	Credit Card Fees	Toll System Maintenance	Transponder Costs	Other E-ZPass Costs*	Total E-ZPass
2010	$973	$144	$210	$758	$109	$2,194
2011	$987	$148	$210	$492	$112	$1,949
2012	$959	$152	$216	$259	$115	$1,701
2013	$720	$157	$216	$264	$118	$1,475
2014	$727	$161	$216	$269	$121	$1,494
2015	$735	$166	$222	$275	$124	$1,522
2016	$753	$171	$222	$281	$127	$1,553
2017	$780	$176	$222	$1,554	$130	$2,862
2018	$810	$181	$229	$869	$133	$2,222
2019	$831	$186	$235	$580	$136	$1,969
2020	$861	$192	$242	$348	$140	$1,783
2021	$894	$197	$249	$354	$143	$1,838
2022	$927	$203	$257	$361	$147	$1,894
2023	$957	$209	$264	$369	$151	$1,950
2024	$991	$215	$272	$376	$155	$2,008
2025	$1,016	$221	$279	$1,658	$159	$3,333
2026	$1,051	$228	$288	$972	$163	$2,701
2027	$1,090	$234	$296	$683	$167	$2,470
2028	$1,129	$241	$305	$451	$171	$2,297
2029	$1,166	$248	$313	$461	$176	$2,364
2030	$1,207	$255	$322	$470	$180	$2,435
2031	$1,249	$262	$332	$480	$185	$2,508
2032	$1,290	$270	$341	$490	$190	$2,581
2033	$1,335	$278	$351	$1,780	$195	$3,939
2034	$1,370	$286	$362	$1,092	$200	$3,310
2035	$1,417	$294	$372	$805	$205	$3,094
2036	$1,469	$303	$383	$574	$211	$2,939
2037	$1,521	$312	$394	$587	$216	$3,030
2038	$1,571	$321	$405	$598	$222	$3,117
2039	$1,626	$330	$417	$610	$228	$3,211

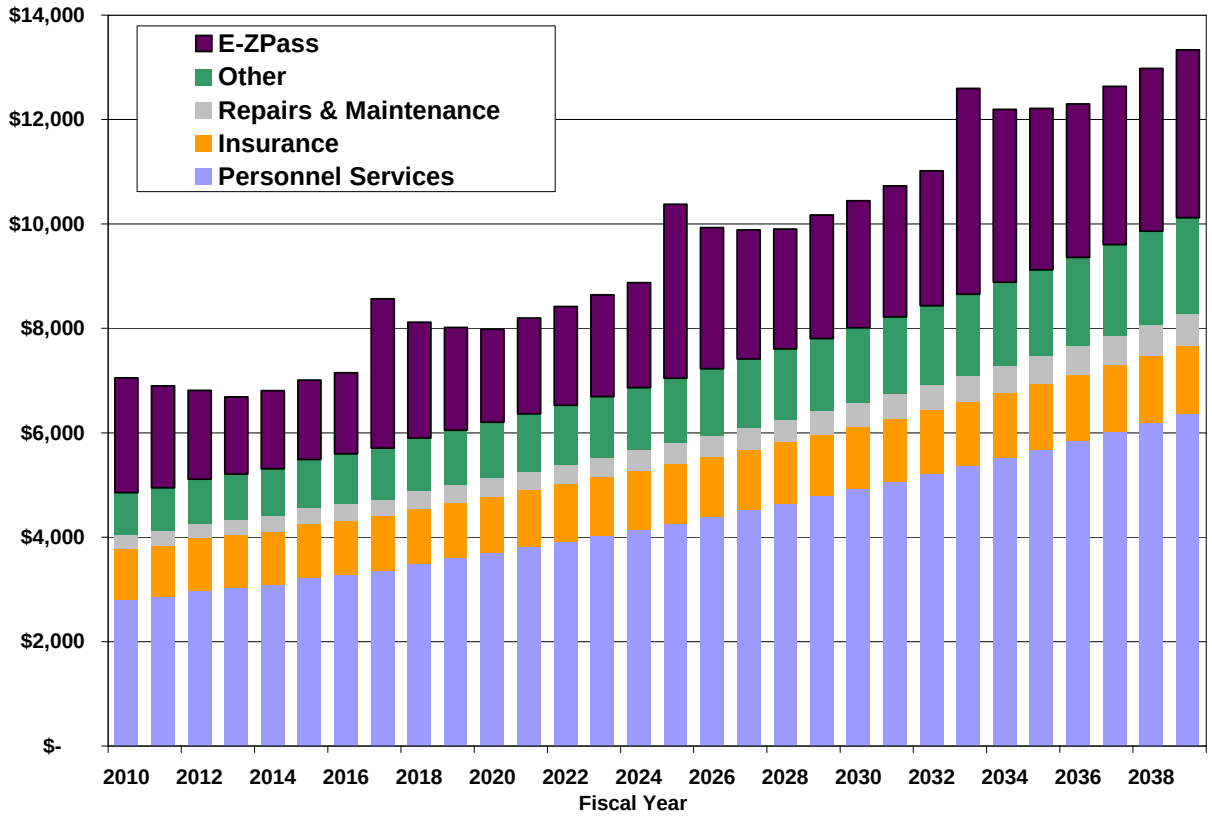
* IAG Subscription, Trailer, Postage

Table 47 and Figure 47 present Jacobs' forecasts of overall operations and maintenance expenditures over the next thirty years. As seen in the table and the figure, the forecasted operations and maintenance expenditures vary from about $7.0 million in FY 2010 to $6.7 million in FY 2013, $8.0 million in FY 2020, and $13.3 million in FY 2039.

Table 47: Forecasted O&M Expenditures (in thousands)

Fiscal Year	Personnel Services	Insurance	Repairs and Maintenance	Other	E-ZPass	Total Operating Costs
2010	$2,806	$980	$263	$805	$2,194	$7,048
2011	$2,860	$990	$270	$829	$1,949	$6,897
2012	$2,981	$999	$278	$853	$1,701	$6,812
2013	$3,037	$1,009	$286	$877	$1,475	$6,685
2014	$3,095	$1,020	$294	$903	$1,494	$6,806
2015	$3,227	$1,030	$303	$929	$1,522	$7,010
2016	$3,288	$1,040	$312	$956	$1,553	$7,149
2017	$3,350	$1,050	$321	$984	$2,862	$8,566
2018	$3,493	$1,061	$330	$1,012	$2,222	$8,118
2019	$3,594	$1,072	$340	$1,042	$1,969	$8,016
2020	$3,699	$1,082	$349	$1,072	$1,783	$7,985
2021	$3,806	$1,093	$359	$1,103	$1,838	$8,199
2022	$3,916	$1,104	$370	$1,135	$1,894	$8,419
2023	$4,030	$1,115	$381	$1,168	$1,950	$8,643
2024	$4,147	$1,126	$392	$1,202	$2,008	$8,875
2025	$4,267	$1,137	$403	$1,237	$3,333	$10,377
2026	$4,391	$1,149	$415	$1,272	$2,701	$9,928
2027	$4,518	$1,160	$427	$1,309	$2,470	$9,884
2028	$4,649	$1,172	$439	$1,347	$2,297	$9,904
2029	$4,784	$1,184	$452	$1,386	$2,364	$10,170
2030	$4,923	$1,196	$465	$1,427	$2,435	$10,445
2031	$5,065	$1,207	$478	$1,468	$2,508	$10,727
2032	$5,212	$1,220	$492	$1,511	$2,581	$11,016
2033	$5,363	$1,232	$507	$1,554	$3,939	$12,595
2034	$5,519	$1,244	$521	$1,599	$3,310	$12,193
2035	$5,679	$1,256	$536	$1,646	$3,094	$12,212
2036	$5,844	$1,269	$552	$1,693	$2,939	$12,297
2037	$6,013	$1,282	$568	$1,743	$3,030	$12,635
2038	$6,188	$1,295	$584	$1,793	$3,117	$12,977
2039	$6,367	$1,308	$601	$1,845	$3,211	$13,332

Figure 47: Forecasted O&M Expenditures



7. Net Revenues

Table 48 calculates, for the Base Case (i.e., no toll increase) scenario, the net revenues from the total revenues (tolls plus transponders) and O&M costs. Net revenues are expected to increase from $10.6 million in 2010 to more than $12.0 million in 2017, decreasing thereafter to $11.8 million in 2020 and $9.4 million in 2039.

Table 48: Net Revenue Forecasts in millions, Base Case (No Future Toll Increases)

Fiscal Year	Toll Revenue	Transponder Revenue	Total Revenue	Total Operating Costs	Net Revenue
2010	$16.9	$0.8	$17.7	$7.0	$10.6
2011	$18.0	$0.5	$18.5	$6.9	$11.6
2012	$18.1	$0.3	$18.4	$6.8	$11.6
2013	$18.4	$0.3	$18.7	$6.7	$12.0
2014	$18.5	$0.3	$18.8	$6.8	$12.0
2015	$18.7	$0.3	$19.0	$7.0	$12.0
2016	$18.9	$0.3	$19.1	$7.1	$12.0
2017	$19.0	$1.6	$20.6	$8.6	$12.0
2018	$19.2	$0.9	$20.0	$8.1	$11.9
2019	$19.3	$0.6	$19.9	$8.0	$11.9
2020	$19.5	$0.3	$19.8	$8.0	$11.8
2021	$19.6	$0.4	$20.0	$8.2	$11.8
2022	$19.8	$0.4	$20.1	$8.4	$11.7
2023	$19.9	$0.4	$20.3	$8.6	$11.6
2024	$20.1	$0.4	$20.4	$8.9	$11.6
2025	$20.2	$1.7	$21.9	$10.4	$11.5
2026	$20.3	$1.0	$21.3	$9.9	$11.4
2027	$20.5	$0.7	$21.2	$9.9	$11.3
2028	$20.6	$0.5	$21.1	$9.9	$11.2
2029	$20.7	$0.5	$21.2	$10.2	$11.0
2030	$20.9	$0.5	$21.4	$10.4	$10.9
2031	$21.0	$0.5	$21.5	$10.7	$10.8
2032	$21.2	$0.5	$21.6	$11.0	$10.6
2033	$21.3	$1.8	$23.1	$12.6	$10.5
2034	$21.4	$1.1	$22.5	$12.2	$10.3
2035	$21.6	$0.8	$22.4	$12.2	$10.2
2036	$21.7	$0.6	$22.3	$12.3	$10.0
2037	$21.8	$0.6	$22.4	$12.6	$9.8
2038	$22.0	$0.6	$22.6	$13.0	$9.6
2039	$22.1	$0.6	$22.7	$13.3	$9.4

Net revenues for the toll increase scenario are shown in Table 49. Net revenues are expected to increase from $10.6 million in 2010 to $20.8 million in 2020 to $33.8 million in 2039 with the toll increase scenario.

Table 49: Net Revenue Forecasts in millions, Toll Increase Scenario

Fiscal Year	Toll Revenue	Transponder Revenue	Total Revenue	Total Operating Costs	Net Revenue
2010	$16.9	$0.8	$17.7	$7.0	$10.6
2011	$18.0	$0.5	$18.5	$6.9	$11.6
2012	$18.1	$0.3	$18.4	$6.8	$11.6
2013	$20.3	$0.3	$20.6	$6.7	$13.9
2014	$21.0	$0.3	$21.3	$6.8	$14.5
2015	$21.3	$0.3	$21.5	$7.0	$14.5
2016	$23.8	$0.3	$24.1	$7.1	$16.9
2017	$24.7	$1.6	$26.2	$8.6	$17.7
2018	$24.9	$0.9	$25.8	$8.1	$17.7
2019	$27.5	$0.6	$28.1	$8.0	$20.1
2020	$28.4	$0.3	$28.8	$8.0	$20.8
2021	$28.7	$0.4	$29.1	$8.2	$20.9
2022	$30.1	$0.4	$30.5	$8.4	$22.0
2023	$30.8	$0.4	$31.2	$8.6	$22.5
2024	$31.0	$0.4	$31.4	$8.9	$22.5
2025	$33.7	$1.7	$35.3	$10.4	$25.0
2026	$34.6	$1.0	$35.6	$9.9	$25.7
2027	$34.9	$0.7	$35.6	$9.9	$25.7
2028	$36.4	$0.5	$36.8	$9.9	$26.9
2029	$37.1	$0.5	$37.5	$10.2	$27.4
2030	$37.3	$0.5	$37.8	$10.4	$27.4
2031	$38.8	$0.5	$39.3	$10.7	$28.5
2032	$39.5	$0.5	$40.0	$11.0	$29.0
2033	$39.8	$1.8	$41.6	$12.6	$29.0
2034	$42.6	$1.1	$43.7	$12.2	$31.5
2035	$43.6	$0.8	$44.4	$12.2	$32.2
2036	$44.0	$0.6	$44.5	$12.3	$32.2
2037	$45.5	$0.6	$46.1	$12.6	$33.4
2038	$46.3	$0.6	$46.9	$13.0	$33.9
2039	$46.6	$0.6	$47.2	$13.3	$33.8

8. Renewal and Replacement

In addition to general maintenance items described in the previous section, the Authority conducts major maintenance items for both bridges through long range capital planning under the Renewal and Replacement (R&R) program. Major work items such as bridge painting, bridge inspection, structural steel repairs, concrete deck repairs, main cable inspection, testing and repairs, substructure repairs, etc. are budgeted for and implemented at appropriate times as part of the Renewal and Replacement program, and are therefore not included in the forecast of operating expenditures.

The RITBA Board has adopted its Ten Year Renewal and Replacement Plan to maintain the safety, security, and operational effectiveness of both the Newport Pell and Mount Hope bridges. The Ten Year Plan approved by the Board on September 23, 2009 identifies $210 million of major maintenance expenditures needed to extend the useful life of both bridges. Nationally-recognized consulting engineering companies have completed the identification of projects included in both the $162 million Newport/Pell Bridge and $48 million Mount Hope Bridge R&R plans. Table 50 breaks out the forecasted R&R expenses by bridge. Jacobs reviewed these forecasts and found them to be reasonable.

Table 50: Board-Approved R&R Expenditures (in thousands)

Fiscal Year	Newport Pell Bridge	Mount Hope Bridge	Total
2010	$ 10,885	$ 5,816	$ 16,701
2011	$ 20,630	$ 7,245	$ 27,875
2012	$ 22,630	$ 3,696	$ 26,326
2013	$ 20,590	$ 2,278	$ 22,868
2014	$ 19,215	$ 11,011	$ 30,226
2015	$ 25,020	$ 8,512	$ 33,532
2016	$ 21,755	$ 4,423	$ 26,178
2017	$ 4,485	$ 4,058	$ 8,543
2018	$ 9,590	$ 496	$ 10,086
2019	$ 6,990	$ 285	$ 7,275
Total	$ 161,790	$ 47,820	$ 209,610

9. Limits

It is Jacobs' opinion that the traffic and gross toll revenue estimates provided herein are reasonable and that they have been prepared in accordance with accepted industry-wide practice. However, given the uncertainties within the current economic climate, it is important to note the following assumptions which, in our opinion, are reasonable:

- This report presents the results of Jacobs' consideration of the information available as of the date hereof and the application of our experience and professional judgment to that information. It is not a guarantee of any future events or trends.
- The traffic and gross toll revenue estimates will be subject to future economic and social conditions, demographic developments and regional transportation construction activities that cannot be predicted with certainty.
- The estimates contained in this report, while presented with numeric specificity, are based on a number of estimates and assumptions which, though considered reasonable to us, are inherently subject to economic and competitive uncertainties and contingencies, most of which are beyond the control of RITBA and cannot be predicted with certainty. In many instances, a broad range of alternative assumptions could be considered reasonable. Changes in the assumptions used could result in material differences in estimated outcomes.
- Jacobs' traffic and gross toll revenue estimations only represent our best judgment and we do not warrant or represent that the actual gross toll revenues will not vary from our estimates.
- We do not express any opinion on the following items: socioeconomic and demographic forecasts, proposed land use development projects and potential improvements to the regional transportation network.
- The standards of operation and maintenance on all of the system will be maintained as planned within the business rules and practices.
- No other competing projects, tolled or non-tolled are assumed to be constructed or significantly improved in the project corridor during the project period, as to negatively impact Newport Pell Bridge traffic, except those identified within this report.
- Major highway improvements that are currently underway or fully funded will be completed as planned.
- The system will be well maintained, efficiently operated, and effectively signed to encourage maximum usage.
- No reduced growth initiatives or related controls that would significantly inhibit normal development patterns will be introduced during the estimate period.
- There will be no future serious protracted recession during the estimate period.

- There will be no protracted fuel shortage during the estimate period.
- No local, regional, or national emergency will arise that will abnormally restrict the use of motor vehicles.

In Jacobs' opinion, the assumptions underlying the projections provide a reasonable basis for the revenue projections and operating expenses. However, any financial projection is subject to uncertainties. Inevitably, some assumptions used to develop the projections will not be realized, and unanticipated events and circumstances may occur. There are likely to be differences between the projections and actual results, and those differences may be material. Because of these uncertainties, Jacobs makes no guaranty or warranty with respect to the projections disclosed in this Study.