

A Fare Choice

How Rhode Island Can Invest
in Public Transit
and Energy Independence



Contents

1	Introduction	4
2	Driving	5
2.1	Costs of Motoring	5
	Fuel Imports	5
	Consumer Costs	5
2.2	Subsidies to Driving	6
3	Driving Global Warming, Bad Air, and Fouled Water	7
3.1	Global Warming	7
3.2	Air Quality	8
3.3	Water Pollution	9
	Non-Point-Source Runoff	9
	Oil Spills	10
3.4	Clean Cars	10
	Stalled Regulation	11
	Runaway Driving	11
	The Road Less Travelled	11
4	Quality of Life	13
4.1	Congestion	13
4.2	Sprawl	14
4.3	Impact on Tourism	14
4.4	Problems in Total	14
5	How Does RIPTA Fare?	15
5.1	Service Efficiency	17
5.2	Cost Effectiveness	17
5.3	Service Effectiveness	18
6	Solutions Through Transit	20
6.1	Planning Ahead	20
6.2	Economic Benefit	20
6.3	The Role of Transit	21
7	Financing a First-Class Transit System in the Ocean State	22
7.1	Paying for Itself	22
7.2	Possible Sources of Operating Support	22
7.3	Possible Sources of Capital Support	26
	Leveling the Road	27
8	Catching the Wave	28
8.1	Conclusions and Recommendations	28
A	The Difficulties of Peer Comparisons: CT Transit	30

A Fare Choice: How Rhode Island Can Invest in Public Transit and Energy Independence

Executive Summary

BY TRANSFORMING our car-driven transportation system into a system with clean, affordable transportation choices, we can significantly reduce our dependence on imported oil, reduce air and global warming pollution from automobile traffic, and create thousands of new, good-paying jobs building and driving our transit system.

Over the past five years, public transit ridership in Rhode Island has increased at a rate of roughly ten percent every year. Recent spikes in gasoline prices to above \$4.00 per gallon have greatly added to the demand. In addition, more and more Rhode Islanders are becoming aware of their automobiles' contribution to global warming and our state's dependence on imported oil.

This surge in public transportation use underscores an important realization among Rhode Islanders: public transit is a central driver towards the new energy economy and global warming solutions. We have an opportunity to ride this new demand and invest in a world-class public transit system in the Ocean State.

Unfortunately, at a time when ridership and demand for public transportation is at an all-time high, the Rhode Island Public Transit Authority (RIPTA) is forced to consider sweeping service cuts. These cuts are due in large part to the way that public transit is financed in Rhode Island. RIPTA's primary funding stream is a small portion of the state's thirty-one cent per gallon gasoline tax. Such a funding stream, linked to fuel consumption rather than fuel price, is unable to meet the current budget demands of rising fuel costs for buses. And when fuel prices go up, fewer people purchase gasoline and more choose to use public transit.

By creating a financing mechanism that is dedicated, sustainable and designed to grow with demand, our state government can ensure success. Rhode Island's current funding scheme for public transit is designed to fail, and if we continue to fund our transportation with a small portion of the gas tax Rhode Islanders will find themselves chained to the gasoline pump with ever-rising gas prices and few solutions to global warming.

Using transit financing solutions already in place around the country, as well as new ideas generated by participants of the New Public Transit Alliance, we can improve our quality of life and plan for a better future. This report outlines the cost of our current transportation system to the economy and the environment and highlights the best practices across the country that are ready to be implemented here in the Ocean State.

1 Introduction

MORE THAN HALF a century ago, Americans began a shift from community-based transit to personal driving, fundamentally changing how we live and work. Made possible by cheap fuel and wide open roads, that lifestyle is no longer sustainable, due to rising fuel cost, worsening congestion, and widespread environmental damage. To alleviate these problems, we must return transit to a central role in daily travel.

Owning and driving a car is costly, but necessary for many people (even bus drivers) for lack of adequate transit. But driving automobiles is the leading source of global warming, pollutes our air and water, and promotes bad land use, ruining once-thriving city neighborhoods and unspoiled rural lands alike, impacting community costs, tourism, and quality of life.

To reduce the impact of driving, we need to reverse the incentives that have made cars the default mode of transportation in Rhode Island. These incentives include hidden subsidies for automobiles and the promotion of suburban commercial development by our property tax and land-use policies.

But addressing incentives is not enough. Worthwhile choices must be available. *Incentives are worthless if drivers don't have choices.* In order to significantly reduce vehicle miles travelled in Rhode Island, transit must provide available options to as many drivers as possible by being reliable, cost-effective, and convenient. Inadequate, unreliable, or unpleasant transit will discourage ridership for those who don't need it, while good, reliable and comfortable transit options will encourage new and continued ridership.

Transit is a proven solution to problems caused by dependence on automobiles and imported oil. Good transit, together with good planning and development, increases efficiency, reduces conges-

tion, reduces pollution, preserves valuable land, enhances economic development, and improves quality of life for everyone in Rhode Island.

RIPTA is ready and able to provide solutions and benefits for Rhode Island, but lacks adequate funding. We have the tools to get the transit we need and want, and we can finance it. Indeed, we can no longer afford not to.

2 Driving

CONSUMER COSTS, fuel supply, political issues, and a raft of environmental threats to public health and economic stability collectively describe a wide range of major problems that transit can help to solve.

In the short term, RIPTA can address these problems by providing bus service as an immediate alternative to driving. As RIPTA service becomes a more viable, attractive choice, transit can replace the need for automobile ownership, saving driving costs and fuel consumption.

2.1 Costs of Motoring

Driving costs Rhode Islanders thousands of dollars a year in vehicle ownership, and consumes nearly two thirds of all petroleum shipped into the state.

Fuel Imports

Figure 2.1 shows how much fuel we use for transportation, for commercial and residential uses (mostly heating) and industrial processes. You can see that in 2005, Rhode Islanders consumed more petroleum for transportation alone—over 10.6 million barrels—than for any other purpose.¹ Even noting that 42% of Rhode Island homes heat with oil—nearly five times the national average—petroleum burned for driving in Rhode Island still accounts for more than all other petroleum consumption combined.

The total cost of gasoline burned away by driving was \$823 million. Dollar figures for diesel are not available, but a conservative estimate would put it

¹Energy Information Administration, 2005 consumption, major motor fuels. (Because Rhode Island does not maintain motor fuel reserves, consumption figures may be assumed to approximate total receipts.)

above \$149 million.

In other words, we spent over a billion dollars on motor fuel—\$947 for every single resident—just in 2005. 2005 was the year that gas prices rose above \$2 per gallon, so the amount is considerably greater today.

Consumer Costs

Fuel is only the most obvious cost of driving. Just owning a car involves substantial costs, including sales tax, financing, insurance, registration, repair and maintenance, and vehicle property taxes.

According to the American Automobile Association, the average total annual cost of car ownership in 2007 was \$9,641.40² The composite national average cost per mile for 2007 was 52.2 cents (based on average late-2006 national fuel pricing).

These costs represent a significant portion of the cost of living for vehicle-owning households (see Table 2.1 on page 6).

The average vehicle-owning household in 2005 spent more just on the family car than on health-care, clothing, and education combined—almost as much as on food.

The U.S. Department of Transportation estimated 2006 average annual motor fuel cost per driving household at over \$3000, or 15.6 cents per mile—more than twice the cost in 2001. The biggest cost is daily commuting, at an estimated average of \$1.87 each way—at 2006 prices.³

²AAA Exchange, AAA Public Affairs, “Your Driving Costs”: Estimated cost includes “average fuel, routine maintenance, tires, insurance, license and registration, loan finance charges and depreciation costs” for a medium sedan driven 15,000 miles per year.

³Federal Highway Administration, National Household Travel Survey, June 2006

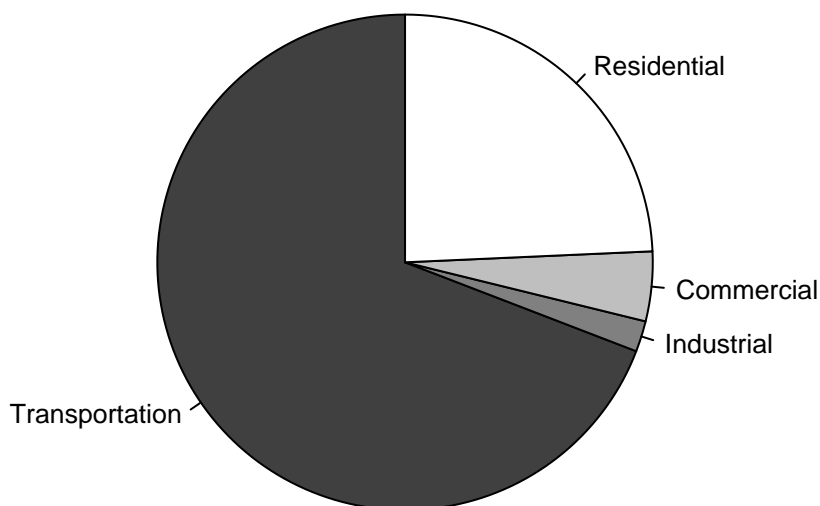


Figure 2.1: Fuel use in Rhode Island, by sector. Almost three quarters of the petroleum used in Rhode Island is for transportation. This means that addressing transportation effectively can produce dramatic drops in petroleum use. Source: Energy Information Administration.

2.2 Subsidies to Driving

Not only is driving an expensive form of transportation, but it is heavily subsidized, too, as was detailed in the RI Sierra Club’s 2007 report, *Getting from Here to There*. Drivers pay property

taxes on their cars and gas tax on their fuel, but the subsidies are even larger than that. Responsible estimates put them as high as 3 to 7 dollars per gallon of gasoline used.⁴

The subsidized costs extend far beyond road and highway construction to free parking lots, state police highway patrols, street lighting, mileage tax deductions, zoning regulations to require parking, and much more. There are also more intangible subsidies, such as the property values lost to road noise or land taken for road construction and expansion and the costs of illness and congestion discussed elsewhere in this report. All of these costs are spread among all taxpayers, whether they choose to drive or not.

Table 2.1: The proportion of consumer dollars going to various categories of expenses. Bureau of Labor Statistics, Consumer Expenditure Survey, 2005

Category	% of total
Housing	32.7%
Food	12.8%
Vehicles, including motor fuel and oil	11.9%
Personal insurance and pensions	11.2%
Healthcare	5.7%
Apparel and services	4.1%
Education	2.0%
Other	19.4%

⁴See *Getting from Here to There*, (Sierra Club Rhode Island Chapter, 2007), and also www.sierraclub.org/sprawl/articles/subsidies.asp for more information, and pointers to several such studies.

3 Driving Global Warming, Bad Air, and Fouled Water

CURRENT TRANSPORTATION TRENDS create many serious environmental problems. Besides the clear threats to public health and global climate, driving also impacts land use and development, economics, and communities across the state; exacerbates political disputes; and threatens not only our quality of life, but our very way of life.

3.1 Global Warming

Global warming is perhaps the greatest environmental problem facing us:¹ The World's scientists agree that global warming is happening more quickly than expected. But scientists also state the the worst effects of global warming can be avoided by taking bold, serious action to reduce global warming pollution 80% by 2050—that's 2% per year for the next forty years, an attainable goal.

Rising sea levels threaten Rhode Island's 400 miles of shoreline, much of which is lowland swamp, including brackish marshes essential to fragile coastal ecosystems. Warming waters put ecological systems out of balance, threatening fisheries and shellfishing areas, raising the likelihood of biological contamination, and leading to more beach closures. Growing frequency and intensity of ocean storms caused by global warming will increase damage to coastal properties and structures.

Sea levels are barely the half of it. Scientists at the New Mexico Institute of Mining and Technology, examined minute patterns of "microseisms" that track shoreline wave activity from large ocean

storms, and determined that since the early 1970s, violent shore waves have increased by "at least a few percent per decade" and will likely continue on that pace.²

Since 1970, average temperatures in the Northeast have been rising half a degree Fahrenheit per decade, increasing summer heat, reducing winter-time snow and ice, and gradually raising sea levels. These trends promise a decline in New England's lucrative ski industry, a dramatic increase of heat waves with more days spiking over 100° F, the loss of important regional trees and birds, and rising coastal destruction.

Rising temperatures in Narragansett Bay have also made the bay more vulnerable to anoxic events such as those that caused massive fish kills in recent years. Rising temperatures have also meant that ctenophores frequently survive the winter. Formerly these little jellyfish (also known as comb jellies) didn't return until late spring or summer. But now they are around during the spring hatching season, when they eat an outsize share of fish eggs and hatchlings that used to have time to grow beyond the vulnerable stage before the jellies returned.

While large-scale natural events such as solar variation and volcanic activity have been major contributors of greenhouse gases (GHGs) throughout earth's long history, the Intergovernmental Panel on Climate Change confirms that the vast majority of reputable climate experts agree that, "Global GHG emissions due to human activities have grown since pre-industrial times, with an increase of 70% between 1970 and 2004."³

²"Earthquake sensors track rise in ocean storms," New Scientist, 18 April 2008

³Intergovernmental Panel on Climate Change, Climate Change 2007: Synthesis Report, §2: "Causes of change," §2.1: "Emissions of long-lived GHGs"

¹Intergovernmental Panel on Climate Change, Climate Change 2007: Synthesis Report, §1: "Observed changes in climate and their effects" and §§3.3: "Impacts of future climate changes"

Climate change experts warn that to avoid the worst, we must act *now*. The concentration of global warming gases in the atmosphere is already almost at the threshold beyond which our actions will no longer matter.

The likely economic damage of allowing global warming to run unchecked is devastating, impacting key Rhode Island trades and industries and ruining coastal real estate. Insurance carriers will raise rates on shoreline properties, or even eliminate coverage altogether. Accelerated beach erosion will threaten waterside properties and impact vital tourism, as well as the simple enjoyment of beach visits.

Because of the global scale of the problem, it will take a decade or more to see the benefits of mitigation. We are already behind in tackling the threat and need to move immediately and aggressively to prevent the worst effects of future warming.

It's not enough to just reduce emissions, right now. We must cut emissions at least 15 to 20 percent over the next decade, and at least 80 percent over the next 40 years. This is the bare minimum of what we need to do just to avoid the worst of what's already impending.

The problem is indeed global. But because the causes are mostly local, local solutions are effective. The United States is the world's biggest polluter by scale, contributing a disproportionate share of global warming gases. This is not a question of morality or fairness: If solutions are to work at all, they must begin here. America must lead the world to success in combating this global threat.

According to the RI Greenhouse Gas Stakeholder Group (a program of the RI Department of Environmental Management), as of 2007, the transportation sector is responsible for 36% of the region's greenhouse gas emissions. Electrical generation is responsible for about 28%.⁴ When trying to make an impact on global warming, it is impossible to ignore transportation. On the contrary, reducing fuel consumption in the transporta-

⁴"Rhode Island Greenhouse Gas Baseline Scenario," 2002.

tion sector provides some of the most promising opportunities for making the crucial reductions in greenhouse gases.

Furthermore, when you consider how long it takes automobile manufacturers to roll out new models of their cars, it quickly becomes apparent that within the transportation sector, the quickest and easiest way to reduce fossil fuel consumption is to increase the use and effectiveness of public transit. Buses provide some of the lowest hanging fruit on that tree.

3.2 Air Quality

Motor emissions pollute the air we breathe in many ways, putting hazardous gases and solid matter into the environment. Besides global warming agents (discussed below), emissions pose more immediate health risks from toxic compounds, particulate matter, and ozone and its precursors.

Carbon Monoxide (CO) is an odorless, colorless gas resulting from incomplete combustion, most commonly noted as a serious risk from home heaters. Besides the risk in enclosed spaces, CO also reacts with sunlight to produce ozone (see below) and contribute to smog.

The main source of CO is exhaust from road vehicles, accounting for just over half of all CO emissions in the U.S. (87% from passenger vehicles)—nearly double that of all other transportation modes combined—and up to 95 percent of CO in cities.⁵

Ozone Precursors are Volatile Organic Compounds (VOCs) and other hydrocarbons. They usually result from incomplete combustion and fuel evaporation. In 2002, road vehicles accounted for 21% of hydrocarbon emissions in New England,⁶ with passenger vehi-

⁵U.S. EPA, Office of Transportation and Air Quality, 1999 Trends Report.

⁶U.S. EPA, 2002 data based on emissions inventories submitted by states.

cles contributing the vast majority.⁷

Nitrogen Oxides (NOx) result from high-temperature fuel combustion, and react with sunlight to produce smog and ground-level ozone, as well as contributing to the formation of harmful particulates. Road traffic accounts for more than a third of all NOx production.⁸ As of 1999, gasoline vehicles contributed just over half of this, while diesel road vehicles contributed 42%.

Particulate Matter (PM) consists of tiny bits of easily-inhaled solid material. Motor traffic pumps huge volumes of harmful particulates into the air that all people and animals must breathe. Numerous health risks, including life-threatening diseases, are linked to PM, especially 'fine' PM (particles 2.5 microns and smaller), which can lodge in lung tissues or even pass directly into the bloodstream.⁹

Besides direct health risks from inhalation, PM can have extended health, environmental, and aesthetic effects.¹⁰ Particles carried by wind can settle on water and food sources, which can impact coastal waters, soil nutrients, farms and forests, and ecological diversity. PM can also reduce visibility, and deface or damage historical structures and other property.

Ozone (O3) is a highly reactive form of oxygen, produced by a reaction of sunlight with hydrocarbons and nitrogen oxides (NOx). In the upper atmosphere, ozone is vital to limiting harmful ultraviolet (UV) radiation. But at ground level, ozone reacts with living tissues, causing irritation and acute health problems.¹¹ It is especially bad for those

with asthma and other chronic lung problems, and prolonged exposure can lead to serious chronic illnesses and premature death.

Ozone usually peaks in summertime due to higher temperatures, longer days, and more direct sunlight. It may reach unhealthy limits, triggering "ozone days" when urgent health bulletins are distributed asking the public to reduce activity, try to stay indoors, and avoid driving. In Rhode Island, regular bus service is provided free on ozone days, to discourage driving and strenuous activity.

While Rhode Island generally complies with federal standards, average levels of hydrocarbons, ozone and nitrogen oxides were high enough to trigger several "moderately" unhealthy air quality days in 2007.¹² We also comply with federal PM standards, but levels have been gradually rising since 2006.¹³ Several major sources of fine particulates have been identified in Rhode Island, all of which deserve attention,¹⁴ but motor traffic may be easiest to mitigate in the short term without difficult regulation of industry and vehicles.

3.3 Water Pollution

Driving, and even parking, threatens our waters in several ways. Surface runoff distributes toxins in ways difficult to trace and mitigate. Coastal oil spills can be major environmental catastrophes.

Non-Point-Source Runoff

Waterborne contamination carried from multiple diffuse sources (such as engine oil drips onto pave-

⁷Interpolated from U.S. EPA, Office of Transportation and Air Quality, 1999 Trends Report: In 1999, passenger vehicles supplied 88% of hydrocarbons from road travel.

⁸U.S. EPA, Office of Transportation and Air Quality, 1999 Trends Report

⁹American Lung Association, State of the Air: 2007

¹⁰U.S. EPA, Office of Air and Radiation, Office of Air Quality Planning and Standards, Fact Sheet: Health and Environmental Effects of Particulate Matter, 17 July 2007

¹¹American Lung Association, State of the Air: 2008 – Air Pollution Basics

¹²U.S. EPA, 2007 data (Providence County: 12 days; Kent Cty.: 10 days; Washington Cty.: 9 days)

¹³U.S. EPA, Providence-Fall River-Warwick, RI-MA PM2.5 Air Quality, 2000-2007

¹⁴U.S. EPA, PM2.5 Emissions by Source Sector in Rhode Island in 2002. (In 2002, on-road vehicles accounted for 13% of PM2.5 emissions, including 3% just in road dust. More significant sources included: non-road equipment, 24%; residential wood combustion, 19%; industrial processes, 18%; non-road fossil fuel combustion, 18%; and waste disposal, 12%.)

ment) and is the leading source of water contamination in the U.S., and the main reason that some 40% of our freshwater lakes and streams are not suitable for fishing or swimming.¹⁵ Chemical-heavy agriculture remains the largest source of NPS pollution, but roadborne contaminants remain a major source, allowing trash, grease, and oil to wash down drains and into culverts, and eventually to streams, lakes, and coastal waters.

Roadway and parking surfaces themselves contribute to water contamination:¹⁶ Asphalt contains numerous toxins and carcinogens, which can be released from poorly compounded or eroding road surfaces and allowed to wash away into watersheds. It is also one of the most commonly spilled petroleum products in the U.S.¹⁷ And as asphalt is 5 to 10% petroleum, demand for paved surfaces contributes to the overall demand for oil.

Oil Spills

When we think of oil spills, we usually think of oceangoing tanker accidents or smaller oil barge accidents, such as the grounding of the North Cape oil barge off Rhode Island's Moonstone Beach in 1996. But large-scale petroleum contamination comes from several sources, including everyday handling by ordinary people.

Industrial Vessels and pipelines spill some 1.3 million gallons of oil into our waters in a typical year,¹⁸ but a single major spill can push that figure much higher: The infamous 1989 Exxon Valdez accident dumped nearly 11 million gallons (more than eight times the average) in a single incident. Meanwhile, leaks, drips, and spills from on-shore storage facilities release oil into streams and ground-

water at a rate averaging 200 recorded leaks per week since 2000.¹⁹

Domestic and Residential Leaking and improperly discarded motor oil from cars amounts to 180 million gallons—equivalent to sixteen Exxon Valdez accidents every year.²⁰ Moreover, Americans spill an additional super-tanker's worth of gasoline every year at filling stations and at home, adding an additional estimated 28,000 tons of hydrocarbon air pollution each year.²¹ These small spills can affect groundwater up to a quarter mile away, and up to 40 million Americans may have gasoline contamination in their water.

Spilled or not, each of the estimated 78 million portable fuel containers in the U.S. releases twice the airborne hydrocarbons of a new car, putting another 310,000 tons into the air.

3.4 Clean Cars

As passenger vehicles contribute the vast majority of global warming gases, getting cars to emit less pollution will make the biggest difference. Fuel efficiency and tailpipe pollution are closely linked: inefficient burning makes exhaust dirtier, while cleaner-burning vehicles also burn less fuel.

The Sierra Club's Clean Cars Campaign has tirelessly promoted higher fuel efficiency in new cars, enforced under the Corporate Average Fuel Economy (CAFE) standards, first introduced in 1975. CAFE dictated gradually improved new-car fuel economy until 1985, but not beyond.

In 2007, the Sierra Club and other environmental advocates scored a major victory, winning stricter

¹⁵U.S. EPA, "Nonpoint Source Pollution: The Nation's Largest Water Quality Problem" (fact sheet)

¹⁶Environmental Contaminants Encyclopedia, Asphalt (asphaltic bitumen, bitumen, petroleum asphalt, asphalt cements)

¹⁷U.S. Coast Guard, Emergency Response Notification System (ERNS)

¹⁸U.S. Coast Guard, Polluting Incident Compendium: Cumulative Data and Graphics for Oil Spills, 1973-2004, last updated September 2006

¹⁹Based on data 2000-2004 from Bureau of Transportation Statistics, National Transportation Statistics, Table 4-51: Leaking Underground Storage Tank Releases and Cleanups.

²⁰Massachusetts Department of Environmental Protection, Energy and Environmental Affairs, "Nonpoint Source Pollution Education: Motor Oil" (fact sheet)

²¹The Alliance for Proper Gasoline Handling, "Proper Gas Handling" (fact sheet) and "Alliance for Proper Gasoline Handling Announces Gas Care 2000 Campaign" (press release)

CAFE standards to begin in 2011. The Club estimates that under new CAFE standards, Americans will save a billion barrels of oil per day by 2020, and 2.4 billion barrels a day by 2030, as well as billions of dollars in fuel cost. Most important, new standards will prevent millions of tons of airborne pollution.

As some 50% of road pollution is supplied by only 10% of all road vehicles, an obvious approach to emissions control is to limit the allowable pollution from individual vehicles, especially the worst offenders, light trucks and SUVs. Many states, including Rhode Island and four others in New England, are earnestly pursuing this strategy through the Clean Cars Program developed by California. CCP requires a 30 percent reduction in warming pollutants from new cars and light trucks by 2016.²² The Clean Cars Program is very important, offering direct and effective mitigation of one of the largest sources of greenhouse gases, road vehicles. It is not enough by itself, however, and although urgent is also being delayed by federal authorities.

Stalled Regulation

The most immediate major impediment is federal foot-dragging: On 19 December 2007, the federal Environmental Protection Agency refused to allow Rhode Island and 16 other proactive states—together comprising nearly half the national driving population—to adopt and enforce vehicle emissions standards stricter than those stipulated at the federal level.²³

Affected states are working to reverse these roadblocks with the support of dedicated advocacy groups. Eventual success is likely, but meanwhile, Rhode Island and other states seeking to fight vehicle pollution and meet federal air quality attainment deadlines must pursue avenues of

²²California Air Resources Board, Climate Change Emission Control Regulations [fact sheet], 10 December 2004

²³“E.P.A. Says 17 States Can’t Set Emissions Rules,” John M. Broder and Felicity Barringer, *The New York Times*, 20 Dec. 2007; “EPA denies California’s right to mandate emissions,” Richard Simon and Janet Wilson, *Los Angeles Times*, 20 Dec. 2007

mitigation apart from applying stricter local standards. Historically and for the immediately foreseeable future, transportation alternatives offer the best promise outside of new regulation.

Runaway Driving

Perhaps a more serious impediment to the effectiveness of the Clean Cars Program is New England’s runaway driving habit.

New England driving has increased nearly 70 percent over the last 25 years, an average increase of more than 2 percent per year.²⁴ Current trends predict that New England motor traffic will increase 24 percent over the next ten years. Based on current emissions, this increase will entirely wipe out any benefits of the Clean Cars Program. We must pursue clean cars every way we can. But to realize any environmental benefit from them, we must also drive less.

The Road Less Travelled

Against this backdrop, public transit offers the most immediate and effective mitigation of transportation pollution, including CO₂ emissions. Even modest improvements in transit will reap significant environmental gains:²⁵ Every 1 percent increase in ridership on existing transit reduces New England’s warming emissions by more than 19,000 metric tons, the equivalent of 3500 fewer cars on the road. More efficient buses and vehicles that use alternative fuels (such as RIPTA’s compressed natural gas-powered trolleys) can cut bus emissions another 20 percent, the equivalent of

²⁴U.S. Department of Transportation, Federal Highway Administration, Highway Statistics series of reports, 16 July 2007

²⁵Digested from Environment Rhode Island and Clean Water Fund, “Cool Moves: Transit in New England and Its Role in Curbing Global Warming,” based on data from U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2002, 2004; U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, 2007; U.S. Census Bureau, Annual Estimates of the Population for the United States, Regions, and States and for Puerto Rico: April 1, 2000 to July 1, 2006; and derivative methodology described in citation.

7800 fewer cars on the road. And every 1 percent increase in commuter rail ridership in New England removes the equivalent of yet another 1000 cars. Combined with transit-oriented land use and development strategies, New England could theoretically cut per-capita driving in half within the foreseeable future.

In 2005, Rhode Island's existing transit reduced the state's overall CO₂ emissions by 30,464 metric tons, the equivalent of taking more than 5400 cars off the road. The larger proportion of this (nearly 20,000 tons) is attributed to interstate rail service (MBTA commuter rail and through-state Amtrak service), and a smaller proportion (nearly 3000 tons) to interstate motorcoach service such as Bonanza. Yet current RIPTA bus service is credited for 8041 tons of this reduction, a little over 26 percent.

Rhode Island's savings from in-state transit are modest compared to proportional savings in other New England states, but this is promising: Expansion and improvement will yield much more significant savings. And expansion of rail options, particularly, promises even more dramatic impact.

4 Quality of Life

BEYOND THE OBVIOUS ISSUES of pollution from cars, transit helps to mitigate other problems that are not measured in terms of health of people or the planet, but impact our lives just as much. Where and how we live, work, and travel has direct and significant consequences, now and into the future.

4.1 Congestion

The nationwide roadbuilding initiative that took off during the Eisenhower administration has never stopped. Yet despite decades of aggressive construction, expansion, and improvement, road congestion has plagued us nearly from the start.

This was never more evident than during the monster snowstorm that brought all of Rhode Island to a standstill in December, 2007, stranding Providence students in traffic for hours. A report from City Council outlines both the underlying problem and ramifications, and long-overdue transit solutions.

DPW Director John Nickelson and Bill Roche, contract manager for First Student, both expressed concern that Route 95 and the city's streets are at or over their capacity to handle traffic. Roche noted that there are now so many vehicles on the roads that Rhode Island had to drop its traditional license plate numbering system of two letters followed by three digits to one of six digits. They concluded with a strong recommendation that the city and state establish more and better public transit as a solution to congestion which, as the snowstorm points out, is not just a matter of convenience, but public safety as well.¹

¹Vital Lessons: Report of the Independent Review Board Appointed by the Providence City Council to Investigate Failures and Lapses During the Snowstorm of December 13,

The perceived convenience of driving lures people to take their cars, even though the immediate consequences can be very inconvenient, and the extended consequences damaging for everyone. Rush-hour gridlock, weather-related congestion, and other traffic backups are usually discovered after it's too late to get off the road.

Traffic always expands to meet capacity—and invariably exceeds it: There will never be enough roadway to solve traffic problems. We cannot build our way out of traffic congestion. The only solution is to get drivers off the road.

2007, May 27, 2008, p. 27: "1-5 The Council and the Mayor Should Explore Ways to Encourage Use of RIPTA Buses When a Snowstorm or Other Strong Storm is Forecast."

Greater Boston

Over the course of 2003, MBTA saved rush-hour Boston commuters 54 million hours of traffic delay, more than a whole day—27 hours each—for every single rider. This savings returned an estimated \$900 million of reclaimed productivity into the local economy.^a MBTA budgeted nearly \$800 million for operational costs that same year, minus about \$100 million in projected rider fares^b, yielding a planned operational deficit of around \$700 million. But while MBTA lost money on paper, when the enormous calculated productivity savings are factored in, Greater Boston actually enjoyed a net gain of close to \$200 million.

^aDavid Schrank and Tim Lomax, Texas Transportation Institute, The 2005 Urban Mobility Report, May 2005

^bMBTA Advisory Board Financial Committee, MBTA Fiscal Year 2003 Budget, Final Report, 8 May 2002.

4.2 Sprawl

“Sprawl” is the gradual spread of urban development into formerly rural (all or mostly undeveloped) and subrural (minimally or lightly developed) land surrounding denser population centers. Sprawl has been a growing problem in Rhode Island for half a century, with serious consequences for our economy, environment and infrastructure.

Established specifically to study these issues, Grow Smart Rhode Island released a major study in 2000 which included several worrying findings:²

- Rhode Island’s sprawl has resulted in more new land development in the last 45 years than in the previous 325 years.
- From 1961 to 1995, consumption of land by new development expanded at nine times the rate of population growth over the same period.
- The added cost of extra infrastructure and services to Rhode Island taxpayers by 2020 will total almost \$1.5 billion—equivalent to half the annual state budget.

Within the century, the character of Rhode Island’s remaining rural communities will be lost, as the state becomes a single gigantic suburb.

Rhode Islanders are loath to forget—or forgive—the words of the late Wall Street Journal reporter Stephen P. Morin, who in 1983 described Rhode Island as “a smudge beside the fast lane to Cape Cod.” Yet if our current sprawl continues unchecked, this description will become entirely apt within the lifetime of many current residents.

²Grow Smart Rhode Island, *The Costs of Suburban Sprawl and Urban Decay in Rhode Island*, 2000

4.3 Impact on Tourism

Sprawl damages the small-town and rural character of large parts of the Rhode Island, threatening our vital tourist trade. Study figures emphasize the importance of this industry:³

- Total 2006 tourism expenditures: \$5.4 billion (\$3.3 billion retained); +2% over 2005
- Tourism employs 1 out of 10 state residents.
- Tourism accounts for 5% of Rhode Island Gross State Product, and about 40% of all Rhode Island restaurant revenues.
- Tourism generated 11% of all state and local tax revenue in 2006 (\$861 million).
- Tourism is Rhode Island’s fourth largest industry, based on jobs.

4.4 Problems in Total

These problems affect everyone, at every level. Therefore, mitigation must be universal. The larger problem of global warming is slow and difficult to deal with, while critical thresholds are fast approaching, so urgent action is needed. Poor land use patterns encourage harmful driving habits, and are also worsened by them—trends with long-term consequences that are hard to reverse. Together with poor air quality and threats to water and food, these problems further threaten Rhode Island’s vital tourism industry.

Unless we change the way we live, work, and travel, the consequences will be very damaging, both for future generations and for everyone living right now.

³Global Insight, 2006 Tourism Satellite Account

5 How Does RIPTA Fare?

ANY CONSIDERATION of transit planning and funding must consider how well the system functions currently. Does RIPTA provide a good value for our dollar?

One way to answer this is to compare RIPTA to similar-sized agencies. For purposes of evaluation, we compare RIPTA to members of a group of eight public transit “peer” agencies reporting annually to the National Transit Database. These are transit agencies of roughly similar size and serving roughly comparable areas.¹

While comparisons between transit agencies are tricky (see Appendix A), what comparisons can be made show that taking all factors into consideration, RIPTA does a good job for the money, earns above-average fares, and delivers exceptionally good service.

The following agencies are compared to RIPTA in this section:

- Albany NY, CDTA Transit
- Syracuse, Central New York Regional Transit Authority
- Rochester (NY) Genesee Regional Transit Authority (RGRTA)
- Memphis, Memphis Area Transit Authority (MATA)
- Louisville, Transit Authority River City (TARC)
- Columbus, Central Ohio Transit Authority
- Kansas City Area Transportation Authority (K-CATA)

¹The peer group was originally selected by Abrams-Cherwony & Associates Transit Consultants (Philadelphia), based on comparable criteria including number of buses in fleet, size of service area, and population served.

The agencies are roughly the same size, but not exactly the same size, so to make the comparisons more meaningful, the agency budget numbers were adjusted according to the number of passenger-miles each agency reported in 2006.

When scaled properly, RIPTA draws just under the average total operating funds expended by comparable agencies, including a substantially higher percentage of its budget from passenger fares than any of the peer group, and an above-average proportion of Federal assistance (Figure 5.1). The flip side of this coin is that every peer except Memphis draws substantially more support from the state, county, or city in which they’re located than does RIPTA.

How does RIPTA compare to peers in terms of balancing costs and services? On straight overall cost comparison, RIPTA comes out slightly better than average (Figure 5.2).

How does RIPTA compare in actual performance? A rough guide can be developed by looking at the following calculated quantities:

Service Efficiency is the cost of the system compared to the miles (sometimes hours) of service. Higher numbers here reflect a higher cost for the scale of service, though this is unrelated to how useful the service is to riders, as it does not consider how many people ride, or how far.

Cost Effectiveness compares the cost of the system to actual service, measured in overall passenger miles and individual passenger trips. Higher numbers here reflect a higher cost for actual passenger service.

Service Effectiveness considers how useful the service is, comparing individual passenger trips to overall miles (or hours). Here, higher

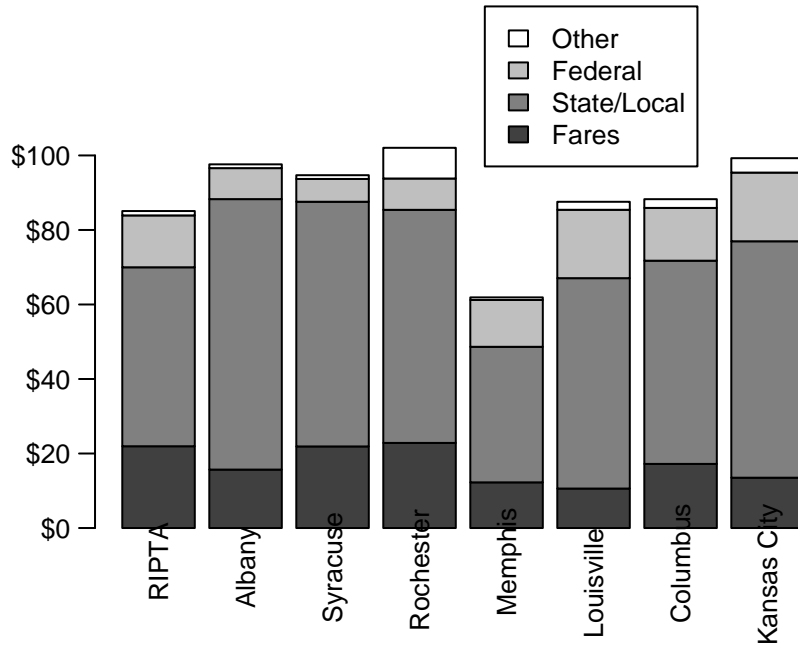


Figure 5.1: Proportions of agency revenue from different sources, scaled by annual passenger miles. RIPTA gets a higher percentage of its revenue from fares, and a lower percentage of state and local support than any other system in the comparison group. Source: National Transit Database, all figures 2006, dollar figures in millions.

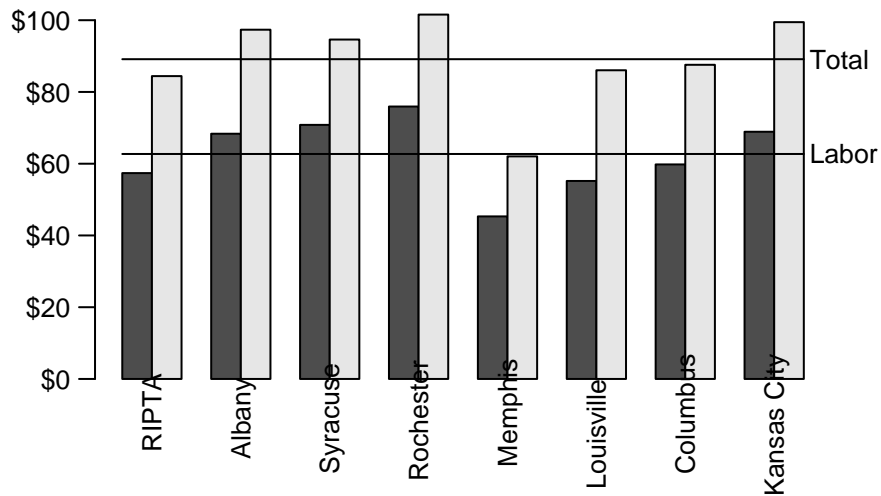


Figure 5.2: Labor costs (dark bars) and total expenses (light bars) for several transit agencies, scaled by annual passenger miles. The horizontal lines show the average values for labor and total expenses. RIPTA is relatively inexpensive compared to these other agencies. Source: National Transit Database, all figures 2006, dollar figures in millions.

numbers reflect more passengers taking more trips, for the scale of the service. This is the best measure of how well the system provides service to riders.

The three important variables for any transit services are the number of passengers, the number miles (or hours) of service, and the cost of providing this service. Service efficiency, cost effectiveness and service effectiveness are just three ways to compare these important variables.

Again, bear in mind that one-to-one comparisons between different agencies are difficult at best. The figures below should only be considered in a general sense. Small differences should not be considered meaningful. Nonetheless, there are some substantial differences that survive the cautions.

All figures in this section are taken from 2006 National Transit Database data, and pertain only to bus services. Bus service figures further refer only to regular fixed-route scheduled service, not to paratransit or flex service.

5.1 Service Efficiency

The two largest cost areas in all transit agencies—wages and fuel—are both measurably higher in New England than in most other parts of the country. See Figure 5.3.

Service efficiency and service effectiveness are directly related, in that the more actual passenger service is delivered, the higher the cost is for the same scale. A bus carrying fewer passengers on fewer trips stops less, and travels farther in the same time, yielding a higher cost efficiency, while a bus delivering higher service stops more, consumes more fuel, and takes longer to travel the same distance, reducing cost efficiency. RIPTA's "Service Effectiveness" (see below) is much higher than that of most peers (all but Syracuse), meaning that RIPTA buses are fuller, carrying more passengers on more trips, and making more stops and starts, which increases fuel and maintenance costs. The consequent greater fuel

and labor costs, both increase RIPTA's overall operational costs—but as a component of substantially higher public service (Figure 5.5).

5.2 Cost Effectiveness

Based on these figures, RIPTA's operating costs per passenger mile and passenger trip appear comparable to the performance of transit peers. (See Figure 5.4.) Yet RIPTA actually performs better than these numbers suggest:

Of all the agencies listed, RIPTA is the only one with 100% cost liability. All other peers are subsidiaries of other agencies or government divisions, and some portion of their overall costs are not reported to the National Transit Database, but instead covered by one or more outside entities.²

The exact amount of non-attributed or 'hidden' costs for each peer is very difficult to know (due to the complexity of most government budgets), but it's certain that they all cost something more than listed here, while the numbers reported here represent RIPTA's entire operational cost. In this light, RIPTA's cost effectiveness is well above average.

²In fact, the original peer group selected by Abrams-Cherwony included the Hartford division of CT Transit, which is approximately the same size as RIPTA. That agency was excluded entirely from this comparison because, as a division of Connecticut's Department of Transportation, its budget is too different from RIPTA's. See Appendix A.

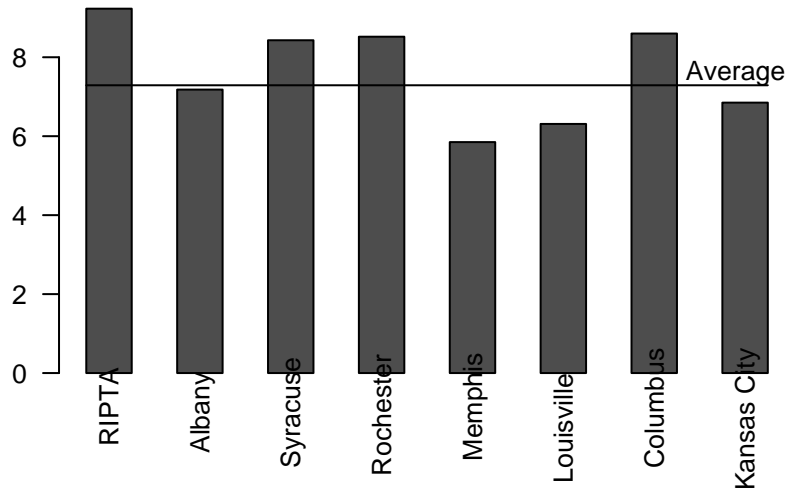


Figure 5.3: Operating expenses per vehicle revenue mile. RIPTA is fairly expensive to run, per mile. But in our compact state, this is less important than it would be in a more spread-out place. Source: National Transit Database, 2006.

5.3 Service Effectiveness

In comparison to peers, RIPTA achieves very high service. (Only Syracuse scores better, see Figure 5.5.) The number of passenger trips per mile and per hour reflects how many people are actually riding buses together. This accounts for RIPTA’s very high fare revenue compared to other peers (30% above peer average).

Most importantly, this means that RIPTA provides a meaningful and vital service for a large number of riders within its densely-populated service area. The benefits of transit are highest in dense areas, and Rhode Island is the second most densely populated state in the nation, so that even a modest expansion of RIPTA service promises dramatically higher effectiveness.

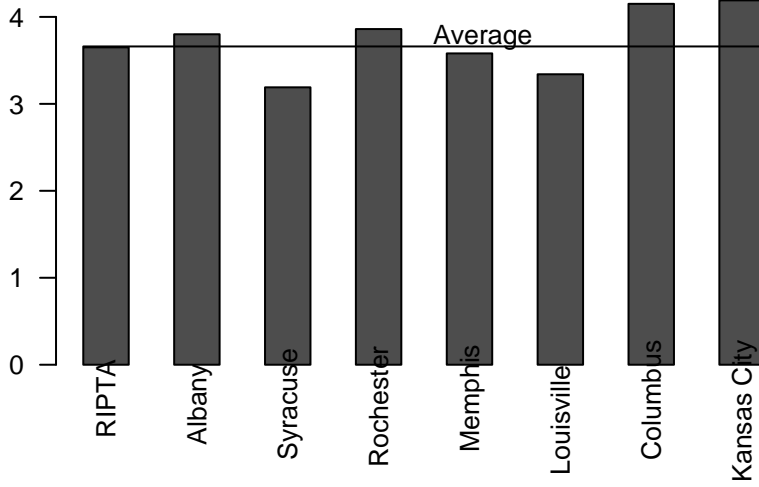


Figure 5.4: Operating expenses per passenger trip. RIPTA is about average when you measure expenses for each passenger's trip. Source: National Transit Database, 2006.

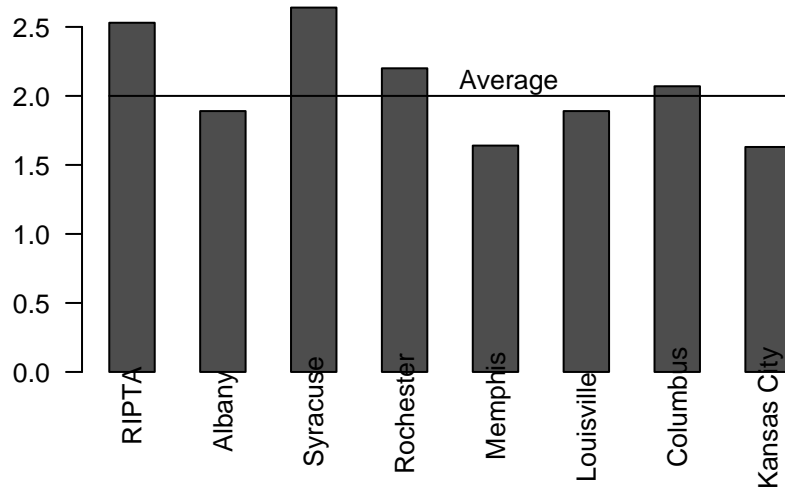


Figure 5.5: Passenger trips per vehicle revenue mile. RIPTA is much more heavily used for each mile of its routes than the other systems considered here. Source: National Transit Database, 2006.

6 Solutions Through Transit

THE TRANSPORTATION, congestion and environmental problems we face are many and varied, yet they share a common cause: our dependence on driving. The good news is that this means they can be solved by a simple strategy: reduce that dependence. Good planning and long-term policies emphasizing public health, community, economic stability and sound environmental priorities will not only reduce our dependence, but will benefit our state in many other important ways.

Properly funded, expanded, and improved, and combined with smart growth strategies and wise land use policies, RIPTA has the potential to be among the nation's top performing public transit systems, if for no other reason than the relatively compact nature of our state. And through that success, Rhode Island has the potential for enormous savings in urban commuting, delivering dramatic net gains for the entire state, and enjoying economic stability and growth, while preserving our special character into the future.

6.1 Planning Ahead

Spending without proper planning will waste as much as it saves. The transit strategy must be part of a larger plan incorporating smart land use, sensible long-term planning and development, realistic valuation of motoring costs, and effective ridership incentives, including elimination of driving incentives.

- By law, agencies like RIPTA have a say in the adoption of town comprehensive plans. In practice, RIPTA rarely has a significant role in town plans. Whether by statute or tighter state control, more consideration to public transit concerns will create comprehensive

plans that better reflect the state's needs to minimize fuel consumption and pollution and improve the quality of life in Rhode Island.

- New development too often demands expansion of costly infrastructure well beyond real population and economic growth trends. Worse, this additional infrastructure is sometimes later abandoned if the development fails, leaving taxpayers holding the bag. Therefore, development permitting should reflect real costs associated with expanding the necessary infrastructure, and include provisions to support related transit requirements.
- Incentives for driving should be eliminated. Parking reform should require motorists to shoulder more of the impact of driving, such as long-term revenues lost by devoting valuable land to parking. Infraction fines should reflect the impact of cars on dense city areas.
- Car insurance should be restructured to reflect actual use. "Pay-as-you-go" and "payer-mile" options more fairly distribute costs of driving according to individual use, rewarding those who drive less and reducing incentives for those who drive more.

6.2 Economic Benefit

Good public transit is hardly a drag on state finances. Transit can itself be an engine of economic activity. Transit has to be built and operated, but more important, it can provide a concentration of activity that can be beneficial to businesses located to take advantage of foot traffic or inexpensive commuting.

In Dallas, opening the new DART system in 1997

set off a one-year 33% jump in retail sales in the area it served, compared to a 3% rise in the rest of the city. Since then, the system has generated \$922 million in new investment. (Compare that to the \$860 million cost of the project.) The increase in taxable value in those areas was 25% greater than anywhere else in the city.¹ Similar stories appear wherever significant transit investments are made. Boston's relatively new Silver Line, for example, has already seen over \$450 million invested in commercial and residential development along its corridor.

Responsible estimates say that the benefit of a \$10 million investment in transit will usually bring around \$31 million in added business output. Another way to look at it is that a dollar spent on transit will return well more than that dollar in economic benefit to the community. In some cases, the benefit can be greater than the cost by a factor of six or more.²

6.3 The Role of Transit

Transit is not merely a convenience for non-drivers, or an attractive alternative for those with problematic commutes. It provides transportation for those who do not drive, or prefer not to. It allows efficient use of land, promotes walking and bicycling instead of driving, and enhances tourism. And it reduces the traffic load on existing roads, improving all transportation modes.

Transit is essential to city life: A city like Boston could not function without an extensive, reliable transit system; Providence and other dense urban areas in Rhode Island would suffer greatly without it, and already suffer for its inadequacy. Cities are the heart of Rhode Island's economic engine, and require transit to move workers and limit con-

gestion, as well as prevent the waste of valuable land for parking at the expense of more worthwhile uses.

Transit is also the quickest, easiest, and most immediately effective way to combat problems of fuel consumption, pollution, and the effects of global warming. By carrying many more people in one vehicle, transit greatly reduces the impact of commuting on these problems.

Transit improves whole systems: When people ride instead of drive, they spend less on fuel and parking. Many riders save the costly burden of having a car at all. Transit enables non-drivers to get to and from work, enhancing the lives and contributions of productive people.

¹Data and estimates in this section are from "The Benefits of Public Transportation: Essential Support for a Strong Economy", a publication of the American Public Transportation Association. www.apta.com/research/info/online/documents/essential.pdf.

²"Public Transportation and the Nation's Economy: A Quantitative Analysis of Public Transportation's Economic Impact," Cambridge Systematics, Inc. Washington, DC, October 1999, quoted in APTA, op. cit.

7 Financing a First-Class Transit System in the Ocean State

IT IS WELL AND GOOD to outline the benefits of transit, but how, exactly, do we pay for it?

7.1 Paying for Itself

Politically, it would seem simplest if RIPTA's fares covered RIPTA's expenses. But even if you ignore the injustice of demanding that one form of transportation do without subsidy while driving is so thoroughly subsidized, it is simply not possible.

With the possible exception of a few Japanese commuter rail lines, no transit system in the world operates without subsidy. For RIPTA, fares pay for about a quarter of its operating costs. Calculating from 2006 expense figures, RIPTA fares would have to be around \$4.35 per trip to cover its operating costs. In order to cover additional costs, including capital expenses, administration, depreciation, and debt service, one-way fares would need to be increased up to nearly \$5.00.¹

Do any transit modes break even or profit on fares? Yes: Taxis, car services, limousines, and the like all charge profit rates. A person who takes a commercial taxi to work everyday is paying only a little more than what RIPTA would have to charge if riders were meant to cover the system's full operating costs. Such a high commuting cost is obviously impossible for the vast majority of riders. Were it imposed, RIPTA would have very few riders, making the service worthless.

The role of public transit is to facilitate other economic channels and to deliver net benefits for the

¹Derived from National Transit Database cost and revenue figures for RIPTA, FY2006. Five dollars is not four times the 2006 standard fare of \$1.50, but many riders pay discounted fares via monthly passes or discounted rates.

served community. Sometimes the benefits can be easily measured in dollars and cents (see box, page 23), and sometimes the benefit is less tangible (see box, page 13). But by making it cost-effective and convenient for large numbers of people to move around at low cost, transit enhances the overall economic system. Done right, the product for the greater community is a robust net gain, even though the transit system itself runs at an immediate loss. Again, consider the amount of money that the Rhode Island economy loses every year to gasoline-producing regions of the world due to our dependence on automobiles. Public transit, is far more fuel efficient, so considerably reduces our energy imports.

Reaping the community benefits of public transit demands regular and robust ridership. The more people who ride, the more effective the service, and the greater the overall benefit for all. But it's not enough just to add buses, routes, and stops. Transit must not only be available, accessible, reliable, and convenient, but also worthwhile. Just as the intangible quality-of-life benefits of transit are important considerations, potential riders place a high value on the quality of the ride experience. Maximizing the benefits of transit means making it desirable, not merely suitable.

7.2 Possible Sources of Operating Support

An ideal transit funding model is adequate, reliable, responsive to changing circumstances, and above all sustainable. Transit requires substantial capital, and its operation should make the most of that investment. Many potential revenue sources

are worthwhile, but must remain supplementary for lack of dependability. For example, the real estate transaction tax levied in upstate New York is a good idea, but the tax varies quite a bit with the health of the local economy.

Still, there is nothing farfetched about a reliable funding system for public transit. Plenty of systems around the country have established funding schemes that can respond to local changes, without the need for legislative adjustment. In other words, there are several successful models available for Rhode Island to use to generate the revenue necessary for stable operating support for RIPTA. Many of these are used in other locales. We don't need to reinvent the wheel, merely adopt what works elsewhere.

Gas taxes In much of the U.S., including Rhode Island, portions of gas taxes are frequently earmarked for roadways and transit, yet just as frequently, these allocations barely cover maintenance, never mind enough extra to buy and maintain buses, stops, and signs. But in Europe, transportation excises on fuel are enough to pay for both.²

In Rhode Island, 7.25 cents per gallon of gas sold goes to RIPTA. While this helps support transit, it does not account for changes in gas prices, or inflation: When the cost of gas goes up, RIPTA does not get any more money as a result of the increase in price. In fact, rising gas costs typically reduce gas sales, so when people drive less, RIPTA loses the extra money needed to pick up the slack—while at the same time paying more itself for fuel.

Fuel levies can help fund transit, but our current gasoline excise scheme will never be adequate. To make better use of gas taxes for transit, excises should be indexed to inflation or other relevant changeable factors, such as the price of gas, to provide automatic flexibility in transit funding, allowing for rapid

²Transportation Research Board, Transit Cooperative Research Program, Building and Retaining Transit Ridership: The Keys to Success, An Interactive CD, 2007; NGA Center for Best Practices, Issue Brief: State Policy Options for Funding Transportation, February 2007

adjustment to changing demand.

Tolls An apportionment of tolls from bridges and turnpikes is appropriate where one goal is to displace some portion of personal motor traffic into mass transit. New York City aggres-

Transit in the Upper Connecticut River Valley

Advance Transit, based in Lebanon, New Hampshire, serves six communities in a combination urban and rural zone in upper New Hampshire and Vermont, totalling 45,000 in population (about 1/20th RIPTA's service scale). Despite its small service population, AT recorded 1.5 million passenger miles in 2004. By 2005, recorded ridership was two and a half times that of a decade earlier.^a

This success is due to AT offering entirely free and unlimited bus service:^b A little more than half of Advance Transit's funding comes through a 50-50 match with Federal Transportation Authority rural subsidies (FTA Sec. 5311). (FTA also provides a portion of capital and administrative funding, with 20% local matching.) After finding that collecting fares cost as much or more than fare receipts, AT consulted with the area's two largest employers, Dartmouth College and Dartmouth-Hitchcock Medical Center, who realized that building and operating needed parking facilities would cost much more than fully subsidizing transit for the same population. The partnership saves money for both these institutions and the transit operator, and provides exceptional service to a broad population.

At 100 percent subsidy, the service cost taxpayers \$1.4 million in 2005. But the net gain for the service community was much greater than the cost: Working riders earned an estimated \$1.2 million, while avoiding \$375,000 in private motoring costs, at least \$16,000 in parking fees, and at least \$170,000 in taxi fares—all totalling some \$1.76 million. The estimated net gain for the community was \$360,000, pre-paying a quarter of the next year's service budget.

^aAll base figures from Upper Valley Transportation Management Association, Operational Impact Study of Advance Transit Fixed-Route Bus Network, 28 July 2005. (Like most small transit agencies, AT does not report to National Transit Database.)

^bCarol Hardy, Advance Transit

sively tolls inter-city traffic, diverting much of these earnings to city transit.

A locally devised plan could shift choking motor traffic—rush-hour traffic in Providence, or summertime traffic in Newport—to more efficient transit. As in New York, targeted tolls on key bridges can encourage travellers to take transit instead, while large toll excises from tolls on those who do drive can help to support those alternative transit options.

Placement of tolls on some of Rhode Island's major arteries could also help relieve the crippling debt burden assumed by DOT. According to the FHWA, there is no legal impediment to establishing tolls on federally-funded highways, though the FHWA reserves the right to approve such proposals. Providing funding for transit is well within the scope of allowable purposes for such money. Similar proposals are in the news in New York, Pittsburgh, San Francisco, and many other cities.

It's worth noting that tolls need not be collected in traditional toll booths. No one wants to *increase* congestion. New technologies have been developed that make the collection of tolls fast and easy. Though the FHWA is currently entertaining a few proposals that involve toll booths, most of the areas experimenting with new tolls are using radio technologies to collect tolls without increasing the traffic on those roads.

Tolls levied for use of roadways during peak periods serve the same purpose as regular full-time tolls, with the added benefit of discouraging excess rush hour traffic and resulting congestion. "Congestion pricing" like this exists in a number of cities in Europe and Asia, and in the US, too. The high-profile attempt to establish it here (in Manhattan) has recently run aground on state-level politics in New York, but variable pricing according to congestion has been in place for a decade in San Diego, among other places.³

Employer taxes Tri-Met is a multi-city planning

³http://www.etc.dot.gov/us_examples.pdf

district that serves a strictly defined area of Greater Portland, Oregon. For support, it levies a tax on employment earnings, currently at 0.66% of gross wages and scheduled to rise 0.01% yearly, until reaching the current state cap of 0.72%. The tax is not shared by employees, but paid quarterly by employers. This covers about 55% of operating costs, while a separate self-employment tax covers an additional 4%. (Fares make up 20-22% of the remainder, with federal grant money filling in most of the rest, along with advertising sales and other minor revenues.) Portland's scheme closely tracks population and growth, both major factors in service demand, allowing Tri-Met to quickly respond to demographic and economic changes.

Parking excises Additional charges for parking can contribute to state revenues for transit, while reducing overall parking congestion. Likewise, additional fees can be attached to parking tickets and other minor infraction fees. Some jurisdictions are considering or already implementing plans to add surcharges to moving traffic fines, a portion of which will go towards transit. Atlanta, for example, has proposed a surcharge that would go entirely to its MARTA system.

In Rhode Island, the cost of parking is a frequently-cited reason for businesses moving out of Providence. It is important not to do anything *more* to discourage businesses from locating in our central cities. We need a transit system good enough to be a plausible substitute for driving before a system of excises like this could work here. Nonetheless, for all the reasons cited in this report, this is a goal worth achieving.

Tax free parking Sprawl is not caused by free parking, but it certainly is abetted by the convenience of driving to places where it exists. Customers of businesses in urban centers have to pay for parking, while customers of their suburban counterparts do not. A statewide assessment on commercial properties that provide free parking could both provide transit income and do it in a way that

begins to level the playing field among businesses within and outside our central urban districts.

Sales tax Cap-Metro serves the greater capital district of Austin, Texas, including some unincorporated suburbs. Under authorization of the state, the agency levies a voter-approved 1% apportionment of the Sales and Use tax within its service area. This tax is open ended, and does not require legislative reauthorization or adjustment. As it follows purchasing trends, it responds reflexively to changes in the local economy, so that as commercial activity goes up, operations revenue follows, allowing Cap-Metro to meet increasing demand.

The Charlotte Area Transit System (CATS) serves a large area around Charlotte, North Carolina, and is developing a multimode transit system to include links to nearby cities. Under state authority, CATS receives a sales tax surcharge of one-half percent on all purchases (except for essentials and some commodities), which funds all operations, as well as a portion of capital investment.

Sales tax apportionments have proved effective and reliable in other areas, and there is every reason to expect that they could go a very long way in keeping RIPTA rolling. To be effective, a sales excise need not be large, but must be broad, consistent, and long term.

Motor vehicle fees Surcharges on vehicle registration fees could help provide support for RIPTA operations. Years ago, registration fees were scaled to the weight of the automobile. Heavier cars paid higher registration fees. Restoring that differential could create incentives that would move the fleet of cars in a more fuel-efficient direction while at the same time supporting public transit.

Real-estate transaction tax The transit divisions of central upstate New York, including RIPTA's peer CNY Centro (Syracuse), rely in part on a mortgage transaction excise, (currently 1/4 of 1%, 0.0025), collected by counties within each agency's jurisdiction and for-

warded monthly to the transit agency directly for operational costs. This is not a tremendously stable source of income. Being linked to economic trends, this source has varied by as much as 40% up or down from year to year recently. However, over the last three years, it has delivered an average of around \$7-8 million per year in Syracuse, though this is trending downwards due to widespread real-estate and larger economic trends well outside the agency's influence. This option can be fruitful, but may be better regarded as a supplement to major funding, as it is not substantial or stable enough by itself to provide meaningful support of a large, complex transit operation, where efficiency depends on confident long-term planning.

Real-estate subdivision tax This concept addresses the assumption that commercial development inherently incurs greater impact on civic infrastructure and services, including transit. Already, new developments are required to address many areas of predicted impact, including direct environmental impact, water use, sewerage increase, and so on. Transit should be considered along with these other impact areas. Workers and customers add to the transit demand in development zones, as well as add to transit costs in those same areas. A complementary planning model can benefit both developers, clients and riders.

Private sponsorship Operating support for transit systems can also come from businesses served by transit. In the same way that Business Improvement District (BID) funds pay for street cleaning, trash removal, and other civic services in these zones, they can be used for transit. Portland's new streetcars were partly financed by the creation of a "Local Improvement District" containing businesses that would be directly served by the new line, and the line provides an interesting model for funding solutions. It currently offers promotion opportunities to businesses along the line, and sponsors can range from large employers who are audibly thanked at least once

a day, to small restaurants whose names appear on transit maps. While interesting, the program also demonstrates the limitations of such a program. With energetic promotion of the sponsorship opportunities, and ridership double its predictions, sponsors only cover about 6% of the operating budget. There are, however, ancillary benefits to private sponsorship, such as increased publicity and support for the system, that make it worthwhile to establish this kind of funding stream.

Commercial support of transit can benefit large business zones with many workers, such as Providence's Financial District or large concentrations of employees or shoppers: the Cranston Industrial Park, Providence Place Mall, Garden City, or dense retail and service corridors such as Bald Hill Road in Warwick and the dense business zone around T. F. Green Airport.

Operating costs are occasionally also available directly from large private businesses. Most often, these are big employers or schools who are persuaded to purchase transit passes in bulk for their employees or students. (The RIPTA UPass program, where students at some area colleges can use their student ID as a bus pass is an example.) In the Columbus, Ohio area, for example, Federal Express helped to fund a dedicated route spur to serve their facility, by paying 25% of pass fees in advance. (The facility later moved.)

7.3 Possible Sources of Capital Support

Capital support, distinct from operating support, has historically been easier for RIPTA to acquire. This is likely because capital funding is usually done through debt, so that the benefit is usually apparent before the cost, a situation with a certain level of political expedience many politicians find appealing.

Still, the amount of capital funding that RIPTA has been allowed is barely what it needs to maintain

its stock, not to expand its service or equipment. Identifying more sources of capital support will make it more likely the system will be able to afford the expansion our state so desperately needs.

Tax Increment Financing The TIF approach uses the increased property taxes from some infrastructure improvement to service the borrowing used to make that improvement. Washington, DC has already vested some \$100 million in TIF support for development and improvement projects totalling nearly a quarter billion dollars. Most recent is a proposal for a mixed-use, transit-oriented development, slated to receive \$4 million in TIF support.

The difficulty with TIF financing for RIPTA is that bus routes are inherently malleable and essentially invisible. Without the implicit promise of permanence embodied by a very visible rail line or station, the expected increase in property values may not happen.

A related version of this kind of funding is to look to the tax increments, but not for bonding. The new Seattle streetcar found half its \$50 million construction funding via a one-time assessment of property within its service area. Property was taxed according to the benefit it would receive in property value. The enabling legislation for this assessment would have required the project to be canceled if 60% of the property owners objected. In the event, only 12 owners filed objections, representing 1.5% of the property in the district.⁴

Developer support More direct than TIF funding is simply to ensure that real estate developers, especially developers of large projects, make an investment in public transit on behalf of the future occupants of that development. This is particularly appropriate where the development creates or seriously increases the demand for transit. Some of the funding used for the Portland streetcar line is from real estate developments along the route.

⁴Seattle Times, 12 November 2005, "Landowners hop aboard Lake Union Streetcar line"

Fed-Flex Federal transportation funding regulations allow a portion of federal highway funding to be converted to use for transit projects. New England states have generally diverted little of this money towards transit, but the option is there, if we choose.

Over the last fifteen years, Rhode Island converted only \$47 million of transferable flexible federal transportation money to transit—less than 10 percent of what was available.⁵ Of the rest of New England, only New Hampshire converted less.

While Rhode Island’s roads and bridges are in need of repair and upkeep, investment in transit would go a long way towards reducing the demand and resulting impact on highway infrastructure, and yield net gains to help pay for needed upkeep. The state should seek to balance ever-growing roadway costs with the costs to improve transit.

Leveling the Road

One of the most productive ways Rhode Island can work to fund transit is by lobbying the federal government to change how it handles funding proposals for transit. Currently, federal funding for highway and transit projects are handled differently:

The federal government’s process for evaluating new transit projects is commonly oversubscribed and the process for obtaining funds is cumbersome, complex and costly. Proposals for transit system expansion must pass a series of difficult hurdles that are not imposed on highway projects, including extensive review of land-use impacts and cost-effectiveness and head-to-head competition against other transit projects nationwide. Moreover, while transit projects theoretically receive the same federal “match” as highways (with the federal government paying for 80 percent of the capital costs of the projects and states 20 percent), in practice the federal government has required state and local governments to

⁵Government Accountability Office, Report to Congressional Committees, Highway and Transit Investments: Flexible Funding Supports State and Local Transportation Priorities and Multimodal Planning, July 2007

cover 40 to 50 percent or more of the cost of new transit projects.⁶

A description of the financing of a recent expansion of the streetcar system in Portland, Oregon, is instructive. To come up with a capital budget of \$103 million, the transit agency relied on the funds shown in Table 7.1.⁷ The remainder was made up from transfers from other transit agencies and cost savings found during construction of an earlier project.

Table 7.1: Financing a recent expansion of the Portland Streetcar line. Dollar figures are in millions.

City general fund	\$ 1.8
City parking bonds	28.6
City parking fund	2.0
City transportation fund	6.2
State funds	12.1
Local Improvement District	19.4
Tax Increment Finance (three districts)	21.5
Federal funds (Transportation and HUD)	7.1

Despite its announced support for transit funding, the federal government was a minor partner in this project, contributing less than 7% of the funding. Any project cobbling together so many sources of funds depends on all of them, but the point is clear. These steep challenges, especially compared to the relative ease of soliciting federal funds for highway projects in the same area, create a powerful disincentive to meaningful expansion of transit, while simultaneously encouraging more wasteful highway expansion.

Rhode Island should work with other states, especially in New England, to level the process so that transit gets at least equal treatment in the federal funding process. Ideally, everyone, including the federal government, would gain the most benefit from putting a higher priority on urban transit, rather than highways.

⁶Edward Beimborn and Robert Fuentes, Brookings Institution Center on Urban and Metropolitan Policy, “Highways and Transit: Leveling the Playing Field in Federal Transportation Policy,” December 2003.

⁷http://www.portlandstreetcar.org/pdf/capital_and_operations_summary_20080213.pdf

8 Catching the Wave

IF OTHER PUBLIC SERVICES were considered on a strict profit-loss basis, we would never fund them, since they are very costly and take in almost no direct revenue. It seems more fiscally responsible not to provide public services at all. But we understand that the net cost of not providing these services is much greater than the direct cost of providing them, not only in quantifiable costs of property and goods, but also in less tangible human costs. In that larger view, the net gains of public service far exceed the direct costs for the served community. While transit considered by itself loses money, inadequate or absent transit would pose much greater losses for the state.

Good public transit yields substantial net benefits, exceeding budget shortfalls and delivering greater non-tangible benefits as well. Investment in transit improvement and expansion inherently benefits the state fiscally, while enhancing the health, well-being, and quality of life for everyone.

Transit subsidies are frequently viewed as an extra cost, but driving actually costs much more. The costs of driving are largely private, and distributed between different payment points—gas pump, insurance company, repair shop, etc.—so that they may not be immediately apparent, especially from the perspective of a taxpayer.

In contrast, the costs of transit are entirely public, and mostly contained in a single budget, so that it's much easier for taxpayers to see what it costs. This transparency can make transit seem costly. But compare the total costs of car ownership to transit directly, and the picture is clearer.

Each day American workers commute 166 million miles. Yet less than one out of ten workers who live and work near transit actually take transit to work. For those who do, however, the motor fuel savings is substantial. In 2006, households with workers who took transit saved 32 dollars in

fuel costs per week on average—\$1670 per year—compared to similar households whose members drove to work; with today's higher fuel prices, the savings is nearly twice as much.¹

It is the public perception of cost, rather than the reality, that makes transit vulnerable to unwarranted budget cuts. As states struggle to balance countless competing priorities within limited resources, beneficial transit that actually reduces overall public costs and promotes economic health too often takes the hit.

8.1 Conclusions and Recommendations

The problems facing Rhode Island specifically, and the nation and world generally, are part and parcel of the same phenomenon and trends. Over the last half century, personal driving replaced transit, biking, walking, and other modes of travel. This led immediately to a vast increase in the number and volume of roadways, making roads and road travel a central aspect of daily life.

Over time, fuel consumption has increased to the point where demand now strains supply. Overdependence on motor vehicles for all purposes now makes us more vulnerable to supply and market changes than ever before. At the same time, the enormous volume of pollutants expelled by motor vehicles of all types has damaged our environment in many ways, threatening air, water, food, and wildlife. Most ominously, the buildup of carbon dioxide has now been identified as the main agent responsible for global warming that will take years to subside, meanwhile raising ocean levels, increasing the frequency and intensity of vio-

¹Federal Highway Administration, National Household Travel Survey, June 2006 (some figures derived).

lent weather, especially ocean storms, and disrupting complex ecological systems, with detrimental consequences for wildlife, food supplies, and human habitats.

While these problems may seem overwhelming, the startling fact is that we can start to mitigate most of them immediately and successfully through thoughtful integration of two relatively easy, simple, and proven solutions: intelligent planning and land use policy, and broad implementation of public transit. Integration of these two closely related solutions offers fruitful synergies such as transit-run commuter assistance, parking reform, transit-centered planning and development, development-based transit financing, and transit-based live/work incentives, with disincentives against personal driving.

Besides immediate benefits to personal and taxpayer cost and overall environment, smart land use and good transit also deliver net gains for the overall community beyond the visible costs of service, from increased commuter travel efficiency and reduced commuter stress—both improving workplace productivity and satisfaction—to preserving irreplaceable open spaces and vital tourist areas.

To deal with current and future challenges of a growing Northeast population, to remain competitive in a growing New England economy, and to mitigate serious environmental dangers, Rhode Island must aggressively commit to long-term transit investment, starting now. Not only in maintenance and enhancement of the current system, but also towards expansion, including into other modes such as light commuter rail, bus rapid transit (buses operated like in-city rail, with limited fixed stops along dedicated lanes), and auxiliary services such as subsidized commuter vanpools.

At the same time, Rhode Island must address damaging land-use trends, and adopt and enforce smart planning and development policies, through necessary regulation and beneficial incentives and rewards, and ensure that these measures are closely integrated with transit funding and development, to maximize the benefits of both.

Finally, while making the most of our available re-

sources, we must also form strong and lasting partnerships with our neighbors in New England the larger Northeast region, and the federal government. Working together, we can share the benefits of large, well-integrated regional planning, including sharing of resources, and leverage good planning and demonstrated local successes to gain valuable federal support.

The problems we face require much more than immediate and short-term mitigation. We also face changes in how we live, work, and travel. These changes are inevitable, and irreversible. The sooner and more enthusiastically we embrace this future and the necessary changes it brings, the better we will fare now, and into the future.

A The Difficulties of Peer Comparisons: CT Transit

Comparisons between transit agencies are fraught with inconsistencies. The peer group we examined in chapter 5 was selected by a consultant to RIPTA. We have omitted the Hartford Division of CT Transit from our comparisons because of several complicating factors.

- While RIPTA is a single statewide agency, Hartford is one of three major regional divisions within a larger statewide system, comprising approximately 61% of the overall administrative cost, based on its share of overall mileage compared to two other divisions (New Haven and Stamford). Some administration is duplicated in each division, making it difficult to reconcile with RIPTA's single centralized administration.
 - CT Transit is a division of the Connecticut Department of Transportation, so that some administration is handled completely outside the agency and accounted for separately. Also, Hartford's facilities and rolling stock are State property, and not accounted for in their own figures.
 - Hartford's paratransit service is conducted by a State contractor, and not included in NTD figures. Signage and shelter maintenance are the responsibility of local governments, and not included in Hartford's cost figures.
 - CT Transit's grants administration, vehicle and facility procurements, and construction management are all handled by ConnDOT, not by the transit agency itself.
 - Hartford operates a single facility, while RIPTA operates several. Other CT Transit divisions have their own facilities, each separately accounted for within its division.¹
- ConnDOT contracts with a private management company, First Transit, to fill CT Transit's GM and AGM positions. At the same time, First Transit provides additional services over and above their salaries and benefits within a fixed annual fee, of which only 61% is attributed to Hartford Division.
 - Besides multiple major regional divisions within CT Transit, much public transit in Connecticut is not conducted by CT Transit. There are separate, independent transit authorities in Norwalk, Bridgeport, and Danbury. The Norwich authority reports to a local board, but the facility and buses are State owned. Meanwhile, transit operations in Waterbury, New Britain, Bristol, Meriden, and Wallingford are performed by State contractors, but use privately owned facilities. These aberrations skew ConnDOT and CT Transit's cost and revenue figures, and therefore Hartford's as well, and complicate the comparison with Rhode Island's single statewide system.

Given all of the above complications, it is not feasible to sufficiently adjust Hartford's figures to form a meaningful comparison to RIPTA, and so Hartford is not included in these comparisons.

ates a number of 'dead-head' facilities, at bus route terminus points. Hartford Division has no major route terminus points because instead of ending, its major routes continue through to other regions. Hartford's single facility is the 'dead-head' point for other regions, and vice versa. On a statewide scale, CT Transit operates a similar number of facilities as RIPTA for its overall size.

¹Besides its single major central facility, RIPTA oper-

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“A Fare Choice” can be found on the Sierra Club Rhode Island web site: www.ri.sierraclub.org/farechoice.pdf.

Many of the policy proposals and suggestions in this document derive from discussions that took place during meetings and conferences put on by the New Public Transit Alliance (NuPTA). NuPTA is a growing coalition of bus riders, businesses, smart growth, labor, health, and environmental groups dedicated to renewing public transportation in Rhode Island. Information about NuPTA can be found at www.ri.sierraclub.org/nupta.

The vision of the Rhode Island Sierra Club is to:

- Protect our fresh ocean air and the legacy of our beaches and coastlines by reducing global warming pollution to sustainable levels (80% by 2050);
- Broaden the prosperity of Rhode island communities with affordable commutes and green jobs; and
- Reduce our dependence on dirty imported oil.

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