



TAX REFORM

Agrees With Vermont ^{THAT}



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for*

The Vermont Fair Tax Coalition



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This report is available on the Internet. Please point your web browser to www.foe.org.

The Vermont Fair Tax Coalition was founded in 1998 by Friends of the Earth, Vermont Businesses for Social Responsibility - Research and Education Foundation, the Vermont Natural Resources Council, and the Vermont Public Interest Research Group, who joined together to focus on reforms to the Vermont tax system to encourage a stronger economy, fairer tax system, and healthier environment. The Coalition believes that the concept of tax shifting is an important tool in promoting a vigorous, fairer, and environmentally sustainable economy. The Coalition explores and promotes reforms that eliminate subsidies for environmentally destructive activities, reduce regressive and distorting taxes, and increase taxes on pollution and waste.

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Executive Summary

The Tax Shifting Concept

The topic of taxes has the power to produce blank stares and yawns, as well as impassioned emotions, complaints, and arguments. Many individuals and businesses believe taxes are too high and too complicated, and that nothing can be done to change them. But there's a good reason to overcome the boredom, set aside preconceived ideas, and reconsider just how taxes work and how they could work better.

Our taxes fund many programs that we benefit from every day, including education, government services, and Social Security. However, taxes tend to discourage the activities that are taxed. Taxes on wages discourage employment, and taxes on air pollution discourage activities that pollute the air. But some activities are worth discouraging more than others. Federal, state, and local governments raise most revenue through a combination of income, property, sales, and payroll taxes. These taxes tend to discourage activities most of us believe are good for society, however: earning income, owning property, purchasing goods, and being employed.

Tax shifting is about reducing and removing these taxes, and placing taxes instead on activities society wants to discourage. Tax shifting is *not about* raising or lowering taxes overall. Instead, it's revenue-neutral; it reduces some taxes by the same amount that it increases other taxes. The power of taxes is used to improve the public good instead of work against it, with lasting benefits for our economy, environment, and all members of society.

There are many ways to craft successful tax shifts. A tax shift can be designed to strength-

en the economy, clean up the environment, and make our tax system fairer for low-income wage-earners. We can evaluate whether a tax is one that works toward or against these goals by asking the following questions about it.

- ◆ **Economy:** Does the tax discourage or encourage job creation, enterprise, and other societal benefits? Does it help to reflect the full costs of under-priced products? Or does it cause distorted incentives in the economy?
- ◆ **Environment:** Does the tax discourage or encourage conserving resources and reducing pollution?
- ◆ **Equity:** Does the tax require polluters to pay their fair share? Is the tax assessed on people in proportion to their ability to pay, or does it create a greater hardship for lower-income people than for higher-income people?

TAXES TO REDUCE OR ELIMINATE

PROPERTY TAX

Vermont's high property taxes have a number of disadvantages. First, they increase the costs of home ownership and rental housing. Second, they are only partly based on peoples' ability to pay, requiring low- and middle-income families to pay a proportionately larger part of their income on property taxes. Finally, a significant portion of Vermont's property taxes fund road construction and maintenance, embedding some of the costs of driving into property taxes.

Vermont's property tax is a good candidate for a tax reduction, in conjunction with expanded rebates to renters. In addition, Vermont should consider eliminating the por-

A tax shift can be designed to strengthen the economy, clean up the environment, and make our tax system fairer for low-income wage-earners.



tion of property taxes that funds road construction and maintenance.

SALES TAX

Sales taxes also produce some problems. People with lower incomes pay a much larger proportion of their income in sales taxes than higher-income wage-earners. In addition, some goods with large negative environmental impacts are exempt from the sales tax in Vermont, including energy used for transportation, residential, and industrial purposes, pesticides used for farming, and fertilizer. Our sales tax also encourages people to make purchases in New Hampshire, which has no sales tax, and through mail-order catalogues.

Vermont should consider reducing its sales tax rate across the board, and exempting some additional items from the sales tax. For example, eliminating the sales tax on clothing and other necessity items that do not cause large negative environmental impacts would have positive impacts on Vermonters with low-incomes. Eliminating the tax in downtown centers would give a big boost to the state's fragile downtown economies. The state also should consider removing the sales tax exemption on energy use, pesticides used for farming, and fertilizer.

PERSONAL INCOME TAX

Personal income taxes are more progressive than many other types of taxes, but they still place a substantial relative burden on low-income wage-earners. A significant number of families in Vermont earn less than a livable wage, and these families should not be required to give up part of their earnings to income taxes. In addition, income taxes make it more difficult for other families with low- and middle-incomes to make ends meet. These families already pay property, sales, payroll, and federal income taxes, and need the remainder of their paychecks to purchase basic necessities.

Vermont should consider eliminating personal income taxes for people earning less than a livable wage, reducing them substantially for other low-income and middle-income

wage-earners, and expanding the Earned Income Tax Credit that benefits low-income wage-earners.

PAYROLL TAX

Payroll taxes are collected by the federal and state government, and include Social Security, Medicare, and unemployment insurance. Workers pay 7.65% of their paychecks for Social Security and Medicare, and employers must match these payments and pay for unemployment insurance. And, the roughly 35,000 Vermonters who are self-employed pay 15.3% of their wages in payroll taxes.¹

Payroll taxes have a number of disadvantages. They increase labor costs, which discourages businesses from hiring new employees. In addition, Social Security taxes are collected only on the first \$72,600 of wages, ensuring that low-income and middle-income wage-earners pay a larger portion of their salaries in payroll taxes than those who earn the most.

Payroll taxes paid by businesses could be reduced in order to encourage businesses to create more jobs. Payroll taxes are collected by the federal government, but Vermont could simulate a payroll tax reduction by offering businesses a credit on their state corporate taxes in proportion to the amount of annual payroll taxes they paid. As with the income tax, payroll taxes paid by employees could be eliminated completely for people earning less than a livable wage. At the same time, the Social Security tax exemption for money earned after the first \$72,600 could be eliminated.

TAXES TO INCREASE OR CREATE

Taxes can work for us rather than against us. They can strengthen our economy and clean up our environment. And, they can do so equitably for those who pollute, for those who don't, and for our lower-income citizens. The following options are examples of taxes that Vermont could institute or increase, while decreasing some of the taxes described above, to keep the tax shift revenue-neutral.



MOTOR FUEL TAX

- ◆ Reduce property taxes by about \$19 million per year and increase the gasoline and diesel tax by 4 cents per gallon to fund the transportation-related costs of local police and fire departments, currently paid for through property taxes.
- ◆ Or, reduce property taxes by about 10% and increase the gasoline and diesel tax by 21 cents per gallon to fund road construction and maintenance costs, currently paid for through property taxes.
- ◆ Or, eliminate vehicle registration fees for automobiles and increase the gasoline and diesel tax by 5 cents per gallon to fund road construction and maintenance.

MOTOR VEHICLE FEEBATE

- ◆ Assess a fee on new car purchases that have poor fuel economy ratings and give a rebate for new car purchases that have good fuel economy ratings.

SALES TAX ON FUEL

- ◆ Reduce the statewide sales tax rate to 4%; or reduce it to 4.5% and exempt clothing. At the same time, place a sales tax of 4% or 4.5% on fuels used for residential purposes and motor fuels. Continue to exempt fuels used for industrial and farm purposes.

CARBON TAX

- ◆ Assess a carbon tax on fossil fuels used in Vermont, exempting fuels used in the industrial and farm sectors and wood energy use. Provide a yearly refund of the revenues to Vermont residents and businesses.

PESTICIDE AND FERTILIZER TAX

- ◆ Introduce a system of pesticide and fertilizer taxes in the state over a period of several years. As a first step, remove Vermont's 5% sales tax exemption on pesticides used for farming and on fertilizers. At the same time, provide tax credits to farmers, and financial subsidies and technical assistance to help farmers move toward low-impact and organic farming.

SOLID WASTE TAX / VARIABLE PRICING PROGRAM

- ◆ Increase the solid waste tax to provide a stronger incentive to reduce waste. At the same time, require municipalities and waste haulers to institute variable pricing for residential customers, in which customers pay based on the amount of trash they discard. Provide revenues to subsidize recycling, composting, and other programs that help people reduce waste.

DEPOSIT / REFUND FOR BEVERAGE CONTAINERS

- ◆ Expand Vermont's current deposit/refund program to cover all non-carbonated beverage containers, and consider instituting similar programs on other types of standard food packages.

LAND VALUE TAX

- ◆ Pass state legislation that would enable cities and towns in Vermont to use land value taxation in their downtown cores if they choose, modeled after Pennsylvania's state law. Allow cities to determine the proportion of the property tax that will be raised from land values and the proportion raised from buildings and improvements.

WHERE TO START

There are a multitude of good options for specific tax shifts in Vermont. A few are outlined above, and there are many other possibilities. In any form, a tax shift works by decreasing some taxes, while increasing others in a revenue-neutral manner.

Options that decrease property taxes would be highly visible and would have widespread appeal and benefits. Sales tax reductions are attractive, but not as visible as reduced property taxes. Reducing payroll taxes paid by businesses is a very advantageous option, because it would encourage job creation and wage increases. Finally, options that eliminate or reduce personal income taxes for Vermonters with low and middle incomes is an excellent



way to compensate for the regressive nature of our tax system.

Increasing taxes on energy use would have the biggest impact on improving economic efficiency and human and environmental health in Vermont. Other taxes, such as those related to solid waste disposal, are attractive because they are manageable, predictable, and there is widespread experience with them. Whatever the form of Vermont's next tax shift, it should be sensibly sized, easy to understand, easy to administer, highly visible, and very beneficial for Vermont.

Tax shifting is a smart way to harness the power of the economy to work for us rather than against us. If we do it wisely, tax shifts will strengthen our economy, make our environment more beautiful and healthy, preserve our social goods, and keep taxes fair for all Vermonters.

The chapters ahead include the following information:

Chapter 1: The Tax Shifting Concept

Chapter 1 gives a brief introduction to tax shifting and how it can benefit the economy, the environment, and all members of society.

Chapter 2: Tax Shifting Options for Vermont

Chapter 2 outlines a number of tax shifting options for Vermont. First, taxes that could be reduced or eliminated are discussed, including property, sales, personal income, and payroll taxes. Second, taxes that could be created or increased are outlined. These include energy, air pollution, water pollution, waste, and land use taxes. A brief conclusion describing some ways to get started with tax shifting closes out the chapter.

Chapter 3: An Inventory of Vermont's Environmental Taxes, Fees, and Incentives

Chapter 3 summarizes Vermont's current environmental taxes, fees, and incentives, including taxes related to energy, air and water pollution, waste, and land use. The summary of each tax includes a brief description of the tax, an explanation of how the tax revenue is used, and a list of the revenue collected from the tax between 1995 and 1998.

Appendix: Additional Information on Vermont's Current Environmental Taxes

The Appendix gives additional details of each environmental tax, fee, and incentive described in Chapter 3, along with statutory references. In addition, a list of the permits and licenses collected by the Vermont Agency of Natural Resources, many of which carry fees, appears here. The Appendix is available upon request from the Vermont Natural Resources Council and Vermont Businesses for Social Responsibility-REF.



Chapter 1

The Tax Shifting Concept

Benjamin Franklin once observed that nothing is certain but death and taxes, and to this day, many Americans continue to see taxes as a necessary evil. No wonder. Taxes claim billions of our dollars. And, most taxes are assessed on activities we all want to take part in, such as owning a home and earning a living.

But taxes don't have to work against us. There is a simple way they can be harnessed to discourage socially and environmentally harmful activities, while encouraging beneficial ones.

Taxes tend to discourage the activities that are taxed. For example, taxes on wages discourage employment and taxes on air pollution discourage activities that pollute the air. But clearly some activities are worth discouraging more than others. Our current federal and state tax systems raise most revenue through a combination of income, property, sales, and payroll taxes. These taxes, however, effectively discourage activities most of us believe are good for society. Meanwhile, most of the taxes we place on activities we do want to discourage raise painfully little revenue and have only a modest impact.

Tax shifting is about removing the taxes on activities society wants to encourage, while placing taxes instead on the activities we want to discourage. Tax shifting is not about raising taxes overall. The government still would collect the same amount of revenue, but revenues would come from taxes on activities we want to reduce. A tax shift could even be designed to reduce taxes overall.

A tax shift can be accomplished in a number of ways. To encourage socially beneficial activities, we can start by reducing or eliminating property, sales, personal income, and payroll taxes. Or, we can offer incentives for socially beneficial activities. For example, we can give people rebates for purchasing energy-efficient products and saving energy, or we can offer farm and forest landowners lower property taxes for preserving our rural working landscape. Tax credits, tax exemptions, rebates, and other incentives are all useful tools.

At the same time, we can discourage socially harmful activities by taxing or placing fees on activities that harm the public good. For example, we can tax toxic air emissions, polluting water discharges, and the generation of solid and hazardous waste. We can protect finite natural resources, such as our drinking water supply, by placing a tax on its use.

Such a tax shift would reorient the way we produce and consume goods. The power of taxes would be used to improve the public good instead of work against it, with lasting benefits for our economy, environment, and all members of society.

A MORE EFFICIENT ECONOMY

A tax shift increases the efficiency of our economy in a number of ways. Currently, our economy is not efficient because many of our taxes have distorting impacts. For example, because employers must pay a hefty payroll tax when they hire a new employee, they have an incentive to get by with as few workers as possible. This effectively discourages employ-

Our current federal and state tax systems raise most revenue through a combination of income, property, sales, and payroll taxes. These taxes, however, effectively discourage activities most of us believe are good for society.



ment. With a tax shift, this and other distortions would be reduced.

Another distortion in our economy results from the fact that many goods are under-priced in the marketplace — their prices do not include all the social and environmental costs of their production, use, and disposal. For example, the price of gasoline doesn't include the costs of human health problems resulting from gasoline's polluting air emissions, the costs of maintaining a military presence in the Middle East to protect oil interests, or even the full costs of maintaining our road system. If the full costs were included in the price of gasoline, more consumers would make fuel-efficient choices — some would purchase fuel-efficient cars, carpool more often, and live closer to their places of work. Economic efficiency would improve because consumers and manufacturers would make choices based on price signals that more accurately reflect reality. A tax shift is an excellent way to start including the real costs of under-priced goods into prices.

A HEALTHIER ENVIRONMENT

Many of our everyday activities have far-reaching, yet subtle impacts on the environment. For example, commuting 20 miles to work, as many Vermonters do, adds more carbon dioxide to the atmosphere, hastening global climate change; adds more toxic fumes to the air, worsening the respiratory problems of some people and compromising the health of some ecosystems; adds more oil to the roads, which eventually runs off into groundwater; and depletes more of our finite oil resource. In and of themselves, most of our everyday activities have insignificant impacts — but the cumulative impact of many people doing the same thing is a different story. While many of the biggest environmental problems in the past were caused by a few big polluters, today's problems are increasingly caused by the cumulative impact of the small-scale activities of everyone. The Agency of Natural Resources has identified car exhaust as the single greatest problem.

Tax shifting is an ideal way to address this trend. Tax shifting benefits the environment by placing substantial taxes, not token taxes, on pollution and resource depletion. As outlined above, the taxes would serve to correct the failure of the market to include environmental and social costs into prices. The result of such taxes is that wasteful and polluting businesses and individuals work harder to reduce pollution, save energy, and conserve resources because they get a direct benefit through lower taxes. In addition, cleaner technologies would be relatively less expensive.

A FAIRER TAX SYSTEM

When polluters pay for their polluting activities through taxes or other means, individuals who don't pollute are treated fairly. But currently, society or certain individuals effectively subsidize many of polluters' activities. For example, when waste haulers charge the same monthly rate for all residential customers, the people who generate small amounts of garbage pay the same as those who generate large amounts. A tax shift could make polluters pay their fair share for their polluting activities, resulting in a more just society for everyone.

In addition, tax shifting gives more control to individuals and businesses to make decisions that can reduce their taxes. Pollution limits, regulations, and other restrictions can be successful in reducing pollution and resource use, but these methods are often inflexible. Taxing pollution and resource use allows individuals and businesses to make their own decisions about when reductions in the taxed activities are cost-effective.

Many of our current taxes impact low-income wage-earners to a greater degree than Vermonters with high-incomes. For example, the Vermont sales tax requires people with low-incomes to pay a greater percentage of their income for each product purchased compared to people with high-incomes. Some proposed tax shifts continue this unfair trend, while others provide ways to lessen the impact for low-income wage-earners. If done wisely,

...today's problems are increasingly caused by the cumulative impact of the small-scale activities of everyone. Tax shifting is an ideal way to address this trend.



tax shifting can make our tax system fairer for Vermonters with low incomes.

HOW TO START A TAX SHIFT

Tax shifting is not a new idea. Several European countries, including Germany, Sweden, the Netherlands, Spain, and others, have undertaken tax shifts on a large scale already. But North America has not yet followed that trend. Tax shifts in the U.S. have only occurred on a very small scale.

Vermont places various taxes and fees on environmentally and socially harmful activities, as Chapter 3 illustrates. Most of these taxes are modest. However, a small tax shift occurred in Vermont in 1997. The state shifted a portion of education funding from

Vermont's high property tax to a collection of other taxes, including the gasoline tax and the motor vehicle purchase and use tax. While this shift represents a step in the right direction, the change was too small to significantly reduce energy use and air pollution.

Nonetheless, Vermont has many of the building blocks in place for a larger tax shift. As Chapter 2 illustrates, Vermont could improve or enlarge some of our tax mechanisms that already exist, add a few more, and decrease the taxes that benefit society to move toward a significant tax shift. Our small scale, our tradition of independence and innovation, and our history of preserving environmental and social goods make Vermont the perfect place to begin a tax shift.

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Chapter 2

Tax Shifting Options for Vermont

Vermont historically has raised a greater percentage of state and local taxes through property taxes than the rest of the nation.

In order to undertake a tax shift in Vermont, we must reduce some taxes, while raising others, all in a revenue-neutral manner. There are some taxes that work against us by distorting economic efficiency, polluting the environment, wasting natural resources, or unfairly taxing some sectors of society. Other taxes could help us by doing the opposite.

We can evaluate whether a tax is one we need or don't need by asking the following questions about it.

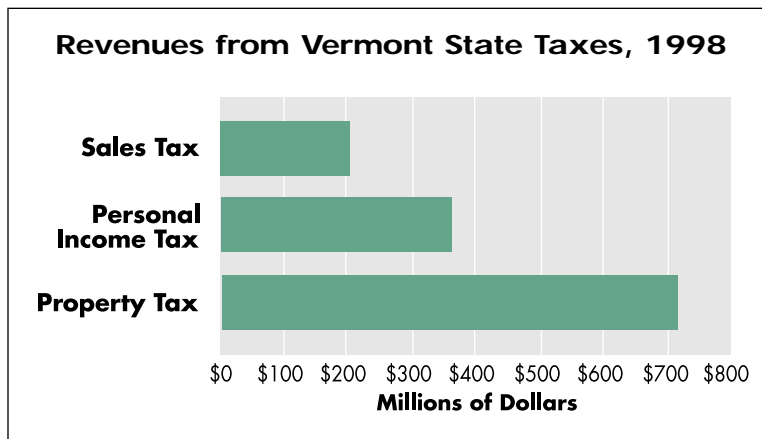
- **Economy:** Does the tax discourage or encourage job creation, enterprise, and other societal benefits? Does it help to reflect the full costs of under-priced products? Or does the tax cause distorted incentives in the economy?
- **Environment:** Does the tax discourage or encourage conserving resources and reducing pollution?
- **Equity:** Does the tax require polluters to pay their fair share? Is the tax assessed on people in proportion to their ability to pay, or does it create a greater hardship for lower-income people than for higher-income people?

Using these criteria, we can see that property taxes, sales taxes, personal income taxes, and payroll taxes work against our goals and would be good candidates to reduce or eliminate. At the same time, energy taxes, air and water pollution taxes, waste taxes, and some

land use taxes could be increased or created. Vermont could craft many different types of tax shifts by combining tax reductions with corresponding tax increases on any of the above-mentioned taxes. The following sections explore these ideas.

TAXES TO REDUCE OR ELIMINATE

Some taxes work against social goals. Property taxes, for example, may have worked well centuries ago, when most of the people who owned property were wealthy and could more easily afford to pay taxes. However, property taxes, like some other taxes described below, have become outdated, and need to be re-examined and revised to better promote social goals.



Property Tax

Vermont historically has raised a greater percentage of state and local taxes through property taxes than the rest of the nation. In 1998, Vermont raised \$712 million through



property taxes to fund schools, local government services, and local road construction and maintenance.² By comparison, Vermont raised \$818 million the same year through personal and corporate income taxes, sales and use taxes, meals and rooms taxes, insurance taxes, property transfer taxes, and all the other taxes that go into the state's general fund.³ Relying on property taxes to fund such a substantial portion of the local government's activities has caused repeated calls for property tax reform. In 1997, a portion of the education tax burden was shifted from property taxes to a collection of broad-based taxes, including the gasoline tax and motor vehicle purchase and use tax. Vermont currently is in its first year of the implementation of this tax shift, so the results remain to be seen.

Vermont's high property taxes work against us in several ways. They increase the costs of home ownership and rental housing. In addition, property taxes are not primarily based on peoples' ability to pay. The method of collecting property taxes earmarked for statewide education now is more income-sensitive as a result of the recent reforms to education funding. Even with the reforms in place, families with low and middle incomes pay a proportionately larger part of their income on property taxes than higher-income families. This makes home ownership difficult for some retired people and others whose incomes decline over time. In addition, our current property tax system encourages sprawl; since property taxes are generally higher in downtowns and settled areas, people are encouraged to purchase property in more rural areas.

Most of our property taxes fund education and local government services, but approximately 10% fund local road construction and maintenance, a much greater percentage than the national average.⁴ If driving-related costs such as road construction and maintenance were entirely funded through motor fuel taxes instead of property taxes, drivers would get more accurate price signals about the full costs of driving.

Vermont should consider substantially

reducing property taxes, while expanding rebates to renters and removing the portion of property taxes that fund road construction and maintenance. In addition, Vermont's downtowns could benefit from changing the current property tax to a land value tax (see Land Value Tax section below).

Sales Tax

Vermont's 5% sales and use tax raised about \$202 million in 1998, accounting for 25% of the state's general fund revenues.⁵ Vermont exempts many items from the sales tax, including energy used for residential and industrial purposes, gasoline and diesel, food, agricultural feed and seed, pesticides used for farming, fertilizer, manufacturing machinery and equipment, prescription and non-prescription drugs and medications, and other items.

The sales tax produces a number of problems and distorting influences. Sales taxes stunt economic activity, and people with lower incomes pay a much larger proportion of their income in sales taxes than people with higher incomes. Removing the sales tax first on necessary items, such as clothing, would help to address this inequity. Removing the sales tax on other items could work toward other social goals. For example, removing the sales tax on items sold in downtown centers could help preserve the economic activity in Vermont's historic downtowns.

In addition, some goods with large, negative environmental impacts are exempt from the sales tax in Vermont, including fertilizer, pesticides used for farming, and energy used for transportation, residential, and industrial purposes. While much of the energy used for transportation and residential purposes is a necessity for everyone, exempting energy from the sales tax makes an environmentally harmful product relatively cheaper. This, in turn, causes people to use more energy than they otherwise would. Instead of exempting environmentally harmful but necessary items from the sales tax, it is wiser to apply the standard sales tax rate to these items and, to maintain fairness, assist low-income wage-earners with

Vermont exempts many items from the sales tax, including energy used for residential and industrial purposes, gasoline and diesel, food, agricultural feed and seed, pesticides used for farming, fertilizer, manufacturing machinery and equipment, prescription and non-prescription drugs and medications, and other items.



paying the tax. For example, rebates or special programs (such as the Weatherization Assistance Program) can be offered to low-income wage-earners. Or, a sales tax exemption can be placed on an initial, fixed amount of energy used by each Vermonter.

Vermont's sales tax also encourages people to purchase products in New Hampshire, which has no sales tax, and through catalogues. Although Vermonters technically are required to pay our 5% tax on items bought in other states, in practice the tax usually is not paid.

Vermont should consider reducing its sales tax rate and eliminating the tax completely on clothing and other necessity items that do not cause large negative environmental impacts. Energy, fertilizer, pesticides used for farming, and other items with large environmental impacts should not be exempted from the sales tax.

Personal Income Tax

Vermont raised \$366 million from personal income taxes in 1998, providing 45% of the state's general fund revenues.⁶

While personal income taxes are more progressive than many other types of taxes, they still place a substantial relative burden on Vermonters with low incomes. A recent study found that a significant number of families in Vermont earn less than a livable wage. These Vermonters, who don't earn enough to meet their families' basic needs, should not be required to give up even more of their earnings to income taxes.

Personal income taxes also make it more difficult for families with low and middle incomes to make ends meet. Many families find it necessary to have two wage-earners, or one wage-earner with two jobs, in order to earn more than a livable wage and fulfill the family's needs. These families already pay property, sales, payroll, and federal income taxes, and need the remainder of their paychecks to purchase basic necessities.

Vermont should consider eliminating personal income taxes for people earning less than a livable wage, reducing them substantially for other low-income and middle-income wage-earners, and expanding the Earned Income Tax Credit that benefits low-income wage-earners.

Payroll Tax

Payroll taxes are taxes paid by individuals and businesses to the federal and state governments for Social Security, Medicare, and unemployment insurance. Employees pay 7.65% of their paychecks for Social Security and Medicare, and employers must match these payments and pay for unemployment insurance. And, the roughly 35,000 Vermonters who are self-employed pay 15.3% of their wages in social security and Medicare taxes.⁷ Payroll taxes account for a large portion of the federal government's annual revenues and have increased dramatically during the past 30 years.⁸

Payroll taxes have a number of disadvantages. They increase labor costs, which discourage businesses from hiring new employees. Payroll taxes hit small businesses and self-employed workers especially hard. Employers pay more than one-half of the payroll tax, but this tax burden ultimately is paid by workers in the form of lower wages and unemployment. In addition, Social Security taxes are collected only on the first \$72,600 of pay, ensuring that low-income and middle-income wage-earners pay a larger portion of their salaries in payroll taxes than those who earn the most.⁹

Payroll taxes paid by businesses could be substantially reduced to encourage businesses to create more jobs. Payroll taxes are collected by the federal government, but Vermont could simulate a payroll tax reduction by offering businesses a credit on their state corporate income taxes in proportion to the amount of annual payroll taxes they paid. As with the personal income tax, Vermont should consider eliminating payroll taxes paid by employees for people earning less than a livable wage. In addition, the Social Security tax exemption for

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money earned after the first \$72,600 could be eliminated.

TAXES TO CREATE OR INCREASE

Taxes can work for us rather than against us. They can strengthen our economy and clean up our environment. And, they can do so equitably for those who pollute, for those who don't, and for our lower-income wage-earners. The following options are examples of taxes that Vermont could institute or increase, while decreasing the taxes described above, all in a revenue-neutral manner.

Energy and Air Pollution

Significant energy taxes would have the largest impact of any type of tax on cleaning up the environment, on correcting distorting economic impacts, on spending less money on out-of-state fuels, on reducing pollution-related health care costs, and on making polluters pay for their polluting activities. Energy use causes most of Vermont's air pollution, including emissions that cause serious respiratory health problems and global climate change. Energy use also causes much of our water pollution, due to oil runoff into lakes, rivers, and groundwater. In addition, energy is one of our most under-priced commodities, causing significant distorting impacts on the economy. Because most of the fuel Vermont uses is derived from oil, most of the \$1.3 billion per year we spend on energy leaves the state, resulting in an extensive drain on the statewide economy.¹⁰ Taxes on energy not only would reduce our energy use, and with it, the negative economic and environmental impacts, they also would make those who pollute most pay their fair share of the costs pollution creates.

Vermonters' energy use is quite different from that of the rest of the country. Due partly to the rural nature of our state, we use the greatest amount of our energy for transportation purposes; about 44% of Vermont's total energy use in 1994 was for transportation. All residential uses of energy, including space heating, water heating, lighting, and other electrical uses accounted for about 30% of our

total energy use in 1994. The remainder of our energy use is split fairly evenly between commercial and industrial sectors.¹¹ About 70% of Vermont's energy use is fueled by products derived from oil: gasoline, diesel, fuel oil, and propane. The state uses relatively small amounts of natural gas and wood. Slightly under one-half of Vermont's electricity use comes from hydropower, and about one-third comes from nuclear power.¹²

Because Vermont has a relatively small industrial sector, our energy use and the pollution that accompanies it come mostly from widely dispersed sources that are difficult to control through traditional regulations. Currently, traditional regulations attach costs to many of the larger, business-related sources of energy use and air pollution, but not to the more widely dispersed sources. Enlarging our energy and air pollution taxes to cover these widely dispersed sources would improve the fairness of our tax system.

These details of our energy use show where our greatest opportunities lie for reducing energy use and pollution. Fuels derived from oil, especially gasoline, account for most of our energy use, have very negative impacts on air quality, and pose other risks to humans and the environment. Therefore, taxes that encourage gasoline conservation have the biggest potential for positive impacts in Vermont, and they should be our first priority. Taxes that encourage other forms of energy conservation also should be high priorities. The following four tax options work toward these goals.

MOTOR FUEL TAX

A motor fuel tax is an energy tax on the consumption of motor fuels, and it is usually measured in dollars per gallon of gasoline or diesel. Currently, Vermont's motor fuel taxes cover only some of the costs of building and maintaining roads and a very small portion of the environmental damage caused by driving. Raising motor fuel taxes would discourage the air and water pollution caused by driving, and encourage carpooling, driving efficient vehicles, commuting shorter distances to work, expanding public transit use and availability, and

Vermonters' energy use is quite different from that of the rest of the country. Due partly to the rural nature of our state, we use the greatest amount of our energy for transportation purposes; about 44% of Vermont's total energy use in 1994 was for transportation.



other environmentally beneficial measures.

Motor fuel taxes are commonly used by states and the federal government to raise some of the revenue needed to build and maintain roads. However in Vermont, substantial amounts of the revenue used to build and maintain roads come from property taxes and vehicle registration fees. Shifting these revenues away from property taxes and registration fees onto a motor fuel tax would incorporate more of the true costs of driving into the prices drivers pay.

sidies. One estimate puts national transportation costs not borne directly by users at \$300-\$590 billion per year.¹⁵

Vermont's vehicle registration fees are used to pay for road construction and maintenance. However, registration fees represent some of the fixed costs of driving — costs that don't vary with the number of miles driven. If these registration costs were reduced or eliminated, and the revenue was raised through motor fuel taxes instead, we would encourage conservation, efficiency, and public transportation, without increasing total costs.

Drivers in Vermont pay 20 cents per gallon of gasoline and 17 cents per gallon of diesel in state motor fuel taxes and fees. The majority of the revenues raised from these taxes fund road construction and maintenance, thereby encouraging more driving. However in 1997, Vermont raised the gasoline tax rate by four cents per gallon and the motor vehicle purchase and use tax by 1% in order to offset property tax reductions that fund education. Although small, this is Vermont's first significant tax shift.

While the carbon tax discussed below represents "the polluter pays" principle, the tax increases suggested here for motor fuels more closely approximate "the user pays" principle. Because Vermont's current motor fuel taxes don't even cover current road construction and maintenance costs, the user (the driver) does not pay for the immediate, direct costs of driving. Increasing the motor fuel tax further in the ways suggested here begins to shift those direct costs to the user.

How a motor fuel tax works

Motor fuel taxes usually are paid by fuel distributors, who pass the cost along to consumers. Because a motor fuel tax is already in place, it is not difficult to implement an increase in the tax rate.

Motor fuel taxes in other places

Many states have higher motor fuel tax rates than Vermont's current rates. The average state gasoline tax rate was 20.87 cents per gallon, and the average state diesel tax rate

In Vermont, substantial amounts of the revenue used to build and maintain roads come from property taxes and vehicle registration fees.

In 1992, Vermont spent the equivalent of 77 cents per gallon of motor fuel sold for building and maintaining roads, but only 34 cents per gallon was raised through state and federal motor fuel taxes. The balance of the revenues was raised through other fees and taxes, contributing to the inefficient use of resources. Property taxes in Vermont funded about 21% of road construction and maintenance costs in 1995. (By contrast, in the rest of the country, property tax revenues paid for only about 5% of these costs.) Revenues from the state gasoline and diesel taxes and state vehicle registration fees contributed another 43%.¹³ The remainder of the revenues are raised from federal motor vehicle taxes and user fees, appropriations from the state's general fund, and other minor sources of funding.

In addition to road construction and maintenance, there are many other costs of driving that are not included in gasoline prices. For example, about 30% of the work of Vermont's local police and fire departments is directly related to transportation, in the form of emergency responses to vehicle accidents, vehicle fires, and traffic and parking problems.¹⁴ But virtually none of the transportation-related work of local police and fire departments is funded through motor fuel taxes. Other costs not included in motor fuel prices are health costs from air pollution, costs to reduce the impacts of global climate change, cleanup costs from polluted runoff into Vermont's waters, accident and noise costs, military costs to protect foreign oil interests, the cost of maintaining the Strategic Petroleum Reserve, and lost tax revenues from oil companies' sub-



was 20.61 cents per gallon in 1995. Drivers in Vermont pay 20 cents per gallon of gasoline and 17 cents per gallon of diesel in state motor fuel taxes and fees. Most of the New England states have higher gasoline and diesel tax rates than Vermont, and three nearby states — New York, Connecticut, and Rhode Island — have some of the highest rates in the nation. Therefore, Vermont could raise motor fuel taxes and still remain within the range of statewide and New England tax rates.

Compared to other western industrialized nations, the U.S. has by far the lowest motor fuel prices and taxes. In 1992, the U.S. gasoline price was \$1.13 per gallon, while the prices in other western industrialized nations ranged from \$1.72 in Canada to \$4.86 in Norway. Moreover, U.S. motor fuel taxes represented only 33.9% of gasoline prices, while in other countries, taxes represented between 46.1% to 77.2%. As we might expect from such low tax rates, the average American also uses more gallons of gasoline per year than people in other industrialized countries.¹⁶

Motor fuel tax options for Vermont

Option #1

- Place an additional tax on motor fuels of 4 cents per gallon to fund the transportation-related costs of local police and fire department costs currently paid for through property taxes. This would raise about \$19 million per year. The Vermont Department of Public Service estimates that this would reduce transportation energy use by 1.4% cumulatively through 2020 compared to current practices.¹⁷ A person who owns a car that gets 20 miles per gallon and drives 15,000 miles per year would pay about \$30 per year with this tax.
- Reduce property taxes and expand the renters' rebate by \$19 million (the equivalent of \$33 per person). Distribute the 4-cent-per-gallon motor fuel tax revenues to police and fire departments using a formula based on the number of people in the community, the transportation-related work of the police and fire depart-

ments, and other factors. Communities then could pass the savings on to residents in the form of lower property taxes or a direct rebate.

Option #2

- Place an additional tax on motor fuels of 21 cents per gallon to fund local road construction and maintenance costs, currently paid for through property taxes. This would raise about \$92 million. The Vermont Department of Public Service estimates that this would reduce transportation energy use cumulatively through 2020 by 6.3% compared to current practices.¹⁸ A person who owns a car that gets 20 miles per gallon and drives 15,000 miles per year would pay \$158 per year with this tax.
- Eliminate the portion of property taxes that fund road construction and maintenance, in conjunction with expansions to the renters' rebate. This would reduce property taxes by an average of 10% statewide (the equivalent of about \$164 per person).¹⁹ Distribute funding for road construction and maintenance to towns using a formula based on the number of people in the community and other factors. (Using a formula based solely on the number of road miles would encourage more roads.) Communities then could pass the savings on to residents in the form of lower property taxes. Enable towns to raise additional money for road construction and maintenance through property taxes if they choose.

Option #3

- Place an additional tax on motor fuels of 5 cents per gallon to fund road construction and maintenance. This would raise about \$23 million dollars.²⁰
- Eliminate vehicle registration fees for automobiles. Registration fees ranged from \$25 to \$28 million per year since 1995.²¹ Continue to assess registration fees on the heaviest vehicles that cause the most damage to roads.

Most of the New England states have higher gasoline and diesel tax rates than Vermont



MOTOR VEHICLE FEEBATE

A motor vehicle feebate program places a fee on purchases of inefficient vehicles, and gives a rebate for purchases of efficient vehicles. Because each new car purchased commits Vermont to many years of future energy use and emissions, we can create a cleaner and healthier environment and more efficient economy by encouraging people to buy efficient cars and discouraging them from buying inefficient ones.

A feebate program is a significant way to improve Vermont's air quality. The average car emits one-half ton of non-carbon dioxide pollutants per year, and five or six tons of carbon dioxide emissions per year.²² The cumulative impact of the emissions from the 503,000 motor vehicles registered in Vermont is quite large.²³ Moreover, emissions from motor vehicles are dispersed throughout the state, making them difficult to control. Setting air emissions standards for cars and trucks, as California has done, is one way to control these emissions. Tax mechanisms such as a feebate program are another way.

Feebate programs are especially appropriate right now, because the average efficiency level of all the vehicles in use is declining. This is due largely to the phenomenal growth in market share of sport utility vehicles, vans, mini-vans, and pickup trucks during the past two decades. In 1996 these vehicles, called light trucks, accounted for 43% of vehicle sales in the U.S., and their market share continues to increase.²⁴ In Vermont, 36% of all registered motor vehicles in 1996 were light trucks.²⁵ In general, the fuel efficiency of light trucks is much worse than that of passenger cars. The city-driving fuel economy of sport utility vehicles ranges from 12 to 25 miles per gallon, while that of mini-vans ranges from 15 to 30 miles per gallon.²⁶ The EPA estimates that during the past decade, passenger sedans have had a fleet-wide average fuel economy of slightly less than 28 miles per gallon, while the average fuel economy for light trucks has been just over 21 miles per gallon.²⁷

Currently, the federal government assesses a fee, called a gas guzzler tax, on passenger cars that have EPA combined city/highway fuel economy ratings of less than 22.5 miles per gallon. However, light trucks are exempted from this tax. Because most light trucks are gas guzzlers, and because they now are used as automobiles by most drivers, their exemption from the federal tax represents a loophole that should be closed. The EPA has found that if light trucks were subject to the same gas guzzler tax as passenger cars, two out of every three would be taxed.²⁸

Sales of light trucks have increased partly because gasoline is relatively cheap, providing little economic incentive to purchase an efficient vehicle. For example, if a consumer purchases a car with a fuel economy of 38 miles per gallon instead of one with 28 miles per gallon, most pollutants emitted from the vehicle would fall by about 26%. However, the consumer would save only \$141 per year for gasoline (assuming the vehicle is driven 15,000 miles per year and gas costs \$1.00 per gallon). The future savings of \$141 per year is small enough that it usually does not figure into car purchasing decisions involving vehicles that cost between \$15,000 and \$30,000.

A feebate program not only sends a more accurate price signal about the full costs of driving to consumers when they purchase cars, it also encourages automobile manufacturers to increase the efficiency levels of their vehicles. In addition, a feebate program generally does not impact lower-income people, because some do not purchase new cars, and those who do tend to purchase smaller, cheaper, more efficient cars. A feebate program penalizes those who can afford it most — people who purchase expensive, large, luxury, and high-performance automobiles.

How a feebate program works

Under a feebate program, a fee is assessed on new purchases of inefficient vehicles, while a rebate is given to purchases of more efficient vehicles. Feebate programs can be revenue-neutral; the revenues collected from the fees can equal the revenues given for rebates.

The average car emits one-half ton of non-carbon dioxide pollutants per year, and five or six tons of carbon dioxide emissions per year.



Alternatively, feebate programs can be designed to collect more revenues than are given in rebates, providing a funding source for the government. Feebate programs can apply only to new vehicle purchases, or new and used vehicle purchases. When programs apply to used vehicles, they usually do not apply to vehicles manufactured before the feebate program was started.

The fuel efficiency of vehicles can be determined in a variety of ways. Perhaps the most obvious way is to use the combined city/highway fuel economy rating determined by the EPA for each car. However, feebate programs also can use vehicle weight, engine size, or carbon dioxide emissions per mile as the determinant for fuel efficiency. Feebate programs can be structured to achieve varying efficiency goals. For example, a feebate program could be structured initially to place a fee only on a small percentage of the most inefficient vehicles.

One option states can use to implement a feebate program is to institute a sliding-scale sales tax. Vermont assesses a motor vehicle purchase tax of 6% on new car purchases, in place of a sales tax. That tax could be changed to a sliding-scale tax of 0% to 12%. Purchases of the most polluting vehicles would be taxed at 12%, while purchases of the most efficient cars would not be taxed at all. Purchases of average vehicles would be charged the same 6% rate they currently are charged. Under this type of feebate program, consumers aren't actually given rebates; instead, rebates are offered in the form of lower sales taxes.

This is an attractive option, because the mechanism for collecting the motor vehicle purchase and use tax already is in place, and because rebates do not have to be returned to consumers. In addition, this type of program could be structured so that the cost of most vehicles would remain the same or decline, and only the cost of the most inefficient vehicles would increase. Almost all inefficient vehicles are expensive, while almost all efficient vehicles are much less expensive. Thus, when a 12% tax is assessed on one \$30,000

inefficient vehicle, the revenue can offset rebates for four efficient vehicles that cost \$15,000.

Feebates in other places

There are a number of other countries that implementing feebate programs, including Sweden, Germany, Austria, and Denmark. In addition, Ontario, Canada doubled its gas guzzler tax in 1991 and added a rebate for the most efficient cars.²⁹

Feebate option for Vermont

- Design a feebate program for Vermont, in which residents who purchase new inefficient cars and light trucks or register inefficient cars and light trucks in the state for the first time must pay an extra fee, while residents who purchase or register efficient vehicles get a rebate.
- Determine the tax rate of each vehicle purchase by the efficiency of the vehicle, as measured by the EPA combined city/highway fuel economy rating, or by a surrogate, such as the vehicle weight, engine size, or carbon dioxide emissions per mile emitted by the vehicle.
- Design the feebate program to be revenue-neutral, raising the same amount of revenue as the current motor vehicle purchase and use tax raises.
- Structure the program so that the cost of most vehicles (about 70%-80%), including the tax, remains the same or decreases, while only the cost of the most inefficient vehicles increases. For example if a sliding-scale tax of 0% to 12% were used, a Land Rover Discovery, a sport utility vehicle that costs \$35,000 and has a city fuel economy rating of 14 miles per gallon, might have a tax rate of 12%, or \$2,100 more than would normally be paid at the current 6% rate. A Ford Escort, which costs \$12,900 and has a city fuel economy rating of 28 miles per gallon, might have a rate of 3%, or \$387 less than would normally be paid at the current 6% rate. And, a Chevrolet Metro, which costs \$10,400 and has a city fuel economy rating of 39 miles per gallon, might have no tax, or \$624 less

Almost all inefficient vehicles are expensive, while almost all efficient vehicles are much less expensive.



than would normally be paid at the current 6% rate.

- Exempt agricultural vehicles, school buses, trailers, and commercial timber-related and construction-related vehicles for small businesses from any motor vehicle tax greater than 6%.

SALES TAX ON FUEL

Vermont’s general sales tax of 5% applies to most products sold at the retail level. However, some products are exempted, such as food, agricultural feed and seed, prescription drugs, and strangely enough, most fuels. Currently, only fuels sold to commercial establishments are subject to the sales tax. Fuels used in the residential, industrial, and farm sectors are exempt from the tax, as are all motor vehicle fuels.

These sales tax exemptions are in place for various reasons. The residential energy exemption was introduced to compensate for the energy price shocks of the 1970s. The sales tax on industrial fuels was phased out in the 1990s to increase the competitiveness of Vermont-made products. Motor fuels have always been exempt from the sales tax.³⁰

The estimated lost revenue from Vermont’s energy sales tax exemptions is significant. The state loses about \$42 million per year by exempting most fuel from the sales tax. (By comparison, the state raised about \$202 million from the sales and use tax on all items in 1998.³¹) As a result, one of Vermont’s largest retail sectors — energy sales — does not support state services. When the fuel tax exemptions are taken into account, the effective sales

tax rate on energy sold in Vermont is less than 1%.³²

Vermont’s sales tax exemptions on fuel work directly against economic and environmental goals. The exemptions result in a tax break for the two activities that cause the most energy use and air pollution in Vermont: driving and heating homes. Sales tax exemptions make it cheaper to waste energy and pollute, and more expensive to make efficiency improvements. And because most products except food are taxed in Vermont, sales tax exemptions on fuel lower the relative costs of energy, making energy-intensive options less expensive than they otherwise would be and distorting the efficiency of the marketplace. The Vermont Department of Public Service estimates that eliminating the sales tax exemption on motor fuels would reduce energy use and carbon dioxide emissions by about 1% cumulatively through 2020.³⁴

How a fuel sales tax works

A sales tax on fuels works the same way as our sales tax on other products. The tax is assessed on the cost of fuel at the time of its final sale.

Some have argued that we should not place a sales tax on motor fuels, because there already are state and federal taxes on motor fuels. However, motor fuels taxes cover part of the costs of building and maintaining roads and other transportation projects, and in this sense, are “user fees.” Motor fuel tax revenues do not contribute to the state’s general fund, as sales tax revenues do.

Some states assess the sales tax on motor fuels on the fuel cost before state and federal motor fuel taxes are assessed. Other states, including New York, California, and Georgia, assess sales taxes after the motor fuel taxes are assessed. When a sales tax is applied to the full sales price of motor fuels, it effectively taxes our use of roads, paying for the costs we generate by using the roads.

Removing the sales tax exemptions on fuels used for residential purposes could negatively

Vermont’s general sales tax of 5% applies to most products sold at the retail level. However, some products are exempted, such as food, agricultural feed and seed, prescription drugs, and strangely enough, most fuels.

Estimated Cost of Fuel Sales Tax Exemptions, 1997³³

| Exemption | Amount |
|---|--------------|
| Fuels for residential use (including electricity) | \$17,500,000 |
| Motor fuels | \$17,900,000 |
| Fuels for industrial use | \$5,000,000 |
| Farm fuels | \$1,500,000 |
| Total | \$41,900,000 |



impact Vermonters with low incomes by increasing the costs of essential items. As a result, extra measures to compensate low-income wage-earners should be introduced when a residential fuel sales tax exemption is removed. For example, an initial, fixed amount of electricity and heating fuel could be exempt from the sales tax for all Vermonters. Because many Vermonters with low-incomes also have inefficient homes and appliances, this policy would work best when combined with a very strong weatherization assistance program for people with low incomes.

Fuel sales taxes in other places

A number of states place sales taxes on motor fuels, as the following table illustrates.

Sales Tax Rates on Motor Fuels in Selected States³⁵

| | |
|---------------|---|
| California | 7.25% sales tax |
| Connecticut | 5% gross earnings tax |
| Georgia | 3% sales tax |
| Hawaii | 4% sales tax |
| Illinois | 6.25% sales tax |
| Indiana | 5% sales tax |
| Michigan | 6% sales tax |
| New York | 4% sales tax |
| Rhode Island | 7% sales tax on diesel |
| Virginia | 2% sales tax in areas where mass transit exists |
| West Virginia | 4.85 cents per gallon consumer/sales tax |

Fuel sales tax option for Vermont

- Place a sales tax of 4% or 4.5% on fuels used for residential purposes and motor fuels. Taxing motor fuels at 4% would raise about \$17.9 million per year, and taxing residential fuels would raise about \$17.5 million per year, for a total of \$35.4 million per year.³⁶
- Continue to exempt fuels used for industrial purposes from the sales tax, to avoid competitiveness issues. Or, assess the sales tax on fuels used in the industrial sector at a lower rate.

- Continue to exempt fuels used for farming from the sales tax, to help preserve Vermont’s declining agricultural sector.
- Reduce the statewide sales tax rate to 4%. This would return about \$38 million per year to consumers.³⁷
- Alternatively, instead of reducing the sales tax rate to 4%, reduce the rate to 4.5% and exempt clothing and footwear from the sales tax. This exemption would reduce costs on essential items for low-income wage-earners. Reducing the sales tax rate to 4.5% would return about \$19 million per year to consumers, and exempting clothing and footwear would return about \$16 million per year, for a total of \$35 million per year.³⁸

CARBON TAX

A carbon tax is an energy tax placed on the carbon content of fuels, and usually is measured in dollars per ton of carbon contained in each fuel or dollars per ton of carbon dioxide emissions. A carbon tax discourages fossil fuel energy use and its corresponding carbon dioxide emissions that lead to global climate change.

Global climate change, or global warming, refers to the warming of the earth and the accompanying climate changes caused by the “greenhouse effect.” When gases such as carbon dioxide trap and absorb heat in the earth’s atmosphere that otherwise would have radiated into space, a greenhouse effect occurs. The gases act as a barrier, thereby warming the earth.

Many gases that cause the greenhouse effect occur naturally and have helped to make the earth a habitable environment. However, human activities, especially fossil fuel use, have substantially increased the amounts of greenhouse gases in the atmosphere. The Intergovernmental Panel on Climate Change, a working group of the world’s top climate scientists, agree that the warming of the earth’s temperature during the past century is likely to be partly the result of human activities. Empirical evidence that the global climate sys-

Human activities, especially fossil fuel use, have substantially increased the amounts of greenhouse gases in the atmosphere.



tem is continuing to warm has mounted in recent years.

Global warming of the magnitude predicted by the Intergovernmental Panel on Climate Change would radically change the earth's climate and produce unpredictable effects in local temperature ranges, precipitation patterns, sea levels, and the incidence of extreme weather events such as floods, droughts, fires, and heat outbreaks. In addition, global climate change would have severe impacts on all natural ecosystems, agriculture, forestry, coastal communities, water resources, urban infrastructure, and many other aspects of human life. Future generations likely will face enormous costs in coping with the impacts of such a quickly changing climate. Vermont's ecosystems and economy would face many uncertain impacts, including impacts to our agricultural and dairy sectors, sugaring operations, ski areas, and other tourist-related businesses.

With global climate change already underway, and with current energy use committing the earth to further warming, it is important to begin to limit the impacts now through measures such as a carbon tax. Fossil fuel combustion emits several gases that contribute to global climate change, but carbon dioxide emissions are by far the most serious because these emissions are the greatest.

Carbon dioxide is emitted from cars, trucks, and other vehicles, as well as oil-fueled, propane-fueled, and natural gas-fueled furnaces, boilers, water heaters, stoves, clothes dryers, and manufacturing equipment. Coal, oil, and gas electric generating plants also emit carbon dioxide. Because it is emitted from many dispersed sources, carbon dioxide emissions are difficult to control through regulations. A carbon tax is a more appropriate mechanism and is one of the most effective ways to discourage carbon dioxide emissions and energy use, encourage conservation and efficiency, and encourage switches to fuels with lower carbon content (such as natural gas) or no carbon content (such as wind power).

Vermonters emitted about 7.9 million tons

of carbon dioxide in 1990 from energy use, and that number is projected to increase by 67% by 2015 if current practices continue. Transportation is the most significant source of carbon dioxide emissions in Vermont. The typical car emits between five and six tons of carbon dioxide per year, and transportation produced 42% of the carbon dioxide emissions resulting from energy use in Vermont in 1990.³⁹

How a carbon tax works

A carbon tax usually is assessed as dollars per ton of carbon contained in each fuel, or dollars per ton of carbon dioxide emissions. Since the carbon contents and carbon dioxide emissions of fuels are known, possible tax rates for various fuels are easily calculated.

Various rates for carbon taxes have been widely debated. In the early 1990s, the federal government estimated that a carbon tax of around \$100 per ton of carbon would stabilize the nation's carbon dioxide emissions at their 1990 levels by 2000, a goal of the 1992 Earth Summit. The Vermont Department of Public Service estimated that in order to meet the same goal in Vermont, a much higher tax rate would be necessary, due to Vermont's small use of fossil fuels for electricity and lack of transportation alternatives. Lower tax rates also have been discussed. The state estimated that a tax rate of \$50 per ton of carbon (if instituted in 1997) would raise around \$107 million in 2000 and reduce greenhouse gas emissions by about 215,000 tons compared to current practices.⁴⁰

The most efficient way to administer a carbon tax is to assess the tax on fuels as close as possible to the point at which they enter the state's economy. For example, the tax would be assessed when each fuel is purchased by businesses or individuals for use or resale within Vermont. This collection method would minimize the number of tax collection points.

A tax on electricity generated from nuclear sources often is combined with a carbon tax. While nuclear energy does not emit carbon dioxide, it does produce radioactive waste —

Vermonters emitted about 7.9 million tons of carbon dioxide in 1990 from energy use, and that number is projected to increase by 67% by 2015 if current practices continue. Transportation is the most significant source of carbon dioxide emissions in Vermont.



a dangerous pollutant that remains hazardous to humans and the environment for millions of years. Nuclear energy often is taxed at the same rate as an oil-fueled or coal-fueled electricity plant. Large hydropower generating facilities also could be taxed because of their negative impacts on rivers, surrounding lands, and local populations.

Fuels used for manufacturing often are exempted from some or all of the carbon tax burden. Because most industries compete nationally and globally, a localized carbon tax can limit industries' competitiveness, encouraging them to relocate. Until the entire nation and other industrialized countries levy a carbon tax on industry, calls to exempt the industrial sector from localized carbon taxes will continue.

In addition, wood energy use can be exempted from the tax. Although wood emits carbon dioxide when burned, if wood is harvested sustainably, new tree growth recaptures as much carbon as is lost through burning.

Carbon taxes in other places

Several European countries introduced carbon taxes in the 1990s, including Germany, Sweden, Denmark, the Netherlands, Norway, and Finland. All but one of these five countries have exempted or partially exempted energy-intensive industries from the taxes. For example, when Sweden introduced a carbon tax in 1991, officials believed other countries soon would introduce carbon taxes or similar measures on industrial energy use,

providing a level-playing-field across nations for industrial competitiveness. However, other countries did not move as swiftly as anticipated, and Sweden subsequently reduced its energy tax burden on the industrial sector.⁴¹

Preliminary studies indicate that in Sweden, the carbon tax has caused a shift in district heating fuels from fossil fuels to bio-fuels (such as wood), which are exempt from the tax. In addition, applications that combine heating and power production have become more competitive. In Norway, which has one of the highest carbon tax rates applied to industry, preliminary studies indicate that carbon dioxide emissions have fallen between 3% - 4% in the two-year period after the carbon tax was started.⁴³

Carbon tax option for Vermont

- Assess a carbon tax on fossil fuels used in Vermont. In addition, assess a tax on nuclear energy at the same rate, assuming nuclear energy has the same carbon content as coal. Collect the tax as close as possible to the time at which each fuel enters the state.
- Exempt fuels used in the industrial sector from the carbon tax, as is done in Europe, to avoid competitiveness issues. Or, assess the carbon tax on fuels used in the industrial sector at a lower rate.
- Exempt fuels used for farming from the carbon tax, to help preserve Vermont's declining agricultural sector.
- Exempt wood energy use from the carbon tax.
- Provide a yearly refund to all Vermont residents, consisting of the portion of the carbon tax revenues collected for energy used in the residential sector. Distribute the refund on a per capita basis to households. This would ensure that the carbon tax is revenue-neutral in an appropriate manner.
- Provide a yearly refund to all Vermont businesses in the commercial sector, consisting of the portion of the carbon tax revenues collected for energy used in the commercial sector. Calculate the amount of the refund as a percentage of

Although wood emits carbon dioxide when burned, if wood is harvested sustainably, new tree growth recaptures as much carbon as is lost through burning.

Carbon Tax Rates in Four European Countries, 1993⁴²
U.S. dollars per ton of carbon

| | Nominal tax rate* | Effective tax rate* |
|---------|-------------------|---------------------|
| Denmark | 57 | 25 |
| Finland | 13 | 13 |
| Norway | 205 | 74 |
| Sweden | 192 | 120 |

**The nominal tax rate is the rate paid by taxpayers; the effective tax rate is the rate paid after the exemptions given to various sectors are taken into account.*



the company's yearly FICA/Medicare payments to the federal government.

social costs of pesticide use in the U.S. at \$8 billion per year.⁴⁴

Water Pollution

Clean lakes and rivers are essential for environmental health, and safe drinking water is critical for good human health. Water pollution occurs when pollutants run off directly into lakes and rivers, or enter the groundwater and eventually contaminate drinking water sources.

Vermont's water pollution, like our air pollution, is increasingly the result of many small, widely scattered sources, such as pesticide and fertilizer runoff from farm land, road salt and oil runoff from developed land, failed septic systems, and leaking underground oil storage tanks. Vermont has made some progress on controlling water pollution from large sources, but has not made enough progress on reducing pollution from these smaller, scattered sources.

Vermont currently assesses fees on pollutants discharged directly into waters. However, the fees collect only a small amount of money each year, and do not cover smaller, widely scattered polluters. Additional taxes are an excellent method of including some of the human and environmental costs of water pollution into the prices of these dispersed, polluting activities. Vermont already assesses a one-cent-per-gallon tax on gasoline and diesel for cleaning up leaking oil storage tanks. Higher motor fuel taxes would help to include some of the costs of water pollution, as well as other costs, into the price of motor fuels (see the section on motor fuel taxes). A pesticide and fertilizer tax, which also would help protect our water quality, is described below.

PESTICIDE AND FERTILIZER TAX

Taxes placed on pesticides and fertilizers help protect human and environmental health that can decline from polluted surface water and groundwater. In addition, such taxes include some of the costs of water pollution into the prices of pesticides and fertilizers. One estimate places the environmental and

In fiscal year 1998, Vermonters used about 38,000 tons of fertilizer, with the highest levels of use in Addison and Franklin counties. Commercial applicators in Vermont used about 1.1 million pounds of active pesticide ingredients in 1997.⁴⁵

The pollutant with the most damaging impact to Vermont's surface waters is phosphorus, which encourages excessive plant and algae growth that kills fish and other life forms. Virtually all of Vermont's streams and lakes are at risk from phosphorus discharges. Lakes Champlain and Memphremagog are particularly vulnerable to phosphorus discharges because more than one-half of the state's land area drains into them, including most of our prime agricultural lands and many of our settled areas. Fertilizer use on farms is one of the primary sources of Vermont's phosphorus discharges.⁴⁶

Groundwater also can be contaminated from pesticide and fertilizer runoff, which is an important concern in rural areas where people get their water from wells. Vermont's Pesticide and Groundwater Monitoring Program has tested wells adjacent to agricultural land for the presence of pesticides and fertilizers since 1986. Under the program, 850 wells have been tested, with 11% testing positive for herbicides, and 55% testing positive for nitrates, which come from fertilizer use. Smaller percentages tested positive for herbicide and nitrate levels above federal health standards.⁴⁷

How a pesticide and fertilizer tax works

Pesticide and fertilizer taxes can be assessed as a percentage of wholesale or retail sale prices. Alternatively, they can be assessed as a per pound tax on the nitrogen content of fertilizers and on the active ingredients in pesticides. Other options include taxes levied at the point of manufacture; registration fees for products, manufacturers, or retailers; dealer licensing; permit and certification fees for applicators; and inspection fees.

Vermont's water pollution, like our air pollution, is increasingly the result of many small, widely scattered sources...



Currently, Vermont exempts all pesticides used for farming and all fertilizers from the 5% sales tax. Removing these exemptions would be a good first step in including some of the costs of fertilizer and pesticide use into their prices.

Pesticide and fertilizer taxes in other places

Iowa and California have instituted pesticide and fertilizer taxes. Iowa introduced a system of pesticide and fertilizer taxes in 1987 to protect groundwater. Iowa’s system includes a pesticide registration fee for pesticides sold in the state; a pesticide dealer licensing requirement for dealers retailing restricted-use pesticides or more than \$10,000 of pesticides labeled for agricultural, lawn, or garden use; a per ton charge on all fertilizers; an additional per ton charge on nitrogen fertilizers, based on their nitrogen content; and a certification requirement for all applicators of commercial, public, or restricted-use pesticides. Iowa’s pesticide fees have not been high enough to cause a decrease in pesticide use, but an 18% reduction in nitrogen use on corn is attributed to the tax. In addition, public awareness of the problem has increased.⁴⁸

Several European countries also use pesticide taxes, including Sweden, Denmark, and the Netherlands. All of these countries use taxes as one measure in a broader pesticide reduction program. In Sweden, for example, a pesticide tax is assessed per kilogram of the active ingredients in the pesticide. Much of the money collected by the tax is directed toward research and extension work. In addition, Sweden offers financial subsidies to aid farmers in moving to organic farming.⁴⁹

Pesticide and fertilizer tax option for Vermont

- Gradually introduce a system of pesticide and fertilizer taxes in the state over a period of several years. As a first step, remove Vermont’s 5% sales tax exemption on pesticides used for farming and on fertilizers.
- Provide substantial tax credits to farmers.
- In conjunction with these tax policies, provide financial subsidies and technical

assistance to help farmers move toward low-impact and organic farming.

Solid Waste

Higher taxes on the solid waste we generate would be a powerful mechanism for reducing waste and resource use in Vermont. Every discarded item required energy and natural resources to produce it. Low-cost solid waste disposal simply encourages more energy and natural resources to be used because more items are discarded. In addition, solid waste disposal can contaminate groundwater and surface waters, use up valuable land, and place additional burdens on future generations who must live with landfills that continue to pollute groundwater.

Vermont generates less hazardous waste than most states, because our industrial sector is relatively small. However, we generate about the same amount of solid waste per capita as the rest of the country — about 3.4 pounds per capita every day.⁵⁰

High taxes on waste disposal would encourage innovation and thrift as individuals and businesses found ways to reduce their own waste. Such taxes would be most effective if complementary programs were undertaken at the same time to reduce illegal dumping and help people reduce their waste through composting and recycling. In addition, Vermont’s deposit/refund program for beverage containers has been very successful in diverting a substantial waste stream from our landfills. Adding beverage containers that currently are exempted to that program, and instituting similar programs on other types of packaging could result in even more waste being reused and recycled. While a deposit/refund program is not identical to a tax, it functions much like a tax for consumers who don’t collect the refund.

**SOLID WASTE TAX/
VARIABLE PRICING PROGRAM**

Taxing solid waste based on its weight or volume and ensuring that taxpayers can reduce their tax payment through conservation has good potential to reduce our solid waste

Fertilizer use on farms is one of the primary sources of Vermont’s phosphorus discharges.



stream, conserve resources, and reduce the costs of human and environmental health problems.

Vermont currently assesses a tax on solid waste generated in the state, paid by operators of solid waste facilities and waste transfer facilities. The tax raised about \$1.5 million in 1998, and the funds are earmarked for solid waste management activities.⁵¹

Taxes are effective at reducing undesirable activities only when the tax rates are set high enough to influence behavior and when the taxpayers can reduce their tax payment by changing their activities. Thus, solid waste tax policies should ensure that consumers pay in proportion to the amount of waste they generate.

The solid waste disposal rates paid by most businesses are based on the volume or weight of the waste they generate, or the frequency of their trash pickup. However, the same is not true of the rates paid by many residential customers. A growing number of communities in Vermont and around the country base residential waste disposal rates on the number of trash bags discarded or the weight of the trash. This variable pricing scheme is not only fairer — people pay only for the waste they discard — it encourages more people to reduce their waste.

How solid waste taxes and variable pricing programs work

Solid waste taxes often are assessed on waste haulers, who generally pass the costs on to their customers. Alternatively, sales taxes can be placed on garbage pickup services.

Most variable pricing programs for residential customers in the U.S. charge people for each bag or can of waste they generate. Special bags sometimes must be purchased by customers. A few communities bill customers based on the weight of their trash. Some communities make it easier for people with low-incomes to shoulder the costs of disposal by offering them coupons that can be exchanged for bags.⁵²

Solid waste taxes and variable pricing programs in other places

Many states and countries assess some type of solid waste taxes. European countries have been especially successful in reducing waste with these taxes. For example, Denmark has levied a charge on waste disposal since 1986. Between 1985 and 1993, reuse and recycling increased from 21% to 50% of the total waste stream.⁵³ Minnesota extended its 6.5% sales tax to garbage services in 1989, and raised \$24.3 million from the tax in 1990.⁵⁴

Many communities in Vermont use variable pricing programs, along with an estimated 2,000 communities across the country. A study on variable pricing programs in the U.S. found that in the first year of the programs, households generated an average of 15%-28% less waste and recycled 32%-59% more waste compared to the year before the program started. The town of Dover, New Hampshire, for example, lowered its annual solid waste from 11,000 tons to 3,900 tons, and raised its recycling rate to more than 50% for residential waste.⁵⁵

Solid waste tax option for Vermont

- Increase the solid waste tax to raise more revenue and provide a stronger disincentive to create waste.
- Require municipalities and waste haulers to institute variable pricing for residential customers and to continue using variable pricing for commercial customers.
- In conjunction with these tax policies, provide revenues to subsidize recycling, composting, and other programs that help people reduce waste.

DEPOSIT / REFUND PROGRAM FOR BEVERAGE CONTAINERS

Vermont currently requires a five-cent deposit to be placed on the sale of most beverage containers, and the deposit is refunded to consumers when the empty containers are returned to a redemption center or retailer. An estimated 88% of all beer and soda containers used in Vermont are recycled through this program, saving significant amounts of resources and landfill space. Because of the

We generate about the same amount of solid waste per capita as the rest of the country — about 3.4 pounds per capita every day.



program, the life of Vermont's landfills is estimated to be extended by 10%.⁵⁶ Improving this program by closing a loophole would result in even more recycling and waste reduction.

Currently, the five-cent deposit is required on the sale of glass, metal, paper, or plastic containers of beer, malt beverages, mineral waters, mixed wine drinks, soda water, and carbonated soft drinks. Juice, iced tea, and sports drinks containers are exempted from the program. However, these drinks now account for 30% of all beverages sold and their sales are projected to continue to increase.⁵⁷

Including these beverages in the deposit/refund program would be administratively simple and would easily improve Vermont's recycling rates, reduce resource use, and save landfill space.

How a deposit/refund program works

The mechanics of Vermont's deposit/refund program are described in Chapter 3. Adding new beverage containers to the program would not change these procedures.

Deposit/refund programs in other places

Several states have deposit/refund programs, and Maine has a program that includes juice, iced tea, and sports drinks containers.

Deposit/refund program option for Vermont

- Expand Vermont's current deposit/refund program to cover all non-carbonated beverage containers except milk containers and containers made primarily of paper.
- Consider instituting a deposit/refund program on other types of standard food packages.

Land Use

Sprawl is threatening to change the state's traditional rural landscape, our sense of community, and the vitality of our downtowns. Vermont has preserved many of its compact villages and towns, but in many parts of the state, pressures to develop outside the downtown centers are strong. Vermont could harness taxes to help reverse this trend.

Exempting downtowns from Vermont's sales tax is one mechanism that could help preserve the economic activity in our historic downtowns. For example, exempting downtown Barre, Bellows Falls, Bennington, Burlington, Brattleboro, Middlebury, Rutland, and St. Johnsbury would save consumers an estimated \$34.5 million, giving a sizable boost to these downtowns.⁵⁸

There are a variety of other ways taxes could be used to improve our land use. The current capital gains tax on speculative land sales could be increased. The capital gains tax rate could be lowered for socially beneficial land use transactions. Assessing property taxes in downtown centers based on the value of land rather than the value of buildings and improvements is discussed below.

LAND VALUE TAX

A property tax is actually two taxes rolled into one: a tax on the value of the land, and a tax on the value of buildings and other improvements. A land value tax is a property tax that falls only or mostly on the value of the land, instead of on the value of the buildings and improvements. This taxation arrangement encourages compact development and improvements on valuable land. If used carefully, a land value tax can decrease sprawl, preserve open space, and encourage compact development in our downtowns, ensuring their economic viability.

Land value taxation is not a new idea; classical economists in the early 1800s were land value tax enthusiasts, and economists today continue to discuss the idea. Land value taxation has been attractive to many economists because, in theory, it should cause no distortions in economic decision-making.

Land receives its value based on its location. Land values rise when new amenities such as a park or library are built nearby; when new infrastructure, such as a road or sewer line, is built nearby; and when neighborhoods become more popular, safe, or change in other ways. The factors that determine land values are generally beyond the control of property owners.

An estimated 88% of all beer and soda containers used in Vermont are recycled.



Pressures to develop outside the downtown centers are strong.

If Vermont communities decreased their taxes on building values and increased their taxes on land values in their downtown centers, property owners would have incentives to build on, maintain, and improve their properties. Tax rates can be set so that most property owners would have to build on, maintain, or improve their buildings in order to pay their taxes. This, in turn, would promote compact development and more efficient use of infrastructure such as roads and sewers. Property owners who had improved their buildings in the past would be in a favorable position, while those who had let their buildings deteriorate would be encouraged to make improvements or sell the property.

Taxing land values instead of building values in Vermont's downtowns could create pressure to develop important green space in our downtowns. Thus, policies that permanently protect green space valued by the community should be undertaken in conjunction with land value taxation schemes. Other protection measures also may be required with land value taxes, such as building height limitations and careful zoning district boundaries. Implementing a land value tax outside downtown centers would be more complicated and would require careful consideration; additional protection measures likely would be needed.

How a land value tax works

A land value tax falls only or mostly on the value of the land, instead of on the value of the buildings and improvements. Communities usually have jurisdiction over the administration of the tax. Land value taxes can be phased-in gradually and can be revenue neutral or revenue-positive.

Land value taxes in other places

Pennsylvania has pioneered the use of the land value tax in the U.S. The state empowers cities and boroughs to decrease their taxes on buildings and increase their taxes on land if they choose. Currently, about 17 cities use this approach, including large cities such as Pittsburgh and smaller communities such as Titusville (population 6,400). Communities determine the ratio at which they tax land in

comparison to buildings; for example, the ratio in Aliquippa is 16.2 to 1, in Pittsburgh is 5.61 to 1, and in New Castle is 1.75 to 1. Some communities are in the process of phasing in an increased ratio slowly over time. The land value tax has helped to revitalize some of Pennsylvania's cities, including Pittsburgh and Harrisburg.⁵⁹

In addition, land value taxation is used in a number of other countries, including Denmark, South Africa, and some parts of Australia.

Land value tax option for Vermont

- Pass state legislation that would enable cities and towns in Vermont to use land value taxation (increasing taxes on land values, while decreasing taxes on building values) in their downtown centers if they choose, modeled after Pennsylvania's state law.
- Allow cities to determine the proportion of the property tax that will be raised from land values and the proportion raised from buildings and improvements, as Pennsylvania does.

WHERE TO START

Vermont's tax shift has already begun. Due to education funding reforms in 1997, a portion of education funding was shifted from property taxes to the gasoline tax, motor vehicle purchase and use tax, and other taxes. Vermont can continue this small tax shift in a variety of ways.

Decreasing property taxes further would be highly visible, would have widespread appeal, and would benefit both families and businesses. Reducing the sales tax is attractive because the tax impacts low-income wage-earners disproportionately, but reduced payments from a lower sales tax aren't as visible as reduced property taxes. On the other hand, eliminating the sales tax in downtowns would be a large enough reduction to be visible, and downtown economies would get a significant boost. Reducing payroll taxes paid by businesses is very desirable, because it would cre-



ate an upward spiral for full employment in the economy. Finally, eliminating the income tax for Vermonters who earn less than a livable wage is an excellent way to address the regressive nature of our current and future tax systems.

Increasing taxes on energy use would have the biggest impact on improving economic efficiency and human and environmental health. While some of the energy taxes described above are regressive, measures that counteract this flaw could accompany the taxes. Solid waste taxes, variable pricing on solid waste disposal, and expanded deposit/refund systems are attractive because

they are manageable, predictable, and there is widespread experience with them in Vermont and the U.S. Whatever the form of Vermont's next tax shift, it should be sensibly sized, easy to understand, easy to administer, highly visible, and very beneficial for Vermont. There are a multitude of good options for specific tax shifts in Vermont.

Tax shifting is a smart way to harness the power of the economy to work for us rather than against us. If we do it wisely, tax shifts will strengthen our economy, make our environment more beautiful and healthy, preserve our social goods, and keep taxes fair for all Vermonters.



Chapter 3

An Inventory of Vermont's Environmental Taxes, Fees, and Incentives

Currently, Vermont places a variety of taxes and fees on socially and environmentally harmful activities, and uses incentives and other mechanisms to encourage beneficial activities. Some of the state's taxes have been in place for some time; others are more recent. Most of the taxes raise modest amounts of revenue. Many of the tax rates, such as those for air contaminant emissions and water discharge fees, are too small to effectively discourage pollution. Some of the revenues from these taxes are re-invested in pollution cleanup, monitoring, or energy-saving programs; others cover the costs of administering permit programs and state regulations; and others are deposited into the general fund.

A summary of Vermont's environmental taxes, fees, and incentives follows. The Appendix gives additional specifics of each law, along with statutory references. (The Appendix is available upon request from the Vermont Natural Resources Council and Vermont Businesses for Social Responsibility-REF.)

In addition to the taxes and fees described below, there are a host of permits and licenses which carry fees that the state requires to protect environmental quality, including air pollution permits, stream alteration permits, sludge facility certifications, and many others. A list of the permits and licenses collected by the Agency of Natural Resources appears in the Appendix.

ENERGY-RELATED TAXES AND FEES

Fuel Gross Receipts Tax

Vermont places a 0.5% gross receipts tax on the retail sale of heating oil, kerosene, propane, natural gas, electricity, and coal when the seller receives more than \$10,000 per year for the sale of such fuels. The tax will be collected through June 2003, when it expires. Some fuel sellers are eligible for rebates of this tax.

Revenues from this tax provide funds for the state's Weatherization Assistance Program, which helps low-income Vermonters weatherize their homes in order to reduce their energy bills. Vermonters earning 150% or less of poverty level income are eligible for the program. Currently, the Weatherization Assistance Program weatherizes about 1,100 homes per year. However, each year there are between 2,500 and 3,000 people on the waiting list for weatherization services.

The gross receipts tax is the largest funding source for the Weatherization Assistance Program; in 1998, the tax provided about 83% of the program's funds. The fuel gross receipts tax was instigated in 1990 in order to provide a stable funding source for the program in the face of diminishing federal support.⁶⁰



Revenues collected from the fuel gross receipts tax^{*61}

| Fiscal Year | |
|-------------|-------------|
| 1995 | \$3,480,373 |
| 1996 | \$3,984,455 |
| 1997 | \$4,046,124 |
| 1998 | \$3,984,514 |

**Revenues represent funds collected before rebates are paid to qualifying fuel sellers.*

Electric Energy Tax

Vermont levies an annual tax of 3.5% of the appraised value of in-state electric generating plants with a generating capacity of 200,000 kilowatts. Currently, only one Vermont generating plant, Vermont Yankee Nuclear Station, fulfills the criteria and must pay this tax. Because about one-half of the energy generated at Vermont Yankee is used by energy users in other states, some of this tax ultimately falls on those users.⁶²

Revenues collected from this tax are deposited into the state's general fund.⁶³

Revenues collected from electric energy tax⁶⁴

| Fiscal Year | |
|-------------|-------------|
| 1995 | \$3,974,270 |
| 1996 | \$3,484,492 |
| 1997 | \$3,258,242 |
| 1998 | \$3,351,508 |

Utilities Gross Receipts Tax

Cooperative, municipal, and privately owned companies that generate, distribute, sell, or transmit electric energy in Vermont are taxed annually at a rate of 0.5% of their gross operating revenue. Gas utilities are taxed annually at a rate of 0.3% of their gross operating revenue.

Revenues of this tax fund the activities of the Vermont Public Service Board and the Vermont Department of Public Service. The Board is Vermont's quasi-judicial body which makes decisions related to regulated utilities

and companies, including electric, gas, water, phone, and cable companies and utilities. The Department acts as a consumer advocate in cases before the Board, undertakes energy and telecommunications planning efforts and energy efficiency activities, and oversees regulations related to utility systems.

Revenues collected from utilities gross receipts tax⁶⁵

| Fiscal Year | |
|-------------|-------------|
| 1995 | \$3,839,714 |
| 1996 | \$3,937,781 |
| 1997 | \$4,309,528 |
| 1998 | \$4,600,695 |

Sales Tax on Commercial Energy Use

There is a 5% sales tax on electricity, natural gas, fuel oil, propane, and wood that is sold to commercial establishments in Vermont. When any of the above fuels are used in motor vehicles, this tax does not apply.

The sales tax applies to most products sold in Vermont, but it does not apply to energy used in the residential, industrial, and farm sectors. In addition, the sales tax does not apply to motor vehicle fuels, or to the sale of motor vehicles.⁶⁶ However, a motor vehicle purchase and use tax does apply to the sale of motor vehicles (see description under "Motor Vehicle Purchase and Use Tax").

Revenues from this tax are deposited into the state's general fund.

Estimated Revenues from Sales Tax on Commercial Energy⁶⁷

| Fiscal Year | |
|-------------|--------------|
| 1995 | \$8,500,000 |
| 1996 | \$9,000,000 |
| 1997 | \$9,400,000 |
| 1998 | \$10,000,000 |

Motor Fuel Taxes and Fees

Gasoline is taxed at 19 cents per gallon in Vermont. In addition, there is a one cent per gallon Petroleum Cleanup Fee on gasoline



sales (see “Petroleum Cleanup Fee” section). Diesel fuel is taxed at 16 cents per gallon, plus one cent per gallon for the Petroleum Cleanup Fee. There are several exemptions to the diesel tax. (See the Appendix for more details.)

In addition to gasoline and diesel taxes, there are a number of other taxes placed on transportation fuels and infrastructure, including railroad fuel, aviation jet fuel, aviation gasoline, and railroad property.⁶⁸

Most of the revenues from the gasoline and diesel tax go to the transportation fund, which provides money for road construction, maintenance, and other transportation projects. However, the gasoline tax rate was raised in 1997 from 15 cents per gallon to 19 cents per gallon in order to offset property tax reductions that fund education. Four cents per gallon of the gasoline tax now go to the education fund (this amount is set to be reduced to three cents per gallon starting on July 1, 1999, although the gasoline tax rate will stay the same⁶⁹). In addition, 3/8 of one cent per gallon of the gasoline tax goes to the Vermont Fish and Wildlife Fund and the Vermont Department of Forests, Parks, and Recreation (76% of funds to the former and 24% to the latter). The balance of the gasoline tax revenues and all of the diesel tax revenues go to the transportation fund, except for the fees mentioned above that are earmarked for the Petroleum Cleanup Fund.⁷⁰

Revenues collected from diesel tax

| Fiscal Year | |
|-------------|--------------|
| 1995 | \$11,195,846 |
| 1996 | \$11,123,747 |
| 1997 | \$10,977,275 |
| 1998 | \$7,401,375 |

Motor Vehicle Purchase and Use Tax

There is a motor vehicle purchase tax assessed on Vermont residents who purchase a motor vehicle. The tax rate is six percent of the taxable cost of the vehicle. For trucks over 6,100 pounds, agricultural vehicles, school buses, trailers, and motorcycles, the maximum amount is \$750.

When a purchase tax is not paid (for example, when a vehicle is purchased out-of-state), there is a motor vehicle use tax assessed at the same rates and with the same rules as the purchase tax. The tax is assessed when a vehicle is first registered, or when the vehicle registration is transferred.

There also is a titling tax levied in cases where no purchase or use tax applies. The titling tax is assessed at the same rates and with the same rules as the purchase tax and is paid at the time of obtaining a certificate of title to the vehicle.

Revenues collected from gasoline tax, by destination⁷¹

| Fiscal Year | Transportation Fund | Fish and Wildlife Fund | Dept. of Forests, Parks, and Recreation | Education Fund | Total |
|-------------|---------------------|------------------------|---|----------------|--------------|
| 1995 | \$46,233,813 | \$823,020 | \$0 | \$0 | \$47,056,833 |
| 1996 | \$47,344,685 | \$800,095 | \$0 | \$0 | \$48,144,780 |
| 1997 | \$47,274,745 | \$611,025 | \$192,101 | \$0 | \$48,077,871 |
| 1998 | \$48,648,181* | \$888,831 | \$279,616 | \$10,463,000* | \$60,279,628 |

**These numbers are approximate. In 1998, revenues destined for the education fund were taken out of the transportation fund; in subsequent years, money for the education fund will go directly to that fund.*



Revenues collected from motor vehicle purchase and use tax, by destination⁷³

| Fiscal Year | Transportation Fund | Education Fund | Total |
|-------------|---------------------|----------------|--------------|
| 1995 | \$44,708,227 | \$0 | \$44,708,227 |
| 1996 | \$43,742,228 | \$0 | \$43,742,228 |
| 1997 | \$45,466,523 | \$0 | \$45,466,523 |
| 1998 | \$47,943,749* | \$8,571,000* | \$56,514,749 |

**These numbers are approximate. In 1998, revenues destined for the education fund were taken out of the transportation fund; in subsequent years, money for the education fund will go directly to that fund.*

To address the toxicity of air contaminant emissions, Vermont also levies annual fees on businesses and individuals who emit more than five tons per year of hazardous air contaminants that cause short-term irritant effects, that cause chronic systemic toxicity, that are known or suspected to cause cancer, and that result from the combustion of coal, wood, fuel

oil, propane, and natural gas. (See the Appendix for more information.)

Cars that are purchased, leased, or acquired for use in short-term rentals are exempt from the purchase, use, and titling taxes. However, such vehicles are subject to a use tax of 5% on the rental charge when renters take possession of a vehicle in Vermont.

Revenues collected from air contaminant emissions fees are deposited in the state's environmental permit fund and are used to cover all the costs of the operating permit program for air emissions. Revenues collected from hazardous air contaminant emissions fund the hazardous air contaminant monitoring program, which undertakes activities to monitor the presence of hazardous contaminants in the air, assess risks, and gather data.⁷⁴

There are a number of exemptions to this tax. (See the Appendix for more details.)

The motor vehicle purchase and use tax was last changed in 1997 when the rate was increased from 5% to 6% to provide funds for education. The tax is assessed in place of a sales tax on motor vehicles.

Revenues collected from air contaminant emissions fees⁷⁵

| Fiscal Year | |
|-------------|-----------|
| 1995 | \$332,098 |
| 1996 | \$320,139 |
| 1997 | \$365,798 |
| 1998 | \$357,134 |

**Includes fees for air contaminant emissions and hazardous air contaminant emissions.*

All of the revenues collected from the use tax on rental vehicles, and five of the six percentage points of the purchase, non-rental use, and titling taxes go to the transportation fund. The remaining one percentage point on the latter taxes goes to the education fund.⁷²

AIR AND WATER POLLUTION TAXES AND FEES

Air Contaminant Emissions Fee

Vermont levies annual registration fees on air emissions of sulfur dioxide, particulate matter, carbon monoxide, nitrogen oxides, and hydrocarbons. Businesses and individuals who generate more than five tons of emissions per year pay \$0.015 per pound, and those who generate more than ten tons per year pay an \$800 fee in addition to the rate per pound.

Water Discharge Fee

Vermont levies fees on individuals and businesses that discharge wastes into lakes, rivers, reservoirs, or other waters. The fees are based on the volume and types of waste discharged. Applications for discharge permits carry a fee of \$100, and there are application review fees and annual operating fees. (See the Appendix for more information.)



The state's water discharge fees were most recently changed in 1997, when annual operating fees were added. Polluters previously paid a fee every five years. The change from five-year fees to annual fees is not expected to raise additional revenues over the short-term.⁷⁶

Revenues from water discharge fees are deposited into the environmental permit fund and used to cover expenses related to the state's environmental permit programs.

Revenues collected from water discharge fees*⁷⁷

| Calendar year | |
|---------------|-----------|
| 1995 | \$235,154 |
| 1996 | \$238,833 |
| 1997 | \$202,439 |
| 1998 | \$168,097 |

**Includes revenues from new permits, renewals, and permit amendments.*

Property Tax Exemption for Air and Water Pollution Control Facilities

Air pollution treatment facilities approved by the state are exempt from property taxes in Vermont. In addition, water pollution abatement facilities and equipment used for Vermont waters or within the purview of the New England Interstate Water Pollution Control Compact are exempt from property taxes.

WASTE TAXES, FEES, AND INCENTIVES

Solid Waste Tax

Operators of solid waste facilities and waste transfer facilities in Vermont pay a tax of \$6.00 per ton of waste. The tax also is assessed when waste is shipped to an out-of-state facility without first being delivered to a transfer facility in Vermont. Certain landfill operators that receive 1,000 tons of waste per year or less may, if they choose, pay a tax of \$2.80 per cubic yard instead of \$6.00 per ton. In addition, certain types of waste are excluded from the tax. (See the Appendix for details.)

Revenues from the solid waste tax are deposited into the waste management assistance fund, which funds activities that enhance solid waste management in the state.⁷⁸

Revenues collected from the solid waste tax⁷⁹

| Fiscal Year | |
|-------------|-------------|
| 1995 | \$1,315,120 |
| 1996 | \$1,025,191 |
| 1997 | \$1,540,148 |
| 1998 | \$1,464,727 |

Deposit/Refund for Beverage Containers

Vermont requires a five-cent deposit to be placed on the sale of glass, metal, paper, or plastic containers of beer, malt beverages, mineral waters, mixed wine drinks, soda water, and carbonated soft drinks. (Containers that are biodegradable do not require a deposit.) Liquor containers that are greater than 50 milliliters in volume are required to have a deposit of fifteen cents. The deposit is paid by the consumer and refunded to the consumer by a retailer or redemption center when the empty containers are returned. Distributors and manufacturers compensate retailers and redemption centers for redeeming and handling the containers. All beverage containers must be labeled with the deposit amount.

Hazardous Waste Tax

A tax is assessed on hazardous waste in Vermont when the waste is shipped, or when facilities recycle, treat, store, or dispose of hazardous waste. The tax is based on the quantity of the hazardous waste and its ultimate destination (e.g., whether it is destined for recycling, treatment, or land-disposal.) Some hazardous waste is exempt from the tax, including generators who produce less than 220 pounds of hazardous waste per month per site, or 2.2 pounds of acutely hazardous waste per month per site during a calendar quarter; and certain hazardous waste for which disbursement from the environmental contingency fund is made. (See the Appendix for more information.)



The hazardous waste tax was most recently changed in 1997, when the tax rates were raised.

Most revenues collected from the hazardous waste tax are deposited in the environmental contingency fund, which is used to investigate and mitigate the effects of hazardous waste releases into the environment. A small portion of the revenues are deposited into the hazardous waste management assistance account, which is part of the waste management assistance fund. The money from the account is used to improve hazardous waste management in the state through a variety of activities, such as administering hazardous waste plans and making grants.⁸⁰

Revenues collected from the hazardous waste tax⁸¹

| Fiscal Year | |
|-------------|-----------|
| 1995 | \$348,212 |
| 1996 | \$511,961 |
| 1997 | \$716,824 |
| 1998 | \$422,946 |

Petroleum Cleanup Fee and Tank Assessment Fee

A fee of one cent per gallon is assessed on all motor vehicle fuels sold in the state for the purpose of providing cleanup funds for leaking petroleum storage tanks. The fee is collected in the same manner as the tax on motor fuels. It will be collected through March 2006.

In addition to the petroleum cleanup fee, owners of underground storage tanks are required to pay an annual tank assessment fee through June 2004. The fee does not apply to fuel oil storage tanks used for on-premise heating, and to farm or residential tanks used for storing motor fuel. The standard fee is \$200 per tank, but some gasoline outlets and municipalities that use smaller amounts of motor vehicle fuel pay \$100 per tank. Tank assessment fees raise about \$470,000 per year.

Most hazardous releases into Vermont’s environment come from leaking underground petroleum storage tanks. More than 2,000 hazardous waste sites have been identified in the state, and more than 1,600 of these are contaminated by leaking underground storage tanks. Underground storage tanks often start to leak when they are about 25 years old. Because Vermont has always relied heavily on fuel oil for heating, there are many aging tanks that have the potential to leak in the near future, posing hazards to human health and the environment. Federal law required that single-wall commercial underground storage tanks be replaced by newer, safer tanks by December 1998.⁸²

Petroleum cleanup fees and tank assessment fees are deposited into the Petroleum Cleanup Fund. The fund was established in 1987 after private insurance companies no longer were willing to cover cleanup costs associated with leaking fuel tanks.⁸³ The fund program originally provided money to clean up and restore contaminated soil and groundwater caused by petroleum releases from underground fuel storage tanks. In 1997, the program also started to provide money for leaking above-ground tanks.

Currently, the program pays for a portion of cleanup costs from leaking tanks, provides for cleanup of abandoned tank sites, and gives interest-free loans to small gasoline outlets and small municipalities to upgrade their tanks. In addition, in 1997 the fund program started to provide grants or loans of up to \$500 to owners of farm or residential underground heating oil storage tanks to close, replace, or upgrade the tanks. The goal of this initiative is to remove older tanks before they start to leak.



Revenues collected from the Petroleum Cleanup Fee⁸⁴

| Fiscal Year | |
|-------------|-------------|
| 1995 | \$3,716,644 |
| 1996 | \$3,771,223 |
| 1997 | \$3,860,580 |
| 1998 | \$4,014,692 |

LAND RELATED TAXES, FEES, AND INCENTIVES

Use Value Appraisal (Current Use) for Agricultural and Forest Land

Vermont's use value appraisal program for agricultural and forest land allows approved lands to be assessed for property tax purposes based on their current use values rather than their fair market values. To qualify for the program, forest land must be at least 25 acres and must be managed under a 10-year forest management plan that meets certain minimum standards. Agricultural land must be at least 25 acres, with some exceptions, and must be used for agricultural purposes. A current use advisory board is responsible for determining current use assessment values. In the 1998 tax year, 1,505,829 acres in Vermont were enrolled in the use value appraisal program.⁸⁵ (See the Appendix for more details.)

A state Use Tax Reimbursement Fund exists to reimburse municipalities for the property tax revenues lost as a result of use value appraisals. The fund is financed with appropriations from the Legislature and from the revenues raised from the Land Use Change Tax.

Vermont's tax break for keeping land in the use value appraisal program is combined with a tax penalty for subsequently developing that land. If land that was previously appraised under the use value appraisal program is subsequently developed, a 20% land use change tax on the full fair market value of the changed land is assessed.

The use value appraisal program was originally started in 1977 when legislators recognized that people who lived off the income of farm and forest land were taxed beyond their ability to pay. The program currently has several goals, including encouraging agricultural and forest land to remain in productive use now and in the future, helping to maintain Vermont's working rural landscape, encouraging the protection of ecological systems, and discouraging accelerated development of open lands.

Capital Gains Tax on Speculative Land Sales

Vermont taxes the capital gain realized from the sale or exchange of land held for less than six years, in order to deter short-term, high-profit land speculation. The number of years the land has been held prior to the sale and the extent to which the land has risen in value determine the tax rate, which ranges from 5% to 80% of the gain. There are a number of exemptions from this tax. (See the Appendix for more information.)

The first \$500,000 in revenues per year from this tax are deposited into the general fund. Any remaining revenues go to the Property Tax Rebate Trust Fund, which funds property tax rebates and credits in the state.⁸⁶

Revenues collected from capital gains tax on speculative land sales⁸⁷

| Fiscal Year | |
|-------------|-------------|
| 1995 | \$775,387 |
| 1996 | \$826,000 |
| 1997 | \$1,264,693 |
| 1998 | \$749,821 |



Endnotes

- 1 Estimate of self-employed Vermonters does not include farmers; self-employed and wage-earning farmers number about 11,000; estimates are for 1996. Personal conversation with Sally Redpath, Labor Market Research Analyst, Vermont Department of Employment and Training, 2/99.
- 2 Personal conversation with Terry Knight, Property Valuation Operations Chief, Vermont Department of Taxes, 1/99.
- 3 Personal conversation with Barbara Gale, Secretarial/Clerical Support Services Coordinator, Vermont Department of Taxes, 2/99.
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- 6 Gale, op. cit. note 3.
- 7 Redpath, op. cit. note 1.
- 8 Friends of the Earth, *Citizens' Guide to Environmental Tax Shifting*, June 1998.
- 9 Alan Thein Durning and Yoram Bauman, *Tax Shift* (Seattle: Northwest Environment Watch, April 1998).
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- 12 Vermont Department of Public Service, op. cit. note 4.
- 13 U.S. Federal Highway Administration, *Highway Statistics* 1996, 1996.
- 14 Vermont Department of Public Service, op. cit. note 4.
- 15 Vermont Department of Public Service, op. cit. note 4.
- 16 Vermont Department of Public Service, op. cit. note 4.
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- 18 Vermont Department of Public Service, op. cit. note 4.
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- 30 Vermont Department of Public Service, op. cit. note 4.
- 31 Gale, op. cit. note 3.
- 32 Vermont Department of Public Service, op. cit. note 4.
- 33 Residential and motor fuels: Vermont Department of Public Service, op. cit. note 4; Industrial and farm fuels: Vermont Legislative Joint Fiscal Office, *1998 Fiscal Facts*, 1998.
- 34 Vermont Department of Public Service, op. cit. note 4.
- 35 Vermont Department of Public Service, op. cit. note 4.
- 36 Vermont Department of Public Service, op. cit. note 4.
- 37 Vermont Legislative Joint Fiscal Office, op. cit. note 33.
- 38 Sales tax rate: Vermont Legislative Joint Fiscal Office, op. cit. note 33; Clothing and footwear exemption: Personal conversation with Doug Williams, Deputy Fiscal Officer, Vermont Legislative Joint Fiscal Office, 1/99.
- 39 Vermont Department of Public Service, op. cit. note 4.
- 40 Vermont Department of Public Service, op. cit. note 4.
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- 42 European Environment Agency, op. cit. note 41.
- 43 European Environment Agency, op. cit. note 41.
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- 84 Middleton, op. cit. note 82.
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The topic of taxes has the power to produce blank stares and yawns, as well as impassioned emotions, complaints, and arguments. Many individuals and businesses believe taxes are too high and too complicated, and that nothing can be done to change them.

Tax Reform That Agrees With Vermont shows there's good reason to overcome the boredom, set aside the pre-conceived ideas, and reconsider just how taxes work and how they could work better – better for the economy, the environment, and for Vermont families.

This book explains how the power of taxes could be better harnessed to improve the public good with lasting benefits for the economy, the environment and all members of society.



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