

# **THE FUTURE OF VERMONT'S NATURAL TREASURES**

**PREPARED FOR THE AGENCY OF NATURAL RESOURCES  
BY STUDENTS AT THE TUCK SCHOOL OF BUSINESS**

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## **EXECUTIVE SUMMARY**

The Parks Division of the Department of Forests, Parks and Recreation and the Department of Fish and Wildlife face similar dilemmas: growth in costs has outpaced growth in revenues. This paper presents the results of a study by two MBA candidates at the Tuck School of Business at Dartmouth who worked with the state to analyze the problem and provide recommendations to the Secretary of the Agency of Natural Resources.

### **Rising costs are mostly unavoidable; organizations are already lean**

The majority of costs for both organizations is employee expense, and the rise in these costs has been largely driven by state-mandated pay and benefit increases. In response to these realities, both organizations operate with lean staffs and hold significant full-time vacancies. The Parks Division, in particular, has subsisted for decades in a tight financial climate. Only a few actionable cost-control strategies agency-wide can be made without drastic cuts in the level of service.

### **Complex revenue streams present areas for improvement**

The revenue side of the financial equation has more opportunities for improvement and comprises the bulk of our recommendations. Both organizations have complex revenue models that emphasize user fees, and neither organization has adjusted quickly enough to significant shifts in customer tastes.

For the Parks Division, the state mandate to be substantially self-funded has created a conflict between financial solvency and mission fulfillment. Our recommendations consider two options the division can use to manage this conflict. First is a series of near- and medium-term changes aimed at boosting financial self-sufficiency; second is a broader recommendation that emphasizes mission fulfillment.

The Fish and Wildlife revenue challenge reflects massive demographic shifts that have undermined its traditional funding base of hunters and anglers. Combined with mandatory increases in department responsibility driving larger annual budgets, user fees will become a smaller and smaller portion of department revenues. Our recommendations center on the communications challenge the department will need to tackle to be able to successfully appeal to all Vermont constituencies for increasing amounts of state funds.

## **DEPARTMENT OF FORESTS, PARKS AND RECREATION**

### **For more than two decades, Vermont parks have felt financial strain**

During times of economic difficulty, states are forced to make difficult decisions about their budgets, and funding for state parks is oftentimes one of the first items to be cut. It was in such an environment, in 1983, that the Vermont Legislature mandated that the State Parks Division within Vermont's Department of Forests, Parks and Recreation move towards financial self-sufficiency. Up until that point, the division was like most other government organizations in that it received an annual appropriation of general funds from the state to finance its operations. The change in 1983 meant that the division would eventually receive no general funds and would move to finance its operations primarily from park user fees and money paid to the department by private ski resorts built on state forest land.

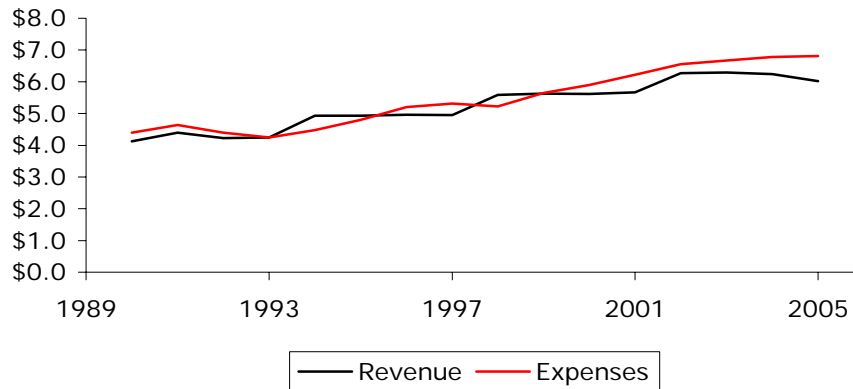
The division successfully met this challenge by undergoing significant changes. Among the many changes that took place:

- Non-core functions like rubbish removal and septic tank pumping were outsourced.
- A number of HR restructuring initiatives reduced permanent headcount from 48 to 36 and seasonal headcount from 500 to 250.
- Skylights and motion sensors were installed in park bathrooms to reduce consumption of electricity.
- Vehicle fleet was substantially altered for efficiency.

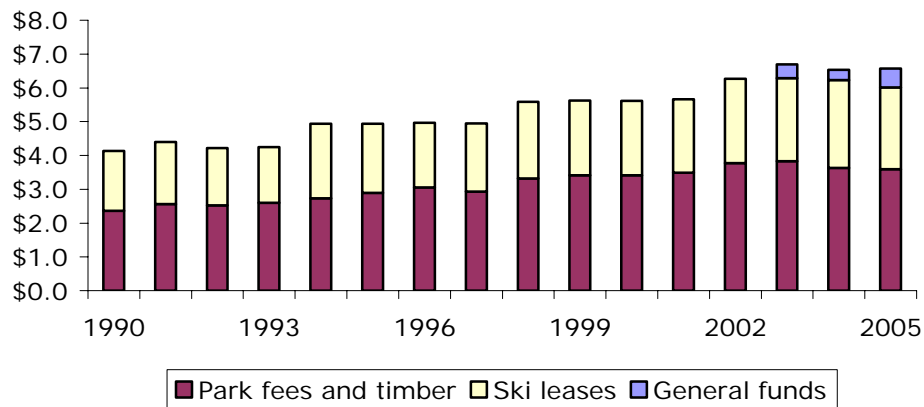
This retrenchment benefited the parks by allowing the division to cut away a great deal of superfluous cost. The parks emerged with a focus on day-to-day operations toward a goal of financial self-sufficiency.

The cuts did not occur without consequence, however. For the past two decades, the division has been operating at a bare bones level with limited resources. By necessity, the division's leaders have been primarily focused on day-to-day operations. Revenues and expenses had generally tracked one another, and the Parks Division had been able to fund itself until 1999, when expenses began to outpace revenue. Since 2003, the division has received a General Fund appropriation to cover its deficit.

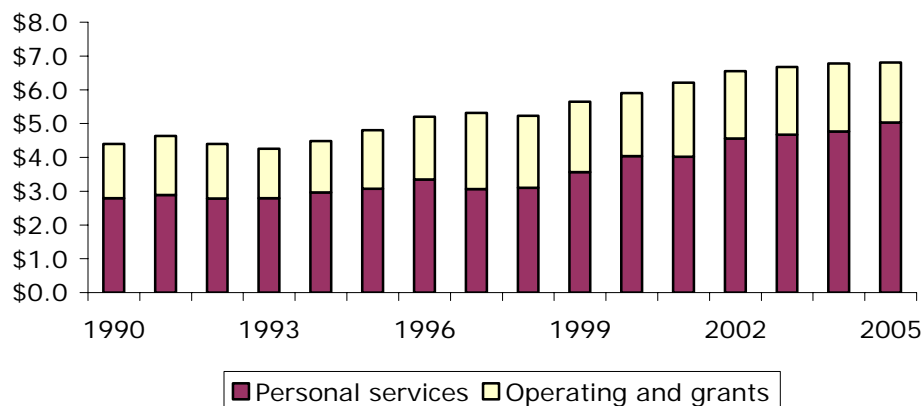
Park revenue and expenses (\$ millions)



Park receipts by category (\$ millions)



Park expenses by category (\$ millions)



Beyond the financial consequences, operating under these resource constraints has severely limited the division's ability to freely make decisions based on mission fit. Instead, financial pressure has shifted the decision-making process toward operating to break even. Consequently,

a disproportionate amount of the division's energy is focused on campground operation and drawing more campers to Vermont's state parks. While camping certainly fits into the division's mission, it should not be its singular focus.

Important park decisions should not be made based on how they impact the number of campers attending the state parks but rather how they impact the division's mission "to conserve and interpret on behalf of the people of Vermont their natural, cultural, historic, and scenic heritage and while doing so provide recreational opportunities and economic benefit." Since the division's funding mechanism is the root cause of this issue, we believe the state of Vermont needs to reconsider how its state parks are financed so that the division can better meet its mission.

The state park system is a public good. By definition, a public good is something that will not arise naturally out of the private sector without the efforts of an organization such as the government. The primary reason for this is that public goods by their very nature are not profitable.

It follows, then, that if the Vermont state park system is to fully meet its mission, it can not be expected to sustain itself entirely from private money. This inconsistency can only be resolved by either changing the mission of the parks or changing the funding mechanism so that the parks receive the public funds needed to provide a public good.

The first decision the state must make is this tradeoff between funding freedom and mission fulfillment. If the Parks Division is to remain self-funded, the scope of division activities must change so that the parks can be flexible enough to operate more like a business. Conversely, if the mission of the division is to remain unchanged, the funding mechanism must be reconsidered. We provide recommendations for both options in turn.

### **Option 1: Operating Vermont parks as a business**

Vermont's park system is only one of two state park systems in the country mandated to be funded primarily from user fees. The other – New Hampshire – is also currently reviewing its park funding mechanism. In this option, we consider ways to improve the self-funded model.

Although Vermont parks have subsisted fairly well without significant General Fund appropriations, revenues have never considerably exceeded expenses for an extended period; revenue and expenses have crossed over one another as park attendance has varied. The recent trend of expenses outpacing revenues is simply a continuation of this history and highlights the tension that exists between mission and profitability: the division is mandated to operate profitably yet it is not given the true freedom to operate the park system like a business. The result is a system that has not completely met its goals for profitability *or* mission.

This same tension helps explain why Vermont positions its state parks as campgrounds that offer an entry-level experience focused on simple, rustic sites with clean facilities. The desire for profitability forces the division to be extremely focused on campground operations, since its campsites are its primary revenue center. At the same time, state park campgrounds are not

allowed to compete directly with private campgrounds since there is a belief that it is not the role of government to compete with the private sector.

The division has been averse to adding facilities such as RV hookups, stores, attractions, and other amenities that would put them in direct competition with the private campgrounds. Additionally, the division has been politically constrained from closing or divesting of underperforming parks that are losing money or require expensive infrastructure repairs that are not likely to pay off. But for the parks to truly be self-funding, they must be allowed to make unconstrained business decisions based on profitability.

The following recommendations can improve the competitiveness and profitability of Vermont's state parks without substantial mission deviation:

*Consider charging for parking using “pay-and-display” systems at popular un-staffed parks*

One short-term solution to capturing revenue from nontraditional users is to charge a modest parking fee at un-staffed parks using automated “pay-and-display” kiosks at the most popular parking lots. Our analysis assumes a daily fee of \$3 – identical to the charge at the White Mountain National Forest.

If implemented at Camel's Hump's seven main trailheads, our analysis shows this to be a positive-return project with a net present value of approximately \$180,000 and annual profit contribution after initial investment of approximately \$45,000. Even at a 75 percent participation rate (i.e. 25 percent of current visitors either decide not to park or dodge the fee) the project has a positive NPV. It achieves break-even if as few as 55 percent of current visitors pay.

Pay-and-display parking uses highly reliable, solar-powered kiosks that print tickets that a user displays on the dashboard. The kiosks can be installed for approximately \$15,000 each. They accept cash and, if cellular coverage is available, credit cards as well. Popular in European cities, these pay-and-display systems are now used in many areas of the American West as well as Brattleboro, Burlington and Northampton, Massachusetts.

Automated fee-collection systems have several distinct advantages over staffed fee collection or the traditional “slotted pipe” collection boxes. They can process payments (and make change, if necessary) 24 hours a day, seven days a week, even during winter and the “shoulder seasons,” when significant revenue potential exists yet does not justify the expense of a staffed position. The machines have low operating and maintenance costs, yet offer flexibility in terms of payment methods. The machines also automatically report when they are nearly full or nearly out of blank ticket stubs.

Another key feature of pay-and-display systems is the detailed data they can provide the managing organization. Managers can easily run reports to find out when the parking areas are most popular without performing physical counts. These reports could prove invaluable for determining true funding needs on a per-user basis. They also provide parking enforcement personnel information on when to perform lot checks.

Enforcement of parking fees is an important consideration. One possible scenario is to ask the nearest local municipality or county sheriff's office to perform routine enforcement under the condition that they could keep the revenues from parking violation citations. A steep fine for non-payment is essential for compliance.

The controversial Fee Demonstration Project in White Mountain National Forest has shown that many consumers are willing to pay nominal parking fees as long as the managing agency shows those "fee dollars at work" in various infrastructure and trail-improvement projects.

Many activists, however, contend that these fees are a grievous form of double taxation and represent a "slippery slope" to a fully commercialized wilderness. Given the broad public misconception that Vermont's state parks are primarily funded by tax dollars, we feel that simple signage indicating that the parks depend on user fees will be enough to convince consumers that their fees are worthwhile.

A critical success factor in pay-and-display parking will be convincing users that a significant portion of the new fee is providing a benefit to Camel's Hump recreation and not just subsidizing campsites and beaches. A particular challenge at Camel's Hump, however, is that the trails are maintained by the Green Mountain Club instead of park employees. The benefits need not be limited to trail bridges and bathrooms, though. Administrative tasks such as forging new recreation partnerships – in mountain biking and snow sports, for example – could be clearly shown to benefit Camel's Hump users. It is also important to get the buy-in of the Green Mountain Club before implementing a pay-and-display parking scheme.

Although the pay-and-display concept may work for Camel's Hump State Park, it has limited potential throughout the rest of the park system. A single parking kiosk only achieves a favorable business model when traffic exceeds approximately 1,600 cars annually, and logic suggests that many of the visitors who frequent parks near this threshold (e.g. Lowell Lake and Niquette Bay) would not visit if a fee were charged. A deep-discount annual pass – one sells for \$20 in the White Mountains, for example – could alleviate this problem somewhat, but local political pressures may still make pay-and-display parking infeasible at these smaller parks. While inexpensive collection boxes might work in smaller locations, they do not make change or produce receipts, so enforcement is difficult. If current usage did not change, however, profits from pay-and-display parking at Lowell Lake and Niquette Bay would each amount to approximately \$8,000 per year.

Our financial model also indicates that it is a "false economy" to simply replace current fee collection staff with automated parking fee collection. Even under the conservative assumption of two paying users per vehicle, the savings of collection-staff reduction (approximately \$8,400 per season) is not enough to offset the loss in day use fees. Of course, this model does not take into account the other intangible value added by a collection agent that a parking kiosk cannot provide.

Appendix 1 provides more detail on pay-and-display parking.

### *Outsource operations of Seyon Ranch*

In the three years 2002 - 2004, the newly reopened Seyon Ranch posted financial losses averaging \$100,000 annually and has diverted human resources from mission-critical activities. The agency should act immediately to stop these losses and experiment on ways to profit from this unique resource.

We recommend one of two options:

- Install third-party management and continue to position Seyon as an inexpensive, rustic retreat for quiet time, fly fishing and cross country skiing. Under relatively strict division oversight, a live-in couple with bed and breakfast experience would perform all services for overnight guests and provide simple “chili-in-bread-bowl” meals to skiers.
- Install third-party management and transform Seyon into an upscale, four-season destination lodge. With broader operational leeway, a professional management company would offer comfortable accommodations, fine dining and talented instruction in fly fishing, animal tracking and cross country skiing. Aside from profitability, the state would establish goals of earning a listing on Orvis’ endorsed lodges and outfitters list.

For either option, the state should solicit bids from potential managers for an annual lease payment to the division. While the details of possible contracts are beyond the scope of this recommendation, the state should be sure to earn a fixed annual sum plus some percentage of profit from operations.

### *Experiment with backcountry yurts for snow sports and summer hiking*

The popularity of Mount Mansfield’s Stone Hut – a rustic ski cabin that sleeps 10 skiers and earns the division \$150 almost every winter night – indicates an untapped potential to expand winter lodging options.

A possible method to meet the needs of winter customers is to experiment with pre-fabricated yurts. Today’s interpretations of the classic Mongolian structures are low-cost, low-maintenance and environmentally sensitive circular structures available in a variety of sizes. The 16-foot model from Pacific Yurts, for example, sleeps five and retails for \$4,995.

We estimate such a yurt, delivered, installed and equipped with a woodstove, basic furniture and a light-duty composting toilet could cost as little as \$10,000. Given the popularity of Stone Hut and the fact that On the Loose, a Burlington-based outfitter, charges \$135 per night for a 24-foot yurt, we feel that the division could command a \$50 fee for a new yurt in a prime location. (The Oregon state park system charges \$30 per night for yurts in their traditional campgrounds.)

Occupancy rates are critical to financial success of backcountry yurts; our model achieves break-even financials when annual occupancy is greater than 50 nights per year. It’s therefore essential that a yurt site attract a year-round clientele. Placement near the Catamount Ski Trail and three-season Long Trail in Camel’s Hump State Park would be ideal.

Appendix 2 provides more information on the yurts and a sensitivity analysis that indicates the required occupancy rate for financial break-even as a function of installation cost and nightly rental fee.

*Avoid pressures to install RV hookups*

Despite growing consumer and political pressures to install them, RV hookups remain a poor strategic choice for the division. They divert funds from more critical infrastructure updates and add an additional maintenance liability. They also do not provide an attractive financial return.

The case for hookups hinges on the notion that adding them will increase the number of campsites sold. In the short term, at least, we find little fault in this argument. The rising popularity of RVs in an aging camping population has increased demand for even basic electrical hookups such that a significant segment of campers will not overnight at “unimproved” sites.

Nonetheless, objective analysis does not show investments in hookups to be a wise business decision. Adding electrical hookups is a large capital investment, estimated at \$3,500 per campsite. The high cost accounts for the need to upgrade the main electrical systems throughout a potential installation site, as well as the need for professional installation. On a per-camper basis, \$3,500 could be better spent on community facilities such as restrooms, interpretive facilities, group shelters and dishwashing sinks rather than a service that enables a single camper to become further detached from the natural surroundings.

If installed, electrical hookups will add a complicated maintenance liability that requires professional service. Risk of fire and injury would also increase.

A financial analysis of electrical hookups indicates a challenging business case. We use two scenarios for illustration. In each scenario, we assume that electrical hookups will be installed in one loop of the park to provide 15 sites with electricity for a total capital investment of approximately \$50,000. In each scenario, we also assume a base site rate of \$15 and a \$10 premium for the hookup. Private campgrounds typically charge \$30 per night, but often include water, sewer and cable in addition to electricity. Some locations are as cheap as \$15 per night, including hookups.

Scenario 1: Busy Park (e.g. Grand Isle)

Assumptions:

- Current average site utilization: 90 %
- Increase in usage as result of hookups: 5 %
- Fraction of customers to use hookups: 50 %

Results:

- Project NPV (loss): (\$15,000)

### Scenario 2: Quiet Park (e.g. Fort Dummer)

#### Assumptions:

- Current average site utilization: 44 %
- Increase in usage as result of hookups: 50 %
- Fraction of customers to use hookups: 90 %

#### Results:

- Project NPV (loss): (\$5,500)

In both scenarios, electrical hookups are not positive-NPV projects. Nonetheless, sensitivity analysis of our financial model (shown in Appendix 3) reveals that the top two drivers of hookup profitability are the revenue premium charged and the installation cost. We do not believe consumer willingness-to-pay exceeds the \$10 we have assumed above, but it would be worthwhile to commission a detailed cost estimate in order to make the model more robust.

#### *Stop losses from marine expenses*

In the years 2002, 2003 and 2004, the division's "marine operations" lost an average of more than \$70,000 per year. The bulk of "marine operations" involves ferrying passengers to the popular Burton Island and primitive Knight Island parks. Total attendance is approximately 20,000 per year, yet total profit (excluding marine operations) averaged \$25,000 over the period; this clearly does not make up for the losses in marine operations.

Ferry service is not (and should not be) a core competence of Vermont parks. The division should investigate creative lease options to the private sector to stem its financial losses and remove this management diversion.

#### *Earmark a small percentage of capital dollars for visible improvements*

A 1998 study found infrastructure needs totaling \$31 million across the Vermont parks system. Since then, due to a combination of further deterioration and inflation, estimates put the backlog closer to \$40 million. Sewage and water systems comprise the bulk of this need, meaning that most customers won't even notice the improvements. We recommend devoting a small portion of "underground" funds to "above ground" cosmetic improvements such as tile floors and dedicated dishwashing sinks so that there will be at least some tangible user benefit from these necessary but invisible investments.

#### *Approach land acquisitions with more caution*

Land acquisition is a worthy endeavor but has in some cases led to financial strife. The Cheney House on Lake Willoughby is an illustrative example of a "white elephant" land acquisition with poor mission fit and high financial liability.

Many land acquisitions are driven by the public in the form of donations. At the Agency level, the Land Acquisition Review Committee typically designates the parcel as a Wildlife Management Area, a Forest or a Park. We recommend holding the land as an undesignated Agency parcel until a long-range plan can undergo public review.

*Hire a full-time partnership manager and volunteer coordinator*

A successful park management strategy makes the most of partnerships with other organizations and leans heavily on volunteers from the community. Relationships with partners and volunteers, though critical, take a significant amount of time to form, and in a lean organization like Vermont parks, these non-urgent activities often get “back-burner” status indefinitely. We recommend investing in a full-time employee tasked with forging new partnerships and coordinating park-wide volunteer activities.

New partnerships are critical to meeting the needs of the new generation of outdoor enthusiasts. Not content with simply camping and picnicking, these “adventurers” enjoy a range of activities from hiking and trail running to mountain biking, snowshoeing, horseback riding, bird watching and orienteering. The division does not have the resources to fulfill recreation needs in all of these areas without relying heavily on trusted specialist partners. Instead of attempting to provide all services for all customers, the division should leverage expert partners and concentrate instead on fulfilling its top-level mission.

The power of community volunteers is currently underutilized, yet volunteer coordination seems to strain current park staff. A park-wide “point person” to recruit, inspire and deploy volunteer forces throughout the park would relieve some burden from regional managers to provide more time for “big picture” planning. A well-coordinated volunteer system also would improve the experience for volunteers and increase the likelihood of future service.

*Improve employee learning and idea sharing through better park communications*

Successful organizations have processes in place to facilitate group learning and idea-sharing between employees. The end-of-season “debrief” of temporary park workers, for example, typically generates worthwhile new ideas to try next season, but there can be better inter-employee communication during the summer.

A proven method used by Fortune 500 companies to facilitate innovation and learning is the Web-based forum. There, park workers could share thoughts on everything from how to deal with campground noise to ways to improve park services. This would require “always-on” Internet service that could cost as little as \$30 per month per site for DSL over a telephone line or as much as \$100 per month for satellite service, plus an initial investment of between \$100 and \$1,000 per site depending on the technology used.

Internet connectivity at parks would provide the communications backbone for a real-time employee forum. It would also enable a real-time reservation system, reducing the amount of time rangers spend on the phone as a result of the quirky 14-day cutoff between reservations made online versus directly through the park. While an upgraded reservation system may not have a measurable revenue effect, today’s customer has a baseline expectation of seamless service, and Vermont does not currently meet that expectation.

*Create a non-profit foundation to support the parks*

To better marshal the resources of the private sector, the division should help start a non-profit foundation to invest in and promote Vermont's state parks. The largest example of such an organization is the California State Parks Foundation; similar organizations exist in Texas, Oregon, and Maine. The California State Parks Foundation was founded in 1969 by William Penn Mott, Jr., former director of the California and National Park Systems, to do philanthropic projects at the parks, but its role has evolved to include advocacy and marketing. Since its founding, it has contributed over \$116 million to California's park system with roughly \$6 million given last year.

A foundation in Vermont – like the needs of the parks – would be on a much smaller scale. The main purpose of the foundation would be to raise money from corporations, communities, and individuals. The initial focus would be to spend the money on marketing the parks and investing in new facilities at the parks. It is also possible for the foundation to include the support of non-game wildlife in its mission as there may be some synergies in fund raising. Critical to the success of the foundation will be an influential and well-connected board that can provide contacts for fund raising and generate widespread support through their influence in the community. Also important is to elicit the backing of the Green Mountain Club and other organizations that already support the park system.

*Market parks to be destinations rather than campgrounds*

The current marketing of Vermont's state parks is focused too much on individual campgrounds, forcing the parks to be too narrowly defined. Consider some of the main marketing documents of the parks: the Vermont State Park Web site, the individual park maps, and the Vermont Campground Association guide. In each of these documents, the primary service being marketed is camping. Park maps are really campground maps.

Instead, the division should market parks not simply as campgrounds but as destinations with a multitude of activities. This will have two primary effects. First, it will create a grander sense of scale so that current users might consider longer stays. Second, it will draw additional users to the parks whose recreational interests extend beyond camping.

One of the division's biggest current challenges is increasing mid-week usage. As a quick aside, the division could benefit from having better access to daily attendance data. As the system currently stands, a database with this information exists but the system is not built in such a way that it can be easily retrieved. Building out a system that enables division leaders to quickly access this information will allow the division to make better decisions about its operations.

Regardless, we know anecdotally that certain parks are filled to capacity on the weekends but are empty during the week. The division has tried to promote mid-week use but has found the challenge of changing people's leisure patterns to be an uphill battle. One way to address this problem is to convince customers to plan week-long vacations around state parks, and the only way that this can succeed is if customers can be convinced that the parks are large-scale destinations that offer a multitude of activities.

Current marketing limits the appeal of the parks for potential users whose recreational tastes are outside of camping. Illustrating this point, Camel's Hump State Park – a core natural asset of Vermont – is very difficult to find on the division's Web site because it does not offer camping. As one of Vermont's most popular outdoor destinations, it ought to be presented more prominently. Once a visitor takes the time to investigate Camel's Hump, the park's popularity can then be leveraged to cross-sell nearby campgrounds such as Little River.

If one goes to the Vermont State Parks Web site, the current organizational system subdivides 51 listed parks into the division's four administrative regions. From each region, one can then click through to individual parks to see what they offer. A few factors make this system less useful than it could be for potential customers. First, the administrative regions are an internal designation that carries little meaning for a user of the parks. Second, the sheer number of parks to choose from is overwhelming. Third, users have to click through all the way to the page describing the park before they can see the types of activities available at the park.

We recommend grouping multiple parks together so that they can be jointly promoted as a single destination. Additionally, the activities available at the parks should be prominently displayed and described. In Groton State Forest, for example, Boulder Beach, Kettle Pond, New Discovery, Ricker Pond, Seyon Ranch, Stillwater, and Big Deer would be combined to form Groton Forest State Park. The current parks would be re-designated as campgrounds and day-use areas within the larger Groton Forest State Park. Marketing materials, including the Web site, would promote the whole park as a place where one can hike, mountain bike, horseback ride, fly fish, swim, boat, sunbathe, watch wildlife, and, of course, camp. Through better marketing, more users will view the park as a place that they can spend a week exploring.

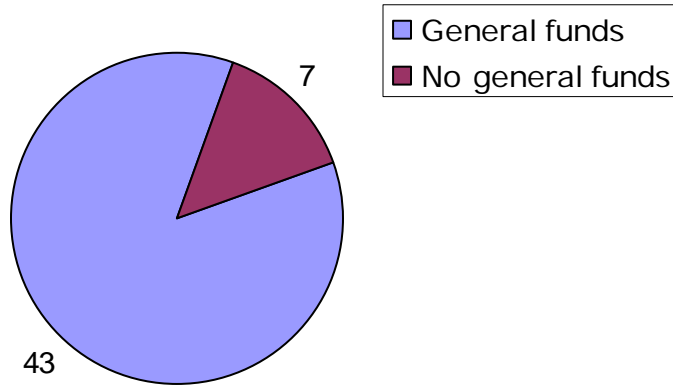
In addition to Groton, the Mount Mansfield parks of Little River, Smuggler's Notch, Underhill, and Waterbury Center can be jointly marketed as a single unit. The Lake Champlain parks can be marketed together, particularly as stops along the Paddler's Trail. Bomoseen and Half Moon can be marketed as one park with two separate campgrounds. Other parks that cannot be combined to achieve scale can still be promoted as destinations by better highlighting the multitude of activities that exist at each.

### **Option 2: Running Vermont's parks according to their stated mission**

The second major division option is to re-evaluate its funding scheme to relieve financial pressures and allow the division's leaders to operate the parks purely for mission fit. While camping will remain an important part of the parks, decisions will not be based only on how they impact attendance at campgrounds.

Unconstrained by financial pressure, the division leaders will be able to develop a strategic vision of the parks and create a system that best allows the division to meet its mission. This scenario best enables the division to objectively determine what constitutes the natural, cultural, historic, and scenic heritage of Vermont that is worthy of preservation and interpretation.

To offer a basis of comparison, we looked at how other states fund their state park systems. As shown in the chart below, the majority of states used some general funds to support their parks in 2004.



In fact, both Vermont and New Hampshire received general funds in 2004. The states that did not were Alabama, Florida, Michigan, Missouri, Montana, Oregon, and South Carolina. Instead, these states used various sources of public money in lieu of general funds:

State	Park funding sources
Alabama	Tobacco tax; other
Florida	Real estate transfer tax
Michigan	Motor fuel tax; ATV and boat registrations; leases; investment interest; other
Missouri	Leases; other
Montana	Motor fuel tax; snowmobile, ATV, and boat registrations; motor vehicle plates; tourism sales tax; investment interest
Oregon	Motor fuel tax; ATV registration; lottery; motor vehicle plates
South Carolina	Tourism tax

Several of the recommendations from Option 1 above are also applicable to the mission-based option. Specifically, if the division chooses a mission-based approach, it should still consider outsourcing the operations of Seyon Ranch and building a system of backcountry yurts as well as other changes that improve profitability without compromising on the park mission. While this long-term vision should ultimately be developed by the division's leaders, we will offer a few thoughts here:

*Bring back permanent staff to help develop parks into destinations*

The recommendation to *market* the parks as destinations is really just the first step in the process to actually *develop* the parks into destinations. Even if the parks remain self-funded, they can be

better marketed. But beyond just grouping parks together for marketing purposes, if a reliable funding source is secured, Vermont's parks can truly be developed into destinations that capture Vermont's heritage and also provide broad recreational appeal to many market segments.

As in the previous example, the parks surrounding Groton should be combined to form Groton Forest State Park. Next, at least one permanent park staffer should be brought back to the park. Most likely, this would be a true park ranger with responsibilities beyond the seasonal rangers that staff park campgrounds today. During the peak season, this ranger would offer interpretive services such as guided hike and discussions of the ecology and history of the local area. Additionally, the ranger would be the liaison with law enforcement and would improve park safety.

During the winter, this ranger would be responsible for strategic planning and community outreach. Interacting closely with the park and its visitors, the ranger would be the employee best positioned to provide recommendations about how the park can improve to meet its mission – whether it is the need for more hiking trails, horse facilities, wildlife tours, or anything else. Adding this ranger position could help Groton Forest State Park develop into a destination that customers can plan vacations around.

*Add designation of “State Campground” to distinguish state parks*

If the division develops parks into big destination sites, something must be done with the smaller sites that cannot be repositioned as destinations so that there is clarity in the market. First, the division should review these sites to evaluate them for mission fit. If they do not fit into the mission, consider handing over their operations to municipal control.

If they are deemed to fit with the mission, we recommend adding a designation called “State Campground” for smaller roadside sites such as Thetford Hill and Fort Dummer. This will help to distinguish the larger vision of a state park from smaller sites that offer little more than camping.

*Develop a strategic plan that clearly demonstrates needs of the park system*

If the state does lift the mandate requiring the parks to be substantially self-funded, the division needs to take a step back and develop a vision for the park system. Then, it should carefully consider the activities necessary for it to fully achieve this vision. Individual activities should be prioritized in a strategic plan that identifies the aim of the activity, the way the aim furthers the park mission, as well as the exact costs associated with performing the activity. Through this planning process, the division will be able to determine what the budget needs of a fully-funded park system are.

*Consider creative funding means*

This second option would restore the use of public funds to finance Vermont's state parks. While the actual mechanism used to finance the system is outside of our expertise, such a scheme would need to provide the division with a steady, predictable source of funds that is not weather dependent. An intriguing and creative suggestion is to add a certain dollar amount to

Vermont automobile registrations and have that money fund Vermont's parks. In turn, Vermont residents could have free access to all day-use parks. Vermont resident day-use attendance amounted to 239,005 or approximately \$600,000 at \$2.50 per person in 2004. If just \$1.50 were added to the nearly 400,000 pleasure cars registered in Vermont, this idea would break even. An amount greater than \$1.50 could serve as a source of steady, predictable funds for the park system.

### **Settle the inconsistency between funding and mission**

We believe that there is an inconsistency between the division's funding mandate and its mission to provide a public good. If Vermont's state parks are to remain self-funded, then they should be allowed the freedom to operate like a business. On the other hand, if they are to fully meet their mission to provide a public good, then public funding must be restored.

If the current system continues, the division will perpetually run into the problem that it currently faces. Financial pressure will continue to force the parks to focus on campground operations, creating an overemphasis on camping that distracts from the division's overall mission. At the same time, political constraints will prevent the division from exhibiting true profit-maximizing behavior, creating further financial pressure.

A matrix in Appendix 4 interprets selected recommendations in the context of this struggle between financial performance and mission fit.

## DEPARTMENT OF FISH AND WILDLIFE

### Recent history sees cost increases and erosion of traditional funding sources

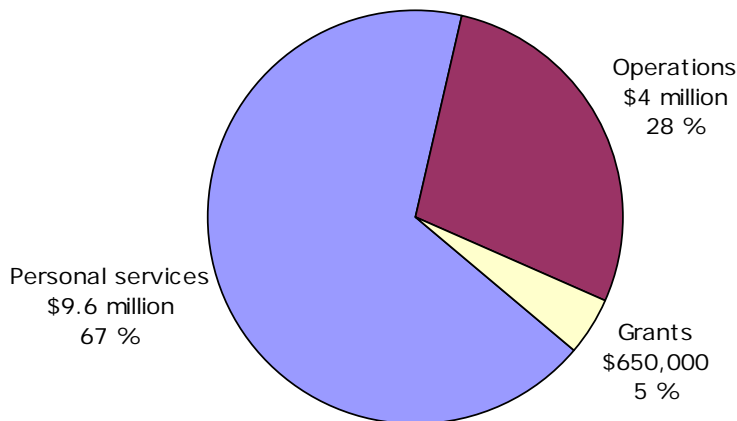
Since 1906, when the Department of Fish and Game began charging non-residents for hunting licenses, user fees comprised the bulk of department revenues. Then, in the 1960s and 1970s, national attitudes toward wildlife and the environment began to shift from manage-and-hunt to conserve-and-protect. As a result, the department has faced both increasing costs and declining user-fee revenues.

The 1985 name change from Department of Fish and *Game* to Department of Fish and *Wildlife* illustrates the changes in past decades that broadly expanded the department's role and increased its costs. Programs to support threatened and endangered species, conservation of "non-game" wildlife and federal responsibilities toward wildlife diversity management have become part of the department's day-to-day operations. Enforcement of fish and game laws, as well as general law enforcement in state Wildlife Management Areas, has become an increasing expense, totaling more than \$3.2 million in 2004.

Going forward, the department's expenses will rapidly outpace its current revenue sources, and it will face the decision to severely cut back services or become more dependent on broader public funding.

Two-thirds of the department's budget – almost \$10 million of FY 2006's \$14.3-million appropriation – is personal services costs. These expenses have grown largely as a result of state-mandated pay and benefits increases. For 2006, 12 full-time positions are left unfilled; 10 of these are carryover from 2005.

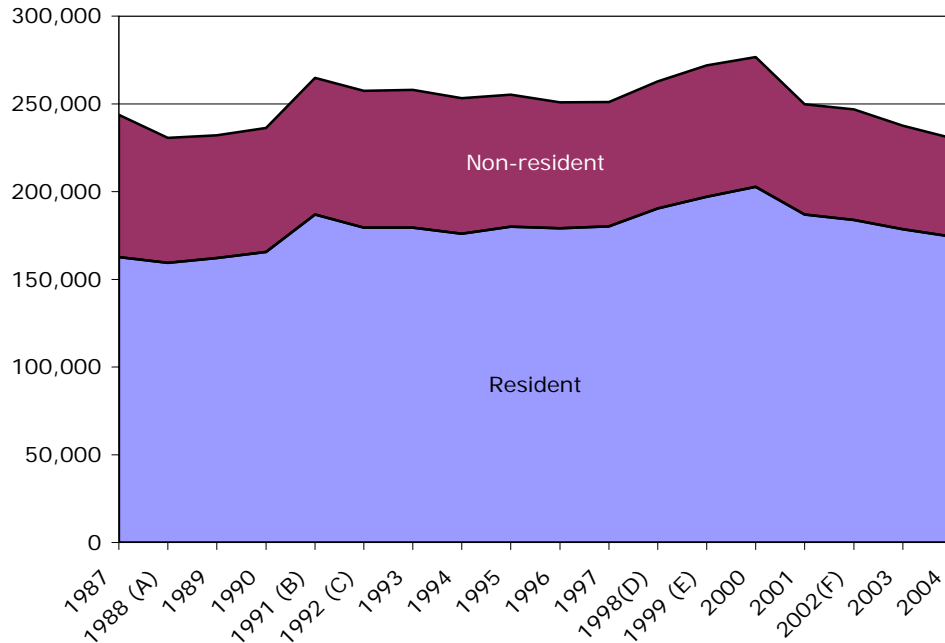
### FY 2006 Fish and Wildlife expenditures



On the revenue side, traditional sources of income are eroding. Total unit sales of hunting, fishing and trapping licenses remain essentially unchanged since 1988, despite the addition of

new categories. Non-residents now buy only 20 percent of all licenses sold, compared to 25 percent in 1988.

Total license sales, 1987 – 2004 (units, not dollars)



While overall license sales have remained flat during the last decade and a half, the numbers hide the seriousness of the underlying demographic shift away from hunting and fishing. The primary “entry” licenses – fishing and hunting – have seen sharp declines. Only because of the increasing specialization of add-on licenses (including those for turkey, muzzleloaders, archery and small game) have overall sales numbers not also declined:

Change in license sales, 1988 – 2004 (units)

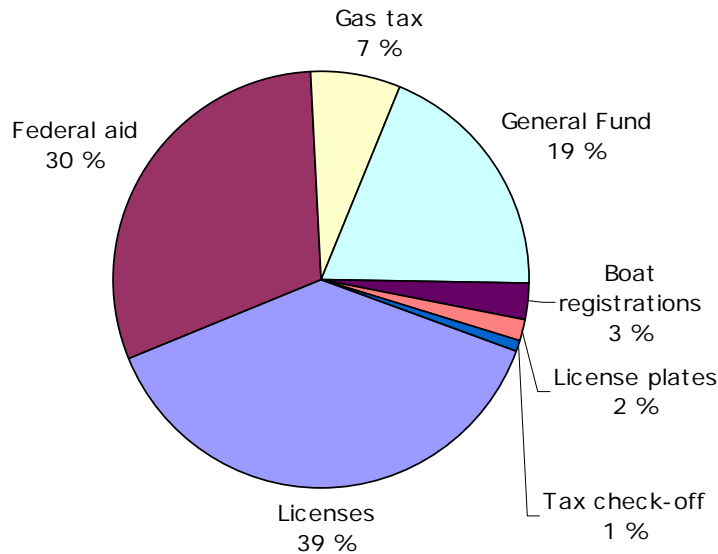
	Resident	Non-resident
Fishing	- 23 %	- 21 %
Hunting	- 17 %	- 37 %
Combination	- 17 %	- 20 %
Specialty	+ 316 %	+ 12 %
<b>Total</b>	<b>+ 10 %</b>	<b>- 22 %</b>

With each year, traditional Fish and Wildlife customers are becoming a smaller, more specialized segment of Vermont’s outdoor enthusiasts. As these customers age and retire from hunting and fishing, a time may come soon when Vermont sees massive drops in overall license sales.

Financial data for the period is not as detailed, but revenue from license sales has become a smaller portion of overall revenue, even with regular price hikes. For FY 2006, license sales are expected to bring in \$5.5 million, or 39 percent of the \$14.3 million budget request. Federal

funds contribute another 30 percent, a portion of the gasoline tax adds 7 percent, while boat registrations, conservation license plates and the income-tax check-off add 5 percent combined. The remaining 19 percent, or more than \$2.5 million, is projected to come from the state's General Fund.

FY 2006 Fish and Wildlife receipts



**Operational changes can help but are not enough to reverse the department's fortune**

While there is no “magic bullet” that can reverse the realities of massive demographic shifts and the loss of the department's traditional customers, we can recommend several changes to improve near-term results. Longer term, however, the department will need to either dramatically cut back services or receive significantly more taxpayer monies.

Other states have successfully applied a number of broader funding strategies in support of their fish and wildlife agency. These include funds derived from the state sales tax, outdoor equipment taxes, lotteries, rooms and meals tax, and real-estate transfer fees.

*Use IT to make the license process more efficient*

Vermont's Department of Fish and Wildlife should use information technology to streamline the license issuance and administration process. If money were no object, Fish and Wildlife would work with the Automated Wildlife Data Systems Program at the International Association of Wildlife Agencies to move to a cutting-edge system that can provide all of the benefits of the latest technology.

Given cost constraints, we believe that implementing a simple Internet-based system can offer some of the benefits of a full point-of-sale system, particularly with respect to administration and user tracking. We suggest designing a system where all agents are required to have Internet access. Replacing the manual system that currently exists, agents would be responsible for typing user information into a Web interface similar to the one that users can go to themselves.

A unique agent ID number would ensure that the agent receives the appropriate amount of money for licenses sold. Although we are not IT experts, it seems that such a system could be built at relatively low cost as it would simply require adding a mechanism that can track agents onto the current Internet-enabled licensing system.

The immediate benefit to the department is elimination of the need to manually enter user information into the database. Historically, Fish and Wildlife has spent about \$66,000 per year outsourcing this data-entry task, although this year there are plans to hire temps to do the job at a lower cost.

The second benefit is that Fish and Wildlife will be better able to track user data to get a better sense of real-time license sales and year-to-year churn rates, potentially improving license sales and customer retention.

A potential hazard of this system is the loss of agents who are not able or willing to get Internet access. We do not feel access to the Internet will be a challenge because the process we propose does not require a high-speed or always-on connection. Each time a license is sold, the agent can dial into the Internet to complete the process, and dial-up is available to anyone with a phone connection.

Willingness may be a bigger challenge. Agents who sell in low volumes may not be willing to invest several hundred dollars in a computer and Internet access. Since agents receive \$1.50 for each license sold, we estimate that agents who sell fewer than 200 licenses may be unwilling to make such an investment. If Fish and Wildlife lost all of the sales from private agents selling fewer than 200 licenses, this would cost the department roughly \$130,000 in lost revenue. This, however, is a worst case scenario. Most people would simply go to another agent to purchase their license, as most counties have multiple licensing agents. Another way to help stem the loss of agents would be to waive the \$35 administration fee agents have to pay. Finally, since license sales are a way for agents to generate more traffic in their stores, even low-volume agents may be willing to invest in Internet access to retain the privilege of selling licenses.

#### *Secure funding for expanded enforcement role of wardens*

Although Vermont game wardens are primarily responsible for enforcing fish and wildlife law, their role now encompasses much more. Among the many activities that wardens spend their energy on are activities like snowmobile, ATV, and boating enforcement, search and rescue, drug interdiction and homeland security.

Although game wardens are performing so many law enforcement duties that benefit the public good, they receive little additional funding for their efforts. For example, wardens perform the majority of boating enforcement in the state since much of their time is spent on the water. But of the \$600,000 that the Department of Public Safety receives for boating enforcement, Fish and Wildlife only receives \$30,000. With other activities, such as when wardens are called to help police in "agency assists," no funding is provided. Particularly dangerous drug enforcement work also goes largely unfunded.

There is no doubt that game wardens should be performing these additional law enforcement duties, but an equitable way to transfer funding must be created.

*Experiment with pay-and-display parking at high-use boat launches*

Fish and Wildlife owns more than 150 areas with water access, many of which are also used by canoeists, kayakers and recreational boaters. These represent the majority of developed boat launches statewide.

It's philosophically controversial and logistically difficult to ask paddlers to pay when they boat on department waters, but anglers, registered powerboat users and hunters should have priority use since their fees maintain the facilities.

Since paying for parking is a commonly accepted practice, one possible solution includes installing pay-and-display parking kiosks at the most popular boat launches and charging a nominal parking fee. The department would have to provide buyers of fishing and hunting licenses (as well as registered powerboat owners) with free dashboard placards.

Our analysis of pay-and-display parking in the Forests, Parks and Recreation section indicates that a parking kiosk becomes financially viable when usage exceeds 1,600 vehicles per year at \$3 per day. This seems to be a reasonable fee for an automobile or pickup truck, but larger vehicles and trailers should have to pay more because they take up more space in the parking lot. The fee schedule could be structured as \$3 plus \$3 for each trailered boat. This way, a car-top canoe would pay \$3 but a Suburban with a six-canoe trailer would be charged \$21.

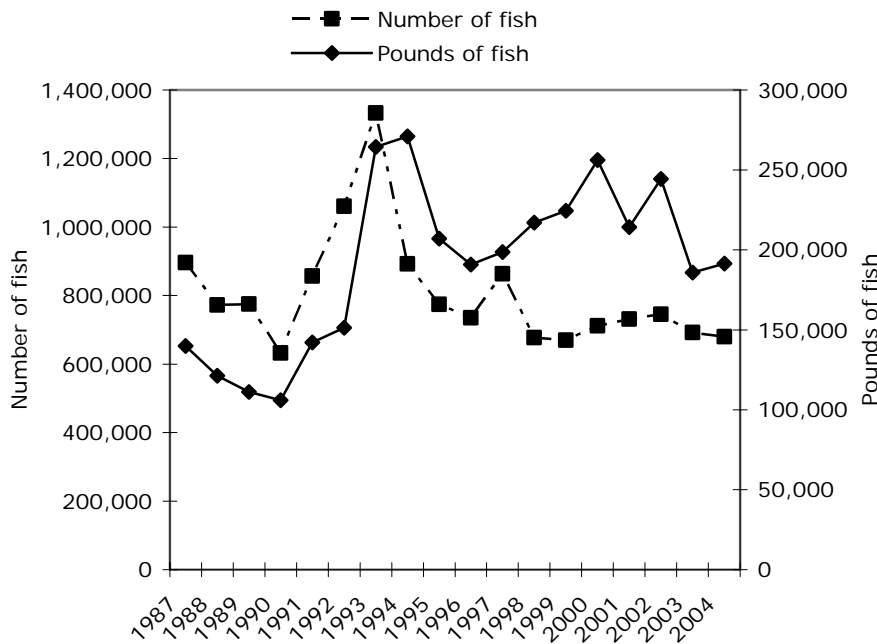
We recommend further research, including more accurate assessment of actual non-paying usage, to estimate the potential for pay-and-display parking. Two promising sites to investigate are Sandbar and Mallett's Bay, known in the paddling and windsurfing community as good put-ins.

*Improve fish stocking efficiency and revenues*

Fish rearing and stocking activities in Vermont's five hatcheries cost the state well over \$2 million per year. While the fish culture program and fisheries management contribute directly to angler satisfaction, an opportunity exists to more rigorously match its expenses to fishing license revenues, which total just more than \$3 million.

The 1990 construction of the \$10 million Ed Weed Fish Culture Station in Grand Isle marked 160 percent increase in hatchery expenses – along with a similar increase in the average annual weight of fish production, which totaled 191,000 pounds in 2004. While total fish *weight* is higher since the new hatchery came on line, the decline in the *number* of fish produced reflects the new hatchery's emphasis on rearing larger "trophy fish."

Hatchery production, 1987 – 2004



There has been a significant increase in the statistical standard deviations of both fish number and weight since the new hatchery went on line in 1991. Much of this variation has been driven by lower requests from biologists for recreational angling; the fisheries typically come within 1 percent of these requests each year. Nonetheless, to pursue cost-control measures, the department should investigate consolidating and streamlining fish culture operations to minimize waste.

Beyond biologist-driven stocking, the fisheries contribute a fraction of their output to fulfill local requests for stocking and to support fishing derbies. The department should more rigorously account for these special events and charge an appropriate price for its services. On a per-fish basis, market prices range from as little as \$2 to \$8 for the largest fish. Since Fish and Wildlife provides approximately 20,000 fish per year for these events, and since these events draw crowds that bring business to Vermont towns, even a fee of \$2 per fish would add a significant additional revenue stream and lead to more efficient fish allocation.

The hatchery facilities themselves are a potential revenue source. While it would be regressive to hit school groups with mandatory admission fees, a prominent “suggested donation” box in each hatchery could yield a return at very little cost to the department.

*Work with Parks and private organizations to capture wildlife viewing revenues*

Aside from the controversial individual land-use permits, the department can partner with others to earn a share of revenue from wildlife viewers.

Fish and Wildlife should investigate an in-kind arrangement with Forests, Parks and Recreation. In such an arrangement, Fish and Wildlife biologists could offer interpretive services – in the

form of live presentations or permanent exhibits – in exchange for some portion of the day-use or camping fees collected by the park.

Another promising revenue idea is to form a partnership with an image-processing company like Vermont Color Photo Labs to provide sophisticated digital photography equipment to amateurs who can't justify the expense of purchasing top-quality gear for an afternoon outing. Vermont Color could rent digital cameras, telephoto lenses and tripods necessary for good wildlife photography, then process the images for amateur wildlife enthusiasts.

Another outcome of a partnership with an imaging company could be a series of jointly sponsored photography workshops. Vermont Color, for example, could provide the technical instruction, while Fish and Wildlife biologists could offer expert wildlife information. Aside from producing some great photography, these workshops provide a great avenue for interaction between the department and its non-traditional customers.

A photography partnership could generate significant profit for the department. One arrangement, for example, would have Vermont Color pay a percentage of its camera rental and photo workshop revenues to the department in exchange for official billing in Fish and Wildlife publications.

### **A new, cost-effective communications strategy is essential to Fish and Wildlife success**

The coming decades will challenge the financial security of the Fish and Wildlife Department like never before. Unless the state is willing to make dramatic cuts to its budget, the department will need to be funded in large part by general tax monies.

We do not feel that the department's current reputation in the broader public makes additional state funding a politically viable option. Specifically, the majority of Vermonters who neither hunt nor fish may not currently value the department's services enough to fund them from their own pockets as traditional user fees decline.

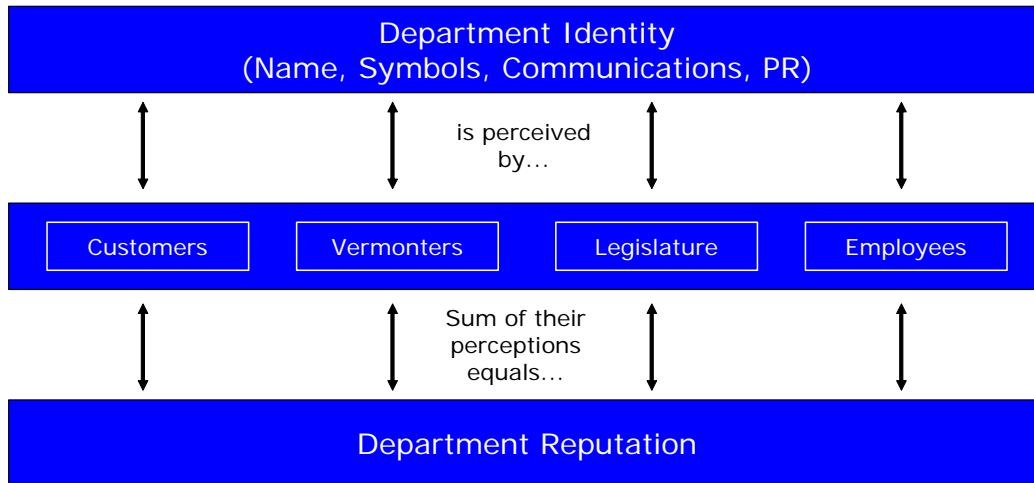
Fish and Wildlife's perception problem is not easily attributed to its direction or efficiency. A 2000 survey indicates the majority of typical Vermonters support the department's core mission – four fifths of those surveyed considered the protection of fish and wildlife and the opportunity to participate in wildlife-related recreation “very important” – while 62 percent agreed that the department is either “very efficient” or “somewhat efficient.”

Despite generally favorable opinions of the department's goals and operations, Vermonters' attitudes change when they're asked to “put their money where their mouth is.” Increasing taxes of any kind was opposed or strongly opposed by a vast majority. Non-hunter/angler “use permits” also generated a polarizing response.

To address the divide between the department's mission and its core funding sources – which will increasingly include the Vermont taxpayer – the key challenge is to show the value of the department to *all* constituents, and to do so on a shoestring budget. The following framework illustrates the ways the department can use its public identity through its varied constituencies to

influence its reputation. A good communications strategy includes targeted messaging to each group of constituents.

A framework for strategic communication  
(adapted from Argenti, *Corporate Communication*)



*Promote hunting and fishing in a manner acceptable to Tourism and Marketing*

The Department of Tourism and Marketing has in recent history shied away from promoting hunting and fishing because of the negative reactions hunting imagery can evoke in some potential tourists. It's essential, however, that Fish and Wildlife capitalize on the opportunity to be part of the "Vermont brand" and leverage Tourism and Marketing promotions to attract hunters, anglers and other wildlife enthusiasts.

Non-resident hunting and fishing – including the popular specialty license categories – is down 22 percent since 1987. Attracting out-of-state customers is thus essential to stemming further losses in license revenue. These are critical times to have Tourism and Marketing as a strategic ally.

One way to get more support from Tourism and Marketing is to use subtle imagery that speaks to hunters and anglers and the majority of the population that chooses not to participate in these activities. For example, adding a mother and daughter in blaze orange vests to the classic Vermont image of a dirt road in foliage season addresses the hunting and non-hunting community equally well. A scene of a father and son fishing at a foggy lakeside does the same. The key here is to piggyback on existing Tourism and Marketing activities at very little incremental cost.

*In department-specific communications, emphasize the experience, not the kill*

Instead of trying to compete with large Western states with "trophy" imagery – the type traditionally used in sporting magazines – the department should emphasize the experience of hunting rather than the kill. For most Vermonters, a dead turkey looks much better coming from

the oven golden brown than on the hood of a pickup truck, but the enthusiasm in a hunter's eyes as he describes his dedication to an early morning hunt appeals to a broad audience.

*Expand and promote programs to recruit women and families*

As hunters and anglers retire from outdoor activities, the department should look toward nontraditional participants to bolster license sales. Women are the fastest-growing segment of outdoor recreation enthusiasts and have until recently been "left out" of hunting and fishing. While the data are not conclusive, women-specific and family-specific hunting and fishing programs may be part of the reason that fishing is on the rise nationally. At the very least, these programs counter the stereotype that hunting and fishing are male-dominated activities – and, by extension, may improve the department's reputation within the broader community.

*Refine the department's Web site to target all constituents*

We benchmarked fish and wildlife Web sites for select states nationwide and found that Vermont has an opportunity to improve its communication with non-traditional constituents.

For traditional customers, the fish and wildlife Web experiences do not vary much from state to state. Each site prominently displays a link for licensing information and online purchase. Vermont's site is typical but for its unique "Support Fish and Wildlife" link.

While the department budgets more than \$50,000 per year to "promote wildlife viewing and photography," a visitor to the Fish and Wildlife Web site will find nothing on the topic. For wildlife viewers and photographers, the Web experience varies considerably state-to-state. Vermont's Fish and Wildlife Web site is useful for hunters and anglers, but not for wildlife viewers and photographers. While there is a link for Wildlife Programs, there is no link specifically for nature viewing with useful information for the wildlife enthusiast.

Vermont should consider following Minnesota's lead by refocusing the Fish and Wildlife site to present a range of options for a site visitor. At [www.dnr.state.mn.us](http://www.dnr.state.mn.us), a hunter or angler is just one click away from a page with photos of all the game mammals and birds and fish in the state, a boater is one click away from a "Lake Finder" page and wildlife viewer is one click away from a page that catalogs all of the state's natural resources.

*Continue to highlight non-game programs to target the majority of Vermonters who do not hunt*

To build public support, it's essential that Fish and Wildlife communicate its achievements in game and non-game programs alike. Key messages include:

- The number of species successfully removed from endangered lists
- The number of acres of habitat preserved, benefiting all wildlife, game and non-game
- The number of rescue operations and non-game calls to which enforcement wardens have responded while "community policing" in rural Vermont.

The weekly Vermont Public Television program "Outdoor Journal" has heralded the new bald eagle restoration program. It has also shown department work on several other non-game species. The program airs twice weekly.

*Expand and improve other communications channels*

Beyond the department Web site, periodic media releases and public television, Fish and Wildlife should expand and improve its communications across a range of marketing channels, including the nightly news.

If a picture is worth a thousand words, a video is priceless. While the department could contract out its videographic needs, it should first see if it can meet the needs of news organizations by leveraging its internal talent. A biologist in the field, for example, given a little training on camera operation, is more likely to be able to capture animal activity than a typical videographic crew, and at a much lower cost.

Fish and Wildlife should invest in a quality digital video camera and tripod to provide local and regional news outlets with easy access to "B-roll" footage for use during news segments. A minute or two of quality footage is all a television station needs to turn a press release into an interesting segment – for a fraction of the cost of professionally produced "video news release."

There's no doubt that a professional camera crew will produce a higher-quality product than a field biologist, but the expense is very high and the crew can interfere with the biologist's work. Today's cameras are so small that they can be carried quietly into the field often to capture fleeting activity. A Mini DV camcorder capable of television-quality output can be purchased for approximately \$1,000. A quality tripod costs another \$200. If the camera leads to just one nightly news impression, it will have "paid for itself" in the cost savings of a professional video crew.

Use the Fish and Wildlife calendar strategically to address a diverse range of constituents. In the calendar, reach beyond the traditional department customers and avoid "trophy" shots that can alienate the broad audience critical for department funding. It's crucial, however, to position the calendar in a way that does not alienate traditional hunters and anglers.

The calendar should celebrate Vermont's unique wildlife resources and the ways which Vermonters enjoy wildlife. An annual photo contest could award the most creative or striking

submissions with state-wide publication. The calendar should include information on how to buy a license – as well as tips for wildlife viewing and enjoyment.

*Meet legislative needs with robust cost breakdowns*

As the department becomes more dependent on general taxpayer funding, proving the necessity of each expense will become increasingly important. One strategy used successfully by other state and national natural resource departments is a detailed activities-based cost accounting that relates daily tasks to the overarching mission of the organization. Activities should be prioritized in a strategic plan details the aim of the activity, the way the aim furthers the mission of the department and the exact cost required to carry out the activity. Through this planning process, the department can create a credible document that demonstrates financial need to the governor and legislature.

*Help form a “Friends of Fish and Wildlife” foundation*

Like Vermont’s parks, Fish and Wildlife could benefit from a third-party, non-profit foundation. The foundation could take several forms, including an umbrella organization for both parks and non-game wildlife, maximizing fundraising synergies.

The foundation would focus on Fish and Wildlife’s greatest need – communication – keeping the public up-to-date with the Fish and Wildlife activities and successes. It could also work with private landowners to keep land open for hunting and fishing.

**In all activities, consider the scrutiny of a diverse public funding base**

Should the Department of Fish and Wildlife choose to maintain the breadth and depth of its current activities, we have little doubt that the need for more public funding is inevitable in coming years. The success of the department hinges on its ability to demonstrate value to all of Vermont’s diverse constituencies.

To that end, the department must consider the effect and perception of each activity on the full spectrum of Vermont residents to position the department as an agency of common ground and public good.

## APPENDIX 1: PAY-AND-DISPLAY PARKING

### Notes

Parkeon Intelligent Pay Stations  
 Moorestown, New Jersey  
[www.parkeon.com](http://www.parkeon.com)

contact: Barry Davis / (856) 234-8000 / [bdavis@moorestown.parkeon.com](mailto:bdavis@moorestown.parkeon.com)

### Financial Model

#### Inputs

Daily parking fee	\$3	[assume no growth]
Number of parking kiosks	7	[this is sum of Kiosks column below]
Purchase cost per kiosk	\$15,000	[includes modem, card reader and installation]
Annual collection cost per kiosk	\$2,000	[1 hour per day on average @ \$9/hr for 100 days, plus fuel, etc]
Annual modem fee	\$576	[\$48 per month for 12 months]
Number of vehicles per year	21,000	[assume no growth]
Payment rate	100%	
Number of persons per vehicle	2.0	
Discount rate	10%	

#### Possible sites

	Estimated Attendance	Kiosks	Vehicles
Camel's Hump	42000	7	21000
Lowell Lake	7150	0	0
Niquette Bay	7200	0	0
	56350	7	21000

#### Calculations

	Year 0	1	2	3	4	5	6	7	8	9	10
Direct revenue		63,000	63,000	63,000	63,000	63,000	63,000	63,000	63,000	63,000	63,000
Costs											
Kiosk purchase	105,000	-	-	-	-	-	-	-	-	-	-
Fee collection		14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000
Modem fees		4,032	4,032	4,032	4,032	4,032	4,032	4,032	4,032	4,032	4,032
Profit (loss)	(105,000)	44,968	44,968	44,968	44,968	44,968	44,968	44,968	44,968	44,968	44,968
PV of cash flows	(105,000)	42,875	38,978	35,434	32,213	29,284	26,622	24,202	22,002	20,002	18,183
<b>NPV</b>		<b>\$ 184,795</b>									

## APPENDIX 2: BACKCOUNTRY YURTS

### Notes

Pacific Yurts, Inc.  
Cottage Grove, Oregon  
[www.yurts.com](http://www.yurts.com)

Sun-Mar composting toilets  
Tonawanda, New York  
[www.sun-mar.com](http://www.sun-mar.com)

### Financial Model

#### Inputs

Nightly rental fee	\$50 [assume no growth]
Nights occupied per year	52 [assume no growth]
Installation cost	\$10,000
Annual maintenance	\$1,000 [assume no growth]
Discount rate	10%

#### Calculations

	Year 0	1	2	3	4	5	6	7	8	9	10
Nights occupied per year		52	52	52	52	52	52	52	52	52	52
Revenue		2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
Costs											
Yurt purchase	10,000	-	-	-	-	-	-	-	-	-	-
Maintenance		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total Costs		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Profit (loss)	(10,000)	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
PV of cash flows	(10,000)	1,526	1,387	1,261	1,146	1,042	947	861	783	712	647
<b>NPV</b>	<b>\$</b>	<b>311</b>									

### Sensitivity Analysis

This analysis shows the required occupancy rate (in nights per year) for financial break-even as a function of installation cost and nightly rental fee.

Installation cost	Nightly rental fee							
	\$30	\$40	\$50	\$60	\$70	\$80	\$90	\$100
\$10,000	85	64	51	43	36	32	28	26
\$12,500	98	73	59	49	42	37	33	29
\$15,000	111	83	67	55	48	42	37	33
\$17,500	124	93	74	62	53	46	41	37
\$20,000	137	103	82	68	59	51	46	41

### APPENDIX 3: ELECTRICAL HOOKUPS FOR RVS

#### Financial Model

<b>Inputs</b>												
Installation cost per site	\$3,500	[includes site installation and upgrade of overall electrical system]										
Number of sites per loop	15	[minimum economy of scale = 1 loop]										
Base site rate	\$15											
Revenue premium for hookup	\$10											
Nights currently used	45	[all weekends and holidays = 33 nights]										
Increase in visitation at hookup site	50%	68 nights										
Fraction of customers to use hookup	90%											
Electricity cost per night	\$2	[1,250 watts * 16 hours @ \$0.10 per kWh]										
Discount rate	10%											
		Year 0	1	2	3	4	5	6	7	8	9	10
Installation cost		52,500										
Incremental revenue			9,113	9,113	9,113	9,113	9,113	9,113	9,113	9,113	9,113	9,113
Incremental costs			1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823	1,823
Profit (loss)		(52,500)	7,290	7,290	7,290	7,290	7,290	7,290	7,290	7,290	7,290	7,290
PV of cash flow		(52,500)	6,951	6,319	5,744	5,222	4,747	4,316	3,924	3,567	3,243	2,948
<b>NPV</b>			<b>\$ (5,520)</b>									

#### Sensitivity Analysis

This analysis shows the profit (or loss) potential of installing hookups as a function of installation cost per site and the revenue premium charged. This example is for a “quiet” park such as Fort Dummer, where hookups have the most profit potential since they can draw customers to the park who would otherwise camp elsewhere.

Profit (loss) numbers are in thousands and represent the total for a 15-site loop.

Note that the model is *very sensitive* to both factors. Further study of installation cost and willingness-to-pay is essential for an informed decision. Better estimates of the amount hookups will increase campsite usage are also important.

Installation cost per site	Revenue premium for hookup										
	\$5	\$6	\$7	\$8	\$9	\$10	\$11	\$12	\$13	\$14	\$15
\$2,500	(\$20)	(\$14)	(\$8)	(\$2)	\$4	\$9	\$15	\$21	\$27	\$33	\$39
\$3,000	(\$27)	(\$22)	(\$16)	(\$10)	(\$4)	\$2	\$8	\$14	\$20	\$25	\$31
\$3,500	(\$35)	(\$29)	(\$23)	(\$17)	(\$11)	(\$6)	\$0	\$6	\$12	\$18	\$24
\$4,000	(\$42)	(\$37)	(\$31)	(\$25)	(\$19)	(\$13)	(\$7)	(\$1)	\$5	\$10	\$16
\$4,500	(\$50)	(\$44)	(\$38)	(\$32)	(\$26)	(\$21)	(\$15)	(\$9)	(\$3)	\$3	\$9
\$5,000	(\$57)	(\$52)	(\$46)	(\$40)	(\$34)	(\$28)	(\$22)	(\$16)	(\$10)	(\$5)	\$1

### APPENDIX 4: FPR FINANCIAL PERFORMANCE VERSUS MISSION FIT

The following matrix plots selected Parks Division recommendations in terms of their projected financial return and subjective mission fit. The top right quadrant, for example, contains recommendations that are both good for business and good for park customers. The colored dots represent an estimate of political risk.

