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Dear Reader,

I admit it. I have judged the Hummer.

I have thought my '91 Honda Civic Wagon, even with its 220,000 miles, gets much better gas mileage, making it more economical and environmentally friendly than the Hummer. And it is less obnoxious to look at. Anyone who knows me will tell you, I love my car.

But after taking a deeper look at the American obsession with the automobile—and in a bigger sense, the way transportation is set up in this country—I've noticed a huge amount of hypocrisy surrounding the topic.

While most of us are aware of the detrimental effects of car emissions to the environment, we repeatedly justify our commuting decisions. More than 200 million Americans are licensed drivers, making all of us and our cars—mine included—a part of the problem. And yet it still seems easier to point to the next worse vehicle as the problem, and not point to ourselves.

Craig Henderson built a car 25 years ago, the Avion, that has since been getting 100 miles per gallon. Western's own Vehicle Research Institute is on the forefront of new technology, working to make our driving addiction a less abusive habit. The X Prize Team is building a car that will exceed the gas mileage of Henderson's Avion, and they are ready to offer it to a mass market. Simultaneously, another wing of their department is working to turn cow manure into fuel.

In comparison, even my wagon is a gas-guzzler.

Then there are the non-drivers who are stepping out of the car altogether. Anne Baker and Paul Engel started the Baker Bus two years ago to minimize automobiles on Highway 542, which in turn reduces pollutants in the Nooksack River watershed. The Seattle-based Undrivers Program licenses people who are working to give up cars and use alternative transportation instead. To them, Henderson's gas-savvy sports car may just be that—a frivolous sports car.

For better or worse, cars are here to stay. They are so entrenched in our society that thinking cars will simply disappear is not only naive, it is unrealistic. But instead of simply turning the blame on the biggest automobile on the road, we should take part of that environmental frustration and turn it inward to ask ourselves, "What more can I do?"

As one man's trash is another man's treasure, my little wagon can always be someone else's Hummer.

We welcome comments in the form of emails, letters or conversation.

Sincerely,

Kaylin Bettinger
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Piled high in recycling yards, nestled in our great plains and along streams and forests, expired automobiles have found their niche.

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Sleepy-eyed from rising long before the sun, a group gathers in the pre-dawn chill for their 7:45 a.m. pick-up in Kendall, Wash.

The Baker Bus arrives with an undeniable energy and jolly spirit as it swoops into the parking lot of the Valero gas station. The driver hops out and riders patiently hand him their boards and skis, then pack into the busses, passing the ‘get in, shut up’ instructions spray-painted on the passenger door.

After settling into their seats on the bus, some catch a few more minutes of shut-eye while others gaze out at the fog still lingering in the fields and low clouds blanketing the forests.

Western hemlock trees bow towards Highway 542 with their droopy tips and outstretched limbs, thanking the bus for providing riders with an environmentally friendly and cost-efficient way to access Mt. Baker’s slopes.

“It’s a really great deal, and you can get a 10 time ride card for only 50 bucks,” said Jan Tefft-Moeker, a Sehome High School junior who holds a season pass for both the mountain and the bus.

The bus’ interior is covered in stickers, like “Welcome to Bellingham, Now Get on Your Bike,” surf magazine cutouts and the signature of the very first rider, “Arielle G. First customer. 12/15/08.”

The bus passes through Deming at daybreak, stops in Maple Falls, Wash., at Harvest Moon Bakery, then again at Graham’s Restaurant in Glacier, Wash. Each time, other vehicles zoom past in a rush for the first chair. As the bus pulls into the parking lot, the White Salmon Lodge and the icy blue glacier on Mt. Shuksan greet riders as they emerge from the bus. Weaving through the rows of vehicles is the last leg of the bus’s journey.

Duncan Howat, manager of the Mt. Baker Ski Area, estimates that on weekends and holidays, several hundred vehicles fill the upper and lower lots of the ski area. Many of these are cars full of carpooling friends, but a significant number of them are individual riders and two-seater, gas-guzzling trucks.

The exhaust from cars directly pollutes the ecosystems surrounding the North Fork of the Nooksack River, the glacial-fed river that flows adjacent to Highway 542, providing nostalgic glimpses of a wild and scenic place. The Baker Bus, which runs to Mt. Baker seven days a week, provides an ideal solution to this problem.

Born in 1985 as a school bus, the original Baker Bus grew up serving day campers at Camp DeBaun in Oceanside, N.Y. Two of the camp’s employees, Brian Caruso and Anthony Romano, shared a desire to travel, so when they heard the bus was for sale, it was a sign for them to pursue their dreams. In its early teens, the Baker Bus switched gears to live a more adventurous life, and became known as ‘El Wanderer.’

The Baker Bus’s passenger-side door reveals graffiti.
Caruso and Romano drove from New York Island to California, then headed south, down the coast to the tip of the Baja Peninsula. In August 2007, Caruso and Romano flew home to the Atlantic Northeast, but ‘El Wanderer’ made its way to the Pacific Northwest to take a rest in the dense forests of Glacier, Wash.

Anne Baker, a Glacier resident and volunteer for the Surfrider Foundation, a non-profit environmental organization devoted to protecting ocean ecosystems, dreamed about an affordable, community supported shuttle service to the Mt. Baker Ski Area to help protect the Nooksack watershed. In Spring 2008, Baker’s dream materialized when ‘El Wanderer’ was rescued from thick bushes and transformed into the Baker Bus. Paul Engel, owner of Cascade Adventures, the company through which the Baker Bus is now run, helped make her dream come true.

‘El Wanderer’ had to be stripped and restored to become the new ‘Baker Bus.’ Brandon Whitebeck, owner of auto-repair shop ServicePro, donated his time to make this bus road-friendly once again.

“It was a well-loved bus,” Engel said. “We had a lot of work to do.”

The bus needed a new starter, replacements for the pulleys damaged by sand and salty air, and of course, a custom rack for ski and snowboard gear. Without the help of Whitebeck, Engel doesn’t believe the project would have ever been completed.

Surfrider sponsored the project until Summer 2009, when it became entirely reliant on the support of volunteers and local businesses.

The following summer, a second bus was purchased on Orcas Island to accommodate the demand for more seats. Each bus can seat 15 people, allowing for up to 30 riders. As of Christmas 2009, the Baker Busses had taken at least 300 people to the mountain, exceeding Engel’s estimate of 200 for all of last season.

Engel has been devoted to making this project more efficient and effective. He has worked with Whatcom Transportation Authority to establish a direct, affordable route to the slopes. Monday through Friday from Bellingham, you can catch the 72X bus to Kendall, then hop on the Baker Bus, ski all day, and be chauffered home for only $6 total for transportation ($5 for Western students with a bus pass). The cost for riding the bus goes directly to fuel, and the price of advertisements covers maintenance, inspections and insurance.

The hour and a half drive from Bellingham to Mt. Baker is quite the trek to make daily, weekly or even monthly. With gas prices approaching $3 per gallon, the drive to Mt. Baker comes at high cost, both monetarily and environmentally. The Baker Bus provides an alternate way of accessing the mountain, a way one can be a little greener, saving money and the earth.

From their pocket, to the project, to protecting the vast ecosystems from sea to ski, people can participate in this local cause and make a difference by getting involved as a rider, a volunteer driver or by purchasing advertising space on the bus for their company or employer.

Chas Eberle, a volunteer driver, has only driven to the mountain by himself once in the four years he’s been snowboarding at Mt. Baker.

“Less cars on the road means less pollution in the watershed,” he said.

And it’s that simple.

COURTNEY LEAKE is a senior majoring in environmental education. This is her first time writing for The Planet.

JORDANSTEAD is a junior pursuing a visual journalism degree with an emphasis on photojournalism. This quarter marks the second time he has shot for The Planet. Jordan has also been published in The Western Front, The AS Review and Seattle Magazine.
An abandoned tire left along North Red River Road in Bellingham.

As the sun sets and long shadows fall across a thicket of sticker bushes along the highway, a bit of history unfurls.

BY MITCH OLSEN
PHOTOS BY MITCH OLSEN
Long prickly vines curl in and out of dark rectangular bus windows that used to house the faces of smiling children. Soggy leaves cradle a massive nest of worn tires that once gripped the earth by the road. Trees stretching for the sky have ensnared a 1956 Ford pickup for decades. The impact of producing new vehicles and disposing of old goes wholly unnoticed by the general public.

Automobiles at the end of their lifecycle remain a predominantly overlooked issue with serious ramifications to the environment. While the automotive industry sells better gas mileage, sleek designs and new technology, the lasting legacy of the automobile has fallen by the wayside. Piled high in recycling yards, nestled in our great plains and along streams and forests, expired automobiles have found their niche. Despite recycling programs that will remove and pay cash for scrap autos, illegal dumping remains a pervasive issue.

Automobiles begin consuming resources at the factory and spend the rest of their lives like a troubled teenager; requiring constant maintenance while guzzling gas on the road. Across the country they are left on public lands, in our beloved state parks and left to rot on private property. Often these abandoned autos are full of fluids containing harmful chemicals that could potentially leak into the environment.

While these chemicals can be detrimental if left untreated, they can be useful if properly recycled. Whatcom County Environmental Health Division listed gasoline as the most harmful fluid if it leaches into the soil, but clean motor oil, as well as uncontaminated fluids such as brake, differential and power steering fluid can be reused to heat buildings with proper oil burning equipment.

Vehicle owners or professionals can drain the fluids and several places in Whatcom County, like the Disposal of Toxics Facility, will dispose of the fluids. Although there is a fixed amount of fluids in each car, it only takes one pint of oil to cover an acre of surface water in oil slick, according to the Whatcom County Solid Waste Division.

The process of dealing with abandoned automobiles requires a great deal of time and money that ultimately comes out of taxpayer pockets. Wallace Falls Park Ranger Shawn Tobin, a Huxley graduate, deals with abandoned autos approximately once a month. Before the vehicles can be sent to a recycler, Washington State requires an attempt to notify the owners, which is nearly impossible, Tobin said.

“Frequently people don’t transfer the title, and the VIN number leads us to an owner that sold it years ago, so it’s really hard to find those responsible,” Tobin said.

If the owners are not contacted, the vehicles are deemed abandoned and brought to an auto wrecker or recycler that determines if the car is salvageable. Automobiles in good working condition are often auctioned off or sold, while others are kept to sell parts that will function in another vehicle. Those without any other use face the lengthy and expensive process of reincarnation.

A major issue with automobile recycling is mercury emissions. According to the Environmental Protection Agency (EPA), Electric Arc Furnaces, used to melt auto scraps into new steel, are the fourth leading source of toxic mercury emissions, releasing up to 10 tons of mercury per year. This happens when automobiles are shredded and melted without removing mercury switches. Passenger cars and pickups manufactured before 2003 often used these switches in the hood and trunk convenience lights and anti-lock braking systems. The solution to reducing these emissions is responsible recycling.
Frost covered sticker bushes ensnare an abandoned classic along Mt. Baker Highway.
In 2000, Washington state joined the National Vehicle Mercury Switch Recovery Program, a voluntary program that provides auto recyclers with collection buckets for the mercury switches and covers the cost of transportation, recycling and disposal. The EPA stated that the national program removed its millionth mercury-containing automotive switch in February 2008, equivalent to keeping more than one ton of mercury out of the environment. One responsible steel smelter, the Nucor Corporation, said it would only take the mercury switches, which are about the size of an acorn, from four vehicles to pollute a 17-acre lake.

Nucor Corporation, with a location in Seattle, claims to recycle an average of 9 million cars a year, which translates to approximately 15 million tons of steel that stays relatively local. Depending on the recycler, once automobiles are crushed, cubed, or shredded and prepared for melt down, they are either sent to local smelters like Nucor or packed away in containers and shipped overseas to the highest bidder. The global market for steel may have made it cheaper for some recyclers to send materials halfway around the world so we can buy it back as a new Hyundai.

Auto recyclers are just about everywhere, and many will not only pay for scrap automobiles, some will even pick them up. Local shops like Montgomery Scrap Processing, Gundie’s Auto Recycling and Lummi Auto Recyclers all participate. The price is contingent on the recycler and the scrap market, but current rates are up to $155 a ton.

If car owners don’t know of a place, 1-800-junk-my-car is a nation-wide service that can help find one. The life cycle of the auto is extremely detrimental and doesn’t need to end with useless pollution. Recycling autos is a win-win situation, and you’re essentially giving the environment a high-five. For every lot of new automobiles we see, there is another lot of autos out there we don’t see. Some are waiting to be recycled, some just waiting.

MITCH OLSEN is a senior. This is his second publication in The Planet. When he is not writing amazing stories or taking cool photos, he is often playing in the snow.

(1) A group of abandoned cars, Mt. Baker Highway; (2) Car seats and junk piled at sunset, Hillaire Road, Bellingham; (3) Pile of tires over grown by brush, Mt. Baker Highway; (4) Tires stacked on a dismembered pick-up, Mt. Baker Highway; (5) A moldy school bus, Mt. Baker Highway; (6) A bus embedded in weeds and bushes, Red River Road; (7) A sports car claimed by sticker bushes, Mt. Baker Highway; (8) A destroyed camper trailer, Red River Road, Bellingham
NO KEYS. NO CAR. NO PROBLEM.

BY BROOKE LOISEL | PHOTOS BY MARYBETH COGHILL

**un-drive** [uhn-drahyv] verb, undrove, undriving, noun, adjective

1. to travel by means other than causing and guiding the movement of a gas-powered, motorized vehicle: to undrive (ie, to walk, take the bus, ride a bike, carpool, skateboard, sail, ride an electric scooter, etc.)

2. to take action to influence others to reduce their car use, or to make it easier for others to reduce car use (undriving.org)

Driving: Vehicle in drive, foot on the gas pedal, seatbelt on.

What then does it mean to undrive?

Through the Undriver Licensing program out of Ballard, Wash., individuals pledge to drive less and in turn, they are licensed as undrivers. In order to open minds about transportation options, Julia Field began the program in 2007.

“The whole idea of Undriver Licensing sparks a ‘huh’ reaction,” Field said. “It opens up curiosity and a different way of thinking.”

Field said the program appeals to people across the board and to all ages in the Northwest. With 3,652 people licensed, from 2 months to 82 years old, anyone can make a pledge. Field said. Not everyone who pledges promises to go without their cars. Some Undrivers form carpools, pledge to teach someone to ride a bike or plan to take the bus to work once a week. Field said she has even had parents sign their two-month-old daughter up to pledge to take more family walks.

“The program invites people to be creative, curious and resourceful,” Field said. “People can design their own pledge.”

For some Bellingham residents, going without a car is a part of life. Being carless saves these residents stress and money and is ultimately better for the environment.

Vehicle exhaust is the leading source of air pollution in Washington State, according to the U.S. Department of Transportation. Some of the air toxicants emitted from exhaust are known or suspected to cause cancer and other serious health and environmental effects, according to the Environmental Protection Agency.

Field said she and her Undriver associates are in the process of creating an online kit that people and organizations could purchase as a way to allow more individuals to set up their own Undriver Licensing stations. She wants the Undriver Licensing program to extend beyond the Northwest.
"There's something bigger going on than we can do ourselves," Field said.

For Melanie Swanson, a recent Fairhaven graduate, bikes are her way of getting from one place to another. Swanson is a bike mechanic at The HUB, a community-based bike shop in Bellingham. She also teaches women's bike maintenance classes to help other women repair their bikes.

Swanson said she briefly owned a car, but it was the most stressful six months of her life, and she decided cars are not worth the hassle. She did not enjoy the inconveniences related to owning a car including purchasing, repairing, insuring, paying for gas and even driving. Swanson prefers the freedom of riding her bike.

Bikes are a win-win with Swanson who doesn't enjoy waiting for the bus. She would rather ride her bike in the rain than wait in the Bellingham weather for the bus.

"When you take the bus you get wet while waiting for the damn bus, when you could've just rode your bike," she said. "You don't have to go to the gym either because you're riding your bike all the time."

If someone's round-trip commute is five miles, they could burn an average of 235 calories and save five pounds of carbon dioxide emissions by biking, according to www.rei.com/bikeyourdrive.

Besides hurting the planet, driving can also be dangerous. In 2008, there were 37,261 roadway fatalities in the United States, according to the Federal Highway Administration.

Concerns about biking safety keep some from riding, but Western Geology Professor Jackie Caplan-Auerbach said Bellingham is a great town for biking. Although she does own a Honda CRV, she said she and her husband bike to work as often as they can.

Caplan-Auerbach enjoys waking up to bike her twins to preschool before arriving to teach her 8 a.m. class.

"I get to see the sunrise, not through a window or in a heated car, but with the wind blowing right at me," she said. She hopes her children will grow up without relying on a car as their main method of transportation, she said. When the twins were younger, she and her husband would pull them in a bicycle trailer, but now that they are five years old, they ride on bikes attached to their parents' bikes. Her children don't mind biking in cold conditions; it has become part of their everyday lives, Caplan-Auerbach said.

She knows her family driving less is not a huge resource saver in the grand scheme of things, but she wants others to know that biking is a viable option, she said.

"Do I think my bike will stop global warming?" Caplan-Auerbach said. "No."

Transportation is the second largest source of greenhouse gas emissions in the United States. For each mile traveled in a car, one pound of carbon dioxide is released into the atmosphere, according to the U.S. Department of Transportation.

Bellingham residents go without their cars for countless reasons and money is another.

After a recycling truck smashed Western senior Hannah Hallday's parked car, she made the choice to live without a vehicle to save money.

She said she misses the freedom of having a car but thinks that biking is a great way to save money. In 2008, the average cost
Love treee said she consistently asks herself, “Is whatever I’m doing good for myself, my community and this planet that is all of our home?”

“I try to live out my ideals,” Lovetree said. “If everyone gave up their cars it could be a culturally transformative experience.”

Americans giving up their cars is unlikely with about 255 million registered vehicles in the United States in 2007, according to the U.S. Bureau of Transportation.

Lovetree has not always used alternative transportation. She once owned a Volkswagen Vanagon, which she also lived in for a short time. Lucy, the 1985 Vanagon, was “poop brown,” in Lovetree’s words, and always had something wrong with her. With a pop-top and two beds, Lucy housed Lovetree for just under a year, even when she was broken down.

However, Lovetree decided to go without a car in 2007.

“I got fired up and Earth conscious and literally cut up my license,” she said.

Lovetree does not hold driving against people, but she urges them to take the bus and walk more, as an alternative to driving. Lovetree recently created a zine that describes how to take the public transit from Vancouver, British Columbia to Portland, Ore. A zine is a small, independently circulated publication with a narrowed interest. Lovetree’s zine is complete with bus times, prices and a map.

Lovetree says she understands the need to drive and feels that when she tells people she does not drive it is a sharing of worldviews where each side understands the other, rather than a confrontation.

Lovetree gets where she needs to go by walking, riding her bike, taking the bus or hitchhiking. She does not think she will ever drive again. Due to the amount of pollution caused by airplanes she says she has vowed to never take an airplane again either.

Lovetree said she consistently asks herself, “Is whatever I’m doing good for myself, my community and this planet that is all of our home?”

Examples of undriver licences. Photos courtesy of the Undriver Licensing program.

of owning and operating an automobile was $8,095 per year, according to the U.S. Bureau of Transportation.

Although Halliday has faced the inconveniences of traveling long distances without a car she finds ways to make her situation work, locally.

“I have a bike trailer I got off Craigslist that I use for grocery shopping,” Halliday said.

Pi Lovetree, 23, spends her days car free; she says driving is simply unnecessary for her. With her dark brown hair pulled into a ponytail and a backpack on her shoulders, she wears a dress with leggings, a hat, scarf and sandals. Lovetree, a Bellingham resident, says she has no problem walking from one end of town to the other.

Brooke Rosaline Loisel is a senior double majoring in visual journalism and communication. This is her second time being published in the Planet; she has also been published in The Western Front and Klipsun.

Marybeth Coghill is a senior fine arts student with an emphasis in photography. This is her second time shooting for The Planet.
farming fuel

BY ANDREA FARRELL | INFOGRAPHIC BY BRIANNA NIEMAN

Whatcom County’s cow manure could be the next source of clean fuel, according to Richard Riels and Benjamin Vos. The two researchers, both Western Washington University graduates, drive in a van powered by gas they produce at Lynden’s Vanderhook Dairy.

On the farm, Riels and Vos work for Western’s Vehicle Research Institute (VRI), perfecting their anaerobic digester and the rest of the technology necessary to turn cow manure into natural gas - biogas - that can power vehicles, generators and farm equipment. At first, no one knew how much energy could be produced by harnessing this waste, which is a major pollutant to both local streams and the global atmosphere. Now, researchers say this new technology could help fuel 30 percent to 40 percent of Whatcom County and the technology will soon pop up on Bellingham Charters buses in Bellingham. Here’s how they do it.

The pit
First, the waste to be processed is transported to “the pit,” a large cement mound that leads to a system of pumps and pipes.

From the pit, the biomatter, which is now around 10 percent solid and 90 percent liquid, is pumped into the digester and sits for approximately 22 days. A simple way to think of the digester is as a giant extension of a cow’s digestive system – the microbes and enzymes that work inside the cow continue to digest and process waste even when they have left the cow’s body. It is even kept around the same temperature as a bovine body.

digester
The digester measures 100 feet by 50 feet wide, and 14 feet deep.

In the digester, the biomatter gives off gas – so much that it is often necessary to burn flares with the excess so that pressure doesn’t build up. The gas produced is approximately 59.7 percent methane, 40 percent carbon dioxide and 0.3 percent hydrogen sulfide and other gases. After leaving the digester, the gas enters a maze of storage and dispensing pipes, providing methane for several different uses.

generator
The generator burns raw methane to provide a constant one-half megawatt of electricity, enough to continually power about 50 homes at a sustained average usage of 1 kilowatt per hour.

scrubber
The scrubber removes impurities from the methane so it can power vehicles. It is able to process the equivalent of approximately 12 gallons of gas per hour.

separator
Once the material in the digester has stopped giving off methane, it is sent through a machine that separates the solids from the liquids.

solids
The solids resemble damp brown grass with very little smell. They are used primarily as cow bedding - a replacement for straw. Other uses include fire logs and base for grass seed.

liquids
The liquids are fed into the “lagoon” - a small brown pond where it will eventually be taken out and sprayed on fields as fertilizer. Riels and Vos said the lagoon smells less, pollutes less and contains almost no fecal coliform bacteria, which damages streams, in comparison with traditional lagoons used at most cattle farms.
GLOBAL GEARHEADS

VRI: A TEAM BEYOND ITS YEARS

BY JAMES ANDREWS | PHOTOS BY JORDAN STEAD
The uncompleted Viking 45 sits in the VRI workshop. Its chassis—the frame—is made from carbon fiber-reinforced plastic, a lightweight alternative to steel and aluminum.
For a small, oil-stained pack of gearheads in the parking lot behind Western Washington University’s automotive technology garage, Jan. 29, 2010, was a very good day.

Throughout January, a calendar inside the garage featured a white kitten with a glassy-eyed gaze and perky ears. The aesthetic it brought to the shop contrasted sharply with the action unfolding around it, where students sawed at car parts with power tools and bounced on wheel wells to test suspension.

But like everything else in the crowded workshop, the calendar served a purpose. Deadlines. Under Jan. 31, a note scrawled in black ink read, “CAR! RUNNING! NOW!!”

The ultimatum was directed at the Vehicle Research Institute’s X Prize team, a group of Western students who have invested nearly three years of late nights and many 70-hour work weeks into the production of a gas-electric hybrid sports car, aiming to exceed a fuel efficiency of 100 miles per gallon. The car is Viking 45, the team’s entry into the Automotive X Prize, a worldwide competition meant to inspire production-ready cars that reach 100 miles per gallon - or the equivalent in electric energy - to combat the effects of peak oil and fossil fuel emissions.

And, because worldwide recognition and environmental kudos are never enough, the team will earn Western a $2.5 million check if they win their division.

With the final stages of the competition taking place at the Michigan International Speedway this summer, the team had a major qualifying checkpoint to reach by the end of January: Prove the car runs.

At 6 p.m. on Jan. 29, teammates gathered in the parking lot to watch team leader Brent Wise drive their baby, Viking 45, while recording video proof.

It was not a pretty sight. Wise sat on a bare frame with no windshield or doors, let alone an exterior body to hold them. The engine, docked behind the two seats, had no cover. The fan was zip tied to the radiator, while the battery pack and a mass of wires the size of a child squeezed behind the engine, nearly falling off the tail. The gas tank rode shotgun.

Shortly before starting it, Wise glanced over the car once more and asked a teammate, “Tony, are we forgetting anything?”

“Only our sanity and dignity.”

Sanity intact or not, when the engine finally rumbled and Wise rolled around in a few careful circles, the group burst into cheers. They met the fourth checkpoint with two days to spare.

During the last year, a burgeoning list of requirements whittled the pool of X Prize teams from 111 to 41, representing 10 countries. Among them, Western and Cornell University are the only collegiate ones left.
The X Prize Foundation announced the Automotive X Prize in April 2007, offering a $10 million prize purse split between three divisions: the mainstream four-seat class, the two-seat side-by-side and the two-seat tandem. Viking 45, a side-by-side two-seater, is now competing against 18 remaining cars in its division and is one of two that primarily runs on gasoline.

After 30 years in operation, with 44 previous vehicles under its seatbelt - including Viking 40, the project’s prototype - the VRI could now very well have its most successful vehicle to date.

Everything in the car has been designed by students with a median age of around 22, a fact that most clearly distinguishes them from their biggest competitors—teams of experienced engineers in most cases, some of whom likely started building cars while these guys were still in diapers.

But the team is supremely confident, and they seem to have the technology and persistence to back it up.

“The only thing that can stop us from winning is our attention spans,” said Andrew Brady, the team’s engine specialist.

In an unexpected move, the January 2010 issue of Popular Science named them the favorites to win their division. Others, like Eric Boyd, who operates the independent Web site XPrizeCars.com, expect a three-wheeled, electric-powered, super-aerodynamic car dubbed the Aptera 2e to claim the prize money.

The Viking 45 team agrees that Aptera is their biggest threat. Before the competition’s announcement, the California-based company had already invested years of development into the 2e. At their Web site, they take preorders with a $500 deposit.

That factor most distinguishes the Prize from other high-mileage contests. These are not just “concept cars”. The first checkpoint required teams to develop a business plan demonstrating how a factory could realistically produce at least 10,000 units in a year.

“Right from the beginning, the Automotive X Prize was different because they wanted to have real, production-capable cars that people would want to buy,” Boyd said. “If they just let the teams be, you’ll end up with a lot of one-off cars, no business plans and a $10 million prize potentially to a team that doesn’t have enough structure to be a business or even an acquisition target.”

So, how does a team of students build a safe, desirable and production-ready car while still hitting that 100 miles per gallon sweet spot? They start by confronting gravity.

Most manufacturers today build cars on steel or aluminum chassis, the basic frame of the vehicle. While durable and cheap, metal frames are incredibly heavy. Instead, the chassis on Viking
45 is composed of recycled, aerospace-grade carbon fiber-reinforced plastic. The result is a sturdy chassis that weighs less than half that of a conventional one.

"There's been a trend in the auto industry lately where each new model that comes out is a little heavier than the last one," Wise said. "It's sort of counterintuitive to improving mileage. If you need to propel a vehicle that weighs 3,000 pounds, it's going to take a lot more energy than one that weighs 1,500."

For the record, Viking 45 will weigh 1,100 pounds. With 51 miles per gallon, the Toyota Prius is the most fuel-efficient car on the market. It weighs more than 3,000 pounds.

While the carbon fiber chassis is an unconventional alternative in the automotive industry, Wise considers it a future "trickle-down technology", something more manufacturers will adopt over time.

"Seatbelts, airbags, anti-lock brakes, traction control - all that sort of stuff was in really expensive, high-end cars before they became standard," Wise said, before adding a disclaimer: "Of course, it's hard to tell which technologies will catch on."

But the team designed Viking 45 with a high-end sports car audience in mind. Formula 1 racecars, for instance, began using carbon fiber chassis in the early '80s.

Viking 45 boosts mileage in more practical ways, too.

According to Environmental Protection Agency tests, at 50 miles per hour, a modern car can use more than half of its power just pushing air aside. At 70 miles per hour, the requisite amount of power doubles. Ben Romeijn-Stout, a lead engineer on the team, said an aerodynamic body is perhaps a car's greatest asset for high-speed fuel economy.

Viking 45 is the sixth car to use body molds first made for Viking 7, a high-efficiency car designed in the '80s. The key to the molds' efficiency, Romeijn-Stout said, involves their thin nose and tail, curved windshield and low center of gravity.

Mass-market cars such as the Prius, on the other hand, owe their efficiency not to specialized chassis or superior aerodynamics, but to their electric motors. Benjamin Vos, the team leader until he graduated in Spring 2008, said the team hoped to overcome the largest shortcoming of hybrid cars: Their electric motors are just not efficient enough.

"Ultimately, we wanted to build a hybrid that didn't make me want to rip my hair out," he said. "If you can't ever drive it all-electric, it's a very bad hybrid. You should be able to drive 30 miles all-electrically. If we can get that up to 40 miles in a day, that covers 90 percent of people who drive - without using any fuel."

The Viking 45 hybrid engine comes donated from a totaled Honda Insight. The 3-cylinder, 70 horsepower gasoline engine houses a built-in 13 horsepower electric motor, but the tiny motor left the team hungry for more power and less fuel dependence, so they attached another 50 horsepower electric motor. By comparison, the latest Prius has a 98 horsepower engine with an 80 horsepower motor.

Coupled with the car's light weight, the extra motor will allow Viking 45 to run on electric power under approximately 35 miles per hour, though it also demands a much bulkier battery with eight times the power.

With the engine and battery box crowding the rear, the front holds only the headlights, the radiator and one of the car's most vital elements, the front crush structure. In the event of a front-end collision, the nose carries a three-foot long "honeycomb" arrangement of carbon fiber designed to crumple and absorb severe force.

The team insists the car is as safe as comparably sized cars, but Wise admits that big automakers deliver comforts that Viking 45 cannot. While it has features such as heating and air conditioning, the car's low height, for example, makes objects like speed bumps and potholes more intimidating. Owners might not find much space for golf clubs, either.

"You can strip down a car to make it lighter, but it might be louder or less comfortable," Wise said. "People accept lower mileage as a necessary evil in order to have those comforts."

But the tradeoff needs to swing back if consumers want progress, Vos said.

Early in development, the team realized that their original competition car, Viking 40, fell short of the strict contest requirements. Returning to the design table, they applied the lessons learned from Viking 40 into making Viking 45, and Vos believes similar self-analysis must occur in today's automotive industry.

"We need to shift the mindset of consumers because we've basically gotten used to driving houses on wheels," he said. "We need to reset the vehicle. We need to show people what a proper vehicle is with fewer parts, less emissions and less fuel."

After their two day break at the end of January, the Viking 45 team returned to the shop to pull the engine, change suspension springs and fit the battery box. The final round of tests and races in Michigan begins April 26, with the winners announced in Washington D.C. in September 2010.

A joke photo hanging inside the garage shows a computer model of Viking 45 superimposed at the Washington Monument. In the picture, tourists appear to amble past the car without notice, as if this sleek, efficient vehicle blended naturally into the American landscape.

With any luck, someday it might.
With its sleek aerodynamic design, side raising wing doors and glossy, red paint, Craig Henderson's Avion is worthy of admiration from any sports car enthusiast.

But what admirers might not know is the Avion's greatest feature lies underneath its attractive exterior. The Avion can drive more than 100 miles per gallon, and it has been since 1984.

"There is no special trick," Henderson said. "Anyone can get in this car, drive 60 miles per hour and average around 100 miles per gallon."

To many, Henderson's exceptionally fuel-efficient Avion looks like a gem amongst a plethora of gas guzzling automobiles on the road. For over 25 years, Henderson has dipped the Avion in and out of the consumer spotlight, unfortunately, without much success. But now, Henderson said he believes the time is right for the Avion to once again be unveiled to the public.

Henderson, 53, created the car as a student in the Vehicle Research Institute at Western Washington University in the late 70s. After working on numerous lightweight and fuel-efficient Viking prototype cars, Henderson decided to create a car that could also be practical for mass-production. With the help of fellow student Bill Green, Henderson began working on the Avion in 1979.

Scott Stoner, close friend of Henderson, said he met Henderson and Green at Western. When they told him they were planning to build a car, Stoner said he was surprised and doubtful.

"It would be like one of your friends telling you they are going to build an airplane," Stoner said. "It was amazing to see it all come together."

Green, now an industrial design professor at Virginia Tech University, said he created the design for the car and Henderson took charge of assembly. Henderson and Green wanted to make the car practical for production, such as designing the vehicle for two riders unlike the single-occupant Viking cars they had worked on. After five years of planning and work, the Avion was completed in 1984.

"The car came out exactly the way we planned," Green said. The Avion, which in French means "airplane," got its name because it is more closely constructed to an airplane than a car, and its aerodynamic build allows it to almost "fly" down the road. The car is built with an aluminum and steel frame and carbon fiber body making the vehicle weigh less than 1,500 pounds—significantly less than the average compact car weighing more than 4,000 pounds, according to the U.S. Environmental Protection Agency. The Avion's engine, located behind the car's seats, runs on biodiesel fuel and can reach up to 110 miles per hour.

Although Henderson does not use the Avion as a primary vehicle, he said he enjoys the attention it gets from onlookers when he does drive it. Henderson's wife, Marian, said she has experienced the attention the Avion gets in public.

"People will wave and smile at you," she said. "People don't ignore you when you drive the Avion."

Currently Henderson, who describes himself as a "tinkerer," is working on a second Avion, with hope of finalizing the designs to put the car into production. Henderson said he hopes to start
"It would be like one of your friends telling you they are going to build an airplane," Stoner said. "It was amazing to see it all come together."

off by selling the car for $30,000 as a "kit car" for customers and "tinkerers" like himself, to assemble.

"In one weekend, a mechanic could put it together and drive it around," he said.

Henderson said he thinks the Avion could sell well once it gets in the public's eye and that the Avion's production will be successful because he already has connections with loyal customers and supplying vendors from his company Bullfrog. Since opening Bullfrog Boats in 1997, Henderson has built approximately 500 boats ranging from search and rescue boats for Camano Fire Department to his home for 20 years, a 53-foot sailboat. He said he hopes to extend his present successful business model into the Avion project.

"Think of it as diversifying the product line," he said.

Stoner thinks that the "kit car" will be popular for the 40 to 50-year-old age group, who are financially secure, already have a primary vehicle and want to take on a project.

"The same kind of people who would buy a recreational boat might buy [an Avion] car," Stoner said.

In the 25 years since the Avion's completion, Henderson has made two attempts to showcase the car's unmatchable fuel efficiency.

In 1986, Henderson and Green drove the car in a fuel-efficiency competition that started at the Mexican border and ended in Vancouver, British Columbia. Henderson's Avion won the competition, averaging 103.7 miles per gallon. The Avion also received the 1988 Guinness Book world record for longest fuel range for a road vehicle. Their excitement from the win was short lived because the market in 1986 was not interested in producing fuel-efficient cars, Henderson said.

More than two decades later, in October 2008, the partners decided to bring forth their idea once again, feeling this time the economic atmosphere was ready. With a newly installed three-cylinder smart car engine, Henderson and Green drove the Avion from Bellingham to the Oregon border, averaging 113.1 miles per gallon, breaking the old record.

Unfortunately, the U.S. economy took a turn for the worst and despite their new accomplishment, Henderson said the Avion did not receive the corporate interest he had hoped for.

"We did that in October and three or four months later fuel prices went to half, the economy went in the toilet and it's déjà vu all over again," he said.
Henderson said he hopes that setting a new record will draw attention and create customer interest in the car. Although the new Avion is still in early production, Henderson said he expects it will be completed before the end of the summer. Once the new model is completed, Henderson plans on setting a record by driving the car from Canada to Mexico on one 20-gallon tank of fuel.

Henderson said he believes this is a strong time to release the Avion because of high environmental concern. Although he said his goal of making the Avion fuel-efficient was not necessarily for environmental reasons, he believes it will be a large contributor to the car's future success.

"If you are driving just yourself around and getting 100 miles per gallon doing it, that is going a long way to quote 'save the planet,' and you are having a good time doing it," he said.

Once the cars are in production, Henderson said he thinks automakers may notice the practicality of the model. Henderson says the Avion can be driven without limitations, unlike battery and electric powered cars, which can only drive a certain number of miles. The Avion is powered by biodiesel, which means it emits the same amount of carbon as most cars per gallon consumed. However, because of the Avion's aerodynamic build, it gets three times the mileage of the average car, using significantly less fossil fuels. Henderson said he thinks it is more productive to use current technology rather than trying to find new complicated ways to save gas.

"Why don't we just take what we have and be more efficient with it," he said.

To become more efficient, Henderson had to cut back on a few components. The original Avion was built without airbags because they did not exist in 1979 when the car was being built. The car also does not have a heater or air conditioner because Henderson did not feel they were needed in the mild Pacific Northwest climate. He would like to give the new Avion an update by including airbags and an air conditioner in the vehicle, Henderson said.

"It will be just like a real car, except for it's cooler," he said.

Whether or not the Avion will interest consumers this time around the block is yet to be seen, but Stoner said he thinks whatever happens with the project, whether customers buy or not, Henderson will still be the same person he is now.

"Even if it was screaming successful, Craig would still be the same guy," Stoner said. "That's the true mark of somebody right there."

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COLIN DILTZ is a sophomore from Brier, Wash., and is majoring in journalism. This is his first time being published in The Planet.

FROM TOP DOWN:
Craig Henderson sits in the Avion showing the amount of room there is in the car; Henderson demonstrates how the Avion's mold opens up; Henderson takes the Avion for a spin around the neighborhood.
Tammy Lowry's Hummer is a gas-guzzler. She admits it. She understands the environmental implications. But she thinks people should lay off.

“If you're going to target one vehicle, you should target them all,” she said, referring to a number of other large SUVs and trucks with less-than-stellar environmental records.

To Lowry, the proud owner of a 2008 Hummer H3 V8, complete with a license plate holder that dubs it “Tammy's Big Toy,” feeling safe during her daily commute from Puyallup, Wash., to Federal Way is more important than reducing her carbon footprint, and her Hummer, which received a five-star frontal crash rating from the National Highway Traffic Safety Administration, provides her that security.

But to others, owning a Hummer means more than feeling safe and looking cool, and like it or not, Hummer drivers like Lowry sit in the middle of a heated debate.

The Hummer brand has emerged as a lightning rod for both criticism and patriotism in a national ideological disagreement about the role of the automobile and the meaning of environmentalism in the United States, said Craig Thompson, who helped write a study on Hummer owners for the Journal of Consumer Research. But due to the small number of Hummer vehicles, the controversy over the brand is as much a symbolic fight as a practical fight over a gas hog— one that pits anti-war groups and environmentalists, who label the Hummer the automotive archetype of American overconsumption and environmental irresponsibility, against conservatives who see themselves as defenders of American ideals and protectors of the great outdoors, according to the study.

Thompson, a professor at the Wisconsin School of Business, said many hardcore, conservative Hummer owners who bought their vehicles during the Bush era identify themselves with military
might and the fight for freedom, which may have something to do with the brand’s allure.

“It’s a resistance toward what they see as liberal freedom-hating,” Thompson said.

Anti-war groups such as Code Pink blast Hummer for glorifying violence by mimicking the look of war vehicles. Code Pink, a group geared primarily toward women, emerged during the Bush administration to oppose the invasion of Iraq. Since its launch, the group has promoted several anti-war and social justice measures, including an anti-Hummer campaign that encouraged supporters to print mock parking tickets that criticize Hummers to place in the vehicles’ windshields.

Code Pink cofounder Medea Benjamin said she considers the Hummer the poster child for what is wrong with consumer culture in America.

“At a time when the United States is involved in war where soldiers are being killed every day, militarism has crept into all aspects of society,” Benjamin said. “The Hummer blurs the line between military and civilian life.”

A MILITARY BEGINNING

The original Hummer, the H1, was modeled after the U.S. military’s High Mobility Multipurpose Wheeled Vehicle, or Humvee. The military has used the Humvee as a replacement for the Jeep in its Middle East operations since the 1980s. General Motors (GM) discontinued the H1 in 2006 due to poor sales after Hummer introduced the smaller H2 and H3.

Although the brand is a high-profile target, the number of Hummers on the road is small. GM built approximately 319,000 H2s and H3s between 2003 and 2008, which is less than 0.1 percent of the number of registered vehicles in the U.S., according to GM.

Benjamin said despite the small number of Hummers on the road, the brand is a useful and recognizable icon to rally the anti-war movement and promote environmentalism.

“You have to look for symbols, and our symbol is the Hummer,” she said.

But to Lowry, the decision to buy a Hummer had less to do with branding and patriotic military imagery and more to do with safety and buying American-built cars, she said.

For years Lowry’s husband was a union worker for a Federal Way-based power company that works under Puget Sound Energy. She said her husband’s union experience had a profound effect on their buying habits, especially when it came to cars.

“He was very adamant about buying American,” she said.

The Lowrys are not alone. According to a Consumer Reports study published in September 2009, 81 percent of potential car buyers were considering a domestic brand. But the study also indicated that two important factors buyers considered were price and fuel economy, and Hummer is one of the least fuel-efficient brands.

The 2008 Hummer H3, the smallest Hummer model, with a 5-cylinder engine, averages 18 miles per gallon during highway driving, while a Dodge Grand Caravan from the same year averages 23, according to the EPA. And Hummers are not cheap. Edmunds.com lists a 2010 Hummer H3’s manufacturer’s suggested retail price at $33,390. The more robust 2009 H2 is listed at $63,090.

Lowry said one of the biggest drawbacks of driving her vehicle is the constant refueling. She estimates she refills the 23-gallon tank approximately one and a half times per week. At $3 per gallon, that would cost her $103.50 per week.

Recent sales figures may reflect that problem. Hummer sales have fallen sharply in the past two years. In 2009, GM sold 9,046 Hummer vehicles, compared to 27,485 in 2008—a 67 percent decrease, according to GM sales figures.

Benjamin is quick to point to the drop in sales as a symbolic milestone for the anti-war movement.

“It was a victory for us,” Benjamin said. “There has been a sea change since we started the campaign.”

But real credit for a drop in sales may have more to do with a faltering economy and high gas prices. Alan Meyer, whose family co-owns Dewey Griffin, a Bellingham car dealership, said with rising gas prices, people are trading in Hummers for smaller vehicles.

He said one man traded in a Hummer for a Subaru because he needed a more fuel-efficient vehicle for his work commute.

Who are the real environmentalists?

Refueling woes have not stopped Hummer loyalists, and many do not think their vehicles’ poor emissions pose a problem for the environment. In fact, Thompson said die-hard Hummer owners he spoke with consider themselves environmentalists, though not the type commonly depicted in the media. He said most are skeptical about human-caused climate change and peak oil. To them, environmentalism is an exercise in preserving a scenic wilderness and making an immediate, tangible difference.

“They like the idea of America the beautiful,” Thompson said. “They help [by] keeping off-road trails [maintained] and picking up litter. They are very against littering.”

Thompson said because these Hummer owners are actively involved in outdoor preservation in a hands-on way, they consider themselves the real-deal environmental conservationists. The study found that Hummer owners who participate in activities such as organizing trail-maintenance crews and emergency preparedness clubs feel like they do more for the environment than stereotypical urban dwellers who simply donate to environmental organizations.
### A Mileage Comparison of Popular Cars (2010 Models)

<table>
<thead>
<tr>
<th>Make</th>
<th>Model</th>
<th>Mileage (mpg)</th>
<th>Energy Impact Score (Petroleum barrels/yr)</th>
<th>Carbon Footprint (Tons of CO2/yr)</th>
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</table>

*Energy impact score and carbon footprint based on driving about 14,500 miles annually. Statistics courtesy of the U.S. Department of Energy*

"They see latte-sipping liberals as hypocrites," he said. Hummer owner Kathleen Williams doesn't use language that strong. Williams lives on a farm near the Missouri and Mississippi rivers in Portage des Sioux, Mo., and owns a 2006 Hummer H2 sport utility truck. She loves driving big vehicles and wanted something that could easily handle the off-road terrain and the occasionally severe floods along the riversides.

"I like a big vehicle that when I get in an accident, I can win," Williams said. "It's kind of neat - you can go four-wheeling in a luxury vehicle."

She said she thinks greenhouse gases are a problem and the climate change theory makes sense, but she also believes the opposing side makes some good points and is a bit skeptical about the climate-change proponents' motives and data.

But Williams said she considers herself an environmentalist. She and her husband recycle, compost, garden and hunt. She said she considers these activities important in reducing her family's environmental impact and thinks most of the world's environmental concerns stem from laziness, fondly recalling decades past when her family took soda bottles in to be refilled.

"It's our world and we are trashing it," William said. "We need to make a conscious effort to conserve it."

### CHANGING THE DEBATE

While Hummer owners like Lowry and Williams do not hold exactly the same attitudes as Hummer owners who participated in the study, Thompson said its findings and the debate have broader implications for Americans. He said he sees the fight as a reflection of ideological differences rather than a debate about who has information about the automobile's affect on the environment. He said the polarizing effect of the vehicle represents a broader rift, and the current talking points are not moving the discussion along.

"The backlash doesn't help," Thompson said. "The terms of the debate need to be changed."

Thompson said a better approach to urge climate change deniers to reconsider their fossil fuel use is likening energy independence to less reliance on foreign oil. He said Hummer owners respond more positively to that line.

"If you say it will make people more free, suddenly a bell goes off," he said.

Still, to some owners, Hummers are just vehicles. In her hometown of Puyallup, five miles east of Tacoma and home to Washington's largest state fair, Lowry said people rarely bother her about her Hummer's gas-guzzling reputation.

"Except my daughter," she said as a knowing smirk grew across 21-year-old Breanna Lowry's face. The younger Lowry drives a Jeep Liberty when she makes the drive from Puyallup to Central Washington University in Ellensburg. Tammy Lowry said she wants to know that her daughter can make it over seasonally snowy Snoqualmie Pass, so she likes the idea having Breanna drive an SUV.

And she also worries about her own safety when she wakes up at 4:30 a.m. to drive over the hills between Puyallup and Federal Way. For a little peace of mind, she is willing to make a bit of a sacrifice.

"I love my truck," she said. "And I know it's not the most gas efficient, but sometimes you have to do things for yourself and your safety. When it comes down to it, you need to do what is best for you."

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THE [IN]CONVENIENCE OF CARPOOLING

BY ZOIE GAIDOS  PHOTOS BY TALITHIA TAITANO

According to Catherine Lutz’s book, “Carjacked”, the number of cars in the United States in 2003 surpassed the number of licensed drivers at 244 million and the average occupancy of a vehicle in 2006 was 1.6 people. The dependence on cars in day-to-day life continues to have a wide range of ecological impacts, said Matthew Paterson, PhD in political science from the University of Ottawa. It is no secret that cars have become a major source of contingency in a world of increasing environmental issues.

At first glance, carpooling may seem like a great alternative. However, carpooling is not a popular option for most commuters. Not only is it inconvenient, but also the current U.S. infrastructure does not support a carpooling culture. When people do turn to alternative transportation, they often choose more convenient options like biking, walking or riding buses.

Carol Berry, sustainable transportation program manager at Western Washington University, helps faculty and staff arrange carpools. Berry said when people consider reducing their carbon impact, driving behaviors are among the hardest habits to change.

Carpooling is not well established in our society, Berry said. “If you look around at where people work, where they get their goods and services, walking, biking or carpooling isn’t all that convenient because of the way the roads are built and the way the infrastructure is designed,” Berry said. “Cars have been a given for this century, and our communities are all set up to favor driving.”

A 2008 Gallup Poll asked people what they were doing to reduce their environmental impact. Only 10 percent nationally said they drove less. Western Professor Andy Bunn said driving personal cars accounts for about one quarter of our energy consumption - more than heating, lighting, hot water and food...
production combined. Yet people are still not willing to change their car-dependent lifestyles.

Matthew VanBoven, a botanical researcher and native seed collector who lives in Rockport, Wash., said he considers himself a radical environmentalist. He does not carpool. VanBoven lives a quiet life in the countryside growing a diverse crop of edible plants while focusing his personal energy on natural building using cob and native wood.

VanBoven periodically drives to Bellingham to run errands. He does not carpool because he does not believe the small actions people take when added together will make any difference in the environmental problems we face.

"If everybody is carpooling to their jobs in high rises, sure you have less people driving but they are still going to some useless bureaucratic job that serves no function," VanBoven said. "They're not generating food, clothing or shelter."

VanBoven said he could not see how carpooling saves gas in the long run since people's jobs support a centralized fossil fuel economy, which is the essence of corporate America.

VanBoven said society itself creates stress and inconvenience and as a consequence, causes people to have to reshape their lives in order to feel like they are making positive, environmentally conscious lifestyle choices.

"With carpooling, we have to spend our time and energy [making arrangements] in order to feel good about what we're doing," VanBoven said. "Whether you're waiting for people to finish errands, or getting off work, or you're on the phone trying to organize the times and places for multiple people, all of these things come out of our free time."

With minimal car expenses, making connections and scheduling carpools with others would be less efficient for him than simply driving alone, he said.

When VanBoven returns from his solo errand runs he spends his time preparing for a post-fossil fuel world. An essential part of his preparations involves using supplies while they last, such as fueling excavators to develop his off-the-grid property, he said.

Even Berry, who arranges carpools for Western, agrees it's not always easy — it takes a bit of prior planning and commitment. She said it works well with people who have the same work schedule, and live and work in the same area. Berry said lifestyle choices such as living far from work and other people make it difficult.

"There are certain benefits to living in these rural areas," Berry said. "When you buy a house, you are thinking long term - about having kids, maybe growing your own food. The main sticking point seems to be transportation."

Berry said in the early '90s, a major concern for Western was how to manage parking, but not necessarily for environmental reasons. Gas was cheaper and people were looking at transportation from an economic standpoint rather than environmental. Berry said that she has seen a major paradigm shift within the last four or five years in which the demand for
alternative transportation has dramatically increased.

According to a survey done by the Sustainable Transportation office in 2008, only 4 percent of Western students carpooled to school while 44 percent took public transit and 30 percent walked.

“When all students became eligible for a bus pass, we saw a dramatic increase in both [bus] ridership and bike ridership,” Berry said. “Carpooling is [unpopular], and that’s because students are skipping the car altogether. They are choosing a less energy intensive method of transportation.”

Building a sustainable community takes political will from individuals. She said the city government is concerned with providing all people in the community with a high quality of life.

“To keep Bellingham small, walk-able, bike-able and not sprawled out, [and to have] a high quality of life takes some advocacy, some activism,” said Berry. “It takes voting with our feet.”

Michael Lilliquist, member of the Bellingham City Council, serves on the Planning and Development Committee and the Transportation Committee. Lilliquist said when someone is more intentional with their schedule they will be more likely to choose alternative means of transportation.

“Carpooling is a small element,” Lilliquist said. “It requires a lucky overlap between people’s transportation needs, schedules and their destinations. On some days I have to go to multiple appointments all over town. The only way for me to get around is to use a car or say no to certain things in my schedule.”

The local government has a limited number of tools at its disposal, the chief of which is the power over land use and the city’s finances, Lilliquist said. He said even a seemingly noncontroversial issue, like building fire stations, can become a bigger issue of how people want the community to grow.

“Where things are located determines how easy it will be to get to those places,” Lilliquist said. “We need to make the land used in a way where the other forms of transportation are easy and convenient.”

People think the General Fund, which pays for government services such as police and the public library, make up most of the overall budget, Lilliquist said. But it is simply the most visible. He said most money goes into maintaining the infrastructure because it is the most expensive.

Lilliquist said some people will always choose a car-based lifestyle even when given a different option. He said he hopes to create a community that attracts people who want an alternative to the car.

“We need to see a big behavioral change, and that’s really hard to do,” Lilliquist said. “We are dependent on that fast-pace lifestyle and the truth is that most people need a car.”

“To keep Bellingham small, walk-able, bike-able and not sprawled out, [and to have] a high quality of life takes some advocacy, some activism,” said Berry. “It takes voting with our feet.”

Although it seems it will take more than carpooling to significantly reduce our ecological footprint, people should begin to ask themselves what tangible changes can be made within the scope of their lives to meet transportation needs both sustainably and conveniently. Perhaps moving towards a reduction in our dependence on the car will start at the individual level. People can consider transportation a primary element when choosing a home — noting where they are relative to the grocery stores, schools and other services and how that will effect transportation options.

People can attend public hearings and speak up to city officials about how they want their community to grow. Non-automotive behavioral changes require personal effort, however, the city government can make those changes easier by guiding land use and development, Lilliquist said.

Encouraging city planners to fund pedestrian-only areas, better bike lanes and improved public transit rather than building more roads will help reduce our dependence on cars.

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-Greenpeace