

## **Naramata Hybrid Analysis Project**

This project is to provide Naramata residents with “real life” data on the use of a hybrid vehicle. Such information could help other people decide if this type of vehicle is worthy of their consideration.

While gasoline/electric hybrids emit a fraction of the CO<sub>2</sub> of their gasoline or diesel cousins, the upfront costs for purchasing a hybrid are higher. Some studies say though that those increased costs are easily recouped by savings in fuel and savings in hybrid vehicle maintenance.

We hope this analysis will show what can be expected based on the experience of the test vehicle monitored. A hybrid vehicle is not for everyone. Whether you decide to consider a hybrid vehicle for your next purchase will depend on many factors. We hope the information and data provided over the coming months will be useful to you.

## **Why This Car?**

2005 Toyota Prius, B package Purchased new in July, 2007.

August, 2007, Owners comment:

My wife and I had been thinking about a hybrid car for sometime, but didn't make the move until this past summer, when all the factors seemed to come together to make it a good move for our family. One child was about to enter middle school in Penticton, which despite school buses and carpooling still meant more trips to Penticton for our family. We had been driving a 2005 Honda CRV, which we leased as a company car for supply shopping trips when we owned Village Grounds Coffeeshouse. The CRV is a great little car: solid, roomy, economical compared with larger SUVs, and great in the winter on Naramata's hills. However, for us, there were several advantages to looking at a Prius.

Winter: was the Prius up to task of getting around in the winter? It would not have the four wheel abilities of the CRV, yet research on the internet revealed that with good winter tires the Prius is capable, except in really deep snow (due to its low ground clearance).

Fuel Economy: The CRV's four cylinder fuel performance is rated at 8.4 Litres/100km-highway / 10 Litres/100km-city. Therefore, the Prius is rated to use half the fuel of the CRV. The test analysis will determine that!

Other Vehicles: Why didn't we consider something like a Volkswagen Jetta TDI station wagon with a very fuel efficient diesel engine? Many of them successfully burn biodiesel. This question came down to personal choice. Yes, the TDIs are very fuel efficient, but they still have a lot higher carbon emission output than the Prius.

(One website showed that the Prius would drastically cut the CO<sub>2</sub> emissions compared to the Honda CRV. <http://www.terrapass.com/road/carboncalc.php> showed that if a Prius is driven 12,000 miles at its estimated 60 U.S. mpg city/51 highway, it will use 216 gallons of gasoline and emit 4226 lbs. of CO<sub>2</sub>. The CRV over the same distance with a fuel economy of 22 city/27 highway would burn 490 gallons and emit 9586 lbs.)

I also am interested in the future capabilities of the Prius hybrid technology, such as adding an additional battery to make it a plug-in car whereby it could conceivably get over 100 miles to the gallon by operating further on electrical power.

Upfront costs of the Prius: A new 2007 Prius (B package) would be about \$34,000. (November 2007 note: prices on the 2008s models have decreased due to the rise of the dollar) In July, there was only one such car at a BC Toyota dealer as my e-mail survey of most of the dealers revealed. Therefore, I was thinking we'd have to buy a used one and in order for the math to work it would have to cost about \$25,000 before taxes. Fortunately, through my research, I found a 2005 Prius, still brand new at the Toyota dealer in Pitt Meadows, outside Vancouver....a rare find indeed. While new Priuses for years have been sold by dealers with no negotiating, the salesman said "make us an offer we need to move this car."

P.S. If you wish to seriously consider a hybrid purchase, I would suggest the following:

1) Use this data to determine the cost savings regarding fuel economy. Calculate the fuel economy of your current vehicle. Don't rely on ratings from government or consumer groups. Those ratings sometimes have a reputation for being exaggerated, especially the American EPA figures. Other considerations include the high retained value of a hybrid.

## The Results:

### Fuel Economy Stats. 2005 Prius.

*August, 2008*

*The odometer on the car reads 30,000 km. now. Therefore, in our 13 months of ownership, my approximate calculation is that an average fuel economy of 5 litres/100km. (56.5 imperial miles-per-gallon) we have saved about 1400 litres of gasoline versus our previous vehicle, the 2005 Honda CRV (see the pdf. "BACKGROUND: Why this Car"). During the year, the price of gas has moved from \$1.10 litres to \$1.45, so given a mean price of, let's say, \$1.25, the dollar savings has been \$1750.00.*

*Through the spring and summer, we are averaging 4.5 to 4.9 litres/per 100 km. Our winter average is from 4.9 to 5.6.*

*The car's Transport Canada rating is 4.0 (70.62 mpg) in city driving, and 4.2 (67 mpg) highway. I certainly see those type of numbers when we are driving around Penticton doing errands or we are on a run to Kelowna. The numbers of our actual fuel economy are based mostly on us using the car Naramata Road. I am very happy with our numbers, but if Naramata did not have hills, our numbers would be even better! Therefore, I do not think the Transport Canada numbers are overrated. The whole idea of this analysis is to show what can be expected for this car in 'the Naramata driving experience.'*

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*Nov. 5/07, (odometer 8,242km.) winter tires are now installed, what will it do to mileage? Word is winters don't roll as well as the factory all seasons. I'm quite impressed with the mileage over the past few weeks even given the fact that it is still not broken in, and also due to the cold temperatures. The Prius is known for not liking cold, but the single digit degrees does not seem to be hurting mileage. Just had the first oil change, cost parts and labour, \$37. In looking back over the results of the mileage, . 90% of the driving is on Naramata Road and the Prius is doing exactly what I was hoping it would do. I figure it is double the mileage of the Honda CRV that we had before, and while we are driving a greater distance this fall, we are spending less money on fuel.*

*January, 8, 2008....*

*The car is handling great in the winter. It handled the mountain pass snowy weather fine when going to Vancouver at the end of December. We've had it for 6 months and would buy another in a flash!*

*February 25, 2008...*

*We've put 4218 km. on the car since December 26, and I have calculated the long term fuel use over this winter. The total is 5.12 litres per 100 km. This figure represents about half the fuel consumption of our previous Honda CRV. Therefore, with over 16,000 km. on the Prius now since purchased new in July, 2007, we have saved more than \$900 in fuel costs. Granted, we are driving the car a lot as you can see...16,000 km. in just a bit more than six months!*

*We're still loving this car...big enough when we are carpooling with extra kids, yet with a hatchback in can handle grocery shopping and I've even had about twelve 2 x 4s at 8' long loaded in the car with the hatch down. The car has made several winter trips to Vancouver, and it has performed well on the Hope-Princeton Highway. It is always up to passing when needed, and takes the turns very well.*

