Responsive Management

Environmental Attitudes of Delaware Residents:

Focus Group Findings

Conducted for the Delaware Department of Natural Resources and Environmental Control

August 2002

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Introduction and Methodology

This report summarizes the findings of five focus groups conducted by Responsive Management on behalf of the Delaware Department of Natural Resources and Environmental Control (DNREC) in July of 2002. The focus groups were conducted to identify the attitudes and opinions of Delaware residents toward environmental issues in Delaware, including water quality, septic systems, home-lawn care, and stormwater runoff.

The five focus groups were conducted at the following dates and locations: Monday, July 15, Middletown, DE (Appoquinimink Library); Tuesday, July 16, Wilmington, DE (Central Focus-focus group facility); Wednesday, July 17, Dover, DE (Delaware State University); Thursday, July 18, Lewes, DE (Lewes Public Library); and Friday, July 19, Delmar, DE (Delmar Public Library). Focus group participants were recruited based on residency in Delaware, whether they were on a septic system or sewer system, whether they maintained a lawn, and whether they were part of the agricultural community.

These focus groups were conducted prior to the administration of a quantitative survey to aid in the design of the survey instrument.

Focus groups are an important method to begin studies such as this one because they allow for extensive probing, follow-up questions, group discussion, and observation of emotional reaction to various topics-aspects that cannot be measured in a traditional telephone or mail survey. Focus group research is considered “qualitative” research. Qualitative research sacrifices reliability for increased validity. This means that although focus group findings cannot be replicated statistically as can sample surveys (high reliability), they often give researchers a more valid understanding of issues at the heart of a study (high validity). Focus groups produce results with extremely high content validity, but are not random sample surveys.

The analysis of these focus groups and interviews was an iterative process. The moderator took notes and observations at the time of the focus group. Next, the audiotapes and videotapes were reviewed. Detailed notes were taken, including quotes that would be incorporated into the focus group report. After all of the audiotapes and videotapes were reviewed, they were analyzed for content, and the focus group report was written. Quotations are always written verbatim, unless otherwise noted, and are written in *italics* to differentiate them from the text.

Environmental Concerns in Delaware

Overall, the focus group participants were concerned about the health of Delaware's environment and were aware of many environmental problems facing Delaware. Although numerous environmental issues concerned the groups, the issues most frequently mentioned were water quality/quantity, air quality, overdevelopment/preservation of open space, and overpopulation. Other concerns were the high cancer rates in the state, disposal of solid waste, littering, ground contamination from past chemical spills, and the impact of septic systems.

> *Water quality. Where I live the nitrates have been really high. We don't have clean water to drink. Next, I would have to say littering; people throwing waste in ditches.*
>
> *Population explosion is going to take a lot away from the resources. [So will] trash along highways and in the water. Anytime you overpopulate, there are a million things that happen. In the last 15-20 years, the population along the eastern shore has exploded.*
>
> *I think what we're going to run out of first is water. It's harder to find other sources of water in the county. Sussex County has limited resources. Pollution may be more important because of the cancer rates, but I think useable water is going to run out first. We can't import water like Boston or New York City.*
>
> *I live near a lake, and we used to have a problem with nitrates in the water. I have a septic system. I had to go 340 feet deep for my well. Water quality is a big thing. I can't see how the diesel smoke is good for us either, and they don't have to pass emissions [tests]. To me, it smells, and I think they should have to pass the same restrictions as I do. Water quality is the highest [priority for me], and air quality is the next.*
>
> *Probably how we get rid of solid waste. We are down to one landfill, and sooner or later that land will be gone. Next, water quality depending on the depth you go after. There is treatment there, but I think eventually the issue will be how much is left in those aquifers; eventually it will be depleted. The problem will be in the future, but not that far away.*
>
> *I agree with what everyone has said. One problem is the use of the septic tanks in residential areas. I don't know what the percentage of failure is. Most will fail eventually. Unless there are places to hook up the septic systems, there will be a lot of unhealthy effects.*
>
> *Open space. The issues are so overwhelming. The air is terrible, and there is no green space. The transportation system is abysmal. It seems like there is no planning to keep open space and say "no" to the developers.*

Although the focus groups mentioned numerous environmental concerns, overdevelopment was at the forefront of everyone's concern. Participants in all of the focus groups had strong feelings about the rate of urbanization taking place in Delaware. Many individuals questioned the standards to which developers and corporations are held at the expense of bringing in new revenue to the state. They seemed somewhat conflicted over the revenue that could be generated for the state and the subsequent tradeoff of losing open space in the countryside. The focus group participants appeared to struggle with a feeling of losing control over the rate of development. They felt that the state is not strategically planning its urbanization projects. It appears that this attitude may be generating negative feelings toward the state in terms of the state's role in protecting Delaware's environment. DNREC may want to evaluate its potential role in educating the public that collective actions of individual homeowners can prevent the same amount of nutrient runoff as is caused by industry and "unwanted development."

There is no long-term strategy for development in the state; it seems like a hodgepodge.

Maintain a balance between growth and the environment. Sussex County is growing and getting a bigger population. These things are bringing in more money, which is good, but it is important to maintain a balance. It's getting crowded, compared to when I moved here 22 years ago.

I think the government is choosing not to exert control, because they want to bring companies into Delaware, but they are letting them get away with a lot. One chemical plant was warned about violations and they went on probation, but the government won't shut them down because of the political and economic repercussions.

Farmers can sell off lots along the front of their property [near the road]. There is a lot of poor planning, especially near the Outlet Mall, and it's a bottleneck.

Now it's just grow, grow, grow. Construction is out of control.

Awareness and Concern about Water Quality

Although *all* focus group participants did not immediately mention water quality when first questioned about their most pressing environmental concerns in the state, almost everyone agreed that water quality should be a high priority. Several focus group participants mentioned drinking water as a reason why water quality should be a priority. The Lewes focus group differed somewhat from the other focus groups in that there was a higher level of concern about eating fish from the waters. Overall, the focus group participants admitted becoming concerned about water quality due to first-hand observations, such as a chlorine smell in the water, advisories against eating fish from certain areas, and closed swimming areas. Very few participants said that water quality was only a medium to low priority for them. One individual mentioned that water quality does not carry a high priority for him because he is satisfied with his sewer system and drinking water.

> *Water quality has to be a high priority because we are drinking it.*
>
> *I place it [water quality] really high. In Washington [State], the reservoirs are from rainwater and mountain runoff, and the water was always good quality. When I was living there, the water was the best tasting water. When people from California started moving north, the watersheds started going dry, and the quality started going down. There's been explosive growth. I'm seeing Sussex County heading that way too. People put a big strain on the resource.*
>
> *This whole side of the county is water based. People come here for the water. We are losing it. I think nutrient runoff is a big problem. Sea life. There are more fish kills in the canal between Lewes and Rehoboth.*
>
> *We used to clam and crab in the inlet; now you don't find anything. The Delaware Fishing Guide recommended eating no more than 8 ounces of fish twice a year from certain waters around here. That scared me.*
>
> *We were told to not eat raw seafood from around here. I would not clam or crab Rehoboth Bay now.*
>
> *The bacteria in the water; they have closed a lot of swimming areas. Delaware has a lot of family places, and they were closed down. It [bacteria] gets into the drinking water.*

I've noticed a lot of algae in the water.

I've noticed that my water now has a chlorine smell, and I've started seeing rust deposits on my faucet.

I don't think that water quality carries a high priority with my life. I've got sewer systems; I don't need it. For me, and my living, I have good quality water and sewer systems, but when I see all the building going on, and all the septic systems going in, I wonder where it's going. It is probably a medium concern for me in the big picture.

Behaviors that Affect Water Quality

A majority of the focus group participants felt that the major sources of water pollution and nutrient runoff in Delaware are agriculture and industry. A few participants recognized that the actions of the general population also contribute to water pollution, but it appeared that the overall perception was that individuals were contributing much less to water pollution than were the larger entities. It appeared that very few focus group participants fully realized the collective impacts that their own actions could have. Less than half of the participants in each focus group attributed their own actions as having a significant impact on water quality. Many of the participants appeared to have the attitude that water pollution was being caused by "someone else." The Delmar focus group contained individuals from the agricultural community. One farmer from this group remarked that farmers now have better technology to handle nutrient runoff. This individual felt that current poor water-quality conditions are a result of behaviors that took place years ago, and therefore he did not feel that his actions were having a negative impact. One individual believed that water pollution in small ponds was predominantly caused by wildlife waste. One problem that DNREC may need to overcome is the relatively low level of public awareness regarding the impacts that individual homeowners have on water quality and the collective impact of homeowners across the state.

In early spring, I think of giant piles of chicken manure sitting on the fields and then being spread. They have recently opened a plant (Perdue has done this) where they process some of the manure and ship it out to the Midwest. But a lot of the farmers just dump the manure.

I think that the general population has a responsibility, but that, proportionately, the corporations are much more at fault than are the every day households.

[It was the] chemical companies before, but now it's the chicken farmers. It's always the biggest industrial enterprises in the state.

Farms, the chemical plants, Dupont, refineries, poultry waste. Delaware is still a chicken state.

You take a large industry and can see how they have large pollution, but you also take the heavily populated areas, and they have the Chemlawn's and storm sewers. It goes right into the estuary.

I believe the individual contributes more to general water pollution, just because of things like detergents and chemicals on their lawn. If a million people spill one gallon, it's like one big industry.

The general population. Everyone drives a car, sprays weed killer, and people have been dumping motor oil for years.

I think homeowners probably cover as many acres with chemicals as do the farmers, and there is no control over how much stuff we use.

There is a lot of runoff from the fields. But they are taking strides to handle it, and what to use/not to use. They aren't working on the animal problem, though.

In Sussex County, yes, agriculture is the main source [of nutrient runoff]. This is a farming area, and probably will be for a long time. We don't have a lot of industrial plants, at least not big ones.

As of today, we are going through nutrient management classes, and we are using better technology to handle nutrients. Fertilizer and nutrients cost us money, so we are trying to save money. Now we have manure spreaders that spread it more evenly. We use the bare minimum. I think some of the problems with the rivers are a result of what we did 20 years ago, so what we are doing now may take 20 years for the nutrient levels to come down.

The problem with development is that they say they are going to keep open space and what they do is put in a golf course where they are spraying on chemicals every day.

Depends where you are. Some of it [nutrient runoff] can't be helped, like the wildlife

waste in the water.

Sewer Systems and Septic Systems

All of the focus groups contained nearly an equal number of individuals on septic systems and sewer systems, with the exception of the Wilmington group (all were on a sewer system).

There appeared to be a wide discrepancy in awareness levels regarding how often septic systems need to be pumped. Some focus group participants pumped their system every other year, while a few others had waited as long as 18 years to pump or had never pumped. However, a majority of individuals pumped their system every 2 years to 5 years. Overall, the focus groups were not very aware of the state mandate requiring septic systems to be pumped every 3 years.

Environmental concerns (for instance, concern about nutrient runoff) were not the predominant reasons that respondents had pumped their septic system. Focus group participants said they pumped their system because of the law (if they were aware of it), for general maintenance reasons, or for personal health (drinking water and their children's health). Those individuals who did not regularly pump their system said that they pumped only when the system backed up. Several individuals felt a need for more public education about septic system pumping and felt that the general public would be more likely to pump their system if they knew they were required to, or if they knew that regular pumping would reduce the likelihood of septic system failure.

There is a mandate by the state, but it is not enforced. You are supposed to pump every 2-3 years.

I wasn't aware there was a requirement; I pump it when it backs up. It has backed up once in 15 years. The line got plugged up, and the [maintenance] guy told me we needed it pumped out.

There is no public education about it. If people knew that if they don't maintain their system, they would have to replace their drain field, they would do more about it. They could save themselves the time and money if they knew to pump every 2-3 years. I think there needs to be more education.

I was told you had to pump it every 3 years. My incentive [for pumping] was the law.

It falls under the maintenance category; I'm not sure that I was thinking of environmental concerns. I was thinking more about what I had to do to keep the system functioning.

I maintain my septic system because I don't want my kids playing around in the overflow; it was backing up.

You're going to drink the water that goes out of your septic system if you have a well, so it is important to keep it functioning.

Many of the focus group participants said that they had never thought about the environmental impacts of septic systems and sewer systems. A few focus group participants did, however, state that they had read about this issue in the newspapers and had thought about the issue.

I don't think about it [impacts of septic systems and sewer systems] every day.

If my water test came back bad and I found that the water wasn't potable, then I would be upset and do something. But, my septic hasn't backed up, so I don't worry about it. Right now, it is a nonissue.

If you read the local papers, I don't see how you can't be aware of it.

I thought about it and read about it, but there are solutions. You need a plan, but it takes money, and when taxes are raised, people start complaining, and start complaining about the systems. We are told the average life of the septic system is 20 years, so I think we're going to have hundreds failing in the coming years.

Although some individuals acknowledged that both septic systems and sewer systems contribute to water pollution, individuals on sewer systems felt that septic systems have a much greater impact on water quality than do sewer systems. In turn, owners of septic systems were

generally satisfied with their system and felt that septic system technology had improved over the years, leading to less substantial impacts on water quality. However, all of the participants in the Middletown group preferred to be on a sewer system, predominantly because of the maintenance issues associated with septic systems. The Middletown group also felt more comfortable with sewer systems because they had read that treatment plants produce high-quality water from the effluent, whereas septic systems do not.

> *We've always had septic systems, but we've always had a lot of land. We've never had one fail, and we pump it every year. It's ridiculous to have houses on tiny lots with septic systems.*
>
> *I've always had a problem with septic systems – I always think sewers are better since they are treated.*
>
> *Water coming out of a treatment plant is supposed to be better quality than most streams out there; I would rather be on a sewer system.*
>
> *Newer septic systems are being put in today, and they are much safer than they were.*
>
> *Modern systems are much better than they were before. As people are building new homes they are using the modern, efficient systems, so to me, that's enough.*

Overall, the focus group participants who owned a septic system were not strongly concerned about the impacts of their *individual* septic systems on water quality, but were more concerned about the aggregate impacts of septic systems in new developments. Many participants felt that developers are at fault for the problems associated with septic systems because they build houses close together and install septic systems in very small properties without adequate space for proper drainage.

> *I'm not so concerned about individual septic systems, like mine; it's when you have the larger systems, in developments...That is a concern because it can drive contaminants into the ground.*
>
> *Now, septic systems are designed to hold the nutrients; the problem is managing growth. Nutrient-wise, there shouldn't be any difference in impact between septic and sewer systems.*

Most of the focus group participants said that septic or sewer systems would not influence their choice in buying a new property and felt that it would also not likely influence the public. Only one individual from Middletown said that it was on his "pro and con list" for purchasing a house. Another participant said that he preferred living in rural areas, which are more likely to have septic systems, but that the septic system itself is not what encouraged him to live outside of an urban center. The general impression of the focus groups was that the public does not consciously think about the impacts of septic systems or sewer systems because as soon as something gets flushed, it becomes "out-of-sight, out-of-mind."

> *I don't think that people think about septics versus sewers; as long as you flush it and it goes down is what the public thinks about.*

Almost all of the focus group participants were hesitant about having the state impose extra costs (taxes or fees) on individual homeowners for retrofitting or for hooking current waste systems to sewer lines. Everyone was in agreement that it would take a significant amount of money to retrofit or hook houses with septic systems to sewer lines. Many of the participants questioned the imposition of more costs because they felt that the current taxation system should already provide money for new technology. The Delmar group was concerned that many people in Sussex County would not be able to afford the necessary $6,000-$12,000 to retrofit their septic systems. In addition, some individuals expressed concern that retrofitting may not have a substantial impact if it is done on a voluntary basis. For example, one participant noted that even if he decided to retrofit, it did not necessarily mean that his neighbors would also retrofit.

Rather than imposing costs on current septic system owners, the focus groups felt that costs should be either built into the price of new homes, or that developers should be required to pay the costs for installing state-of-the-art septic systems. Several individuals also felt that tighter restrictions should be placed on developers regarding lot size when installing septic

systems into new neighborhoods. As previously noted, many individuals felt that new, concentrated housing developments with septic systems are contributing to water-quality problems more so than are individual homeowners. Therefore, these individuals did not feel more costs were justified. This is not to say that support does not exist for retrofitting. Rather, the focus groups felt that retrofitting or hooking up to sewer lines should be examined at a local level, with ample opportunities for public debate on the issue. A different solution that was suggested by an individual in the Wilmington group was to create a "penny-a-gallon" trust fund that could be funded from homeowners' water bills.

A lot of people don't have $6,000-$12,000 to spend. You would be making people choose between renting their residence or retrofitting their septic system. A lot of people in this county don't make lucrative wages, and I don't feel comfortable putting them in that kind of financial distress.

I have a high concern, but how many homeowners could afford a $12,000 retrofit?

You can't sell people a $100 fan for the bathroom; it goes back to the almighty dollar. People want to do things as inexpensively as possible.

You might pay the $6,000, but it doesn't mean your neighbors will do it.

I see it [hooking up to sewer lines] as a local option.

I feel like the money is already there from taxes.

We all pay sewer bills. Why should we pay more?

I think the counties need to get together and force developers to quit using septic systems.

Maybe we need to create a "penny a gallon" trust fund.

Retrofitting is a great idea if you have the money.

There has to be a political argument to rationalize how the infrastructure repair is needed.

People would support [retrofitting] if it were less expensive.

Home-Lawn Care

Overall, the focus group participants had various types of lawns, ranging from "green and beautiful" to "brown and ugly." Some participants reported using fertilizers on a regular basis, while others did not fertilize at all. Most of the rural residents reported that they did not give their lawn much attention. The reasons for their lack of attention were that they simply did not place significant importance on having a green lawn, or they simply did not want to spend a lot of time and money on their lawn.

While some focus group participants did not care if they had a green lawn, the overall impression was that aesthetics drive the public to keep a green lawn. There appeared to be a slight social stereotype associated with green lawns-beautiful houses, better neighborhoods, middle class. If this is the case, it may be difficult to change the behavior of people who live in certain types of neighborhoods, because they may feel like they have to keep their lawn up to the "neighborhood standard."

> *It's about vanity; why else would you keep a green lawn? It's not for health reasons. People just like the look of a green lawn with a beautiful house.*
>
> *I like grass to look like a putting green; I think everyone likes that. It is very middle class.*
>
> *I think the point of living is to enjoy your yard and home.*
>
> *Aesthetics is important to me; I like the way [a green lawn] looks. I hardly use the lawn, but I like the way it looks.*
>
> *The better neighborhoods have green lawns; you can see the Chemlawn trucks.*

Despite the importance of aesthetics, several individuals appeared to have conflicting feelings of guilt for their actions and in the desire to have an aesthetically pleasing lawn. DNREC may want to consider promoting and emphasizing natural lawn care practices that produce an aesthetically pleasing lawn.

I use a ton of fertilizer to have a green lawn; it's awful. I know I shouldn't do it because the soil doesn't hold the fertilizer and it runs right into the sewers. I use too much of it so that I can have a green lawn and make the flowers look good. It's one of those things that tears on you; you want your lawn and house to look good, but to do that, I have to use all these chemicals. My personal feeling is that it needs to be an individual responsibility. I should be taking care of my property in a responsible way, and I fudge sometimes. I take my cans to recycling; I do a bit, but I'm not perfect.

A few individuals said that they employ a lawn service company to take care of their lawn, and that they trust the company to use the appropriate amounts of fertilizer and pesticides. Other individuals agreed with the idea of trusting the fertilizer and chemical companies that sell products in stores, because they feel that the Environmental Protection Agency (EPA) has set regulations that ensure that fertilizers and pesticides are safe for public use.

The lawn company comes in and tests, and they do what they have to do. They don't put on more [fertilizer] than they need to. I don't have any complaints; I trust them.

I fertilize in the spring and fall. I live right in the middle of town, with no sewers or canals nearby. If there were a possibility of runoff into the sewer, then I wouldn't do it. It's like Roundup – you can use it safely. We use it around the ponds, and some grass. It deteriorates, even if it doesn't go into the sewer.

No, I don't feel like I'm doing the environment in. Grass is a barometer of health. I believe what I am doing is okay because I feel comfortable with the regulations in place. You deal with the best information you have, and it is telling me that I'm not going to hurt anybody.

I don't really think about my lawn service putting too much fertilizer and chemicals on my lawn that are going to leach into the ground and affect my kids' kids. I'm aware of it, because I was in the pesticide business, but I also know what the regulations are. I trust the companies to follow the regulations. I have other things to worry about.

The pesticides we use today are a lot better than what we used 10-20 years ago.

Several focus group participants admitted having health and safety concerns regarding the use of lawn service companies. For example, one individual cancelled his Chemlawn contract because he became worried when he saw signs on his yard that advised people not to walk on the lawn for 2 days. A few individuals were concerned purely because of environmental

reasons about using a lawn service, but this opinion was not expressed by a majority of focus group participants. Most people who applied fertilizers did so for aesthetic reasons, while those who did not apply fertilizers did not do so because of time and money constraints. Environmental concerns did not appear to be a significant factor when choosing a lawn care company. However, one individual felt that employing a more environmentally concerned company was an added bonus, even though it was not his predominant reason for hiring the company.

> *I got out of my Chemlawn contract because I saw all the signs that said to not walk on the lawn for 2 days.*
>
> *I thought they [lawn care services] were notorious for pouring on herbicides and fertilizers, which is why I wouldn't use one.*
>
> *I have a green lawn. I water a small portion of it, but don't use pesticides or herbicides. I used to have Chemlawn but I changed to a more environmental company; they charged less money. I don't worry about what they put on my yard; the EPA regulates that stuff, so I trust them. I don't think I would have hired the more environmental company if I had to pay them more, but I do think it was a plus to go with someone more environmental.*

Overall, there was very little support for having the state place restrictions on the amount of fertilizer that a homeowner can use without explicit evidence that by doing so, improvements in water quality would occur. This relates to the issue of perception of blame: as previously mentioned, most of the focus group participants felt that agriculture, developers, and industry are more at fault for negatively impacting water quality. With this perception, it is justifiable that homeowners would want to know exactly how their behavior was impacting water quality before they submit to further regulations and restrictions.

> *If DNREC could show that by using less fertilizer it will have positive effects, I would consider it. But, I think there are other things that DNREC should be worried about than my fertilizer. I think that fertilizer use is an environmental issue in other areas [of the state] but not here [Sussex County].*

That would be intrusive, but if they could show improvements or give evidence of improvements, then I would probably go for it.

I don't see how they could regulate [fertilizer and pesticide use]. Home Depot and Lowe's are telling everyone to use the products.

A majority of the focus group participants did not like the idea of leaving grass clippings on the lawn. Once again, it was an issue of aesthetics and being able to enjoy the lawn. One individual noted that clippings on the lawn made mowing difficult, and another individual did not enjoy walking on the lawn with clippings on it. Everyone generally supported soil testing, and several focus group participants said that they keep a compost pile. The overall attitude was that the public is not aware of natural lawn care practices or the reasons for implementing them.

It feels yucky to walk barefoot on a lawn with grass clippings.

Leaving clippings on the lawn makes it difficult to mow because they don't sink down.

Stormwater Runoff

Overall, the focus group participants were aware that stormwater runoff contributes to water pollution but were not highly concerned about this issue. Many individuals were aware of the presence of stormwater structures in their neighborhood, but had a low level of awareness regarding the actual function of the structures. Many individuals had negative opinions of stormwater ponds in developments and saw these structures merely as mosquito-breeding areas. There was a high level of concern about safety, as many participants viewed stormwater ponds as potential dangers to small children. When informed about other structures, the focus groups were more supportive of them, including swales, rain gardens or constructed wetlands. One individual was concerned about the responsibility of managing and cleaning up the ponds in his neighborhood and felt that the county or state should be responsible for the ponds.

I would prefer something different than the ponds; they are ugly and dangerous. If we could put in swales, or buy land close by and put in ponds that you can't see [it would be better]. In developments, it's a problem.

I'm in a new development, and we have 6 ponds. It's our responsibility to take care of them; how efficient are they? When it rains, everything gets stirred up and it floods, so how is it working? We have one that is 12 feet deep; the state said it's only supposed to be 3 feet. At some point in time we're going to have to take them over; we shouldn't be responsible, it should be the state or the county. They should have the qualified people to take care of it when it needs cleaning out in a few years.

I'm aware of it…but that's all. It [stormwater runoff] is a medium issue for me. I notice in new developments they are building these basins; you end up with a mosquito breeding pond; I always worry about the kids falling in.

To me, stormwater ponds are a hazard for kids.

I never thought about it; I've seen swales but never knew what they were for. There is one in my development. I was always wondering why it was there.

I like the idea of rain gardens. My friend told me that you can plant certain species of trees that are better for the air, and you could plant these trees in swales to get a double benefit.

When provided with a list of preventative measures that individuals can take to reduce pollution runoff, the focus group participants had mixed opinions. Many individuals said that they already undertake some of the measures, such as disposing of motor oil properly. The problem of convenience was mentioned several times. Convenience is an important factor in motivating people to change their behavior. For example, one individual described how he saves his motor oil, but is frustrated because he has to drive to the next town to take it to the nearest collection center. This individual felt that people who dump their oil on the ground do so because they either do not know where to take it, or the collection center is not in a convenient location.

Farmers in the Delmar focus group were not particularly supportive of buffer zones, because they felt that too much valuable land would get taken out of production. The other focus

groups were supportive of buffer zones, but had not constructed any on their own property. Several individuals questioned DNREC's encouraging residents to use less salt on pavement in winter because of the safety issues. In fact, several participants pointed out that the state always uses salt and felt that the state was not setting a very good example for how it wants the public to behave. One individual mentioned that he has reduced the amount of detergent when doing his laundry, but his motivation was the function of his washing machine rather than a concern for the environment.

Buffering zones: that's an egregious term to agriculture people. It takes up too much valuable land.

I think washing cars on the lawn is a silly idea; what kind of grass would you have? It would kill the grass. Try throwing soapy water on grass, it will kill it.

I would do these things – I do some of them now.

How do you clean up something that was put there 50 years ago? Why blame homeowners for what was there before? The concern is water under the bridge – what are we supposed to do if the phosphorous binds to the soil and won't get broken down? We can prevent more from going in, but that's already being done, at least what is reasonable with the technology we have. I think it is used as a battle cry to just get more regulation put in, when enough is already being done.

I would rather not slip and fall and break my neck [instead of reducing salt on pavement].

I hadn't thought about washing cars on lawns; I recycle my motor oil. My yard is too small to create structures, but my yard is so flat that I don't really have runoff problems. I clean up after my dog, but I pitch it in a big field on my property. I don't think it hurts anything; it's just a little dog.

We've reduced our laundry soap use per load by 25% because it is harder on your machine to use more detergent.

I use kitty litter instead of salt, but the state always uses salt on the streets; so what are they going to do about it? When it snows, they still use salt. If I have to cut back, then the state should have to as well. It feels like the state is kicking you in the teeth.

Education

Although education was not a topic specifically discussed in the focus groups, the need for more general public education was brought up frequently enough that it warrants discussion here. Focus group participants generally agreed that the public is not fully aware of steps they can take to help improve water quality. A majority of the participants supported the idea of having DNREC place greater emphasis on educating the public about water quality and measures that individual homeowners can take to prevent pollution. Several participants noted the importance of procedure in presenting environmental information to the public and encouraged DNREC to use radio announcements or other methods that would not appear "preachy." Many focus group participants remarked that the general public does not engage in certain environmentally friendly behaviors because they become lackadaisical and need reminders. Although the focus groups acknowledged that there would always be some people who would not change their behavior, they felt that, as a whole, people might be receptive as long as they are given rationales for why behavior changes are necessary or why taxes might need to be increased. The general perception was that as long as people feel like they are being presented options and feel as though they have some choice, they will be open to actions they can take to improve water quality.

> *I would still go back that there is some value for DNREC to educate and provide a rationale for implementing ways to go about preventing pollution of our resources. Provide rationale for why we should do these things, and what the alternatives are if you don't do these things, which eventually would be regulation if these things weren't done. We have to try education first. If it were done in a way that explains that the alternatives would have to be regulation, you would make people understand what the carrot is.*

> *If people were better informed and presented with options, through a referendum through a county, I think you would get a response if you got the word out. If it took some new tax structure, or whatever, I think if it came through a referendum, they would know what they were getting into. If they could vote on it, I think they would probably vote "yes."*

The information needs to be out there, but there will only be small percentages that do it. But, as a responsible humanity, the information needs to be out there, and we, as individuals, should then do as we see fit.

I'm afraid sometimes about what I don't know. I have distrust for people making decisions in the state.

A lot of it too, is education. It may sound corny, but when I was a Boy Scout, I learned some things about conservation and how to save water. I think those things stick with you. Kids need training and need to learn techniques so it sticks with them.

It goes back to the issue of education. All summer I haven't seen any kind of notice saying that I have to regulate my water usage because we are in a drought. You look for folks to alert you, and if you don't hear an alert, you tend to overuse. Conservation is something that needs to be reminded constantly.

We are notoriously a reactive rather than a proactive society, which is why I think education is important. It's like when a kid drowns; you put up a fence, but why not put up the fence first?

[The state] doesn't have a form to present all this stuff to people who aren't informed. You don't want to be singled out as an activist or troublemaker.

Major Findings

Overall, there were several major findings revealed by the focus groups on environmental attitudes of Delaware residents. The highlights from these groups are summarized below.

- Although focus group participants were generally aware of and concerned about environmental issues in Delaware, the specific issues discussed in these focus groups (sewer systems and septic systems, home-lawn care, and stormwater runoff) did not appear to be "top-of-mind" issues for most people.
- The focus groups revealed a high level of concern for the environment when the issues were in the abstract or in another individual or organization's realm. However, when the actions of personal homeowners were indicated as a source of water pollution, most individuals in the focus groups became defensive and initially sought to justify their actions or blame others. However, there was an underlying sense of guilt and acknowledgement that one's own actions do indeed contribute to water quality degradation in Delaware. When developing messages to promote behavior changes, DNREC should develop messages that are informative but do not personally attack the public.
- The focus groups felt that the public tends to have an "out-of-sight, out-of-mind" attitude. They don't tend to think about what runs into the sewer, or what happens when they flush the toilet.
- There is a general distrust of state government. The focus group participants felt that the state does not always set a good example for the public; for example, homeowners are

encouraged to use less salt on their pavement in winter, yet residents see the state using salt on the highways in large quantities.

- Concern for environmental issues appeared to be generated by "visible" problems. For example, many focus group participants became concerned about water quality after noticing a chlorine smell in the water. When promoting behavior changes, DNREC should consider focusing on "visible" problems that result from water pollution. Many individuals said that they only pumped their septic system when it backed up, another "visible" result of poor maintenance. DNREC could promote pumping septic systems on a regular basis not only as a way to potentially improve water quality but also to prevent possible septic system failures.
- Costs are very important considerations for Delaware residents when evaluating methods to improve water quality in the state. The focus groups desired a clear rationale if further costs are to be incurred. Also, the focus groups reiterated that people tend to support the most inexpensive option.
- There is a general understanding that individual actions can cause pollution, but the focus groups overall felt that industry and large corporations contribute more to water pollution than do individual homeowners. It did not appear that people generally think about the impact of the *collective* actions of homeowners on water quality.
- Many focus group participants felt that industry and developers are not being held to the same standard as they are. They felt that the large companies are allowed to get away with more than they should. Therefore, the attitude seemed to be: why is the state coming after the individuals?

- The focus groups did not highly support the use of stormwater ponds in housing developments. Many individuals felt that the ponds are mosquito breeding areas and a hazard to small children. When informed about other stormwater structures, the focus groups showed higher support for rain gardens, swales, and constructed wetlands.
- There is a general feeling of lack of control, or lack of having a voice in Delaware. The focus groups felt that overdevelopment and overpopulation are major concerns, and that the state does not have a good strategy for planning its urbanization projects. Many individuals felt that the state doesn't place adequately stringent regulations on the developers and corporations. They also felt the need for greater interaction and coordination at all levels- counties, state, citizens, etc. With this feeling of lack of control expressed in the focus groups, it is likely a significant proportion of the public feels like any environmental actions they take don't matter and won't have a significant impact.
- Overall, the focus groups felt that urbanization in Delaware is occurring without a strategic plan. The public needs to know *why* certain behavior changes are required of them before they will willingly change.
- Many individuals felt like they shouldn't have to "pay for someone else's mess" (such as the water quality problems created by the developers and corporations). Several individuals questioned why they should have to pay more (taxes or fees), when the developers (and other larger entities) are contributing so much to the amount of impervious surface and runoff.
- Among some residents, there is a high amount of trust in the regulatory process. For example, many focus group participants felt that if the EPA designates certain fertilizers

and pesticides as "safe," they should not have to worry about what is applied to their lawn.

- Aesthetics are very important to some people in maintaining their lawn. Therefore, it may be difficult to change behaviors unless the behaviors allow the aesthetic characteristics of the lawn to remain. DNREC should consider promoting natural lawn care practices that will be aesthetically pleasing to the public, especially in areas with neighborhood associations where residents may be required to maintain their lawn at a certain standard.
- Time and cost associated with improving the environment concerned many focus group participants. DNREC should consider promoting environmentally conscious behavior changes that are relatively effortless and providing reminders to the public.
- Health and safety issues were among the top concerns for many focus group participants who engaged in environmentally conscious behaviors. DNREC should consider focusing on issues that affect the public directly as a means to change behavior. For example, the agency could focus on children's safety when encouraging homeowners to use less fertilizer and/or pesticides on their lawn, or the health risks associated with swimming in polluted waters. People need to realize that their actions can directly impact themselves and their family.
- The focus groups supported increased education efforts by DNREC. A majority of the focus group participants felt that the general public is virtually unaware of measures they can take to help improve water quality. The perception is that people need constant reminders to engage in behaviors that are environmentally conscious. A related concern

was the inundation of too much information. The focus groups felt that DNREC should consider focusing on a few key behaviors it would like the public to change.

- Although many of the focus group participants felt that the general public is unaware of many of the issues discussed in this report, they also believed that most people would consider changing their behavior if they were presented with options, frequently reminded of the options, the options were convenient, they understood the rationale behind the options, and were given the chance to debate and vote on certain measures through a referendum.