



A survey for Delaware drivers on roadside vegetation and management issues.



Enhancing Delaware Highways

Delaware is indeed a Small Wonder. The natural landscape of the First State is beautifully diverse, from Wilmington's surrounding woodlands and wetlands to the grassy dunes of Dewey. In keeping with the spirit of the state's "*Livable Delaware*" program, the Department of Transportation has launched an initiative called Enhancing Delaware Highways. This cooperative program capitalizes on the beauty of Delaware's regional landscape heritage by making it a key feature of roadside rights-of-way.

This survey was designed to learn how you as a Delaware driver feel about roadside vegetation. First, we want to thank you for taking the time to complete the survey and mail in your response. We received six hundred eighty four survey responses, which is a response rate of 57%. This booklet is a summary of the responses. For the first sixteen scenes in question 1, you will see the percent of respondents who circled each number (percentages listed directly below the number) and you will also see the average response. Question 2 is reported in the same way. For the rest of the questions we are reporting the percentage of respondents who circled a particular response.

Conclusions from this survey are reported on the last several pages. Thanks again for your help in discovering driver preferences for roadside vegetation.



1 People often have different opinions about what they find attractive along the roadside. Spend a little time looking over all the photos first. Then rate each of these roadside scenes a Delaware driver might see from his or her car for their attractiveness on a scale of 1 to 10 from very unattractive to very attractive. You are welcome to add a comment if you want to explain or qualify your response.



Scene 1

Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	1%	3%	4%	15%	18%	18%	21%	7%	12%
Average Response=6.9									

Scene 2



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	1%	3%	6%	7%	10%	19%	22%	17%	14%
Average Response=7.3									

Scene 4



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	1%	1%	1%	2%	3%	7%	18%	25%	41%
Average Response=8.7									

Scene 3



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	0%	2%	2%	4%	6%	10%	26%	24%	25%
Average Response=8.1									

Scene 5



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
11%	9%	9%	11%	15%	20%	12%	7%	3%	3%
Average Response=4.9									

Scene 6



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
0%	0%	2%	3%	4%	8%	16%	25%	21%	21%
Average Response=7.9									

Scene 8



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	0%	2%	4%	5%	10%	18%	27%	18%	15%
Average Response=7.6									

Scene 7



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	1%	3%	3%	6%	11%	22%	23%	18%	12%
Average Response=7.4									

Scene 9



Very Unattractive			Neutral				Very Attractive		
1	2	3	4	5	6	7	8	9	10
1%	1%	4%	5%	6%	11%	14%	20%	18%	20%
Average Response=7.5									

Scene 10



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
1%	0%	3%	5%	7%	13%	25%	22%	14%	10%
Average Response=7.2									

Scene 12



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
4%	6%	11%	12%	14%	21%	16%	10%	4%	2%
Average Response=5.4									

Scene 11



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
3%	4%	10%	12%	12%	21%	18%	13%	4%	3%
Average Response=5.7									

Scene 13



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
0%	1%	1%	1%	4%	6%	18%	31%	22%	16%
Average Response=7.9									

Scene 14



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
1%	3%	6%	8%	14%	20%	19%	16%	9%	4%
Average Response=6.3									

Scene 16



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
1%	2%	4%	7%	10%	17%	22%	20%	10%	7%
Average Response=6.8									

Scene 15



Very Unattractive				Neutral				Very Attractive	
1	2	3	4	5	6	7	8	9	10
11%	11%	13%	15%	17%	16%	9%	6%	1%	1%
Average Response=4.5									

2 Along roadsides, large trees and shrubs must be controlled to allow drivers to see signs and cars at intersections. Rate the following methods of vegetation control (see these three photos) for their attractiveness to the driver from very unattractive to very attractive by circling the appropriate number.

Vertical arm mower that trims branches back



Very Unattractive		Neutral						Very Attractive	
1	2	3	4	5	6	7	8	9	10
30%	18%	16%	11%	10%	7%	4%	3%	1%	0%
Average Response=3.1									

Herbicides that burn back leaves



Very Unattractive		Neutral						Very Attractive	
1	2	3	4	5	6	7	8	9	10
18%	11%	14%	12%	10%	12%	8%	9%	4%	2%
Average Response=4.4									

Complete tree or limb removal



Very Unattractive		Neutral						Very Attractive	
1	2	3	4	5	6	7	8	9	10
13%	9%	10%	11%	11%	14%	13%	12%	4%	3%
Average Response=5.0									

3a

The highest priority for DeIDOT is to provide drivers with a safe, reliable road system. But, the way a place looks is also important to many people. So, DeIDOT should spend money on roadside enhancement. Circle the response that most closely fits your opinion.

Strongly disagree	Disagree	Agree	Strongly Agree
2%	7%	76%	15%

3b

If you believe money should be spent on roadside enhancement, please rate the following sources of funding for roadside enhancements as to their acceptability from very unacceptable to very acceptable by circling the appropriate number.

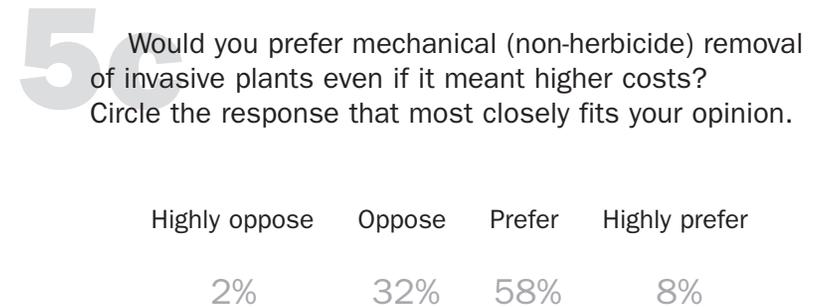
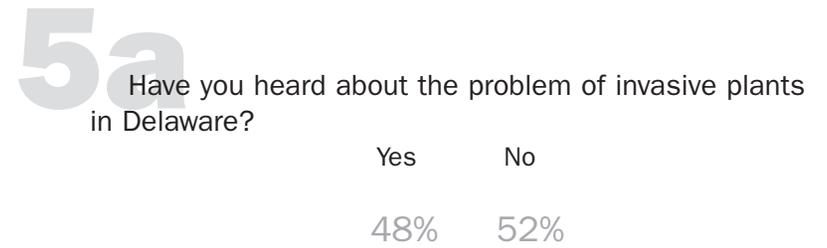
	Very Unacceptable	Unacceptable	Acceptable	Very Acceptable
DeIDOT operating budget	4%	10%	70%	16%
Federal enhancement money	2%	7%	54%	37%
Community transportation				
Funds (money allocated to each legislator for projects in his/her district)	5%	11%	59%	25%
Community/neighborhood Dues (local neighborhoods financing their own enhancement projects)	22%	27%	40%	11%

4

There are many factors that could influence the way we manage roadside environments such as money, environmental sensitivity, and personal preferences. Rate your level of agreement or disagreement considering the management of roadsides from highly disagree to highly agree by circling the appropriate number.

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
Keep pesticide use to a minimum.	1%	5%	14%	47%	33%
Use pesticides freely to keep costs down.	34%	41%	17%	7%	1%
Use no pesticides at all.	14%	37%	29%	10%	10%
Keep maintenance costs to a minimum.	4%	21%	32%	34%	9%
Spend what is needed to keep the roadside attractive.	3%	11%	23%	53%	10%
Provide beautiful flowers in highway medians.	2%	7%	24%	45%	22%
Maintain trees and shrubs to provide colorful displays of fall foliage	1%	2%	13%	55%	29%
Use plants that match the look of plants native to DE.	2%	5%	28%	44%	21%

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
Use plants native to DE.	2%	2%	28%	42%	25%
Use only plants native to DE.	5%	34%	42%	15%	4%
Mow all turfgrass areas regularly.	1%	8%	18%	50%	23%
Allow grasses to reach a meadow height with edges that are kept neatly mowed.	5%	16%	29%	40%	10%



Demographic Information

1. Your sex:

39% Male

61% Female

2. In what year were you born?

Median=1954

3. How long have you lived in DE?

Median=50 years

4. What is the highest level of education you have completed thus far?

2% Less than high school degree

40% High school degree or equivalent degree

31% Post high school study or 2-year degree

17% 4-year college degree

10% Post college advanced degree

5. What was your approximate household income (before taxes) last year?

10% Less than \$25,000

26% \$25,000 to \$49,000

25% \$50,000 to \$74,999

27% \$75,000 to \$124,000

12% \$125,000 or more

6. In which county in Delaware do you live?

26% Kent

34% New Castle

40% Sussex



Conclusion

The Enhancing Delaware Highways Survey supports the conclusion that color is a desirable attribute for roadside vegetation. The most preferred scenes all contained plants with color provided by either flowers, fruit or foliage except the two detention pond scenes, which both include water, another highly desirable landscape component.

Intensively planted traffic islands (Scenes 3 and 4) were rated as the most attractive roadside scenes. Large masses of perennials in a median planting (Scene 8) require somewhat less intensive maintenance and were also rated highly, although not as highly as the traffic island plantings.

Color does not need to come from flowers. Fruit in Scene 13 and foliage in Scene 6 provided desirable characteristics that resulted in rating almost as high as those of the traffic islands.

The DeIDOT wildflower program consisted primarily of cosmos in the median (represented by Scene 7) prior to 1998. This is an expensive method of providing color

along the roadside. Cosmos is an annual plant requiring soil treatment, site preparation, seeding and weed control every year.

While Scene 7 was considered attractive, it was significantly less attractive than the planted traffic islands (Scenes 4 and 3) and the shrub masses (Scenes 13 and 6), which are established once and maintained with a modest maintenance regime.

Respondents are somewhat more supportive of colorful displays from trees and shrubs (83%) than from flowers in highway medians (67%). This may be due to the perceived cost of maintaining median plantings of flowers.

Detention ponds are considered attractive components along the roadside. They are even more desirable when surrounded by vegetation (Scene 9).

Mowed turf is the default vegetation along Delaware roadsides. The green mowed turf infield (Scene 1) received a moderately attractive rating of 6.9. The least preferred scene was Scene 15, the unmowed roadside edge. However, respondents rated the unmowed roadside with a mowed edge (Scene 16) almost as highly (6.8) as Scene 1. The contrast between Scene 1 and Scene 16 was not significant. DeIDOT can reduce maintenance costs by mowing an edge in turf rights-of-way and allowing the rest of the right-of-way to grow tall.

Respondents agreed (72%) that all turfgrass areas should be mowed regularly, but a half (50%) also agreed with allowing grasses to reach a meadow height with edges that are kept neatly mowed. An additional 29% of respondents were neutral about his practice, so only 19% of respondents disagreed with the practice of mowing an edge.

Enhancing Delaware Highways Survey responses support the expenditure of money on roadside enhancement (91% agree or strongly agree). Only 15% of respondents disagree with the statement to "spend what is needed to keep the roadside attractive."

A large majority of respondents found expenditures from the DelDOT operating budget, federal enhancement money and community transportation funds acceptable but only half the respondents found community/neighborhood dues an acceptable source of roadside funds. Overall, respondents believe "someone else" should pay for roadside enhancements.

While most respondents want pesticide use to be kept to a minimum (80%) and do not want pesticides used freely (75%), they are supportive of some pesticide use with only 20% agreeing with no pesticide use at all.

When asked about controlling invasive plants on roadsides, most respondents (77%) approve of the use of pesticides, in this case herbicides. In fact, there is less support for the use of mechanical (non-herbicide) removal of invasive plants (66%) if it means higher costs. Respondents appear to be more sensitive to cost issues than reducing the use of pesticides.

On the subject of native plants, respondents support the use of native plants, but equally support the use of plants that match the look of plants native to Delaware and few respondents (19%) want to use only plants native to Delaware in roadside plantings.

Thank you

This survey has exposed important public opinions about management of vegetation on the roadside in Delaware. It will help inform policy makers in Delaware and decision makers in DelDOT. Thanks once again for your help with this important effort.

