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STATE HIGHWAY ADMINISTRATION

RESEARCH REPORT

DEVELOPMENT OF A SAMPLING PROTOCOL FOR CONDITION ASSESSMENT

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**UNIVERSITY OF MARYLAND
COLLEGE PARK**

**Project number MD-07-SP608B4H
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16. Abstract <p>This report addresses the development of a sampling protocol for condition assessment of selected assets as a function of the desired precision and level of confidence in the estimates of levels of service (LOS). The focus is on the precision and confidence level at each maintenance shop. Recommendations are also provided to conduct field surveys of the condition of selected assets that minimize the uncertainty in the estimates of LOS. The scope of work included the evaluation of the effect of sample size (i.e., number of ½- mile roadway sections) on the accuracy of estimates of level of service. The distribution of sample sizes among the various maintenance shops accounts for factors such as roadway functional classification, average annual daily traffic (AADT), geographical location, and the approximate distribution of assets in the system. Sensitivity studies were conducted to evaluate the effect of each of the aforementioned parameters on the size and diversity of samples throughout the state of Maryland. It is expected that the implementation of the proposed sampling protocol will allow SHA to make reasonable inferences regarding the condition level of the entire asset population. More specifically, the goal would be to obtain reliable information such that SHA shops can prioritize areas of need and determine levels of funding, personnel, and equipment.</p>			
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Development of a Sampling Protocol for Condition Assessment

Project Report to

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Development of a Sampling Protocol for Condition Assessment Report

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Executive Summary

This report addresses the development of a sampling protocol for condition assessment of selected assets as a function of the desired precision and level of confidence in the estimates of levels of service (LOS). The focus is on the precision and confidence level at each maintenance shop. Recommendations are also provided to conduct field surveys of the condition of selected assets that minimize the uncertainty in the estimates of LOS. The scope of work included the evaluation of the effect of sample size (i.e., number of ½- mile roadway sections) on the accuracy of estimates of level of service. The distribution of sample sizes among the various maintenance shops accounts for factors such as roadway functional classification, average annual daily traffic (AADT), geographical location, and the approximate distribution of assets in the system. Sensitivity studies were conducted to evaluate the effect of each of the aforementioned parameters on the size and diversity of samples throughout the state of Maryland.

A MS Excel spreadsheet has also been developed to determine the size and diversity of samples according to the proposed sampling protocol. This spreadsheet is delivered to SHA along with this report. The goal is to allow SHA to determine the size and diversity of samples based on updated information on the variability in estimates of LOS of service for each asset in the system. Updated estimates of LOS from the most recent peer review program can be incorporated into the spreadsheet to replace peer review data from the earliest year. In addition, the spreadsheet could be modified, if needed, to account for changes in AADT, number of centerline miles, and roadway functional classification.

It is expected that the implementation of the proposed sampling protocol will allow SHA to make reasonable inferences regarding the condition level of the entire asset population. More specifically, the goal would be to obtain reliable information such that SHA shops can prioritize areas of need and determine levels of funding, personnel, and equipments.

Objectives and Scope

The objective of this study was to develop a sampling protocol for condition assessment of selected assets (e.g., line striping, drainage, signs) and provide recommendations for data collection as a function of the desired precision and level of confidence. The scope of work included the evaluation of the effect of sample size (i.e., number of ½- mile roadway sections) on the accuracy of estimates of level of service. The distribution of sample sizes among the various maintenance shops accounts for factors such as roadway functional classification, average annual daily traffic (AADT), geographical location, and the approximate distribution of assets in the system. The implementation of the proposed sampling protocol will allow the Maryland State Highway Administration (SHA) to make reasonable inferences regarding the condition level of the entire asset population. More specifically, the goal would be to have reliable information such that SHA shops can prioritize areas of need and determine levels of funding, personnel, and equipments.

Background

SHA has established a Peer Review Measurement Program to evaluate the condition of SHA's highways and roadsides, as well as the level of service provided to customers. The 'level of service' (LOS) is based on the percentage of elements/assets that meet or exceed predefined/desired maintenance conditions. This percentage is calculated for each element. Individual elements are weighted within each 'category' (which consist of groups of common elements) in order to calculate category LOS. The four categories of interest in this study are: Shoulder, Drainage, Traffic & Safety, and Roadside. Then, each category is weighted to obtain an overall LOS for each roadway section evaluated. The system LOS (interstate, primary, and secondary) is then calculated, weighted by the percentages of each type of road miles within each county. The statewide LOS is weighted by percentages of road miles in each county.

Data necessary to calculate LOS (i.e., the condition of assets currently maintained by SHA) is obtained from field surveys conducted on each of the SHA's 28 shops. These evaluations are performed from May/June through October. Once statewide field surveys are completed, the data is entered into a database. The data is validated and LOS at the shop, district, and state levels are calculated. Field surveys are performed by three-member teams comprised of maintenance personnel from various geographical areas. In some cases, each shop designates a 'host representative'- an expert in local conditions in his/her county- to accompany the evaluation team. The teams spent two days evaluating the conditions of assets in each shop's area of responsibility. A total of approximately 65 randomly selected sites, each one-half mile in length, are evaluated during each review. This implies that, on average, approximately 1800 randomly selected one-half mile roadway sections are evaluated in each review cycle.

The drawback of using the proposed approach is that the sample size may not be representative (i.e., of sufficient size and diversity) to infer asset condition levels of the entire inventory. There is also a concern that such a condition assessment is a snapshot in time of an asset that in many cases is not a good representative of all functional conditions desired (i.e., rain, dark, etc.). Samples are selected randomly without taking into consideration factors such as roadway functional classification, AADT, and the uncertainty in previous estimates of LOS.

Proposed Sampling Protocol

Stratified Random Sampling

A sampling protocol was developed in this study based on the method of Stratified Random Sampling. This sampling approach divides the population, which in this case is composed of one-half mile roadway sections, into nonoverlapping subpopulations called strata. Random samples are collected from each stratum and combined into a single sample to estimate population parameters. Stratified random sampling assures that every subpopulation (stratum) is considered when formulating a sample. The number of required samples to obtain a desired precision and level of confidence in the estimate of the LOS of assets is calculated for each maintenance shop. The three basic parameters utilized to define strata for each shop were:

1. Functional classification of roadways (2):
 - Urban
 - Rural

2. AADT range (5):
 - 0 – 4999
 - 5000 – 9999
 - 10000 – 49999
 - 50000 – 74999
 - 75000 +

3. Assets in each category (29):
 - Shoulder: Joint Separation, Edge/Raveling, Nonpositive Drainage, Vegetation Growth, Potholes, Cracking, Distortion, Drop-off
 - Drainage: Ditches, Culverts, Catch Basins/Inlets, Curb/Gutter
 - Traffic & Safety: Regulatory Signs, Other Signs, Delineators, Pavement Markings, Line Striping, Concrete Barriers, Guardrail, Impact Attenuators
 - Roadside: Mowing, Vegetation Growth at Structure, Litter, Bush & Tree Control, Graffiti, Fence, Slopes, Landscaping, Debris.

Therefore, for each maintenance shop, a total of $2 \times 5 \times 29 = 290$ strata were utilized in the development of the sampling protocol. It is important to note that in this study centerline miles were used to determine sample sizes. The rationale was that most of the assets of interest are related to centerline miles rather than lane miles. Information on the number of centerline miles by maintenance shop, AADT range, and functional classification is presented in Appendix A.

The 28 maintenance shops evaluated correspond to the following:

- District 1: Dorchester, Somerset, Wicomico, and Worcester
- District 2: Caroline, Cecil, Kent, Queen Annes, Talbot
- District 3: Fairland, Gaithersburg, Laurel, Marlboro
- District 4: Golden, Hereford, Owings, Harford
- District 5: Annapolis, Glen Burnie, Calvert, Charles, St. Mary's
- District 6: Allegany, Garret, Washington
- District 7: Carroll, Frederick, Howard

Determination of Sample Size and Distribution
Stratified Random Sampling Methodology

When Stratified Random Sampling is implemented, the number of samples selected from a subpopulation can be determined using various methods. The simplest method of selecting a stratum (subpopulation) size is to select an equal number of samples from each stratum ('Equal Samples'). Alternately, the stratum sample size may be taken as proportional to the size of the stratum population relative to the total population ('Proportional Sampling'). An alternative method is the 'Neyman Allocation' approach, a method that is based on the assumption that sampling costs are equal among strata. In addition, Neyman Allocation increases the precision of the estimates of population parameters when the difference between stratum sizes and stratum variances are great. Thus, more samples are selected from large strata and strata that are more heterogeneous. Neyman Allocation was utilized in this study because of the relatively large differences in stratum sizes and large variances of LOS from year to year. The implication is that the implementation of a sampling protocol based on Neyman Allocation will result in larger sample sizes for strata that correspond to: (a) large numbers of centerline miles, and (b) assets that have large variability in their estimates of LOS.

Neyman Allocation requires that the total sample size, n , be determined by asset and maintenance shop based on the following formula (which applies to sampling without replacement):

$$n = \frac{(\sum N_s s_s)^2}{N^2 D^2 + \sum N_s s_s^2} \quad (1)$$

where N is the total number of units in each maintenance shop (i.e., total number of 1/2-mile roadway sections); N_s – total number of units per stratum; s_s^2 is the unbiased estimator of population variance for each stratum; and D is the desired variance as a function of precision, d , and level of reliability, z ($D = d^2/z^2$). In this context, d corresponds to the precision in the estimate of the LOS for each asset in a given stratum. The level of reliability, z , is related to the desired confidence level in the estimates of LOS. For example, $d = 3\%$ and $z = 1.96$ implies that for each asset, the 95% confidence limits on the best estimate of the LOS are equal to the LOS rating +/- 3%. For a given precision, the confidence levels at the district and statewide levels would be at least equal to those specified for each asset in each maintenance shop. In addition, the parameter N_s is a function of location (i.e., maintenance shop), AADT range, and functional classification. This implies that N_s is the same for all assets within a category.

Once the required sample size is determined for a given asset and shop, n , it is later proportioned to a stratum sample size (i.e., n may be calculated for dropoff in a given shop and then proportioned to AADT ranges and functional classification strata in that shop). The stratum sample size, n_s , can be calculated based on the following expression:

$$n_s = \left(\frac{N_s s_s}{\sum N_s s_s} \right) * n \quad (2)$$

In the implementation of Eqs. 1 and 2, unbiased estimators of the population variance for each stratum were determined from estimates of LOS obtained from peer reviews conducted from 1998 to 2005 (excluding 2003¹). Because a single estimate of LOS is obtained on any given year, variances in LOS from year to year were utilized in the calculations. Data on estimates of LOS from previous years is presented in Appendix B. As explained in subsequent sections of these reports, the year-to-year variances based on previous estimates of LOS controlled in most cases the sample size for a given stratum.

Required Sample Size per Maintenance Shop

Each combination of functional classification and AADT range will yield different stratum sample sizes, n_s , for each asset in a given shop. This implies that in order to ensure that the desired precision and level of reliability is achieved in the estimate of LOS for all assets, the maximum calculated value of n_s among all assets should be selected. In addition, the total number of ½-mile roadway sections for a district will be equal to the sum of the individual number of sections for each maintenance shop. Taking the maximum of the required samples ensures that every estimate of LOS has a precision that is greater than or equal to the desired precision, i.e., LOS ratings for the majority of assets will be more precise. However, this approach may be too conservative, especially when the asset that controls the sample size requires a disproportionately large number of samples when compared to those required for the majority of the assets in a given maintenance shop. Instead, one may decide to:

- (1) Base sample sizes on the maximum value of n_s selected from a smaller group of assets. The drawback of selecting the maximum value of n_s from a smaller group of assets is that the precision in the estimates of the LOS may be smaller than desired for those assets that do not form part of this group; or
- (2) Utilize a statistical measure of stratum sample sizes for each shop, functional classification, and AADT range. Statistical measures may include averages or percentile values of n_s . The drawback of selecting a value of n_s other than the maximum among all assets is that for several assets, the precision in the estimates of the LOS will be smaller than desired.

These two alternatives were evaluated and the results are presented in subsequent sections of this report.

Geographical Breakdown/Approximate Distribution of Assets

The approximate distribution of assets in the system was included in the calculations based on information regarding the elements/assets that were most commonly seen in Eastern Shore, Central Maryland, Southern Maryland, and Western Maryland during the 2006 Peer Review (see Appendix C). In the development of the proposed sampling protocol, the unbiased estimates of the population variances of Eqs. 1 and 2 were increased for those elements/assets that were most commonly seen in a given region. Thus, if an element appears on most of the surveyed sections that belong to a geographical region, then more samples should be taken in this region to ensure that the common element is effectively evaluated. It is important to note that this approximate distribution of assets does not correspond to the actual distribution of assets in the system.

¹ Field surveys were not conducted in 2003.

Instead, it is based on the relative frequency in which a given asset was observed in the 2006 Peer Review data.

Because unbiased estimates of population variances in Eqs. 1 and 2 can be viewed as weight factors that are applied to each stratum, a Geographical Influence Factor (GIF) was applied to each element that was commonly seen in a given region to increase its variance. Sensitivity studies were conducted to evaluate the influence of the GIF on the required number of samples for each maintenance shop. GIF values that varied from 0% to 50% were utilized. For instance, a GIF of 10% implies that the variance for a given asset was increased by 10%. Ideally, a procedure could be developed to calculate the GIF factor based on the likelihood of seeing the particular asset in any given region. However, this would require detailed information on the actual distribution of assets/elements in the system. Once this information is available, a more accurate value of GIF could be calculated.

Effect of Climate on the Determination of Required Sample Sizes

Climate was implicitly considered in this approach by accounting for two main factors: geography and the variance in the LOS ratings for each asset based on peer review data from previous years. Because climate and geography are related to one another, a sampling protocol that determines size and diversity of samples for every maintenance shop implicitly accounts for the effect of climate in the condition of assets. In addition, data on LOS rating from the last 8 years (from 1998 to 2005, excluding 2003) was utilized to determine sample size and diversity for each maintenance shop. This data from previous years was influenced by the effect of climate in the condition of the assets for a particular region. The recommendation for future field surveys is to update the variances by replacing data from the earliest available year, e.g., 1998, with updated information from the most current peer review (i.e., 2006). In this way, relatively recent variations in climate and their effects on the condition of assets in the system can be incorporated into the selection of sample sizes for future peer reviews.

Implementation of the Proposed Sampling Protocol

The following example is presented to illustrate the implementation of the proposed sampling protocol. In each case, the desired precision level is 5%, the level of confidence 95%, and the GIF 0%. Sample sizes for each maintenance shop, functional classification, and AADT range were selected based on three approaches:

1. The asset with the largest number of required samples,
2. the asset with the largest number of required samples from a selected group of assets,
and
3. the average number of required sample sizes for all assets in a given stratum.

1. Sample Size Based on Asset with the Largest Number of Required Samples

Table 1 presents a summary of the number of sample sizes and their distribution for each maintenance shop based on the information presented in the previous paragraph. For instance, in Calvert County, a total of 86 ½-mile roadway sections should be surveyed, where 34 should correspond to urban roads and 52 to rural roads. Out of the 34 sections of urban roads, 11 should be randomly selected from roads with AADT from 0 to 4999, 5 from roads with AADT from 5000 to 9999, and 17 from roads with AADT from 10000 to 49999. Out of the 52 sections of

rural roads, 18 should be randomly selected from roads with AADT from 0 to 4999, 9 from roads with AADT from 5000 to 9999, and 24 from roads with AADT from 10000 to 49999. An alternative way of presenting the information in Table 1 is shown in Table 2 and Figure 1.

Table 1 – Required Number of Sample Sizes for Each Maintenance Shop

SAMPLE SIZE														
CI = 95%	1.960	d= 5					geographical influence factor: 0%							
	Urban	Urban	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural				
	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT				
County	0-4999	5000-9999	10000-49999	50000-74999	75000+	0-4999	5000-9999	10000-49999	50000-74999	75000+	Total	Total	Total	Total
Dorchester	2	3	2	0	0	61	4	11	0	0	6	76	82	
Somerset	4	2	4	0	0	48	9	13	0	0	10	70	80	
Wicomico	2	3	12	0	0	27	1	8	0	0	18	36	53	
Worcester	3	1	7	0	0	23	11	6	0	0	11	40	50	
DIST. 1 TOTALS	10	9	25	0	0	160	24	38	0	0	44	222	266	
Caroline	0	0	0	0	0	36	14	7	0	0	0	57	57	
Cecil	11	6	11	0	0	31	26	15	0	0	29	72	101	
Kent	1	0	1	0	0	62	8	4	0	0	3	74	77	
QA	1	0	0	0	0	28	5	10	1	0	2	44	46	
Talbot	3	5	16	0	0	73	22	50	0	0	25	145	169	
DIST. 2 TOTALS	16	12	29	0	0	230	75	86	1	0	58	393	450	
Mont/Fairland	2	4	39	8	6	0	5	2	0	0	59	7	66	
Mont/Gaithersburg	0	2	19	2	6	6	6	2	0	1	29	16	44	
PG/Laurel	4	3	41	4	15	0	0	2	0	1	66	3	68	
PG/Marlboro	6	4	31	10	9	5	6	5	1	0	60	18	77	
DIST. 3 TOTALS	11	13	130	24	35	12	17	11	1	2	213	43	256	
Balt/Golden	0	5	39	3	5	0	2	2	0	0	51	4	56	
Balt/Hereford	1	3	7	0	3	7	5	2	2	0	14	17	31	
Balt/Owings	2	2	22	4	10	0	2	2	0	0	40	5	44	
Harford	2	3	18	0	0	12	11	8	0	0	23	31	54	
DIST. 4 TOTALS	6	12	86	7	18	19	20	15	2	0	128	56	185	
AA/Annapolis	6	5	17	6	4	8	4	12	0	3	39	27	66	
AA/Glen Burnie	4	4	27	5	8	0	0	0	0	0	49	0	49	
Calvert	11	5	17	0	0	18	9	24	0	0	34	52	86	
Charles	2	3	16	3	0	41	17	23	0	0	24	81	105	
St. Mary's	2	0	7	0	0	26	15	11	0	0	9	53	62	
DIST. 5 TOTALS	25	18	85	15	11	93	46	71	0	3	154	213	367	
Allegany	10	6	14	1	0	24	9	11	0	0	30	43	74	
Garret	0	0	0	0	0	51	7	17	0	0	0	75	75	
Washington	2	2	7	3	0	18	13	10	1	0	15	42	56	
DIST. 6 TOTALS	12	8	22	4	0	93	28	38	1	0	46	160	205	
Carroll	6	4	22	1	0	22	11	20	0	0	33	54	86	
Frederick	4	3	6	3	1	15	9	7	2	1	17	34	51	
Howard	2	1	12	3	7	4	2	5	2	0	25	13	38	
DIST. 7 TOTALS	13	8	39	7	8	41	22	32	3	1	74	101	175	
STATE TOTALS	93	81	414	57	72	648	233	290	10	6	717	1187	1904	

Table 2 – Percentage of Sections to be Sampled

Percentage of Sections to be Sampled										
County	Urban	Urban	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural
	AA DT 0-4999	AA DT 5000 -9999	AA DT 10000 -49999	AA DT 50000 -74999	AA DT 75000 +	AA DT 0-4999	AA DT 5000 -9999	AA DT 10000 -49999	AA DT 50000 -74999	AA DT 75000 +
DIST. 1										
Dorchester	30%	30%	30%	N.A.	N.A.	30%	30%	30%	N.A.	N.A.
Somerset	37%	37%	37%	N.A.	N.A.	37%	37%	37%	N.A.	N.A.
Wicomico	16%	16%	16%	N.A.	N.A.	16%	16%	16%	N.A.	N.A.
Worcester	12%	12%	12%	N.A.	N.A.	12%	12%	12%	N.A.	N.A.
DIST. 2										
Caroline	N.A.	N.A.	N.A.	N.A.	N.A.	19%	19%	19%	N.A.	N.A.
Cecil	26%	26%	26%	N.A.	N.A.	26%	26%	26%	N.A.	N.A.
Kent	23%	23%	23%	N.A.	N.A.	23%	23%	23%	N.A.	N.A.
QA	11%	11%	11%	11%	N.A.	11%	11%	11%	11%	11%
Talbot	67%	67%	67%	N.A.	N.A.	67%	67%	67%	N.A.	N.A.
DIST. 3										
Mont/Fairland	19%	19%	19%	19%	19%	19%	19%	19%	N.A.	N.A.
Mont/Gaithersburg	12%	12%	12%	12%	12%	12%	12%	12%	N.A.	12%
PG/Laurel	22%	22%	22%	22%	22%	22%	N.A.	22%	N.A.	22%
PG/Marlboro	18%	18%	18%	18%	18%	18%	18%	18%	18%	N.A.
DIST. 4										
Balt/Golden	24%	24%	24%	24%	24%	N.A.	24%	24%	N.A.	N.A.
Balt/Hereford	10%	10%	10%	10%	10%	10%	10%	10%	10%	N.A.
Balt/Owings	21%	21%	21%	21%	21%	N.A.	21%	21%	21%	N.A.
Harford	10%	10%	10%	10%	N.A.	10%	10%	10%	N.A.	N.A.
DIST. 5										
AA/Annapolis	15%	15%	15%	15%	15%	15%	15%	15%	N.A.	15%
AA/Glen Burnie	17%	17%	17%	17%	17%	N.A.	N.A.	N.A.	N.A.	N.A.
Calvert	33%	33%	33%	N.A.	N.A.	33%	33%	33%	33%	N.A.
Charles	26%	26%	26%	26%	N.A.	26%	26%	26%	N.A.	N.A.
St. Mary's	15%	15%	15%	N.A.	N.A.	15%	15%	15%	N.A.	N.A.
DIST. 6										
Allegany	17%	17%	17%	17%	N.A.	17%	17%	17%	N.A.	N.A.
Garret	19%	N.A.	N.A.	N.A.	N.A.	19%	19%	19%	N.A.	N.A.
Washington	10%	10%	10%	10%	N.A.	10%	10%	10%	10%	N.A.
DIST. 7										
Carroll	19%	19%	19%	19%	N.A.	19%	19%	19%	N.A.	N.A.
Frederick	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Howard	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

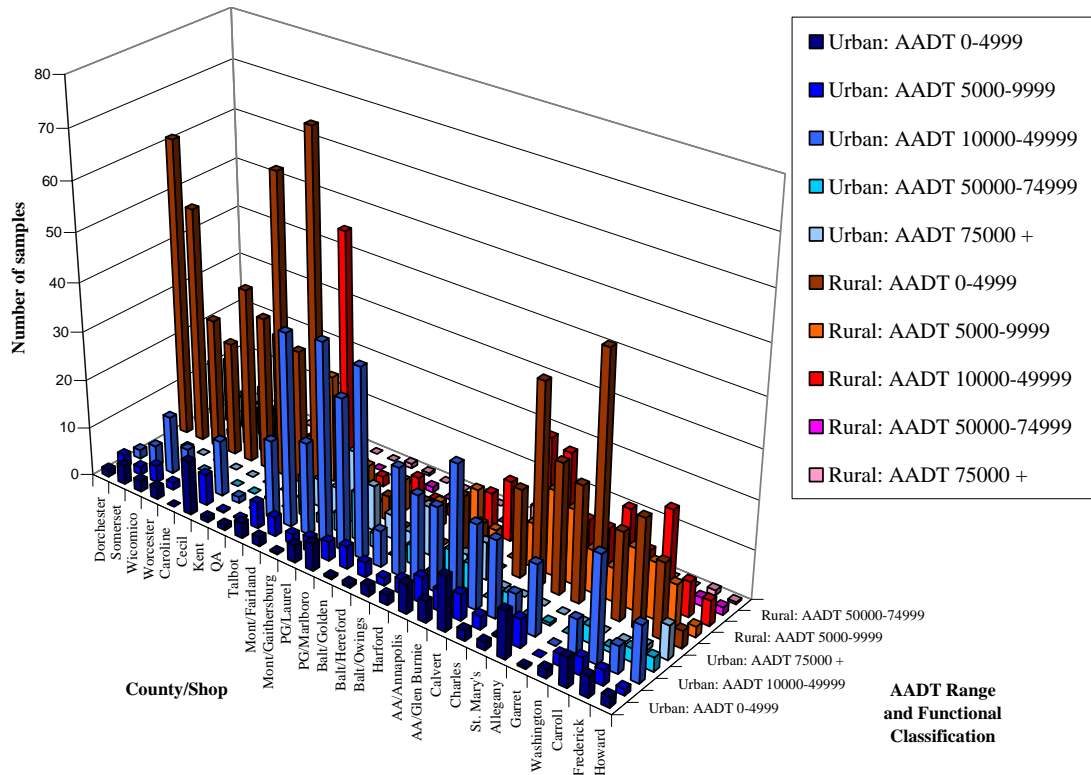


Figure 1 – Distribution of Required Number of Sample Sizes for Each Maintenance Shop

It can be observed from Table 1, Table 2, and Figure 1 that the implementation of a stratified random sampling methodology results in sample sizes that vary significantly from one maintenance shop to another. This is in contrast to current field surveys in which approximately the same sample size is selected for each maintenance shop. Information on the unbiased estimates of the square root of the variances (i.e., standard deviations), and the asset that controlled the required maximum number of samples per shop in this example is presented in Table 3. It can be observed that the assets that tend to control sample sizes for a given shop are those that exhibit relatively large variations in estimates of LOS from previous years. An evaluation of several scenarios conducted by the authors concluded that the variability in previous estimates of LOS was in several cases more important than total number of available ½-mile roadway sections in order to determine required sample sizes. Another relevant observation from Table 3 is that in some districts (e.g., District 4) the same asset controlled the required number of samples. These observations corroborate the notion that selecting sample sizes based on the asset with the largest required number of samples may be too conservative in most cases.

Table 3 – Controlling Standard and Asset per County

Controlling Standard Deviation and Asset for Each County; CI = 95%, d = 5%, GIF = 0%.			
County	Standard Deviation of LOS	Controlling Asset	Reference
DIST. 1			Shoulder Category
Dorchester	28	LS	JS Joint Separation
Somerset	29	FE	ER Edge/Raveling
Wicomico	20	LA	ND Nonpositive Drainage
Worcester	19	MO	VG Vegetation Growth
			PO Potholes
DIST. 2			CR Cracking
Caroline	21	CG	DS Distortion
Cecil	30	DL	DR Dropoff
Kent	26	VG	
QA	18	MO	Drainage Category
Talbot	58	FE	DI Ditches
			CL Culverts
DIST. 3			CI Catch Basin/ Inlet
Mont/Fairland	23	DL	CG Curb/Gutter
Mont/Gaithersburg	18	DE	
PG/Laurel	24	VG	Traffic & Safety Category
PG/Marlboro	25	DL	RS Regulatory Signs
			OS Other Signs
DIST. 4			DL Delineator
Balt/Golden	22	DL	PM Pavement Markings
Balt/Hereford	15	DL	LS Line Striping
Balt/Owings	19	DL	CB Concrete Barriers
Harford	20	DL	GR Guard Rail
			IA Impact Attenuators
DIST. 5			Roadside Category
AA/Annapolis	22	DL	MO Mowing
AA/Glen Burnie	20	LI	VS Veg Growth @ Structure
Calvert	29	FE	LI Litter
Charles	30	DL	BT Bush Tree Control
St. Mary's	22	PM	GF Graffiti
			FE Fence
DIST. 6			SL Slopes
Allegany	24	LS	LA Landscaping
Garret	25	CB	DE Debris
Washington	20	DL	
DIST. 7			
Carroll	26	LS	
Frederick	19	LA	
Howard	17	JS	

2. Sample Size Based on Asset with the Largest Number of Required Samples From a Selected Group of Assets

In this section, sample sizes are estimated based on the controlling asset selected from a smaller group of asset provided by OOM personnel. The smaller group of assets consists of: dropoff, ditches, culverts, catch basins/inlets, regulatory signs, other signs, pavement markings, line striping, guardrail, mowing, litter, bush & tree control, and debris. Two main factors contributed to the selection of a smaller group of assets to drive sample sizes:

1. The relative importance of assets/elements with respect to one another. For example, Table 3 suggests that delineators should drive the sample size in Charles County. While delineators are important, OOM would not have chosen this asset to drive the numbers at this location.
2. Some elements are rarely seen and evaluated in each shop's peer review. For example, in Talbot County an element such as fence was not seen in four out of the last seven peer reviews. In addition, OOM recognizes that fence was probably only seen once, twice at most, in each season where it was seen.

Information on the required size and diversity of samples based on the implementation of the proposed sampling protocol using a smaller group of controlling assets is provided in Tables 4 and 5, respectively. A comparison of Tables 1 and 4 demonstrates that the statewide sample size is reduced by approximately one third (33%) when the controlling asset is selected from the smaller group of assets. In addition, the diversity of samples also varies significantly (see Tables 2 and 5). Data on the asset that controls sample sizes for each maintenance shop is presented in Table 6. It can be observed that, on average, the standard deviations in Table 6 are approximately equal to 18 as opposed to 24, which is the average standard deviation of the controlling assets based on the total number of elements (see Table 3). This significant drop in standard deviations contributed to the decrease of 33% observed in the required number of statewide samples.

A more comprehensive picture of the effect of using a smaller group of assets on the statewide sample sizes is presented in Figure 2. This figure presents the variation of the ratio of the number of statewide samples obtained using a smaller group of assets to that obtained using the total number of assets as a function of the confidence level and desired precision for a geographical influence factor of 0%. It is evident that for a given confidence level, a relatively smaller number of statewide samples are necessary as the desired precision is increased.

Table 4 – Required Number of Sample Sizes for Each Maintenance Shop-Selected Asset

SAMPLE SIZE														
CI = 95%	1.960	d= 5					geographical influence factor: 0%							
	Urban	Urban	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural				
	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	Total	Total		
County	0-4999	5000-9999	10000-49999	50000-74999	75000 +	0-4999	5000-9999	10000-49999	50000-74999	75000 +	Urban	Rural	Total	
Dorchester	2	3	2	0	0	61	4	11	0	0	6	76	82	
Somerset	2	1	2	0	0	25	4	7	0	0	5	36	41	
Wicomico	2	3	9	0	0	20	1	6	0	0	13	27	40	
Worcester	3	1	7	0	0	23	11	6	0	0	11	40	50	
DIST. 1 TOTALS	8	8	20	0	0	129	20	30	0	0	35	178	213	
Caroline	0	0	0	0	0	22	8	5	0	0	0	35	35	
Cecil	5	3	5	0	0	13	11	6	0	0	12	30	42	
Kent	1	0	1	0	0	32	4	2	0	0	1	39	40	
QA	1	0	0	0	0	28	5	10	1	0	2	44	46	
Talbot	1	1	4	0	0	17	5	12	0	0	6	34	40	
DIST. 2 TOTALS	7	4	9	0	0	112	34	35	1	0	21	182	203	
Mont/Fairland	1	2	18	4	3	0	2	1	0	0	27	3	30	
Mont/Gaithersburg	0	2	19	2	6	6	6	2	0	1	29	16	44	
PG/Laurel	3	2	32	3	12	0	0	1	0	0	52	2	54	
PG/Marlboro	4	2	20	6	6	3	4	3	1	0	38	11	49	
DIST. 3 TOTALS	8	9	88	15	26	10	13	7	1	1	146	32	178	
Balt/Golden	0	4	31	2	4	0	2	2	0	0	41	3	45	
Balt/Hereford	1	2	5	0	2	5	4	2	1	0	10	12	22	
Balt/Owings	1	1	10	2	5	0	1	1	0	0	18	2	21	
Harford	1	1	9	0	0	6	5	4	0	0	11	15	26	
DIST. 4 TOTALS	3	8	55	4	11	11	12	8	2	0	81	33	114	
AA/Annapolis	3	3	10	4	2	4	2	7	0	2	21	15	36	
AA/Glen Burnie	4	4	27	5	8	0	0	0	0	0	49	0	49	
Calvert	5	2	7	0	0	7	4	10	0	0	14	22	36	
Charles	1	1	4	1	0	11	5	6	0	0	6	21	27	
St. Mary's	2	0	7	0	0	26	15	11	0	0	9	53	62	
DIST. 5 TOTALS	14	11	55	10	10	49	26	34	0	2	99	111	210	
Allegany	10	6	14	1	0	24	9	11	0	0	30	43	74	
Garret	0	0	0	0	0	37	5	12	0	0	0	54	54	
Washington	2	2	7	3	0	17	12	9	1	0	14	39	52	
DIST. 6 TOTALS	12	8	21	4	0	78	25	32	1	0	44	136	181	
Carroll	6	4	22	1	0	22	11	20	0	0	33	54	86	
Frederick	3	2	4	2	1	10	6	5	1	1	11	23	34	
Howard	1	1	7	2	4	2	1	3	1	0	16	8	24	
DIST. 7 TOTALS	10	7	33	5	5	35	19	28	2	1	60	85	145	
STATE TOTALS	62	54	282	38	51	424	147	174	7	4	487	757	1244	

Table 5 – Percentage of Sections to be Sampled-Selected Assets

Percentage of Sections to be Sampled										
	Urban	Urban	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural
	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT
County	0-4999	5000-9999	10000-49999	50000-74999	75000 +	0-4999	5000-9999	10000-49999	50000-74999	75000 +
DIST. 1										
Dorchester	30%	30%	30%	N.A.	N.A.	30%	30%	30%	N.A.	N.A.
Somerset	19%	19%	19%	N.A.	N.A.	19%	19%	19%	N.A.	N.A.
Wicomico	12%	12%	12%	N.A.	N.A.	12%	12%	12%	N.A.	N.A.
Worcester	12%	12%	12%	N.A.	N.A.	12%	12%	12%	N.A.	N.A.
DIST. 2										
Caroline	N.A.	N.A.	N.A.	N.A.	N.A.	11%	11%	11%	N.A.	N.A.
Cecil	11%	11%	11%	N.A.	N.A.	11%	11%	11%	N.A.	N.A.
Kent	12%	12%	12%	N.A.	N.A.	12%	12%	12%	N.A.	N.A.
QA	11%	11%	11%	11%	N.A.	11%	11%	11%	11%	11%
Talbot	16%	16%	16%	N.A.	N.A.	16%	16%	16%	N.A.	N.A.
DIST. 3										
Mont/Fairfax	9%	9%	9%	9%	9%	9%	9%	9%	N.A.	N.A.
Mont/Gaithersburg	12%	12%	12%	12%	12%	12%	12%	12%	N.A.	12%
PG/Laurel	18%	18%	18%	18%	18%	18%	N.A.	18%	N.A.	18%
PG/Marlboro	12%	12%	12%	12%	12%	12%	12%	12%	12%	N.A.
DIST. 4										
Balt/Golden	20%	20%	20%	20%	20%	N.A.	20%	20%	N.A.	N.A.
Balt/Hereford	7%	7%	7%	7%	7%	7%	7%	7%	7%	N.A.
Balt/Owings	10%	10%	10%	10%	10%	N.A.	10%	10%	10%	N.A.
Harford	5%	5%	5%	5%	N.A.	5%	5%	5%	N.A.	N.A.
DIST. 5										
AA/Annapolis	8%	8%	8%	8%	8%	8%	8%	8%	N.A.	8%
AA/Glen Burnie	17%	17%	17%	17%	17%	N.A.	N.A.	N.A.	N.A.	N.A.
Calvert	14%	14%	14%	N.A.	N.A.	14%	14%	14%	14%	N.A.
Charles	7%	7%	7%	7%	N.A.	7%	7%	7%	N.A.	N.A.
St. Mary's	15%	15%	15%	N.A.	N.A.	15%	15%	15%	N.A.	N.A.
DIST. 6										
Allegany	17%	17%	17%	17%	N.A.	17%	17%	17%	N.A.	N.A.
Garret	14%	N.A.	N.A.	N.A.	N.A.	14%	14%	14%	N.A.	N.A.
Washington	9%	9%	9%	9%	N.A.	9%	9%	9%	9%	N.A.
DIST. 7										
Carroll	19%	19%	19%	19%	N.A.	19%	19%	19%	N.A.	N.A.
Frederick	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Howard	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%

Table 6 – Controlling Standard and Asset per County-Selected Assets

Controlling Standard Deviation and Asset for Each County; CI = 95%, d = 5%, GIF = 0%.			
County	Standard		Reference
	Deviation of LOS	Controlling Asset	
DIST. 1			Shoulder Category
Dorchester	28	LS	DR Dropoff
Somerset	18	MO	
Wicomico	17	LI	Drainage Category
Worcester	19	MO	DI Ditches
			CL Culverts
DIST. 2			CI Catch Basin/ Inlet
Caroline	16	CL	
Cecil	18	PM	Traffic & Safety Category
Kent	17	MO	RS Regulatory Signs
QA	18	MO	OS Other Signs
Talbot	18	PM	PM Pavement Markings
DIST. 3			LS Line Striping
Mont/Fairland	15	MO	GR Guard Rail
Mont/Gaithersburg	18	DE	
PG/Laurel	21	LI	Roadside Category
PG/Marlboro	19	DR	MO Mowing
DIST. 4			LI Litter
Balt/Golden	19	MO	BT Bush Tree Control
Balt/Hereford	12	DR	DE Debris
Balt/Owings	12	DR	
Harford	13	CL	
DIST. 5			
AA/Annapolis	16	PM	
AA/Glen Burnie	20	LI	
Calvert	16	LI	
Charles	14	MO	
St. Mary's	22	PM	
DIST. 6			
Allegany	24	LS	
Garret	20	MO	
Washington	19	CL	
DIST. 7			
Carroll	26	LS	
Frederick	15	MO	
Howard	22	CL	

**RATIO OF REQUIRED NUMBER OF SAMPLES
GIF = 0%, Maximum Number of Samples of Strata**

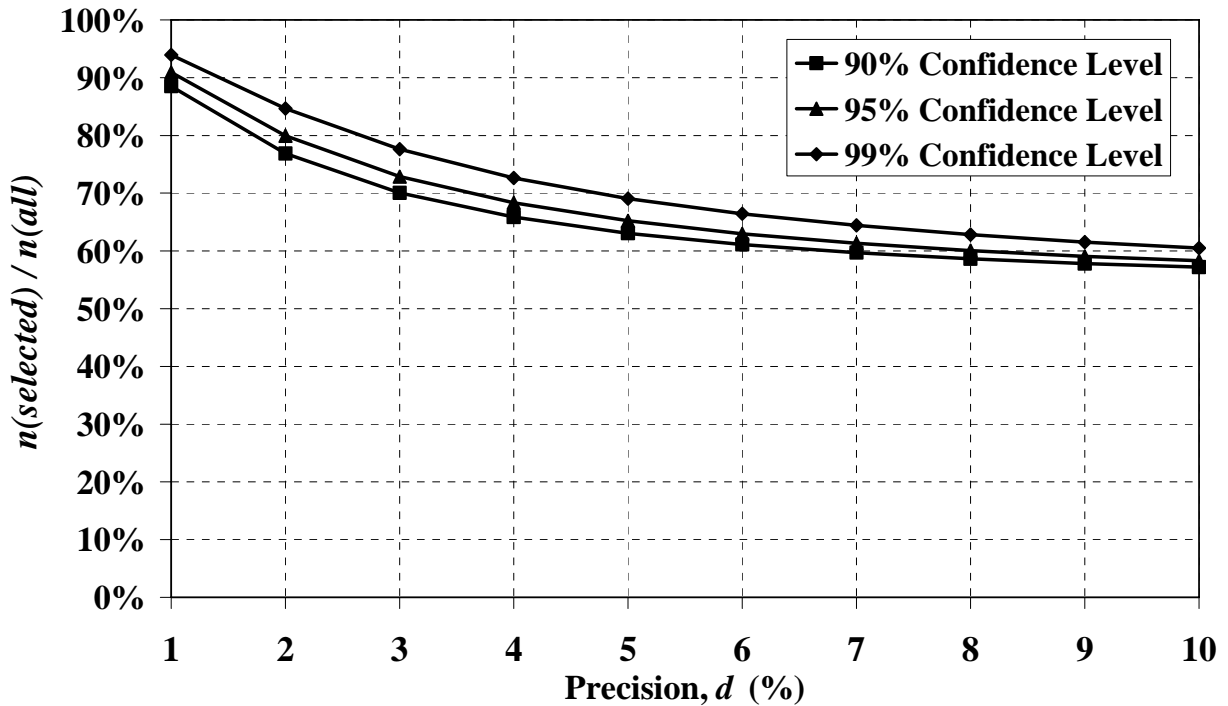


Figure 2. Ratio of Total Number of Statewide Samples Based on Selected Assets to the Total Number of Statewide Samples Based on All Assets.

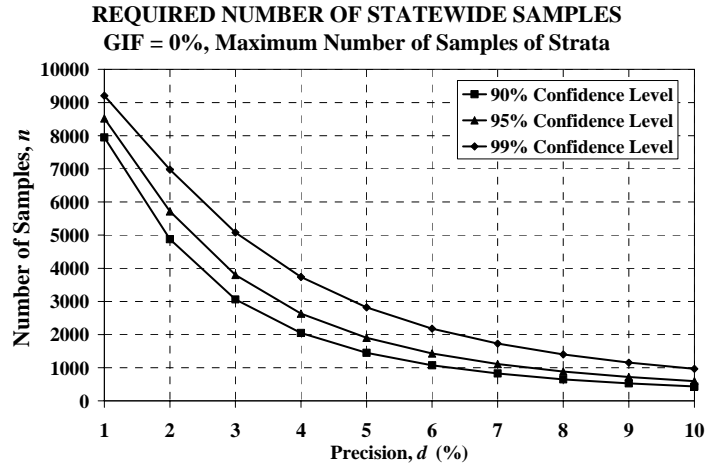
3. Sample Size Based on the Average Number of Required Sample Sizes for All Assets in a Given Stratum

As stated in earlier sections of this report, the total number of ½-mile roadway sections for a district is equal to the sum of the individual number of sections for each maintenance shop. Selecting the maximum of the required samples by considering all assets in the system ensures that every estimate of LOS has a precision that is greater than or equal to the desired precision. However, this approach may be too conservative, especially when the asset that controls the sample size requires a disproportionately large number of samples when compared to those required for the majority of the assets in a given maintenance shop. Instead, one may decide to utilize a statistical measure (e.g., average values) of stratum sample sizes for each shop, functional classification, and AADT range. In this section, the average number of required sample sizes for all assets in a given stratum is used to determine sample sizes. A breakdown of the required number of samples by shop, functional classification, and AADT range is presented in Table 7 when average values are used with a precision of 5%, a confidence level of 95%, and a GIF = 0%. When Table 7 is compared to Tables 1 and 4, it can be seen that not only the sample size varies but also its distribution among the various maintenance shops. In some cases, for example Dorchester county – Urban roads (AADT 0 – 49999), the number of required samples is equal to zero. This is a direct result of average values less than 0.5.

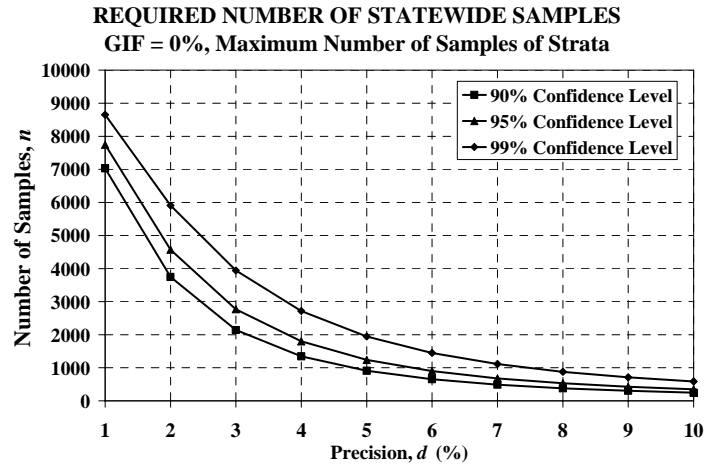
Table 7 – Required Number of Sample Sizes for Each Maintenance Shop-Average Number of Samples of Strata

SAMPLE SIZE														
CI = 95%	1.960	d= 5					geographical influence factor:					0%		
	Urban	Urban	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural	Total	Total	Total	
County	AADT 0-4999	AADT 5000 -9999	AADT 10000 -49999	AADT 50000 -74999	AADT 75000 +	AADT 0-4999	AADT 5000 -9999	AADT 10000 -49999	AADT 50000 -74999	AADT 75000 +	Urban	Rural		
Dorchester	0	0	0	0	0	10	1	2	0	0	1	13	14	
Somerset	2	1	2	0	0	19	3	5	0	0	4	28	32	
Wicomico	1	1	4	0	0	9	0	3	0	0	6	12	18	
Worcester	0	0	1	0	0	4	2	1	0	0	2	7	9	
DIST. 1 TOTALS	3	3	7	0	0	43	6	11	0	0	13	60	73	
Caroline	0	0	0	0	0	19	7	4	0	0	0	31	31	
Cecil	3	2	3	0	0	8	6	4	0	0	7	18	25	
Kent	0	0	0	0	0	16	2	1	0	0	1	19	20	
QA	0	0	0	0	0	11	2	4	1	0	1	18	19	
Talbot	1	1	3	0	0	13	4	9	0	0	4	26	31	
DIST. 2 TOTALS	4	3	6	0	0	68	22	22	1	0	13	112	125	
Mont/Fairland	1	1	10	2	2	0	1	0	0	0	16	2	17	
Mont/Gaithersburg	0	1	6	1	2	2	2	1	0	0	9	5	14	
PG/Laurel	2	1	18	2	7	0	0	1	0	0	29	1	31	
PG/Marlboro	1	1	8	3	2	1	2	1	0	0	16	5	20	
DIST. 3 TOTALS	4	4	43	7	12	4	5	3	0	1	70	13	83	
Balt/Golden	0	1	11	1	1	0	1	1	0	0	15	1	16	
Balt/Hereford	0	1	2	0	1	2	2	1	1	0	4	5	9	
Balt/Owings	1	1	8	1	4	0	1	1	0	0	14	2	16	
Harford	1	1	5	0	0	3	3	2	0	0	6	8	15	
DIST. 4 TOTALS	2	4	26	2	6	5	6	4	1	0	40	16	56	
AA/Annapolis	2	2	5	2	1	2	1	4	0	1	12	8	20	
AA/Glen Burnie	1	1	8	2	2	0	0	0	0	0	14	0	14	
Calvert	3	2	5	0	0	6	3	8	0	0	10	16	26	
Charles	0	1	3	1	0	9	4	5	0	0	5	17	22	
St. Mary's	1	0	3	0	0	11	6	4	0	0	4	21	25	
DIST. 5 TOTALS	8	5	24	4	3	27	14	21	0	1	45	63	107	
Allegany	3	2	4	0	0	7	3	3	0	0	9	13	22	
Garret	0	0	0	0	0	13	2	4	0	0	0	19	19	
Washington	1	1	3	2	0	8	6	4	1	0	7	18	25	
DIST. 6 TOTALS	4	3	7	2	0	28	10	12	1	0	16	50	66	
Carroll	1	1	4	0	0	4	2	4	0	0	6	10	16	
Frederick	1	1	2	1	0	5	3	2	1	0	5	10	16	
Howard	1	0	4	1	2	1	1	2	1	0	8	4	13	
DIST. 7 TOTALS	3	2	10	2	3	10	6	8	1	0	20	25	44	
STATE TOTALS	27	23	124	17	24	185	68	80	3	2	215	339	554	

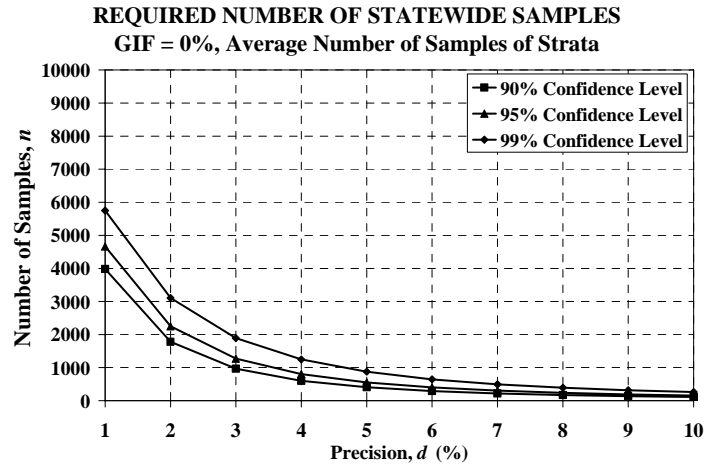
Figure 3 presents results for the total number of statewide samples with a GIF = 0% when the maximum from all assets, the maximum from selected assets, and the average of the required number of samples for all strata in each maintenance shop is utilized. It can be seen that when average values are used (Figure 3c), for a precision of 5%, the number of statewide samples is approximately equal to 900, 550, and 400 for confidence levels of 99%, 95%, and 90%, respectively. These numbers are significantly different from those obtained when the maximum number of samples among all assets is utilized: 2800, 1900, and 1400 for confidence levels of 99%, 95%, and 90%, respectively (see Figure 3a); and the maximum number of samples among selected assets is utilized: 2000, 1200, and 900 for confidence levels of 99%, 95%, and 90%, respectively.



(a)



(b)



(c)

Figure 3 – Required Number of Statewide Samples, GIF = 0%, Based on (a) Maximum Number of Samples of Strata-All Assets, (b) Maximum Number of Samples of Strata-Selected Assets; and (c) Average Number of Samples of Strata.

The conclusion is that the total number of statewide samples, and hence, the number of samples per maintenance shop are significantly affected by the decision to select for a given shop, sample sizes that are not based on the maximum required sample size from all the assets or from selected assets in the various strata that belong to a maintenance shop. Another implication of selecting a value other than the maximum of all assets is that, strictly speaking, the minimum desired precision and confidence levels are not the same for all assets in the system. For example, if average values are utilized, a 99% confidence level in Figure 3c implies that for some assets the confidence level in the estimates of their LOS will be smaller than 99%. This situation is an unavoidable drawback that results from trade-offs that involve the selection of fewer samples per maintenance shop.

Sensitivity of Sample Sizes to Geographical Influence Factor and Functional Classification

The sensitivity of sample sizes to the GIF and functional classification was evaluated. This evaluation was conducted with a sampling protocol that determines sample sizes based on the maximum number of samples per stratum when considering all assets in the system. This particular approach was selected because it is the most sensitive to the variability in estimates of LOS based on past peer review data.

Total Number of Required Statewide Samples by GIF

If the approximate distribution of assets in the system is taken into account, the GIF would be different from zero. Figure 4 presents the same type of information contained in Figure 3a but with a GIF factor equal to 50%. It can be observed that for a precision of 5%, the approximate number of statewide samples increases from 2800, 1900, and 1400 (Figure 3a) to 3000, 2000, and 1500 (Figure 4) for confidence levels of 99%, 95%, and 90%, respectively.

An alternative representation of the effect that the GIF has on the total number of statewide samples is shown in Figure 5. In this case, for a given precision (5%), the required number of samples increases with an increase in the GIF. However, an increase in the GIF from 0% to 50% produces an increase in the required number of samples of less than 10%. It is evident that the relationship between the number of samples and the GIF is nonlinear, which implies that the larger the value of GIF, the larger the rate of increase of the required number of statewide samples. However, for the range of GIF values investigated, this result demonstrates that samples sizes are weakly dependent on the value of GIF.

REQUIRED NUMBER OF STATEWIDE SAMPLES
GIF = 50%, Maximum Number of Samples of Strata

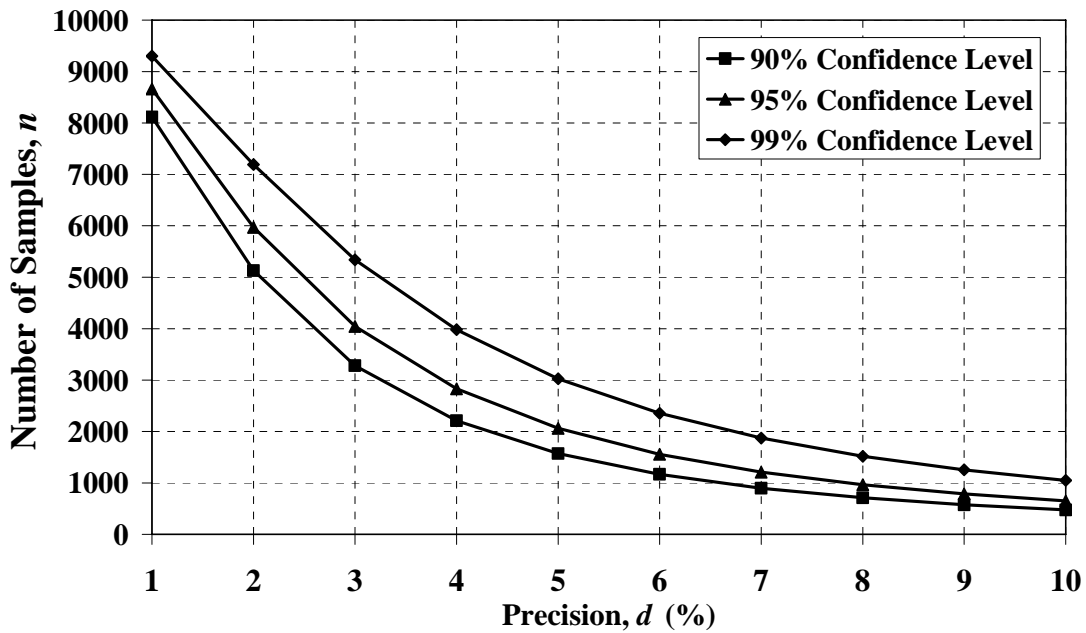


Figure 4 – Required Number of Statewide Samples, GIF = 50%, Maximum Number of Samples of Strata

REQUIRED NUMBER OF STATEWIDE SAMPLES
Precision = 5%, Maximum Number of Samples in Strata

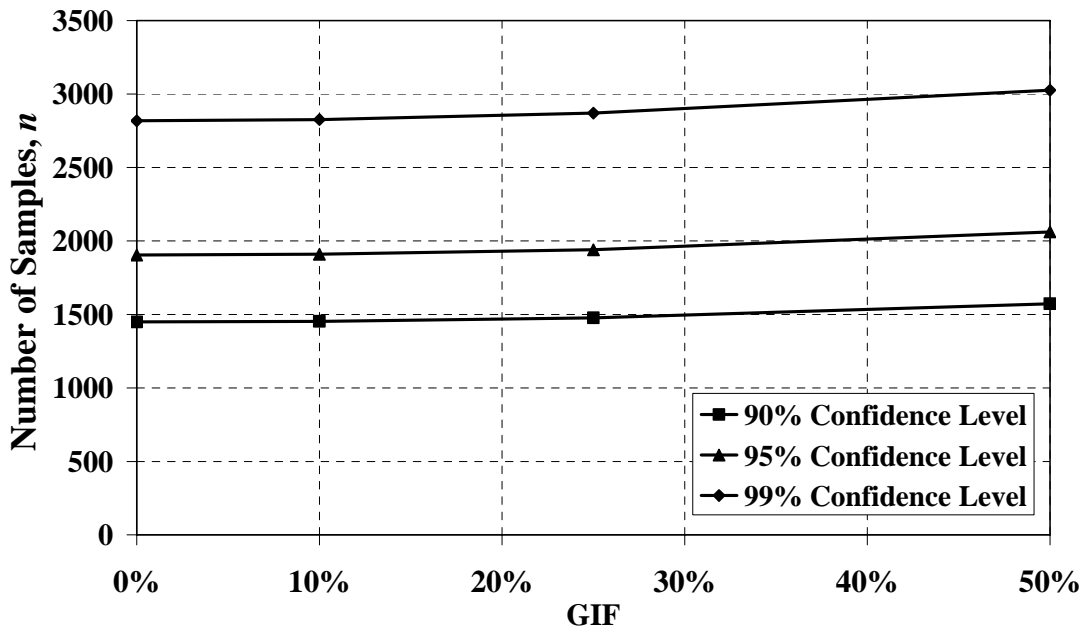


Figure 5 – Sensitivity of Sample Size to Geographical Influence Factor (GIF)

Total Required Number of Statewide Samples by Functional Classification

The information depicted in Figure 3a can be presented by functional classification as shown in Figure 6. In general, for a given precision and confidence level, the required number of samples from rural roads exceeds the required total number of samples from urban roads. For instance, for a precision of 5%, required samples from rural roads are approximately equal to 1700, 1200, and 900 for confidence levels of 99%, 95%, and 90%, respectively. On the other hand, the required samples from urban roads are approximately equal to 1100, 700, and 500 for confidence levels of 99%, 95%, and 90%, respectively. In concept, a greater number of ½-mile roadway sections is required for Rural functional classification because the total number of centerline miles of roads is larger.

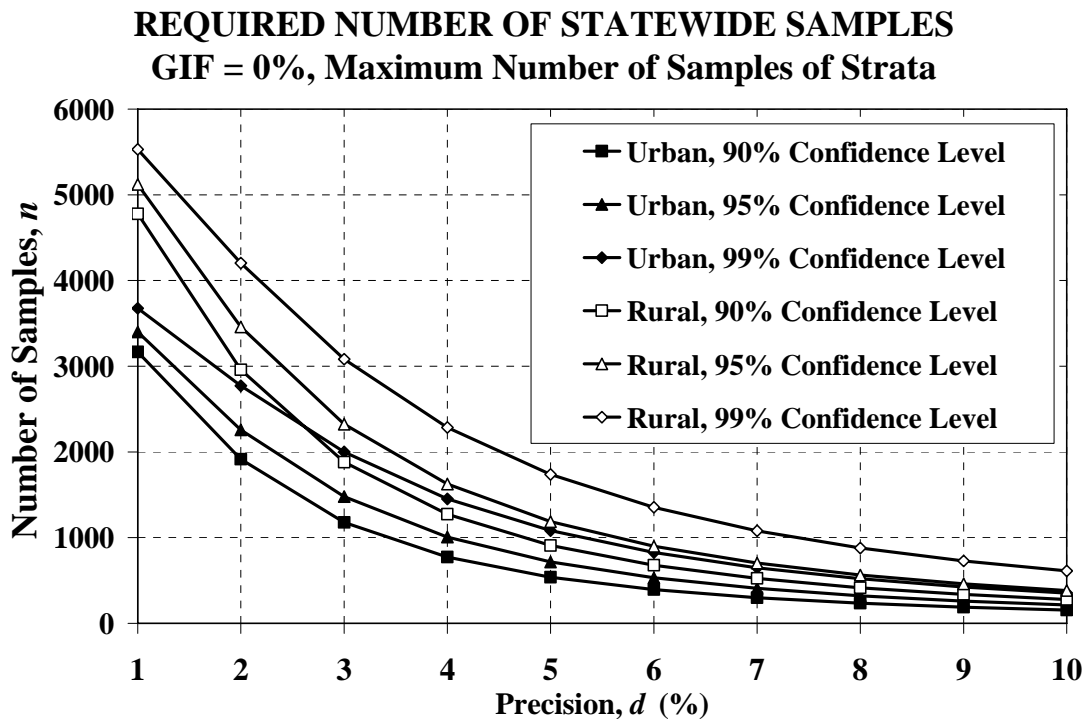


Figure 6 – Required Number of Urban and Rural Statewide Samples, GIF = 0%, Maximum Number of Samples of Strata

Spreadsheet to Determine Size and Diversity of Samples

A MS Excel spreadsheet to determine the size and diversity of samples based on the proposed sampling protocol and its associated user’s guide are delivered with this report. This spreadsheet contains all the necessary information to develop figures and tables such as the ones presented in this study. The goal is to allow SHA to determine the size and diversity of samples based on updated information on the variability in estimates of LOS of service for each asset in the system. Updated estimates of LOS from the most recent peer review program can be incorporated into the spreadsheet to replace peer review data from the earliest year. In addition, the spreadsheet could be modified, if needed, to account for changes in AADT, number of centerline miles, and roadway functional classification.

Summary and Recommendations

For a given precision and confidence level, the size and diversity of the randomly selected samples necessary to conduct the yearly peer review in each maintenance shop are primarily a function of (a) the total number of centerline miles in each shop, (b) the stratification of the total population in the region, (c) the approximate distribution of assets in the system, and (d) the estimates of the population variance in each stratum. In concept, the proposed approach is more rational when compared to the current one, which is based on the random selection of approximately sixty samples per maintenance shop without considering the number of centerline miles, the approximate distribution of assets in the system, and the variability in estimates of LOS. The current approach does not base sample size and diversity on the desired confidence level and precision for each maintenance shop, and hence, it may not provide reliable estimates of the condition of the assets/elements in the system.

Three different approaches were evaluated by the research team at the University of Maryland to determine the required number of samples (i.e., number of ½-mile long sections) per maintenance shop. Differences among the three approaches rely primarily on how sample sizes are to be determined for a given precision, confidence level, and stratification. Sample sizes based on (1) the asset with the largest number of required samples; (2) the asset with the largest number of required samples among a selected group of assets; and (3) the average number of required sample sizes for all assets in a given stratum were evaluated and the results were presented in the body of the report. The proposed sampling protocol is flexible enough to allow SHA personnel to generate sampling protocols based on any of the aforementioned approaches.

Variations in the total number of centerline miles in each shop will occur throughout the years. These changes could be easily incorporated into the spreadsheet used to calculate the required sample size and diversity by updating the total number of centerline miles for various locations. Information on how to conduct these changes is detailed in the user's guide delivered along with the spreadsheet. The stratification of the total population in a maintenance shop is currently conducted by functional classification, AADT, and element/asset. Presumably, this stratification will remain the same, but the process is flexible enough to allow changes in the way the strata are defined (e.g., if additional factors need to be included).

The approximate distribution of assets is taken into account through the implementation of the geographical influence factor (GIF). Based on the results obtained by the research team, a GIF factor of 50% seems to be appropriate to increase the number of sample sizes for those elements that are more commonly seen in a given region. However, strictly speaking, information on elements that are more commonly seen should come from a more accurate knowledge of the actual distribution of the assets in the system. Obviously, reliable knowledge of the distribution of assets in the systems requires the availability of a database with this information. Therefore, in the absence of such information, a GIF = 0% is recommended.

Estimates of population variances for each stratum are controlled by LOS ratings from previous peer review data. This is a critical aspect of the proposed sampling protocol that is primarily controlled by the field surveys conducted by the evaluation teams. This implies that number of team members, their level of training, the time spent in each maintenance shop, the time of the year when the field surveys are conducted, and the total duration of the field surveys will be

critical components of the process. Thus, the following general recommendations to conduct field surveys are provided in an attempt to minimize the uncertainty in the LOS ratings obtained in any given year:

- Field surveys should be conducted in a reasonably short period of time, e.g., two months. This implies spending approximately one week per district.
- Filed surveys should be completed by the same group of people every year. This ensures consistency in assessment of level of service for various assets.
- Currently, three-person teams are drawn from a pool of fourteen qualified people. A pool of twelve people could be trained such that each year nine could be rotated from district to district so that each one of them conducts field surveys in two districts. This implies that, in a given year, three of those individuals will conduct surveys in one district only. Each year a different group of three individuals (out of the twelve who are available) could be selected to conduct the field survey in one district only. A schematic representation of the proposed approach is presented below:

Team of twelve individuals: A, B, C, D, E, F, G, H, I, J, K, L

Districts: 1, 2, 3, 4, 5, 6, 7.

Field surveys for year X: District 1 (ABC); District 2(ADE); District 3 (BFG); District 4 (CHI); District 5(DJK), District 6(EFL); District 7(GHJ).

In this example, team members A, B, C, D, E, F, G, H, and J conduct field surveys in two districts, while team members I, K, and L conduct field surveys in one district only. The following year, another group of three people should be selected to conduct the surveys in one district only. In addition, note that in the same year two people never conduct field surveys in the same two districts.

- Ideally, the peer review process should be a full time responsibility for a number of SHA employees.

APPENDIX A

2005 Center Lines Miles by Maint.Shop, Functional Class and AADT Range

SHOP NAME	FUNCTIONAL CLASS ¹	AADT					TOTAL
		0 to 4999	5000 to 9999	10000 to 49999	50000 to 74999	75000 +	
ANNAPOLIS	1	0.000	0.000	0.000	0.000	9.970	9.970
ANNAPOLIS	2	0.000	0.000	4.770	0.000	0.000	4.770
ANNAPOLIS	6	0.000	6.920	28.560	0.000	0.000	35.480
ANNAPOLIS	7	3.150	7.560	8.360	0.000	0.000	19.070
ANNAPOLIS	8	14.000	0.000	0.000	0.000	0.000	14.000
ANNAPOLIS	9	8.920	0.210	0.000	0.000	0.000	9.130
ANNAPOLIS	11	0.000	0.000	0.000	0.000	9.330	9.330
ANNAPOLIS	12	0.000	0.000	6.310	9.860	2.610	18.780
ANNAPOLIS	14	0.200	0.000	25.080	12.050	0.000	37.330
ANNAPOLIS	16	1.510	6.990	25.370	0.000	0.000	33.870
ANNAPOLIS	17	9.650	5.221	1.110	0.000	0.000	15.981
ANNAPOLIS	19	9.004	5.790	0.852	0.000	0.000	15.646
TOTAL		46.434	32.691	100.412	21.910	21.910	223.357
CAMBRIDGE	2	0.000	0.000	14.810	0.000	0.000	14.810
CAMBRIDGE	6	49.630	6.120	4.120	0.000	0.000	59.870
CAMBRIDGE	7	46.060	0.000	0.000	0.000	0.000	46.060
CAMBRIDGE	8	4.650	0.000	0.000	0.000	0.000	4.650
CAMBRIDGE	9	0.730	0.000	0.000	0.000	0.000	0.730
CAMBRIDGE	14	0.360	4.170	3.010	0.000	0.000	7.540
CAMBRIDGE	16	1.000	0.250	0.070	0.000	0.000	1.320
CAMBRIDGE	19	1.130	0.000	0.000	0.000	0.000	1.130
TOTAL		103.560	10.540	22.010	0.000	0.000	136.110
CENTREVILLE	2	0.000	0.000	36.100	6.630	0.900	43.630
CENTREVILLE	6	13.550	13.307	9.123	0.000	0.000	35.980
CENTREVILLE	7	71.450	5.990	0.430	0.000	0.000	77.870
CENTREVILLE	8	35.020	3.550	0.000	0.000	0.000	38.570
CENTREVILLE	9	8.040	1.040	0.000	0.000	0.000	9.080
CENTREVILLE	12	0.000	0.000	0.000	1.760	0.000	1.760
CENTREVILLE	14	0.000	0.000	0.430	0.000	0.000	0.430
CENTREVILLE	16	1.840	1.110	0.070	0.000	0.000	3.020
CENTREVILLE	17	0.000	0.090	0.000	0.000	0.000	0.090
CENTREVILLE	19	3.040	0.000	0.000	0.000	0.000	3.040
TOTAL		132.940	25.087	46.153	8.390	0.900	213.470
CHESTERTOWN	2	0.000	0.000	8.790	0.000	0.000	8.790
CHESTERTOWN	6	16.970	13.050	0.420	0.000	0.000	30.440
CHESTERTOWN	7	55.320	4.030	0.000	0.000	0.000	59.350
CHESTERTOWN	8	49.080	0.000	0.000	0.000	0.000	49.080

CHESTERTOWN	9	11.400	0.000	0.000	0.000	0.000	11.400
CHESTERTOWN	14	0.000	0.190	2.730	0.000	0.000	2.920
CHESTERTOWN	16	2.130	0.410	0.000	0.000	0.000	2.540
TOTAL		134.900	17.680	11.940	0.000	0.000	164.520
CHURCHVILLE	2	0.000	3.880	14.040	0.000	0.000	17.920
CHURCHVILLE	6	3.390	25.885	22.133	0.000	0.000	51.408
CHURCHVILLE	7	30.950	24.050	4.940	0.000	0.000	59.940
CHURCHVILLE	8	20.730	2.060	0.810	0.000	0.000	23.600
CHURCHVILLE	9	4.030	0.000	0.000	0.000	0.000	4.030
CHURCHVILLE	12	0.000	0.000	10.723	0.580	0.000	11.303
CHURCHVILLE	14	1.530	2.000	49.602	0.000	0.000	53.132
CHURCHVILLE	16	5.180	10.830	29.830	0.000	0.000	45.840
CHURCHVILLE	17	1.410	2.020	0.770	0.000	0.000	4.200
CHURCHVILLE	19	2.103	0.280	0.420	0.000	0.000	2.803
TOTAL		69.323	71.005	133.268	0.580	0.000	274.176
DAYTON	1	0.000	0.000	0.000	7.660	2.120	9.780
DAYTON	2	1.550	0.000	9.070	0.000	0.000	10.620
DAYTON	6	0.000	0.000	14.540	0.000	0.000	14.540
DAYTON	7	11.410	9.910	2.010	0.000	0.000	23.330
DAYTON	8	2.780	0.780	0.000	0.000	0.000	3.560
DAYTON	9	1.900	0.000	0.000	0.000	0.000	1.900
DAYTON	11	0.000	0.000	0.000	3.810	17.470	21.280
DAYTON	12	0.000	0.000	11.800	9.860	16.880	38.540
DAYTON	14	0.470	0.000	18.270	0.670	0.000	19.410
DAYTON	16	0.000	5.110	24.965	0.000	0.000	30.075
DAYTON	17	3.300	1.300	0.830	0.000	0.000	5.430
DAYTON	19	7.104	0.140	1.320	0.000	0.000	8.564
TOTAL		28.514	17.240	82.805	22.000	36.470	187.029
DENTON	2	0.000	4.070	13.300	0.000	0.000	17.370
DENTON	6	23.680	26.010	6.870	0.000	0.000	56.560
DENTON	7	56.310	6.420	0.000	0.000	0.000	62.730
DENTON	8	8.850	0.000	0.000	0.000	0.000	8.850
DENTON	9	7.904	0.000	0.000	0.000	0.000	7.904
TOTAL		96.744	36.500	20.170	0.000	0.000	153.414
EASTON	2	0.000	0.000	25.060	0.000	0.000	25.060
EASTON	6	3.340	12.980	12.160	0.000	0.000	28.480
EASTON	7	22.230	3.410	0.000	0.000	0.000	25.640
EASTON	8	9.900	0.000	0.000	0.000	0.000	9.900
EASTON	9	18.990	0.000	0.000	0.000	0.000	18.990
EASTON	14	0.000	3.470	12.040	0.000	0.000	15.510
EASTON	16	0.000	0.510	0.000	0.000	0.000	0.510
EASTON	17	0.930	0.000	0.000	0.000	0.000	0.930
EASTON	19	1.400	0.000	0.000	0.000	0.000	1.400
TOTAL		56.790	20.370	49.260	0.000	0.000	126.420
ELKTON	2	1.940	5.490	8.550	0.000	0.000	15.980

ELKTON	6	7.080	37.000	19.840	0.000	0.000	63.920
ELKTON	7	33.470	6.930	0.000	0.000	0.000	40.400
ELKTON	8	11.910	0.000	0.000	0.000	0.000	11.910
ELKTON	9	5.420	0.220	0.000	0.000	0.000	5.640
ELKTON	12	0.000	0.000	2.420	0.000	0.000	2.420
ELKTON	14	1.090	5.260	19.340	0.000	0.000	25.690
ELKTON	16	12.720	5.820	0.000	0.000	0.000	18.540
ELKTON	17	5.660	1.010	0.000	0.000	0.000	6.670
ELKTON	19	1.660	0.000	0.000	0.000	0.000	1.660
TOTAL		80.950	61.730	50.150	0.000	0.000	192.830
FAIRLAND	6	0.000	2.940	3.620	0.000	0.000	6.560
FAIRLAND	7	0.000	9.300	0.980	0.000	0.000	10.280
FAIRLAND	8	0.480	0.000	0.000	0.000	0.000	0.480
FAIRLAND	11	0.000	0.000	0.000	0.000	14.380	14.380
FAIRLAND	12	0.000	0.000	3.029	5.960	0.000	8.989
FAIRLAND	14	0.000	2.270	79.237	16.050	0.720	98.277
FAIRLAND	16	0.000	5.540	21.701	0.000	0.000	27.241
FAIRLAND	17	0.600	2.680	0.090	0.000	0.000	3.370
FAIRLAND	19	4.441	0.000	0.000	0.000	0.000	4.441
TOTAL		5.521	22.730	108.657	22.010	15.100	174.018
FREDERICK	1	0.000	0.000	0.000	12.010	7.390	19.400
FREDERICK	2	4.250	0.360	33.300	0.000	0.000	37.910
FREDERICK	6	12.410	27.720	7.520	0.000	0.000	47.650
FREDERICK	7	67.531	33.030	7.840	0.000	0.000	108.401
FREDERICK	8	8.220	0.000	0.000	0.000	0.000	8.220
FREDERICK	9	14.232	0.000	1.100	0.000	0.000	15.332
FREDERICK	11	0.000	0.000	0.000	15.640	4.420	20.060
FREDERICK	12	0.000	0.000	9.740	3.000	3.320	16.060
FREDERICK	14	0.000	3.500	18.876	0.430	0.000	22.806
FREDERICK	16	7.219	17.010	8.090	0.000	0.000	32.319
FREDERICK	17	10.350	1.410	1.925	0.000	0.000	13.685
FREDERICK	19	12.370	0.000	0.100	0.000	0.000	12.470
TOTAL		136.582	83.030	88.491	31.080	15.130	354.313
GAITHERSBURG	1	0.000	0.000	0.000	0.000	4.080	4.080
GAITHERSBURG	6	1.680	13.710	8.850	0.000	0.000	24.240
GAITHERSBURG	7	20.930	8.860	0.000	0.000	0.000	29.790
GAITHERSBURG	8	4.100	0.000	0.000	0.000	0.000	4.100
GAITHERSBURG	9	0.000	4.130	0.000	0.000	0.000	4.130
GAITHERSBURG	11	0.000	0.000	0.000	0.000	23.360	23.360
GAITHERSBURG	14	0.000	1.820	46.590	7.640	0.370	56.420
GAITHERSBURG	16	0.740	7.020	31.980	0.000	0.000	39.740
GAITHERSBURG	19	0.660	0.000	0.540	0.000	0.000	1.200
TOTAL		28.110	35.540	87.960	7.640	27.810	187.060
GLEN BURNIE	11	0.000	0.000	2.060	1.070	11.290	14.420
GLEN BURNIE	12	0.000	0.000	8.400	12.150	11.630	32.180
GLEN BURNIE	14	0.000	2.180	27.390	2.830	0.000	32.400

GLEN BURNIE	16	2.030	6.440	40.530	0.000	0.000	49.000
GLEN BURNIE	17	3.030	2.870	3.730	0.000	0.000	9.630
GLEN BURNIE	19	7.948	1.737	0.330	0.000	0.000	10.015
TOTAL		13.008	13.227	82.440	16.050	22.920	147.645
GOLDEN RING	2	0.000	0.000	2.840	0.000	0.000	2.840
GOLDEN RING	7	0.000	4.080	1.470	0.000	0.000	5.550
GOLDEN RING	11	0.000	0.000	0.000	0.000	8.670	8.670
GOLDEN RING	12	0.000	0.000	14.580	5.060	1.380	21.020
GOLDEN RING	14	0.000	0.960	38.040	0.820	0.000	39.820
GOLDEN RING	16	0.560	7.340	26.000	0.000	0.000	33.900
GOLDEN RING	17	0.000	1.240	0.290	0.000	0.000	1.530
GOLDEN RING	19	0.390	0.000	0.500	0.000	0.000	0.890
TOTAL		0.950	13.620	83.720	5.880	10.050	114.220
HAGERSTOWN	1	0.000	0.000	32.300	5.990	0.000	38.290
HAGERSTOWN	2	0.000	0.000	3.589	0.000	0.000	3.589
HAGERSTOWN	6	9.260	37.050	10.690	0.000	0.000	57.000
HAGERSTOWN	7	46.400	23.389	2.900	0.000	0.000	72.689
HAGERSTOWN	8	23.180	1.850	0.000	0.000	0.000	25.030
HAGERSTOWN	9	10.053	0.000	0.000	0.000	0.000	10.053
HAGERSTOWN	11	0.000	0.000	4.120	17.040	0.000	21.160
HAGERSTOWN	14	0.000	8.160	23.667	0.000	0.000	31.827
HAGERSTOWN	16	3.670	2.800	7.760	0.000	0.000	14.230
HAGERSTOWN	17	1.470	0.750	0.000	0.000	0.000	2.220
HAGERSTOWN	19	3.890	0.000	0.000	0.000	0.000	3.890
TOTAL		97.923	73.999	85.026	23.030	0.000	279.978
HEREFORD	1	0.000	0.000	4.090	10.430	0.000	14.520
HEREFORD	6	9.520	6.830	6.540	0.000	0.000	22.890
HEREFORD	7	27.710	19.560	0.370	0.000	0.000	47.640
HEREFORD	9	0.100	0.000	0.000	0.000	0.000	0.100
HEREFORD	11	0.520	0.000	2.800	0.000	15.750	19.070
HEREFORD	12	0.000	0.000	0.580	0.000	0.000	0.580
HEREFORD	14	0.000	0.000	20.120	0.330	0.000	20.450
HEREFORD	16	3.000	13.940	14.370	0.000	0.000	31.310
HEREFORD	17	0.050	1.630	0.180	0.000	0.000	1.860
HEREFORD	19	0.850	0.000	0.000	0.000	0.000	0.850
TOTAL		41.750	41.960	49.050	10.760	15.750	159.270
KEYSER'S RIDGE	1	0.000	0.000	31.780	0.000	0.000	31.780
KEYSER'S RIDGE	2	10.580	11.700	8.410	0.000	0.000	30.690
KEYSER'S RIDGE	6	47.310	6.230	2.010	0.000	0.000	55.550
KEYSER'S RIDGE	7	69.340	0.000	1.700	0.000	0.000	71.040
KEYSER'S RIDGE	8	1.130	0.000	0.000	0.000	0.000	1.130
KEYSER'S RIDGE	9	7.187	0.000	0.000	0.000	0.000	7.187
KEYSER'S RIDGE	14	0.850	0.000	0.000	0.000	0.000	0.850
TOTAL		136.397	17.930	43.900	0.000	0.000	198.227
LAPLATA	2	0.000	0.000	28.060	0.000	0.000	28.060

LAPLATA	6	0.000	13.000	12.720	0.000	0.000	25.720
LAPLATA	7	42.890	17.670	0.600	0.000	0.000	61.160
LAPLATA	8	13.170	1.960	0.270	0.000	0.000	15.400
LAPLATA	9	20.940	0.220	1.790	0.000	0.000	22.950
LAPLATA	14	0.000	0.510	24.980	5.490	0.000	30.980
LAPLATA	16	3.650	4.720	2.410	0.000	0.000	10.780
LAPLATA	17	0.000	0.000	2.490	0.000	0.000	2.490
LAPLATA	19	0.370	0.000	0.000	0.000	0.000	0.370
TOTAL		81.020	38.080	73.320	5.490	0.000	197.910
LAUREL	1	0.000	0.000	0.000	0.000	1.270	1.270
LAUREL	6	0.000	0.000	3.730	0.000	0.000	3.730
LAUREL	9	0.870	0.000	0.000	0.000	0.000	0.870
LAUREL	11	0.000	0.000	0.000	0.960	25.390	26.350
LAUREL	12	0.000	0.000	1.670	0.530	5.530	7.730
LAUREL	14	0.000	0.000	57.130	6.824	2.200	66.154
LAUREL	16	0.260	2.230	30.740	0.300	0.000	33.530
LAUREL	17	4.090	2.560	1.060	0.000	0.000	7.710
LAUREL	19	3.590	2.050	0.280	0.000	0.000	5.920
TOTAL		8.810	6.840	94.610	8.614	34.390	153.264
LAVALE	1	0.000	0.000	26.240	0.000	0.000	26.240
LAVALE	2	0.000	7.640	3.150	0.000	0.000	10.790
LAVALE	6	10.820	14.080	2.260	0.000	0.000	27.160
LAVALE	7	19.680	2.830	0.000	0.000	0.000	22.510
LAVALE	8	20.110	0.160	0.000	0.000	0.000	20.270
LAVALE	9	17.100	0.000	0.000	0.000	0.000	17.100
LAVALE	11	0.000	0.000	12.470	1.560	0.000	14.030
LAVALE	14	3.010	11.620	25.780	0.000	0.000	40.410
LAVALE	16	10.640	2.900	3.120	0.000	0.000	16.660
LAVALE	17	9.710	1.590	0.000	0.000	0.000	11.300
LAVALE	19	4.260	0.460	0.000	0.000	0.000	4.720
TOTAL		95.330	41.280	73.020	1.560	0.000	211.190
LEONARDTOWN	2	0.000	0.000	16.050	0.000	0.000	16.050
LEONARDTOWN	6	7.643	24.563	17.930	0.000	0.000	50.136
LEONARDTOWN	7	27.350	24.470	1.790	0.000	0.000	53.610
LEONARDTOWN	8	37.250	0.000	0.000	0.000	0.000	37.250
LEONARDTOWN	9	13.270	0.000	0.000	0.000	0.000	13.270
LEONARDTOWN	12	0.000	0.000	0.830	0.000	0.000	0.830
LEONARDTOWN	14	0.000	0.050	18.161	0.000	0.000	18.211
LEONARDTOWN	16	0.270	0.000	2.950	0.000	0.000	3.220
LEONARDTOWN	17	1.560	1.130	0.000	0.000	0.000	2.690
LEONARDTOWN	19	3.290	0.000	0.090	0.000	0.000	3.380
TOTAL		90.633	50.213	57.801	0.000	0.000	198.647
MARLBORO	2	0.000	0.000	5.560	3.060	0.000	8.620
MARLBORO	6	0.000	0.000	2.730	0.000	0.000	2.730
MARLBORO	7	12.390	17.820	5.640	0.000	0.000	35.850
MARLBORO	9	1.611	0.000	0.000	0.000	0.000	1.611

MARLBORO	11	0.000	0.000	0.000	0.000	19.340	19.340
MARLBORO	12	0.000	0.000	19.100	14.030	5.160	38.290
MARLBORO	14	0.000	5.260	45.040	12.970	0.940	64.210
MARLBORO	16	0.300	4.187	19.590	0.000	0.000	24.077
MARLBORO	17	0.390	0.350	1.020	0.000	0.000	1.760
MARLBORO	19	14.798	0.850	0.160	0.000	0.000	15.808
TOTAL		29.489	28.467	98.840	30.060	25.440	212.296
OWINGS MILLS	2	0.000	0.000	3.280	1.030	0.000	4.310
OWINGS MILLS	6	0.000	0.000	2.377	0.000	0.000	2.377
OWINGS MILLS	7	0.000	4.920	0.000	0.000	0.000	4.920
OWINGS MILLS	11	0.000	0.000	4.480	5.500	23.190	33.170
OWINGS MILLS	12	0.000	0.000	0.470	1.220	0.200	1.890
OWINGS MILLS	14	0.000	1.180	37.250	1.850	0.000	40.280
OWINGS MILLS	16	0.000	2.650	9.190	0.580	0.000	12.420
OWINGS MILLS	17	5.010	0.000	0.000	0.000	0.000	5.010
OWINGS MILLS	19	0.120	0.000	0.000	0.000	0.000	0.120
TOTAL		5.130	8.750	57.047	10.180	23.390	104.497
PRINCE FREDERICK	2	0.000	0.000	31.160	0.700	0.000	31.860
PRINCE FREDERICK	6	0.000	0.000	3.629	0.000	0.000	3.629
PRINCE FREDERICK	7	4.990	12.040	1.750	0.000	0.000	18.780
PRINCE FREDERICK	8	12.570	0.980	0.310	0.000	0.000	13.860
PRINCE FREDERICK	9	9.481	0.490	0.000	0.000	0.000	9.971
PRINCE FREDERICK	12	0.000	0.000	3.400	0.000	0.000	3.400
PRINCE FREDERICK	14	0.000	0.000	14.782	0.000	0.000	14.782
PRINCE FREDERICK	16	0.000	0.850	6.750	0.000	0.000	7.600
PRINCE FREDERICK	17	6.510	5.430	0.530	0.000	0.000	12.470
PRINCE FREDERICK	19	10.340	1.810	0.470	0.000	0.000	12.620
TOTAL		43.891	21.600	62.781	0.700	0.000	128.972
PRINCESS ANNE	2	0.000	0.000	14.650	0.000	0.000	14.650
PRINCESS ANNE	6	11.130	11.420	1.790	0.000	0.000	24.340
PRINCESS ANNE	7	30.630	0.000	1.400	0.000	0.000	32.030
PRINCESS ANNE	8	8.760	0.000	0.000	0.000	0.000	8.760
PRINCESS ANNE	9	14.260	0.000	0.000	0.000	0.000	14.260
PRINCESS ANNE	12	0.000	0.000	5.630	0.000	0.000	5.630
PRINCESS ANNE	14	0.360	0.000	0.000	0.000	0.000	0.360
PRINCESS ANNE	16	1.170	2.220	0.000	0.000	0.000	3.390
PRINCESS ANNE	17	2.330	0.000	0.000	0.000	0.000	2.330
PRINCESS ANNE	19	1.320	0.000	0.000	0.000	0.000	1.320
TOTAL		69.960	13.640	23.470	0.000	0.000	107.070
SALISBURY	2	0.614	0.000	23.496	0.000	0.000	24.110
SALISBURY	6	10.160	3.710	1.031	0.000	0.000	14.901
SALISBURY	7	55.230	0.200	0.000	0.000	0.000	55.430
SALISBURY	8	15.840	0.000	0.000	0.000	0.000	15.840
SALISBURY	9	4.525	0.000	0.000	0.000	0.000	4.525
SALISBURY	12	0.000	0.000	20.303	0.000	0.000	20.303
SALISBURY	14	2.688	0.910	18.012	0.000	0.000	21.610

SALISBURY	16	3.280	9.470	0.020	0.000	0.000	12.770
SALISBURY	17	0.000	0.820	0.000	0.000	0.000	0.820
SALISBURY	19	1.460	0.000	0.000	0.000	0.000	1.460
TOTAL		93.797	15.110	62.862	0.000	0.000	171.769
SNOW HILL	2	1.100	30.570	23.080	0.000	0.000	54.750
SNOW HILL	6	9.600	9.740	0.000	0.000	0.000	19.340
SNOW HILL	7	56.410	3.435	0.000	0.000	0.000	59.845
SNOW HILL	8	19.080	0.000	0.000	0.000	0.000	19.080
SNOW HILL	9	9.368	0.092	0.000	0.000	0.000	9.460
SNOW HILL	12	0.000	0.000	3.840	0.000	0.000	3.840
SNOW HILL	14	0.070	2.430	20.150	0.000	0.000	22.650
SNOW HILL	16	2.440	3.500	3.060	0.000	0.000	9.000
SNOW HILL	17	2.600	0.000	0.000	0.000	0.000	2.600
SNOW HILL	19	5.167	0.000	0.000	0.000	0.000	5.167
TOTAL		105.835	49.767	50.130	0.000	0.000	205.732
WESTMINSTER	2	0.000	2.810	9.000	0.000	0.000	11.810
WESTMINSTER	6	4.950	18.950	40.410	0.000	0.000	64.310
WESTMINSTER	7	22.850	8.350	2.800	0.000	0.000	34.000
WESTMINSTER	8	4.280	0.000	0.000	0.000	0.000	4.280
WESTMINSTER	9	26.753	0.000	0.000	0.000	0.000	26.753
WESTMINSTER	11	0.000	0.000	0.000	1.610	0.000	1.610
WESTMINSTER	14	0.680	6.500	51.874	1.360	0.000	60.414
WESTMINSTER	16	0.640	3.270	5.220	0.000	0.000	9.130
WESTMINSTER	17	1.310	0.000	0.000	0.000	0.000	1.310
WESTMINSTER	19	13.390	0.000	0.000	0.000	0.000	13.390
TOTAL		74.853	39.880	109.304	2.970	0.000	227.007

*Functional Classification of Roadways:

Rural

- 1 – Interstate
- 2 – Other principal arterial
- 6 – Minor arterial
- 7 – Major collector
- 8 – Minor collector
- 9 – Local

Urban

- 11 – Interstate
- 12 – Other freeway and expressway
- 14 – Other principal arterial
- 16 – Minor arterial
- 17 – Collector
- 19 – Local

APPENDIX B

LOS Estimates from Previous Years

1998

SHOULDER CATEGORY										
County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	61	85.1	n/a	100.0	93.6	100.0	87.2	100.0	76.6	91.8
Somerset	30	94.7	n/a	100.0	63.2	100.0	57.9	100.0	100.0	87.4
Wicomico	69	92.3	n/a	97.4	82.1	97.4	74.4	100.0	97.4	91.2
Worcester	70	87.3	n/a	96.4	67.3	98.1	76.4	96.4	85.5	86.8
DIST. 1 TOTALS	230	89.9	n/a	98.4	76.5	98.9	74.0	99.1	89.9	89.3
Caroline	38	89.2	n/a	100.0	83.8	97.3	81.1	100.0	83.8	90.6
Cecil	72	93.0	n/a	98.2	82.5	98.2	77.2	96.5	89.5	90.5
Kent	60	95.0	n/a	97.5	75.0	100.0	65.0	100.0	62.5	85.0
QA	63	85.7	n/a	100.0	87.8	97.9	69.4	100.0	87.8	89.3
Talbot	57	92.1	n/a	100.0	84.6	94.7	81.6	100.0	66.7	88.6
DIST. 2 TOTALS	290	91.0	n/a	99.1	82.7	97.6	74.8	99.3	78.0	88.8
Montgomery	69	93.8	n/a	100.0	75.0	100.0	68.8	100.0	56.3	85.0
PG/Laurel	72	90.0	n/a	100.0	87.5	97.5	65.0	100.0	60.0	85.5
PG/Marlboro	73	91.1	n/a	100.0	100.0	93.3	80.0	93.5	75.6	90.2
DIST. 3 TOTALS	214	91.6	n/a	100.0	87.5	96.9	71.3	97.8	63.9	86.9
Balt/Golden	72	50.0	n/a	100.0	92.1	89.5	84.2	84.2	89.5	83.8
Balt/Hereford	64	96.0	n/a	88.5	96.0	96.2	73.1	69.2	69.7	84.3
Balt/Owings	63	88.2	n/a	100.0	76.5	100.0	70.6	100.0	97.0	89.9
Harford	75	78.6	n/a	100.0	81.0	81.0	69.0	76.2	85.7	81.1
DIST. 4 TOTALS	274	78.2	n/a	97.1	86.4	91.6	74.2	82.4	85.5	84.8
AA/Annapolis	66	86.8	n/a	94.7	94.6	92.1	81.6	86.8	76.9	87.6
AA/Glen Burnie	70	87.7	n/a	100.0	82.5	100.0	89.5	98.2	86.0	92.1
Calvert	60	97.8	n/a	100.0	71.7	100.0	60.9	100.0	69.6	85.5
Charles	54	97.3	n/a	100.0	97.3	97.3	86.5	97.3	97.3	95.8
St. Mary's	30	95.2	n/a	100.0	95.2	100.0	90.5	100.0	81.0	94.6
DIST. 5 TOTALS	280	93.0	n/a	98.9	88.3	97.9	81.8	96.5	82.1	91.1
Allegany	66	75.0	n/a	100.0	97.5	97.5	77.5	95.0	87.5	89.5
Garret	73	83.3	n/a	100.0	98.1	92.6	64.8	100.0	70.4	86.4
Washington	51	73.0	n/a	100.0	86.5	97.2	75.7	91.9	94.4	88.0
DIST. 6 TOTALS	190	77.1	n/a	100.0	94.0	95.8	72.7	95.6	84.1	87.9
Carroll	58	85.4	n/a	100.0	95.1	90.2	78.0	82.9	92.7	88.8
Frederick	69	92.5	n/a	100.0	67.5	100.0	52.5	92.5	70.0	81.9
Howard	36	46.9	n/a	100.0	87.5	100.0	84.4	96.9	84.4	85.5
DIST. 7 TOTALS	163	74.9	n/a	100.0	83.4	96.7	71.6	90.8	82.4	85.4
STATE TOTALS	1641	86.0	n/a	99.0	85.2	96.6	74.9	94.7	81.2	88.0

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	61	94.3	80.0	100.0	72.7	86.8
Somerset	30	96.7	96.0	100.0	83.3	94.2
Wicomico	69	100.0	96.2	93.8	100.0	97.5
Worcester	70	98.4	71.4	94.7	77.3	85.4
DIST. 1 TOTALS	230	97.3	85.9	97.1	83.3	91.0
Caroline	38	73.5	73.5	85.7	42.9	69.2
Cecil	72	97.1	96.8	100.0	75.8	92.7
Kent	60	83.6	58.3	100.0	75.0	78.7
QA	63	98.4	98.0	94.4	63.6	89.3
Talbot	57	100.0	100.0	100.0	100.0	100.0
DIST. 2 TOTALS	290	90.5	85.3	96.0	71.5	86.0
Montgomery	69	77.8	72.7	82.8	63.9	74.4
PG/Laurel	72	94.3	92.9	94.8	84.2	91.7
PG/Marlboro	73	100.0	97.2	93.0	94.0	96.2
DIST. 3 TOTALS	214	90.7	87.6	90.2	80.7	87.4
Balt/Golden	72	100.0	100.0	96.0	83.0	95.1
Balt/Hereford	64	86.4	95.0	82.1	80.0	86.2
Balt/Owings	63	100.0	66.7	82.1	43.8	73.8
Harford	75	90.0	96.2	89.2	97.4	93.2
DIST. 4 TOTALS	274	94.1	89.5	87.3	76.0	87.1
AA/Annapolis	66	89.8	86.1	78.6	43.5	75.4
AA/Glen Burnie	70	98.1	100.0	100.0	87.2	96.5
Calvert	60	98.2	93.1	94.4	84.8	92.9
Charles	54	95.8	95.7	93.3	68.8	88.9
St. Mary's	30	51.9	60.0	80.0	60.0	62.5
DIST. 5 TOTALS	280	86.8	87.0	89.3	68.9	83.2
Allegany	66	96.8	98.1	100.0	91.7	96.7
Garret	73	100.0	90.9	87.5	93.8	93.2
Washington	51	100.0	90.9	100.0	80.0	92.9
DIST. 6 TOTALS	190	98.9	93.3	95.8	88.5	94.3
Carroll	58	98.0	100.0	100.0	80.8	95.0
Frederick	69	98.3	100.0	92.7	85.7	94.5
Howard	36	93.9	100.0	100.0	92.9	96.7
DIST. 7 TOTALS	163	96.7	100.0	97.6	86.4	95.4
STATE TOTALS	1641	93.0	89.1	93.1	78.0	88.5

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	61	100.0	97.8	n/a	85.4	96.7	n/a	90.0	n/a	94.2
Somerset	30	100.0	100.0	n/a	100.0	100.0	n/a	66.7	100.0	93.5
Wicomico	69	100.0	100.0	n/a	96.6	91.3	n/a	100.0	100.0	98.2
Worcester	70	98.2	100.0	n/a	83.0	95.7	100.0	100.0	100.0	96.8
DIST. 1 TOTALS	230	99.6	99.5	n/a	91.2	95.9	100.0	89.2	100.0	95.7
Caroline	38	100.0	100.0	n/a	90.5	97.4	n/a	100.0	100.0	98.2
Cecil	72	98.5	94.1	n/a	97.8	98.6	n/a	85.4	100.0	95.3
Kent	60	98.0	100.0	n/a	96.6	96.7	100.0	100.0	100.0	98.7
QA	63	100.0	100.0	n/a	89.7	95.2	100.0	90.9	100.0	96.4
Talbot	57	93.3	100.0	n/a	86.4	82.5	n/a	100.0	100.0	94.0
DIST. 2 TOTALS	290	98.0	98.8	n/a	92.2	94.1	100.0	95.3	100.0	96.5
Montgomery	69	87.5	90.4	n/a	48.6	68.1	100.0	95.0	100.0	84.3
PG/Laurel	72	91.5	93.0	n/a	71.2	95.8	90.0	63.0	77.8	82.9
PG/Marlboro	73	98.4	95.3	n/a	78.8	91.8	100.0	87.9	100.0	92.9
DIST. 3 TOTALS	214	92.5	92.9	n/a	66.2	85.2	96.7	82.0	92.6	86.7
Balt/Golden	72	98.5	97.1	n/a	93.5	94.4	100.0	89.7	100.0	95.9
Balt/Hereford	64	90.9	94.4	n/a	81.3	92.2	100.0	76.7	100.0	90.0
Balt/Owings	63	91.2	96.7	n/a	77.1	93.7	100.0	78.4	100.0	90.3
Harford	75	93.7	96.9	n/a	68.2	89.3	100.0	92.9	75.0	88.6
DIST. 4 TOTALS	274	93.6	96.3	n/a	80.0	92.4	100.0	84.4	93.8	91.2
AA/Annapolis	66	98.5	98.4	n/a	80.0	95.5	100.0	62.5	66.7	85.8
AA/Glen Burnie	70	100.0	98.6	n/a	95.2	98.6	100.0	89.6	100.0	97.1
Calvert	60	100.0	100.0	n/a	86.2	93.3	n/a	91.4	100.0	95.2
Charles	54	100.0	100.0	n/a	90.9	94.4	100.0	91.3	100.0	96.5
St. Mary's	30	95.5	85.7	n/a	87.5	90.0	100.0	80.0	100.0	90.5
DIST. 5 TOTALS	280	98.8	96.5	n/a	88.0	94.4	100.0	83.0	93.3	93.0
Allegany	66	100.0	100.0	n/a	100.0	84.8	100.0	91.1	100.0	96.4
Garret	73	100.0	97.1	n/a	100.0	97.3	100.0	84.6	100.0	96.5
Washington	51	100.0	100.0	n/a	93.3	88.2	n/a	86.1	100.0	94.5
DIST. 6 TOTALS	190	100.0	99.0	n/a	97.8	90.1	100.0	87.3	100.0	95.8
Carroll	58	100.0	100.0	n/a	55.6	98.3	100.0	88.6	100.0	91.8
Frederick	69	100.0	100.0	n/a	91.9	95.7	100.0	83.0	100.0	95.3
Howard	36	100.0	100.0	n/a	95.8	88.9	100.0	73.3	66.7	89.5
DIST. 7 TOTALS	163	100.0	100.0	n/a	80.8	94.3	100.0	81.6	88.9	92.2
STATE TOTALS	1641	97.5	97.6	n/a	85.9	92.8	99.5	86.6	95.6	93.3

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	61	50.0	n/a	93.4	100.0	100.0	n/a	100.0	n/a	98.4	90.7
Somerset	30	80.0	n/a	90.0	96.7	96.7	n/a	100.0	n/a	93.3	93.0
Wicomico	69	81.3	n/a	52.3	95.3	100.0	n/a	n/a	100.0	100.0	87.9
Worcester	70	79.0	n/a	72.5	96.7	100.0	n/a	100.0	100.0	95.7	92.0
DIST. 1 TOTALS	230	72.6	n/a	77.1	97.2	99.2	0.0	100.0	100.0	96.8	90.9
Caroline	38	63.2	n/a	73.7	100.0	100.0	n/a	96.2	100.0	92.1	89.2
Cecil	72	78.3	n/a	95.8	84.5	100.0	n/a	100.0	n/a	98.6	93.2
Kent	60	71.9	n/a	88.3	100.0	100.0	100.0	100.0	100.0	98.3	94.8
QA	63	77.4	n/a	83.9	93.5	100.0	n/a	100.0	100.0	100.0	93.5
Talbot	57	66.7	n/a	86.0	100.0	100.0	100.0	100.0	100.0	98.0	93.8
DIST. 2 TOTALS	290	71.5	n/a	85.5	95.6	100.0	100.0	99.2	100.0	97.4	92.9
Montgomery	69	69.4	n/a	85.2	69.2	100.0	100.0	100.0	83.3	87.3	87.4
PG/Laurel	72	80.3	n/a	46.5	68.2	98.6	87.5	88.5	75.0	72.6	77.8
PG/Marlboro	73	70.0	n/a	42.9	52.2	100.0	100.0	100.0	100.0	76.8	80.2
DIST. 3 TOTALS	214	73.2	n/a	58.2	63.2	99.5	95.8	96.2	86.1	78.9	81.8
Balt/Golden	72	98.2	n/a	91.3	98.0	100.0	100.0	100.0	100.0	100.0	98.4
Balt/Hereford	64	75.4	n/a	100.0	40.7	100.0	100.0	93.0	100.0	100.0	88.5
Balt/Owings	63	76.9	n/a	66.7	83.3	100.0	100.0	100.0	60.0	85.7	85.5
Harford	75	64.2	n/a	64.3	76.1	100.0	100.0	100.0	75.0	86.8	84.2
DIST. 4 TOTALS	274	78.7	n/a	80.6	74.5	100.0	100.0	98.3	83.8	93.1	89.2
AA/Annapolis	66	87.3	n/a	97.0	47.5	100.0	90.9	91.1	100.0	98.5	88.9
AA/Glen Burnie	70	89.4	n/a	29.0	65.6	100.0	100.0	98.4	100.0	86.6	83.6
Calvert	60	96.6	n/a	88.1	93.2	100.0	n/a	95.9	100.0	100.0	96.2
Charles	54	85.2	n/a	86.8	81.1	100.0	100.0	100.0	100.0	100.0	94.1
St. Mary's	30	83.3	n/a	90.0	92.9	100.0	n/a	100.0	n/a	86.7	92.5
DIST. 5 TOTALS	280	88.4	n/a	78.2	76.1	100.0	97.0	97.1	100.0	94.3	91.1
Allegany	66	75.8	n/a	98.5	90.5	100.0	100.0	100.0	n/a	100.0	95.2
Garret	73	50.7	n/a	94.4	98.5	100.0	n/a	100.0	n/a	97.2	90.6
Washington	51	100.0	n/a	100.0	97.9	100.0	100.0	100.0	n/a	94.0	98.9
DIST. 6 TOTALS	190	75.5	n/a	97.6	95.6	100.0	100.0	100.0	n/a	97.1	94.9
Carroll	58	89.5	n/a	100.0	97.9	100.0	100.0	100.0	n/a	98.3	98.0
Frederick	69	68.1	n/a	91.2	82.4	98.6	90.9	98.0	100.0	100.0	91.1
Howard	36	72.7	n/a	72.7	69.7	100.0	85.7	100.0	100.0	87.9	86.1
DIST. 7 TOTALS	163	76.8	n/a	88.0	83.3	99.5	92.2	99.3	100.0	95.4	91.7
STATE TOTALS	1641	77.1	n/a	80.8	84.1	99.8	97.4	98.5	94.4	93.8	90.6

1999

SHOULDER CATEGORY

County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	53	92.5	100.0	100.0	82.5	95.0	95.0	100.0	95.0	95.0
Somerset	47	92.9	100.0	100.0	100.0	96.4	92.9	100.0	100.0	97.5
Wicomico	53	85.4	100.0	100.0	82.9	97.6	87.8	100.0	78.0	91.6
Worcester	58	93.0	97.7	100.0	97.7	100.0	95.3	100.0	86.0	96.3
DIST. 1 TOTALS	211	90.9	99.4	100.0	90.8	97.2	92.8	100.0	89.8	95.1
Caroline	56	89.1	100.0	100.0	94.5	100.0	87.3	100.0	96.4	95.7
Cecil	70	100.0	94.2	98.1	90.2	98.1	90.2	98.1	90.4	94.9
Kent	53	93.3	100.0	100.0	72.4	100.0	66.7	100.0	96.7	90.8
QA	54	89.1	100.0	100.0	86.7	97.8	80.0	100.0	91.3	92.9
Talbot	50	97.5	100.0	100.0	97.5	100.0	95.0	100.0	100.0	98.7
DIST. 2 TOTALS	283	93.8	98.8	99.6	88.3	99.2	83.8	99.6	94.9	94.6
Mont/Fairland	44	42.9	100.0	100.0	100.0	100.0	71.4	100.0	85.7	86.9
Mont/Gaithersburg	66	92.3	96.2	96.2	92.3	100.0	88.5	96.2	96.2	94.7
PG/Laurel	65	91.7	100.0	100.0	83.3	100.0	69.4	100.0	97.2	92.3
PG/Marlboro	65	92.9	97.6	97.6	97.6	97.6	92.9	97.6	78.6	94.2
DIST. 3 TOTALS	240	79.9	98.4	98.4	93.3	99.4	80.5	98.4	89.4	92.0
Balt/Golden	32	78.6	89.3	96.4	89.3	92.9	78.6	96.4	92.9	88.9
Balt/Hereford	46	91.7	75.0	91.7	83.3	83.3	75.0	83.3	100.0	84.9
Balt/Owings	47	87.5	95.8	95.8	95.7	95.8	79.2	95.8	66.7	89.0
Harford	66	91.2	84.4	93.9	84.4	93.9	66.7	97.1	77.4	85.8
DIST. 4 TOTALS	191	87.2	86.1	94.5	88.2	91.5	74.9	93.2	84.2	87.2
AA/Annapolis	55	94.3	100.0	94.3	85.7	94.3	82.9	100.0	75.7	90.9
AA/Glen Burnie	66	84.6	96.2	100.0	86.5	94.2	86.5	98.1	78.8	90.6
Calvert	50	75.7	97.3	100.0	73.0	97.3	86.5	100.0	100.0	91.1
Charles	65	88.9	95.6	93.3	70.5	100.0	91.1	100.0	97.8	92.4
St. Mary's	42	87.9	93.9	100.0	75.8	93.9	87.9	100.0	87.5	90.9
DIST. 5 TOTALS	278	86.3	96.6	97.5	78.3	96.0	87.0	99.6	88.0	91.2
Allegany	70	77.5	90.0	95.0	94.9	95.0	74.4	95.0	87.5	88.2
Garret	62	78.4	78.4	100.0	100.0	96.1	68.0	100.0	94.1	88.6
Washington	64	72.9	100.0	100.0	87.5	100.0	89.6	100.0	89.6	92.4
DIST. 6 TOTALS	196	76.3	89.5	98.3	94.1	97.0	77.3	98.3	90.4	89.7
Carroll	47	91.9	94.6	100.0	91.9	100.0	70.3	97.3	70.3	89.4
Frederick	66	68.3	85.4	95.1	82.9	92.7	73.2	90.2	87.8	84.1
Howard	42	84.4	93.8	97.0	68.8	100.0	75.0	97.0	71.9	86.2
DIST. 7 TOTALS	155	81.5	91.2	97.4	81.2	97.6	72.8	94.8	76.7	86.5
STATE TOTALS	1554	85.9	94.8	98.0	87.4	96.9	82.0	97.9	88.2	91.2

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	53	100.0	97.7	100.0	90.0	97.0
Somerset	47	100.0	96.8	100.0	88.9	96.5
Wicomico	53	100.0	96.2	100.0	80.8	94.3
Worcester	58	100.0	90.7	100.0	92.7	95.9
DIST. 1 TOTALS	211	100.0	95.3	100.0	87.9	95.9
Caroline	56	100.0	100.0	100.0	100.0	100.0
Cecil	70	94.8	100.0	100.0	69.6	91.5
Kent	53	100.0	47.6	100.0	100.0	99.4
QA	54	89.4	75.0	71.4	83.3	79.9
Talbot	50	100.0	97.9	100.0	88.9	96.8
DIST. 2 TOTALS	283	96.8	94.1	94.3	88.4	93.5
Mont/Fairland	44	100.0	90.9	97.2	97.6	96.4
Mont/Gaithersburg	66	100.0	94.4	90.7	96.1	95.4
PG/Laurel	65	100.0	100.0	90.4	75.6	92.1
PG/Marlboro	65	100.0	100.0	100.0	75.0	94.2
DIST. 3 TOTALS	240	100.0	96.3	94.6	86.1	94.5
Balt/Golden	32	100.0	75.0	94.7	84.2	88.4
Balt/Hereford	46	100.0	100.0	100.0	95.2	98.9
Balt/Owings	47	96.2	100.0	93.9	83.3	93.7
Harford	66	100.0	90.0	100.0	89.2	94.8
DIST. 4 TOTALS	191	99.0	91.3	97.2	88.0	93.9
AA/Annapolis	55	100.0	90.0	100.0	97.1	96.7
AA/Glen Burnie	66	100.0	94.4	90.9	83.0	92.4
Calvert	50	100.0	100.0	91.7	100.0	98.1
Charles	65	100.0	95.2	83.3	94.4	93.5
St. Mary's	42	100.0	95.2	92.3	91.3	94.9
DIST. 5 TOTALS	278	100.0	95.0	91.6	93.2	95.1
Allegany	70	100.0	88.5	100.0	84.8	93.4
Garret	62	93.2	96.7	97.4	89.5	94.2
Washington	64	100.0	100.0	92.6	96.2	97.4
DIST. 6 TOTALS	196	97.7	95.0	96.7	90.2	95.0
Carroll	47	96.7	84.2	81.8	56.3	80.4
Frederick	66	97.7	100.0	88.9	77.8	91.6
Howard	42	97.5	100.0	88.0	94.7	95.3
DIST. 7 TOTALS	155	97.3	94.7	86.2	76.3	89.1
STATE TOTALS	1554	98.8	94.5	94.5	87.7	94.0

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	53	100.0	100.0	97.7	100.0	100.0	n/a	100.0	100.0	99.7
Somerset	47	100.0	97.7	100.0	100.0	100.0	100.0	100.0	100.0	99.7
Wicomico	53	93.3	100.0	87.0	91.2	96.2	100.0	100.0	100.0	95.9
Worcester	58	97.6	98.2	100.0	95.6	100.0	100.0	100.0	100.0	98.9
DIST. 1 TOTALS	211	97.7	99.0	96.2	96.7	99.1	100.0	100.0	100.0	98.5
Caroline	56	100.0	100.0	100.0	92.1	100.0	100.0	100.0	100.0	99.1
Cecil	70	100.0	98.2	44.1	87.5	100.0	75.0	86.2	85.7	85.5
Kent	53	100.0	100.0	100.0	100.0	100.0	100.0	87.5	100.0	98.1
QA	54	92.9	93.9	71.4	94.1	96.3	100.0	100.0	100.0	93.6
Talbot	50	97.5	100.0	92.3	100.0	100.0	100.0	100.0	100.0	98.7
DIST. 2 TOTALS	283	98.1	98.4	81.6	94.7	99.3	95.0	94.7	97.1	95.0
Mont/Fairland	44	100.0	97.7	75.0	68.6	95.5	100.0	92.9	100.0	91.4
Mont/Gaithersburg	66	98.5	100.0	82.4	79.5	98.5	100.0	86.7	100.0	93.0
PG/Laurel	65	94.8	98.4	29.5	74.1	96.9	100.0	93.9	87.5	84.9
PG/Marlboro	65	98.0	96.8	93.8	93.5	98.5	100.0	87.2	66.7	92.2
DIST. 3 TOTALS	240	97.8	98.2	70.2	78.9	97.3	100.0	90.0	88.5	90.4
Balt/Golden	32	100.0	100.0	92.0	100.0	100.0	100.0	81.0	100.0	96.1
Balt/Hereford	46	97.1	100.0	71.4	88.9	100.0	80.0	90.6	100.0	91.4
Balt/Owings	47	97.8	97.8	85.7	87.9	84.4	93.3	100.0	50.0	88.6
Harford	66	100.0	98.4	79.1	83.3	100.0	100.0	92.7	100.0	94.2
DIST. 4 TOTALS	191	98.7	99.0	82.1	90.0	96.1	93.3	91.1	87.5	92.6
AA/Annapolis	55	95.9	96.2	97.5	82.4	100.0	100.0	78.9	100.0	93.3
AA/Glen Burnie	66	96.9	98.5	54.9	91.2	90.9	100.0	90.9	100.0	90.5
Calvert	50	97.9	100.0	38.7	95.8	100.0	n/a	76.9	n/a	85.4
Charles	65	93.3	92.6	12.5	90.5	100.0	100.0	88.9	66.7	81.4
St. Mary's	42	97.1	100.0	91.3	93.3	100.0	100.0	76.5	n/a	93.5
DIST. 5 TOTALS	278	96.2	97.5	59.0	90.6	98.2	100.0	82.4	88.9	88.8
Allegany	70	95.8	100.0	56.5	80.0	98.6	100.0	85.2	100.0	89.8
Garret	62	100.0	98.1	57.1	100.0	100.0	50.0	96.3	91.7	88.2
Washington	64	100.0	100.0	69.8	85.7	96.9	93.8	91.7	87.5	91.2
DIST. 6 TOTALS	196	99.5	99.4	61.1	88.6	98.5	81.3	91.1	93.1	89.7
Carroll	47	100.0	100.0	94.9	86.4	93.5	n/a	80.6	100.0	93.4
Frederick	66	98.4	98.3	95.2	82.1	96.9	100.0	88.6	100.0	94.7
Howard	42	100.0	100.0	70.0	84.4	100.0	100.0	85.2	100.0	92.3
DIST. 7 TOTALS	155	99.5	99.4	86.7	84.3	96.8	100.0	84.8	100.0	93.5
STATE TOTALS	1554	98.1	98.6	76.4	89.6	98.0	95.7	90.6	93.7	92.7

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	53	77.4	95.7	96.2	100.0	100.0	n/a	100.0	100.0	98.1	95.9
Somerset	47	100.0	84.6	93.6	80.9	100.0	n/a	100.0	n/a	95.7	93.8
Wicomico	53	87.8	90.0	96.2	91.1	100.0	n/a	90.9	100.0	94.3	93.6
Worcester	58	88.2	89.7	91.4	85.7	100.0	n/a	100.0	100.0	100.0	94.4
DIST. 1 TOTALS	211	88.3	90.0	94.4	89.4	100.0	0.0	97.7	100.0	97.0	94.4
Caroline	56	90.9	63.6	94.6	100.0	100.0	n/a	100.0	100.0	100.0	93.6
Cecil	70	55.2	37.5	88.6	78.6	100.0	100.0	100.0	100.0	91.4	83.5
Kent	53	94.3	50.0	98.1	100.0	100.0	n/a	100.0	100.0	100.0	92.8
QA	54	70.4	63.6	85.2	87.5	98.1	n/a	100.0	n/a	98.1	86.6
Talbot	50	98.0	73.7	96.0	90.0	100.0	n/a	100.0	100.0	98.0	94.5
DIST. 2 TOTALS	283	81.8	57.7	92.5	91.2	99.6	100.0	100.0	100.0	97.5	90.2
Mont/Fairland	44	87.5	31.0	97.7	56.4	100.0	n/a	100.0	100.0	72.7	80.7
Mont/Gaithersburg	66	86.4	58.8	95.5	69.7	100.0	100.0	97.7	100.0	90.8	88.7
PG/Laurel	65	43.1	19.2	95.4	90.8	96.9	100.0	100.0	100.0	95.3	82.3
PG/Marlboro	65	87.5	73.8	87.7	57.8	100.0	100.0	100.0	75.0	87.7	86.3
DIST. 3 TOTALS	240	76.1	45.7	94.1	68.7	99.2	100.0	99.4	93.8	86.6	84.5
Balt/Golden	32	93.3	59.4	93.8	100.0	100.0	100.0	100.0	100.0	78.1	91.6
Balt/Hereford	46	83.3	56.0	100.0	54.8	100.0	100.0	97.5	100.0	84.1	86.1
Balt/Owings	47	84.6	52.5	91.1	76.9	100.0	100.0	100.0	100.0	84.4	87.7
Harford	66	83.3	46.5	92.4	80.3	95.5	100.0	98.2	100.0	75.8	85.7
DIST. 4 TOTALS	191	86.2	53.6	94.3	78.0	98.9	100.0	98.9	100.0	80.6	87.8
AA/Annapolis	55	78.8	90.5	87.0	29.6	100.0	100.0	95.7	100.0	81.8	84.8
AA/Glen Burnie	66	87.1	63.2	83.3	78.3	100.0	100.0	100.0	100.0	65.2	86.4
Calvert	50	96.0	54.5	88.0	55.1	100.0	100.0	100.0	n/a	88.0	85.7
Charles	65	88.9	62.1	83.1	66.7	100.0	100.0	91.7	100.0	90.8	86.9
St. Mary's	42	100.0	52.0	95.2	97.5	100.0	n/a	97.4	100.0	85.7	90.9
DIST. 5 TOTALS	278	90.2	64.4	87.3	65.5	100.0	100.0	97.0	100.0	82.3	86.9
Allegany	70	72.7	41.5	100.0	90.6	100.0	100.0	100.0	100.0	85.7	87.8
Garret	62	85.0	44.4	93.4	98.2	100.0	100.0	100.0	100.0	93.5	90.5
Washington	64	89.1	50.0	92.2	95.3	100.0	100.0	100.0	87.5	98.4	90.7
DIST. 6 TOTALS	196	82.3	45.3	95.2	94.7	100.0	100.0	100.0	95.8	92.6	89.7
Carroll	47	78.7	75.8	100.0	76.6	100.0	n/a	90.0	100.0	97.9	89.7
Frederick	66	85.9	61.3	93.8	94.6	100.0	100.0	100.0	100.0	90.9	91.8
Howard	42	76.2	69.0	69.0	70.7	100.0	87.5	100.0	100.0	78.6	83.5
DIST. 7 TOTALS	155	80.3	68.7	87.6	80.6	100.0	93.8	96.7	100.0	89.1	88.3
STATE TOTALS	1554	83.9	61.1	92.1	80.5	99.7	99.3	98.5	98.5	89.3	88.8

2000

SHOULDER CATEGORY

County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	63	92.3	90.4	100.0	88.5	100.0	82.7	100.0	86.5	92.4
Somerset	63	100.0	100.0	100.0	93.8	100.0	93.8	100.0	93.8	97.7
Wicomico	60	83.0	90.6	98.1	77.4	96.2	73.6	100.0	79.2	87.1
Worcester	65	91.8	98.0	100.0	93.9	100.0	89.8	100.0	93.9	95.8
DIST. 1 TOTALS	251	91.8	94.7	99.5	88.4	99.1	85.0	100.0	88.4	93.3
Caroline	64	96.7	96.7	98.3	98.3	100.0	81.7	98.3	98.3	95.7
Cecil	61	100.0	95.8	95.8	95.8	93.8	85.4	100.0	91.7	94.6
Kent	62	75.6	90.2	100.0	78.0	100.0	65.9	100.0	92.7	87.3
QA	65	93.9	100.0	100.0	98.0	98.0	98.0	100.0	95.9	97.9
Talbot	57	95.5	95.5	100.0	93.2	97.7	88.6	95.5	100.0	95.6
DIST. 2 TOTALS	309	92.3	95.6	98.8	92.7	97.9	83.9	98.8	95.7	94.2
Mont/Fairland	58	64.7	88.2	100.0	88.2	94.1	82.4	100.0	58.8	84.5
Mont/Gaithersburg	63	68.4	84.2	94.7	100.0	89.5	73.7	100.0	68.4	84.4
PG/Laurel	62	94.7	97.4	94.7	78.9	97.4	76.3	100.0	76.3	89.5
PG/Marlboro	60	97.2	94.4	86.1	91.7	94.4	86.1	94.4	80.6	90.8
DIST. 3 TOTALS	243	81.3	91.1	93.9	89.7	93.9	79.6	98.6	71.0	87.3
Balt/Golden	55	76.0	100.0	100.0	84.6	96.2	65.4	96.2	88.5	87.8
Balt/Hereford	54	92.0	88.0	100.0	92.0	88.0	84.0	88.0	96.0	90.6
Balt/Owings	47	90.3	90.3	93.5	96.8	90.3	77.4	96.8	77.4	88.8
Harford	68	74.4	81.4	90.7	72.1	88.4	60.5	81.4	88.4	79.3
DIST. 4 TOTALS	224	83.2	89.9	96.1	86.4	90.7	71.8	90.6	87.6	86.6
AA/Annapolis	68	100.0	95.3	93.0	97.7	97.7	90.7	100.0	86.0	95.1
AA/Glen Burnie	63	93.0	97.7	95.3	100.0	97.7	97.7	95.3	95.3	96.5
Calvert	65	91.5	100.0	97.9	80.9	100.0	89.4	100.0	83.0	93.0
Charles	61	86.0	95.3	100.0	97.7	100.0	93.0	100.0	81.4	94.2
St. Mary's	63	88.2	85.3	97.1	76.5	97.1	64.7	100.0	94.1	87.4
DIST. 5 TOTALS	320	91.8	94.7	96.7	90.5	98.5	87.1	99.1	88.0	93.3
Allegany	57	71.1	94.7	100.0	97.4	100.0	76.3	100.0	97.4	91.6
Garret	67	74.6	84.7	100.0	98.3	94.9	78.0	100.0	66.1	86.8
Washington	68	86.0	86.0	94.0	84.0	96.0	70.0	90.0	90.0	86.7
DIST. 6 TOTALS	192	77.2	88.5	98.0	93.2	97.0	74.8	96.7	84.5	88.4
Carroll	63	87.2	89.7	94.9	71.8	100.0	51.3	100.0	97.5	85.9
Frederick	69	83.3	95.8	100.0	89.4	95.7	83.0	89.6	100.0	91.8
Howard	58	88.4	100.0	100.0	90.7	97.7	86.0	97.7	93.0	94.0
DIST. 7 TOTALS	190	86.3	95.2	98.3	84.0	97.8	73.4	95.8	96.8	90.6
STATE TOTALS	1729	87.0	93.1	97.3	89.5	96.5	80.2	97.3	87.5	90.8

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	63	81.8	71.8	100.0	85.7	84.3
Somerset	63	95.2	84.6	100.0	37.5	80.0
Wicomico	60	70.4	62.2	68.8	77.8	69.5
Worcester	65	96.0	75.0	100.0	87.5	89.4
DIST. 1 TOTALS	251	85.9	73.4	92.2	72.1	80.8
Caroline	64	96.5	94.4	100.0	100.0	97.6
Cecil	61	100.0	92.0	95.0	73.1	90.4
Kent	62	62.3	49.0	92.3	90.9	72.4
QA	65	95.4	87.0	100.0	83.3	91.4
Talbot	57	98.0	100.0	100.0	100.0	99.5
DIST. 2 TOTALS	309	90.4	84.5	97.5	89.5	90.3
Mont/Fairland	58	93.3	75.0	77.1	75.5	80.5
Mont/Gaithersburg	63	96.2	95.5	95.1	89.6	94.2
PG/Laurel	62	100.0	100.0	97.8	96.5	98.7
PG/Marlboro	60	79.5	91.8	95.5	88.2	88.5
DIST. 3 TOTALS	243	92.2	90.6	91.4	87.4	90.5
Balt/Golden	55	96.7	100.0	97.9	90.6	96.4
Balt/Hereford	54	100.0	95.5	97.4	80.6	93.7
Balt/Owings	47	97.6	96.8	97.4	93.8	96.4
Harford	68	100.0	96.6	90.6	90.0	94.6
DIST. 4 TOTALS	224	98.6	97.2	95.8	88.8	95.3
AA/Annapolis	68	100.0	93.5	97.2	87.8	94.8
AA/Glen Burnie	63	100.0	100.0	92.3	87.0	95.2
Calvert	65	100.0	90.0	100.0	97.5	96.8
Charles	61	92.7	81.3	90.0	90.9	88.6
St. Mary's	63	95.0	90.4	100.0	88.9	93.5
DIST. 5 TOTALS	320	97.5	91.0	95.9	90.4	93.8
Allegany	57	100.0	96.0	91.7	87.5	94.1
Garret	67	91.8	84.0	87.5	77.8	85.5
Washington	68	94.9	90.0	81.8	50.0	80.1
DIST. 6 TOTALS	192	95.6	90.0	87.0	71.8	86.5
Carroll	63	98.2	100.0	92.6	85.7	94.5
Frederick	69	100.0	100.0	100.0	80.0	95.3
Howard	58	100.0	89.5	100.0	92.3	95.4
DIST. 7 TOTALS	190	99.4	96.5	97.5	86.0	95.1
STATE TOTALS	1729	94.0	88.6	94.2	84.5	90.4

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	63	97.6	92.7	94.1	87.1	96.8	100.0	100.0	100.0	96.0
Somerset	63	100.0	100.0	91.9	98.2	100.0	100.0	92.9	100.0	97.7
Wicomico	60	96.1	98.0	53.8	73.9	91.7	n/a	100.0	100.0	88.4
Worcester	65	100.0	100.0	72.2	73.2	89.2	n/a	100.0	100.0	91.4
DIST. 1 TOTALS	251	98.4	97.7	78.0	83.1	94.4	100.0	98.2	100.0	93.4
Caroline	64	100.0	100.0	60.0	100.0	93.8	n/a	100.0	100.0	93.9
Cecil	61	91.5	94.9	26.3	94.1	100.0	61.5	93.5	100.0	83.7
Kent	62	100.0	95.6	87.0	78.3	96.8	100.0	100.0	100.0	94.9
QA	65	96.2	97.8	96.9	86.7	100.0	100.0	96.3	100.0	96.6
Talbot	57	100.0	100.0	100.0	91.7	100.0	n/a	100.0	100.0	98.9
DIST. 2 TOTALS	309	97.5	97.6	74.0	90.1	98.1	87.2	98.0	100.0	93.6
Mont/Fairland	58	68.4	91.4	20.7	55.8	84.5	100.0	70.4	100.0	73.0
Mont/Gaithersburg	63	96.7	96.8	76.9	77.8	100.0	100.0	93.9	100.0	92.8
PG/Laurel	62	100.0	100.0	39.0	80.0	96.8	94.7	93.2	100.0	88.4
PG/Marlboro	60	83.7	90.9	62.9	90.6	91.7	100.0	90.9	100.0	88.4
DIST. 3 TOTALS	243	87.2	94.8	49.9	76.0	93.2	98.7	94.1	100.0	85.6
Balt/Golden	55	100.0	98.1	89.2	90.4	100.0	100.0	93.9	100.0	96.4
Balt/Hereford	54	100.0	98.1	90.9	93.1	98.1	93.8	95.5	100.0	96.3
Balt/Owings	47	97.8	100.0	42.5	94.1	100.0	100.0	97.2	83.3	90.0
Harford	68	97.0	100.0	51.5	76.5	100.0	100.0	97.3	100.0	90.6
DIST. 4 TOTALS	224	98.7	99.1	68.5	88.5	99.5	98.4	96.0	95.8	93.3
AA/Annapolis	68	96.8	98.4	66.0	90.5	94.1	100.0	79.2	100.0	90.3
AA/Glen Burnie	63	96.7	98.4	67.6	92.9	100.0	100.0	77.8	75.0	88.6
Calvert	65	100.0	100.0	17.6	96.2	93.8	100.0	95.2	n/a	87.0
Charles	61	97.0	97.7	96.4	94.4	96.7	100.0	100.0	100.0	97.8
St. Mary's	63	100.0	95.7	85.2	100.0	100.0	100.0	96.4	100.0	97.1
DIST. 5 TOTALS	320	98.1	98.0	66.6	94.8	96.9	100.0	89.7	93.8	92.2
Allegany	57	97.8	100.0	98.1	71.4	91.2	100.0	96.0	100.0	94.4
Garret	67	100.0	98.4	67.2	97.8	97.0	100.0	92.0	100.0	94.0
Washington	68	96.0	100.0	93.6	92.6	94.1	100.0	90.0	100.0	95.5
DIST. 6 TOTALS	192	97.9	99.5	86.3	87.3	94.1	100.0	92.7	100.0	94.7
Carroll	63	100.0	100.0	100.0	77.8	100.0	100.0	79.2	100.0	94.2
Frederick	69	100.0	100.0	100.0	92.3	94.2	100.0	94.7	100.0	97.6
Howard	58	100.0	100.0	46.2	93.3	100.0	92.9	100.0	100.0	92.1
DIST. 7 TOTALS	190	100.0	100.0	82.1	87.8	98.1	97.6	91.3	100.0	94.6
STATE TOTALS	1729	96.8	98.0	71.2	87.2	96.4	97.6	93.4	98.5	92.4

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	63	46.7	68.4	90.3	89.2	100.0	n/a	n/a	100.0	95.2	83.9
Somerset	63	87.3	88.7	88.9	84.1	100.0	100.0	100.0	100.0	96.8	94.0
Wicomico	60	55.9	58.8	83.3	84.5	100.0	100.0	100.0	50.0	88.3	81.7
Worcester	65	78.7	88.5	93.8	87.0	100.0	100.0	100.0	100.0	98.5	94.1
DIST. 1 TOTALS	251	67.1	76.1	89.1	86.2	100.0	100.0	100.0	87.5	94.7	88.4
Caroline	64	71.9	77.8	90.6	94.4	100.0	n/a	100.0	100.0	96.9	91.4
Cecil	61	93.3	54.8	93.4	73.8	98.4	100.0	n/a	100.0	100.0	89.0
Kent	62	74.2	30.8	85.5	96.7	100.0	n/a	100.0	100.0	96.8	85.5
QA	65	89.2	44.0	93.8	93.8	98.5	n/a	97.3	n/a	98.5	88.3
Talbot	57	84.2	44.4	98.2	96.8	98.2	n/a	100.0	100.0	94.7	89.6
DIST. 2 TOTALS	309	82.6	50.4	92.3	91.1	99.0	100.0	99.3	100.0	97.4	88.7
Mont/Fairland	58	62.8	19.0	93.1	34.5	98.3	80.0	100.0	100.0	69.0	72.9
Mont/Gaithersburg	63	93.2	61.4	95.2	53.4	98.4	100.0	100.0	100.0	76.2	86.4
PG/Laurel	62	72.6	49.2	58.1	77.4	96.8	100.0	100.0	72.7	69.4	78.2
PG/Marlboro	60	77.2	42.9	70.0	45.6	100.0	100.0	93.8	71.4	73.3	75.7
DIST. 3 TOTALS	243	76.4	43.1	79.1	52.7	98.4	95.0	98.4	86.0	72.0	78.3
Balt/Golden	55	100.0	88.9	65.5	89.1	100.0	100.0	100.0	100.0	92.7	92.9
Balt/Hereford	54	65.4	60.4	96.3	58.0	100.0	100.0	98.0	100.0	96.3	86.0
Balt/Owings	47	76.6	66.7	89.4	80.9	100.0	93.8	100.0	100.0	93.6	89.0
Harford	68	83.3	36.7	95.5	88.9	98.5	100.0	100.0	66.7	91.2	85.6
DIST. 4 TOTALS	224	81.3	63.2	86.6	79.2	99.6	98.4	99.5	91.7	93.5	88.4
AA/Annapolis	68	94.1	65.4	79.4	55.9	100.0	100.0	98.5	100.0	82.4	86.2
AA/Glen Burnie	63	91.5	50.8	79.4	59.0	98.4	100.0	100.0	85.7	74.6	82.6
Calvert	65	70.3	54.5	98.5	78.1	100.0	100.0	100.0	100.0	95.4	88.5
Charles	61	86.9	79.7	95.1	77.0	100.0	100.0	100.0	100.0	83.6	91.4
St. Mary's	63	90.2	83.1	96.8	96.7	100.0	n/a	98.2	n/a	92.1	94.1
DIST. 5 TOTALS	320	86.6	66.7	89.8	73.4	99.7	100.0	99.3	96.4	85.6	88.5
Allegany	57	63.6	68.3	96.5	94.2	96.5	100.0	94.7	100.0	96.5	89.9
Garret	67	42.4	54.5	97.0	88.9	100.0	100.0	94.6	100.0	91.0	85.3
Washington	68	76.6	74.6	92.6	76.6	100.0	92.3	98.3	100.0	85.3	88.5
DIST. 6 TOTALS	192	60.9	65.8	95.4	86.6	98.8	97.4	95.9	100.0	90.9	87.9
Carroll	63	73.0	23.1	96.8	81.0	100.0	n/a	100.0	100.0	90.5	83.0
Frederick	69	94.1	79.4	97.1	97.0	98.6	100.0	100.0	50.0	95.7	91.8
Howard	58	84.5	82.7	86.2	84.5	98.3	100.0	98.3	100.0	91.4	91.7
DIST. 7 TOTALS	190	83.9	61.7	93.4	87.5	98.9	100.0	99.4	83.3	92.5	88.8
STATE TOTALS	1729	77.8	60.6	89.2	79.2	99.2	98.4	98.9	92.2	89.5	87.0

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SHOULDER CATEGORY

County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	63	87.5	100.0	100.0	92.5	100.0	85.0	100.0	100.0	95.4
Somerset	66	76.1	95.7	97.8	84.8	97.8	91.3	100.0	50.0	87.2
Wicomico	62	95.7	93.5	91.3	89.1	97.8	78.3	95.7	82.6	90.5
Worcester	64	91.8	98.0	100.0	95.9	100.0	95.9	100.0	100.0	97.6
DIST. 1 TOTALS	255	87.8	96.8	97.3	90.6	98.9	87.6	98.9	83.2	92.7
Caroline	66	84.4	95.3	100.0	82.8	100.0	81.3	100.0	93.8	92.0
Cecil	66	84.6	98.1	98.1	90.4	98.1	73.1	100.0	82.7	90.3
Kent	66	82.5	97.5	100.0	77.5	100.0	65.0	100.0	92.5	89.0
QA	67	84.0	92.0	100.0	92.0	98.0	86.0	100.0	92.0	92.8
Talbot	61	93.3	95.6	100.0	97.8	100.0	93.3	100.0	97.8	97.1
DIST. 2 TOTALS	326	85.5	95.7	99.6	88.1	99.2	79.7	100.0	91.7	92.2
Mont/Fairland	59	100.0	100.0	100.0	94.1	100.0	82.4	100.0	82.4	94.8
Mont/Gaithersburg	67	76.5	100.0	100.0	100.0	100.0	100.0	100.0	94.1	96.3
PG/Laurel	63	84.8	95.7	91.3	89.1	95.7	67.4	93.5	73.9	86.2
PG/Marlboro	65	79.6	88.9	100.0	94.4	92.6	81.5	100.0	46.3	85.5
DIST. 3 TOTALS	254	85.2	96.1	97.8	94.4	97.1	82.8	98.4	74.2	90.7
Balt/Golden	60	74.3	85.7	100.0	85.7	94.3	65.7	88.6	80.0	83.9
Balt/Hereford	64	91.3	91.3	100.0	95.7	95.7	91.3	100.0	100.0	95.4
Balt/Owings	63	78.9	97.4	100.0	92.1	97.4	84.2	97.4	100.0	93.1
Harford	48	90.6	84.4	90.6	96.9	100.0	81.3	96.9	100.0	92.3
DIST. 4 TOTALS	235	83.8	89.7	97.7	92.6	96.8	80.6	95.7	95.0	91.2
AA/Annapolis	61	84.2	92.1	97.4	97.4	97.4	94.7	100.0	81.6	93.1
AA/Glen Burnie	66	100.0	97.9	100.0	100.0	100.0	95.8	100.0	100.0	99.1
Calvert	65	69.8	96.2	100.0	94.3	100.0	77.4	100.0	62.3	87.4
Charles	64	97.6	100.0	100.0	100.0	97.6	85.7	97.6	97.6	96.7
St. Mary's	66	80.0	77.8	100.0	68.9	97.8	75.6	100.0	77.8	84.7
DIST. 5 TOTALS	322	86.3	92.8	99.5	92.1	98.6	85.8	99.5	83.8	92.2
Allegany	62	65.1	93.0	100.0	93.0	100.0	79.1	100.0	88.4	89.5
Garret	66	73.6	73.6	98.1	94.3	94.3	47.2	100.0	49.1	78.1
Washington	70	78.9	89.5	100.0	86.0	96.5	73.7	100.0	94.7	89.4
DIST. 6 TOTALS	198	72.5	85.4	99.4	91.1	96.9	66.6	100.0	77.4	85.7
Carroll	65	71.1	95.6	100.0	82.2	100.0	73.3	100.0	82.2	87.8
Frederick	68	97.5	92.5	100.0	90.0	100.0	62.5	100.0	70.0	88.8
Howard	66	93.6	97.9	100.0	95.7	100.0	91.5	97.9	95.7	96.5
DIST. 7 TOTALS	199	87.4	95.3	100.0	89.3	100.0	75.8	99.3	82.7	91.0
STATE TOTALS	1789	84.6	93.4	98.7	91.2	98.2	80.7	98.8	84.5	91.1

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	63	95.1	88.1	100.0	72.7	89.2
Somerset	66	82.0	69.2	100.0	72.7	80.6
Wicomico	62	93.0	83.0	94.1	94.4	90.9
Worcester	64	93.1	87.5	100.0	94.7	93.6
DIST. 1 TOTALS	255	90.8	82.0	98.5	83.7	88.6
Caroline	66	75.9	61.4	100.0	86.4	80.1
Cecil	66	91.7	76.7	100.0	71.4	84.9
Kent	66	78.1	72.2	100.0	91.7	84.8
QA	67	100.0	100.0	66.7	93.8	90.8
Talbot	61	74.6	58.3	66.7	100.0	74.3
DIST. 2 TOTALS	326	84.0	73.7	86.7	88.6	83.0
Mont/Fairland	59	92.3	80.0	93.8	85.7	87.8
Mont/Gaithersburg	67	100.0	92.0	95.8	97.7	96.4
PG/Laurel	63	93.5	100.0	96.3	86.5	94.3
PG/Marlboro	65	92.0	90.0	81.8	84.3	87.3
DIST. 3 TOTALS	254	94.5	90.5	91.9	88.6	91.4
Balt/Golden	60	100.0	100.0	98.1	93.5	98.0
Balt/Hereford	64	100.0	94.1	96.4	100.0	97.6
Balt/Owings	63	100.0	100.0	97.7	85.7	96.1
Harford	48	96.8	66.7	93.8	94.7	87.6
DIST. 4 TOTALS	235	99.2	90.2	96.5	93.5	94.8
AA/Annapolis	61	84.2	73.7	95.8	96.6	87.0
AA/Glen Burnie	66	100.0	100.0	100.0	93.0	98.4
Calvert	65	95.2	85.7	100.0	92.5	93.2
Charles	64	100.0	100.0	100.0	100.0	100.0
St. Mary's	66	83.6	76.9	100.0	97.2	88.8
DIST. 5 TOTALS	322	92.6	87.3	99.2	95.9	93.5
Allegany	62	100.0	100.0	100.0	80.8	95.5
Garret	66	94.4	85.0	87.5	100.0	91.6
Washington	70	87.5	44.4	94.7	81.8	76.4
DIST. 6 TOTALS	198	94.0	76.5	94.1	87.5	87.8
Carroll	65	90.7	86.7	69.2	72.7	80.4
Frederick	68	98.5	97.8	100.0	89.7	96.6
Howard	66	100.0	92.3	100.0	84.6	94.4
DIST. 7 TOTALS	199	96.4	92.3	89.7	82.3	90.5
STATE TOTALS	1789	92.6	84.3	93.9	89.1	89.9

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	63	100.0	100.0	85.0	96.6	100.0	100.0	100.0	100.0	97.8
Somerset	66	94.7	95.0	85.7	100.0	93.9	100.0	90.9	100.0	94.7
Wicomico	62	98.0	100.0	92.5	92.9	98.4	100.0	83.3	87.5	94.0
Worcester	64	100.0	100.0	93.8	98.3	100.0	100.0	100.0	100.0	99.1
DIST. 1 TOTALS	255	98.2	98.8	89.2	97.0	98.1	100.0	93.6	96.9	96.4
Caroline	66	92.3	100.0	96.2	87.5	100.0	100.0	100.0	n/a	96.5
Cecil	66	100.0	89.7	65.6	80.0	98.5	100.0	85.3	100.0	89.7
Kent	66	100.0	100.0	83.3	100.0	98.5	100.0	93.8	100.0	96.9
QA	67	100.0	96.4	68.0	85.7	100.0	n/a	92.6	100.0	92.1
Talbot	61	98.0	98.1	96.3	87.1	93.4	100.0	100.0	100.0	96.7
DIST. 2 TOTALS	326	98.1	96.8	81.9	88.1	98.1	100.0	94.3	100.0	94.4
Mont/Fairland	59	87.3	98.3	33.3	52.6	96.6	100.0	82.6	75.0	78.7
Mont/Gaithersburg	67	100.0	94.9	93.0	92.5	98.5	100.0	91.2	100.0	96.1
PG/Laurel	63	94.5	96.7	16.7	79.2	98.4	100.0	92.7	100.0	85.1
PG/Marlboro	65	75.8	81.3	25.0	96.0	100.0	100.0	84.4	85.7	80.6
DIST. 3 TOTALS	254	89.4	92.8	42.0	80.1	98.4	100.0	87.7	90.2	85.1
Balt/Golden	60	96.6	100.0	45.2	87.2	100.0	100.0	95.3	90.0	89.7
Balt/Hereford	64	96.1	95.1	63.6	97.0	98.4	100.0	79.2	100.0	90.7
Balt/Owings	63	100.0	100.0	68.2	75.9	95.2	100.0	100.0	100.0	92.8
Harford	48	100.0	100.0	62.5	93.3	100.0	100.0	78.6	100.0	91.5
DIST. 4 TOTALS	235	98.2	98.8	59.9	88.4	98.4	100.0	88.3	97.5	91.2
AA/Annapolis	61	98.0	96.2	46.3	93.5	100.0	100.0	74.4	100.0	88.1
AA/Glen Burnie	66	100.0	100.0	76.9	75.4	100.0	100.0	86.7	100.0	92.3
Calvert	65	98.2	100.0	60.9	85.7	86.2	n/a	96.2	100.0	90.2
Charles	64	100.0	97.8	82.9	88.0	100.0	100.0	96.6	100.0	95.7
St. Mary's	66	94.5	97.9	67.9	83.3	100.0	100.0	84.6	100.0	90.7
DIST. 5 TOTALS	322	98.1	98.4	67.0	85.2	97.2	100.0	87.7	100.0	91.4
Allegany	62	98.2	95.0	78.6	90.5	100.0	83.3	94.4	100.0	92.8
Garret	66	96.1	96.8	66.1	100.0	100.0	83.3	94.1	100.0	92.3
Washington	70	93.8	97.1	72.9	89.2	98.6	100.0	95.3	100.0	93.3
DIST. 6 TOTALS	198	96.0	96.3	72.5	93.2	99.5	88.9	94.6	100.0	92.8
Carroll	65	100.0	100.0	96.5	76.9	84.6	100.0	100.0	100.0	95.0
Frederick	68	100.0	100.0	95.1	95.2	100.0	100.0	92.6	100.0	97.7
Howard	66	100.0	98.4	66.0	88.3	98.5	100.0	96.2	100.0	93.6
DIST. 7 TOTALS	199	100.0	99.5	85.9	86.8	94.4	100.0	96.2	100.0	95.4
STATE TOTALS	1789	96.9	97.3	70.9	88.1	97.8	98.7	91.5	97.7	92.3

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	63	67.2	57.1	88.9	95.2	100.0	n/a	100.0	n/a	98.4	87.2
Somerset	66	81.5	81.8	57.6	86.2	100.0	n/a	100.0	100.0	89.4	87.1
Wicomico	62	91.8	82.9	98.4	88.5	100.0	100.0	100.0	100.0	93.5	95.0
Worcester	64	96.7	85.7	96.9	97.4	100.0	n/a	100.0	100.0	100.0	97.1
DIST. 1 TOTALS	255	84.3	76.9	85.4	91.8	100.0	100.0	100.0	100.0	95.3	91.6
Caroline	66	69.7	77.3	87.9	91.5	100.0	n/a	100.0	n/a	97.0	89.5
Cecil	66	95.4	72.4	90.8	82.8	98.5	100.0	100.0	100.0	98.5	93.1
Kent	66	64.1	46.2	86.2	91.7	100.0	100.0	97.4	n/a	98.5	86.0
QA	67	62.7	70.0	76.1	97.0	100.0	n/a	100.0	100.0	94.0	87.5
Talbot	61	68.3	71.4	96.7	89.8	100.0	n/a	83.3	100.0	88.5	87.0
DIST. 2 TOTALS	326	72.0	67.5	87.5	90.5	99.7	100.0	96.2	100.0	95.3	88.6
Mont/Fairland	59	63.6	48.2	87.9	42.3	96.6	100.0	100.0	100.0	76.3	79.4
Mont/Gaithersburg	67	95.2	85.5	94.0	74.5	100.0	100.0	98.1	100.0	56.7	89.3
PG/Laurel	63	73.3	40.0	42.9	65.0	98.4	100.0	100.0	81.8	66.7	74.8
PG/Marlboro	65	63.1	51.8	60.0	45.2	100.0	100.0	92.3	85.7	43.1	71.6
DIST. 3 TOTALS	254	73.8	56.4	71.2	56.8	98.8	100.0	97.6	91.9	60.7	78.8
Balt/Golden	60	83.3	75.9	86.7	89.1	100.0	100.0	100.0	87.5	90.0	90.7
Balt/Hereford	64	82.8	70.9	96.9	75.0	98.4	100.0	100.0	100.0	95.3	91.0
Balt/Owings	63	79.0	83.3	82.5	77.8	100.0	100.0	100.0	63.6	95.2	88.0
Harford	48	64.6	65.7	93.8	75.0	100.0	100.0	97.8	100.0	100.0	88.5
DIST. 4 TOTALS	235	77.4	74.0	90.0	79.2	99.6	100.0	99.5	87.8	95.1	89.5
AA/Annapolis	61	67.8	62.8	98.4	52.5	100.0	100.0	100.0	100.0	70.5	83.6
AA/Glen Burnie	66	95.2	86.4	75.8	77.3	100.0	100.0	100.0	100.0	86.4	91.2
Calvert	65	87.7	45.0	95.4	72.3	100.0	n/a	100.0	100.0	87.7	86.0
Charles	64	90.3	91.7	95.3	85.9	100.0	n/a	100.0	100.0	90.6	94.2
St. Mary's	66	60.9	78.1	87.9	95.3	100.0	n/a	100.0	75.0	84.8	86.2
DIST. 5 TOTALS	322	80.4	72.8	90.5	76.7	100.0	100.0	100.0	95.0	84.0	88.2
Allegany	62	47.5	69.0	88.7	78.7	100.0	100.0	92.0	n/a	90.3	83.7
Garret	66	56.1	81.8	98.5	95.1	100.0	100.0	97.9	n/a	93.9	90.7
Washington	70	72.9	37.0	92.9	83.1	100.0	100.0	100.0	75.0	94.3	84.7
DIST. 6 TOTALS	198	58.8	62.6	93.4	85.6	100.0	100.0	96.6	75.0	92.8	86.4
Carroll	65	65.6	37.8	100.0	93.1	100.0	100.0	92.3	100.0	86.2	86.0
Frederick	68	54.4	74.2	97.1	91.2	100.0	100.0	100.0	100.0	80.9	88.6
Howard	66	74.2	55.6	100.0	87.1	100.0	100.0	100.0	84.2	90.9	88.5
DIST. 7 TOTALS	199	64.8	55.9	99.0	90.5	100.0	100.0	97.4	94.7	86.0	87.7
STATE TOTALS	1789	74.1	67.3	87.6	81.3	99.7	100.0	98.3	93.6	87.1	87.4

2002

SHOULDER CATEGORY

County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	65	72.7	95.5	100.0	72.7	100.0	84.1	97.7	79.5	87.9
Somerset	64	94.7	86.8	100.0	78.9	97.4	86.8	100.0	92.1	92.1
Wicomico	68	76.7	97.7	100.0	88.4	100.0	83.7	100.0	95.3	92.5
Worcester	72	81.6	100.0	100.0	91.8	95.9	85.7	98.0	98.0	93.6
DIST. 1 TOTALS	269	81.5	95.0	100.0	83.0	98.3	85.1	98.9	91.2	91.5
Caroline	71	91.0	80.6	97.0	85.1	98.5	73.1	100.0	89.6	89.0
Cecil	68	57.1	98.0	100.0	95.9	100.0	77.6	98.0	91.8	89.3
Kent	66	67.5	95.0	100.0	87.5	95.0	92.5	100.0	100.0	91.9
QA	68	88.0	94.0	100.0	100.0	100.0	74.5	100.0	80.0	91.7
Talbot	58	80.4	100.0	100.0	95.7	100.0	93.5	100.0	97.8	95.8
DIST. 2 TOTALS	331	76.8	93.5	99.4	92.8	98.7	82.2	99.6	91.8	91.6
Mont/Fairland	64	86.7	93.3	93.3	93.3	100.0	60.0	93.3	87.5	87.9
Mont/Gaithersburg	68	78.3	100.0	95.7	100.0	95.7	100.0	100.0	87.0	94.6
PG/Laurel	57	90.3	93.5	100.0	90.3	96.8	41.9	100.0	54.8	82.8
PG/Marlboro	67	71.1	86.8	97.4	86.8	100.0	78.9	100.0	94.7	89.1
DIST. 3 TOTALS	256	81.6	93.4	96.6	92.6	98.1	70.2	98.3	81.0	88.6
Balt/Golden	25	75.0	83.3	91.7	66.7	83.3	33.3	100.0	58.3	73.1
Balt/Hereford	63	91.2	94.1	94.1	91.2	100.0	85.3	97.1	73.5	91.0
Balt/Owings	57	74.2	96.7	93.3	93.3	96.7	83.3	100.0	86.7	90.3
Harford	68	100.0	92.3	100.0	94.9	100.0	64.1	92.3	92.3	91.5
DIST. 4 TOTALS	213	85.1	91.6	94.8	86.5	95.0	66.5	97.3	77.7	86.5
AA/Annapolis	68	97.6	95.1	100.0	95.1	97.6	85.4	97.6	87.8	94.4
AA/Glen Burnie	67	91.7	93.8	100.0	100.0	100.0	66.7	95.8	95.8	92.3
Calvert	61	72.9	87.5	97.9	77.1	97.9	75.0	100.0	70.8	84.8
Charles	65	90.2	97.6	100.0	95.1	100.0	90.2	100.0	95.1	95.9
St. Mary's	68	84.4	82.2	100.0	75.6	84.4	71.1	100.0	97.8	86.2
DIST. 5 TOTALS	329	87.4	91.2	99.6	88.6	96.0	77.7	98.7	89.5	90.7
Allegany	61	73.7	94.7	100.0	100.0	100.0	86.8	100.0	86.8	92.5
Garret	76	81.7	78.3	100.0	98.3	98.3	68.3	100.0	91.7	88.9
Washington	70	84.0	96.0	100.0	98.0	100.0	78.0	100.0	94.0	93.3
DIST. 6 TOTALS	207	79.8	89.7	100.0	98.8	99.4	77.7	100.0	90.8	91.6
Carroll	67	84.6	100.0	100.0	100.0	100.0	82.1	100.0	97.4	95.1
Frederick	68	88.6	90.9	93.2	86.4	100.0	68.2	95.5	81.8	87.9
Howard	63	74.0	96.0	96.0	100.0	100.0	94.0	98.0	92.0	93.7
DIST. 7 TOTALS	198	82.4	95.6	96.4	95.5	100.0	81.4	97.8	90.4	92.2
STATE TOTALS	1803	82.1	92.9	98.2	90.6	97.8	77.3	98.7	87.5	90.3

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	65	100.0	93.6	72.7	83.3	88.0
Somerset	64	89.8	76.1	100.0	71.4	84.2
Wicomico	68	100.0	100.0	100.0	94.1	98.6
Worcester	72	96.6	85.7	100.0	100.0	95.3
DIST. 1 TOTALS	269	96.6	88.9	93.2	87.2	91.5
Caroline	71	75.4	62.5	85.7	100.0	80.1
Cecil	68	96.6	83.7	100.0	92.0	92.9
Kent	66	98.3	81.8	87.5	81.8	87.5
QA	68	100.0	88.2	100.0	90.5	94.6
Talbot	58	94.6	94.1	93.8	85.7	92.2
DIST. 2 TOTALS	331	93.0	82.1	93.4	90.0	89.5
Mont/Fairland	64	94.1	100.0	94.2	92.3	95.3
Mont/Gaithersburg	68	100.0	95.8	98.0	96.7	97.6
PG/Laurel	57	96.2	90.9	97.9	72.3	89.6
PG/Marlboro	67	91.2	91.3	95.9	100.0	94.4
DIST. 3 TOTALS	256	95.4	94.5	96.5	90.3	94.2
Balt/Golden	25	100.0	100.0	95.5	95.5	97.9
Balt/Hereford	63	86.4	90.9	96.9	93.9	91.8
Balt/Owings	57	100.0	100.0	97.1	90.5	97.1
Harford	68	93.2	100.0	100.0	100.0	98.2
DIST. 4 TOTALS	213	94.9	97.7	97.4	95.0	96.2
AA/Annapolis	68	96.2	83.3	100.0	94.6	93.3
AA/Glen Burnie	67	100.0	100.0	97.8	86.0	96.2
Calvert	61	75.0	68.0	91.7	90.0	80.5
Charles	65	97.1	85.7	100.0	96.9	94.7
St. Mary's	68	98.4	93.3	100.0	95.0	96.6
DIST. 5 TOTALS	329	93.3	86.1	97.9	92.5	92.3
Allegany	61	100.0	96.8	100.0	95.5	98.1
Garret	76	96.2	100.0	96.2	76.4	94.9
Washington	70	100.0	89.7	95.7	95.8	95.3
DIST. 6 TOTALS	207	98.7	95.5	97.3	92.6	96.1
Carroll	67	94.3	100.0	100.0	92.3	96.7
Frederick	68	93.3	100.0	90.9	73.3	89.9
Howard	63	100.0	100.0	96.6	96.6	98.4
DIST. 7 TOTALS	198	95.9	100.0	95.8	87.4	95.0
STATE TOTALS	1803	95.1	91.1	95.9	90.8	93.2

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	65	100.0	100.0	100.0	93.0	98.4	100.0	100.0	100.0	99.0
Somerset	64	94.4	94.4	73.1	98.0	100.0	100.0	92.9	100.0	93.9
Wicomico	68	100.0	100.0	76.2	94.5	98.5	100.0	95.5	100.0	95.7
Worcester	72	100.0	100.0	100.0	95.4	100.0	100.0	100.0	100.0	99.5
DIST. 1 TOTALS	269	98.6	98.6	87.3	95.2	99.2	100.0	97.1	100.0	97.0
Caroline	71	100.0	96.9	100.0	100.0	100.0	100.0	100.0	100.0	99.6
Cecil	68	98.3	100.0	93.2	93.3	100.0	100.0	100.0	100.0	98.1
Kent	66	97.0	100.0	62.5	82.4	100.0	100.0	100.0	100.0	93.0
QA	68	100.0	100.0	79.2	100.0	97.1	100.0	100.0	100.0	97.2
Talbot	58	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIST. 2 TOTALS	331	99.1	99.4	87.0	95.1	99.4	100.0	100.0	100.0	97.6
Mont/Fairland	64	93.4	98.4	51.9	59.3	100.0	100.0	75.0	100.0	84.4
Mont/Gaithersburg	68	100.0	98.5	100.0	88.9	100.0	92.3	95.1	80.0	94.9
PG/Laurel	57	92.5	96.4	23.5	69.4	100.0	100.0	96.8	100.0	85.2
PG/Marlboro	67	100.0	100.0	57.1	81.5	97.0	100.0	83.3	81.8	88.0
DIST. 3 TOTALS	256	96.5	98.3	58.1	74.8	99.2	98.1	87.6	90.5	88.1
Balt/Golden	25	100.0	100.0	71.4	88.2	95.7	100.0	70.6	100.0	90.2
Balt/Hereford	63	97.9	98.0	50.0	97.7	98.4	100.0	95.3	100.0	92.3
Balt/Owings	57	94.4	98.1	48.8	86.3	100.0	100.0	97.4	100.0	90.8
Harford	68	100.0	100.0	56.8	88.9	100.0	100.0	100.0	100.0	93.6
DIST. 4 TOTALS	213	98.1	99.0	56.7	90.3	98.5	100.0	90.8	100.0	91.7
AA/Annapolis	68	100.0	96.9	68.1	86.7	100.0	100.0	77.6	100.0	90.8
AA/Glen Burnie	67	98.5	98.5	79.4	86.7	97.0	100.0	90.0	91.7	92.8
Calvert	61	100.0	98.2	78.1	100.0	96.7	n/a	73.0	100.0	91.8
Charles	65	98.0	100.0	42.4	82.8	100.0	100.0	100.0	100.0	90.8
St. Mary's	68	100.0	100.0	92.0	100.0	100.0	100.0	100.0	100.0	99.1
DIST. 5 TOTALS	329	99.3	98.7	72.0	91.2	98.7	100.0	88.1	98.3	93.1
Allegany	61	97.6	100.0	78.6	86.7	86.7	100.0	100.0	100.0	93.9
Garret	76	98.2	98.5	85.5	100.0	94.5	100.0	90.7	85.7	94.3
Washington	70	96.2	98.4	81.5	72.2	100.0	94.7	100.0	100.0	93.2
DIST. 6 TOTALS	207	97.3	99.0	81.8	86.3	93.7	98.2	96.9	95.2	93.8
Carroll	67	100.0	100.0	98.1	81.4	95.4	100.0	100.0	100.0	97.0
Frederick	68	97.9	100.0	85.7	80.4	97.0	100.0	93.3	100.0	94.3
Howard	63	98.0	98.1	51.9	69.6	98.4	95.0	96.0	92.9	88.1
DIST. 7 TOTALS	198	98.6	99.4	78.6	77.2	96.9	98.3	96.4	97.6	93.1
STATE TOTALS	1803	98.3	98.9	74.5	88.0	98.2	99.3	93.7	97.6	93.6

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	65	39.7	86.4	76.6	98.0	100.0	100.0	100.0	100.0	96.9	88.6
Somerset	64	49.2	44.4	79.7	88.9	100.0	n/a	100.0	100.0	93.8	82.0
Wicomico	68	95.5	100.0	87.9	80.0	98.5	100.0	100.0	100.0	97.0	95.4
Worcester	72	69.7	87.1	80.6	92.6	100.0	100.0	100.0	100.0	98.6	92.1
DIST. 1 TOTALS	269	63.5	79.5	81.2	89.9	99.6	100.0	100.0	100.0	96.6	89.5
Caroline	71	75.4	77.3	73.9	96.1	100.0	100.0	100.0	100.0	94.2	90.8
Cecil	68	98.5	72.5	79.1	93.7	100.0	100.0	100.0	100.0	92.5	92.9
Kent	66	85.7	75.5	93.8	96.7	100.0	100.0	100.0	100.0	96.9	94.3
QA	68	90.9	90.6	73.5	94.1	100.0	100.0	100.0	100.0	92.6	93.5
Talbot	58	73.2	71.4	77.2	94.5	100.0	n/a	100.0	100.0	96.5	89.1
DIST. 2 TOTALS	331	84.7	77.5	79.5	95.0	100.0	100.0	100.0	100.0	94.6	92.1
Mont/Fairland	64	87.3	41.9	87.1	54.8	98.4	83.3	100.0	95.7	77.4	80.8
Mont/Gaithersburg	68	97.0	90.6	95.5	97.0	100.0	100.0	100.0	100.0	66.7	94.1
PG/Laurel	57	53.8	19.2	31.6	50.9	98.2	100.0	93.8	100.0	36.8	64.8
PG/Marlboro	67	80.3	20.4	75.8	47.7	100.0	100.0	100.0	85.7	69.7	76.0
DIST. 3 TOTALS	256	79.6	43.0	72.5	62.6	99.2	95.8	98.4	95.3	62.7	78.9
Balt/Golden	25	47.8	63.6	43.5	78.3	95.7	n/a	100.0	n/a	87.0	74.6
Balt/Hereford	63	93.5	69.4	90.3	52.5	100.0	100.0	98.2	100.0	74.2	86.4
Balt/Owings	57	66.7	60.9	68.5	85.2	98.1	100.0	100.0	81.8	75.9	82.4
Harford	68	57.4	77.9	91.2	60.3	98.5	100.0	100.0	100.0	88.2	85.9
DIST. 4 TOTALS	213	66.3	68.0	73.4	69.0	98.1	100.0	99.6	93.9	81.3	82.4
AA/Annapolis	68	85.2	62.3	89.4	60.3	100.0	100.0	100.0	100.0	73.5	86.7
AA/Glen Burnie	67	73.0	64.2	74.6	67.2	100.0	100.0	100.0	100.0	94.0	85.9
Calvert	61	83.3	47.5	51.7	60.3	98.3	n/a	100.0	100.0	75.0	77.0
Charles	65	92.1	41.9	73.0	73.4	100.0	100.0	100.0	83.3	81.3	83.3
St. Mary's	68	79.7	78.1	83.6	100.0	100.0	n/a	100.0	100.0	94.0	91.9
DIST. 5 TOTALS	329	84.7	58.8	74.5	72.2	99.7	100.0	100.0	96.7	83.6	85.0
Allegany	61	94.9	59.5	93.4	91.8	100.0	100.0	100.0	100.0	96.7	92.9
Garret	76	83.6	60.0	100.0	94.5	100.0	100.0	100.0	100.0	94.5	92.5
Washington	70	80.6	61.2	82.6	80.9	100.0	100.0	100.0	78.6	92.8	87.0
DIST. 6 TOTALS	207	86.4	60.2	92.0	89.1	100.0	100.0	100.0	92.9	94.7	90.8
Carroll	67	68.4	74.4	87.7	98.4	100.0	n/a	100.0	100.0	92.3	90.1
Frederick	68	76.9	62.0	95.4	94.1	100.0	100.0	100.0	100.0	81.8	90.0
Howard	63	95.1	78.4	91.8	96.7	100.0	100.0	100.0	100.0	75.4	93.0
DIST. 7 TOTALS	198	80.1	71.6	91.6	96.4	100.0	100.0	100.0	100.0	83.2	91.1
STATE TOTALS	1803	78.0	65.7	79.6	81.4	99.5	99.2	99.7	97.2	85.2	86.9

2004

SHOULDER CATEGORY

County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	59	75.6	95.1	100.0	97.6	97.6	82.9	97.6	90.2	91.7
Somerset	61	90.5	92.9	100.0	90.5	100.0	92.9	97.6	90.5	94.4
Wicomico	65	92.3	100.0	100.0	77.8	100.0	74.1	100.0	100.0	92.7
Worcester	57	80.0	88.9	100.0	75.6	97.8	73.3	100.0	77.8	86.5
DIST. 1 TOTALS	242	84.6	94.2	100.0	85.3	98.8	80.8	98.8	89.6	91.3
Caroline	68	89.1	90.6	100.0	94.4	98.4	70.0	100.0	81.3	88.9
Cecil	64	91.8	89.8	100.0	100.0	100.0	51.0	100.0	82.7	88.6
Kent	66	98.5	93.9	100.0	94.8	98.5	68.2	100.0	84.8	90.8
QA	69	75.0	94.3	92.5	94.2	92.6	67.9	96.2	81.1	86.3
Talbot	56	100.0	100.0	100.0	97.4	100.0	89.5	97.4	100.0	97.9
DIST. 2 TOTALS	323	90.9	93.7	98.5	92.2	97.9	69.3	98.7	86.0	90.5
Mont/Fairland	56	84.6	92.3	100.0	92.3	100.0	76.9	100.0	100.0	92.8
Mont/Gaithersburg	55	94.4	94.4	94.4	94.4	94.4	77.8	94.4	77.8	90.1
PG/Laurel	59	97.4	97.4	100.0	100.0	94.9	89.7	100.0	74.4	94.2
PG/Marlboro	62	91.3	91.3	91.3	89.1	93.5	73.9	93.5	47.8	84.2
DIST. 3 TOTALS	232	92.0	93.9	96.4	94.0	95.7	79.6	97.0	75.0	90.3
Balt/Golden	53	88.6	85.7	91.4	97.1	85.7	65.7	100.0	88.9	87.1
Balt/Hereford	62	82.8	89.7	89.7	89.7	89.7	73.3	90.0	82.8	85.7
Balt/Owings	63	92.9	96.4	96.4	85.7	96.4	64.3	96.4	82.1	88.5
Harford	64	96.9	90.6	100.0	90.6	100.0	62.5	100.0	84.8	90.2
DIST. 4 TOTALS	242	90.3	90.6	94.4	90.8	92.9	66.5	96.6	84.7	87.8
AA/Annapolis	59	100.0	100.0	100.0	97.3	97.3	89.2	100.0	88.1	96.4
AA/Glen Burnie	62	92.0	93.9	84.0	86.0	95.8	92.0	98.0	77.6	90.3
Calvert	61	100.0	95.3	100.0	97.7	100.0	76.7	100.0	90.7	94.7
Charles	66	97.5	100.0	100.0	97.4	100.0	92.3	100.0	75.0	95.4
St. Mary's	56	100.0	90.0	100.0	96.7	100.0	66.7	100.0	83.3	91.6
DIST. 5 TOTALS	304	97.9	95.8	96.8	95.0	98.6	83.4	99.6	82.9	93.7
Allegany	60	94.6	94.4	94.6	100.0	97.3	69.4	97.3	83.8	91.0
Garret	66	95.5	86.4	90.9	93.2	90.9	45.5	90.9	74.4	82.7
Washington	63	88.0	92.0	100.0	90.0	100.0	75.5	94.0	80.0	89.8
DIST. 6 TOTALS	189	92.7	90.9	95.2	94.4	96.1	63.5	94.1	79.4	87.8
Carroll	63	74.3	91.4	100.0	94.3	100.0	22.9	97.1	94.3	82.8
Frederick	67	100.0	97.7	100.0	95.3	100.0	65.1	100.0	90.7	93.1
Howard	59	87.3	93.0	98.3	89.5	100.0	89.5	100.0	83.9	92.8
DIST. 7 TOTALS	189	94.0	99.4	93.0	100.0	59.1	99.0	89.6	89.5	
STATE TOTALS	1721	91.1	93.5	97.3	92.1	97.2	72.8	97.9	83.9	90.4

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	59	92.2	86.8	100.0	100.0	94.4
Somerset	61	91.1	84.8	77.8	82.4	84.3
Wicomico	65	100.0	96.4	100.0	90.9	96.9
Worcester	57	80.0	66.7	100.0	84.6	82.2
DIST. 1 TOTALS	242	90.8	83.7	94.4	89.5	89.4
Caroline	68	81.4	86.0	83.3	76.2	81.8
Cecil	64	55.1	100.0	94.4	71.4	80.1
Kent	66	98.5	85.9	94.3	100.0	94.5
QA	69	89.1	78.1	75.0	88.2	82.7
Talbot	56	100.0	100.0	100.0	100.0	100.0
DIST. 2 TOTALS	323	84.8	90.0	89.4	87.2	87.8
Mont/Fairland	56	100.0	93.3	86.7	95.9	94.2
Mont/Gaithersburg	55	100.0	100.0	100.0	96.8	99.2
PG/Laurel	59	100.0	66.7	83.3	80.0	82.6
PG/Marlboro	62	86.7	71.4	68.2	82.4	77.3
DIST. 3 TOTALS	232	96.7	82.9	84.5	88.8	88.3
Balt/Golden	53	100.0	100.0	94.7	83.3	94.9
Balt/Hereford	62	94.6	88.9	100.0	92.6	93.9
Balt/Owings	63	91.2	100.0	89.8	90.3	93.0
Harford	64	100.0	97.1	100.0	94.4	97.9
DIST. 4 TOTALS	242	96.4	96.5	96.1	90.2	94.9
AA/Annapolis	59	100.0	85.3	100.0	90.6	93.9
AA/Glen Burnie	62	91.3	96.2	83.0	95.2	91.6
Calvert	61	100.0	97.6	100.0	97.6	98.8
Charles	66	98.4	89.4	100.0	100.0	96.7
St. Mary's	56	90.4	97.7	100.0	96.7	96.0
DIST. 5 TOTALS	304	96.0	93.2	96.6	96.0	95.4
Allegany	60	98.1	91.7	87.1	96.7	93.5
Garret	66	70.5	69.6	88.2	92.3	79.5
Washington	63	96.5	95.2	97.1	95.7	96.1
DIST. 6 TOTALS	189	88.4	85.5	90.8	94.9	89.7
Carroll	63	100.0	94.6	100.0	81.8	94.3
Frederick	67	98.4	95.3	100.0	89.3	95.8
Howard	59	97.5	76.9	89.7	92.9	89.1
DIST. 7 TOTALS	189	98.6	89.0	96.6	88.0	93.1
STATE TOTALS	1721	92.9	89.0	92.6	90.7	91.3

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	59	94.7	93.9	100.0	100.0	94.8	100.0	90.9	100.0	96.4
Somerset	61	98.1	89.8	75.0	98.1	96.7	100.0	93.8	100.0	93.8
Wicomico	65	100.0	98.3	87.9	91.2	98.5	87.5	100.0	100.0	95.8
Worcester	57	100.0	98.0	91.7	89.8	96.5	100.0	100.0	100.0	97.1
DIST. 1 TOTALS	242	98.2	95.0	88.6	94.8	96.6	96.9	96.2	100.0	95.8
Caroline	68	98.3	100.0	100.0	81.8	98.5	n/a	81.0	100.0	93.9
Cecil	64	97.8	100.0	90.9	62.9	95.3	91.7	100.0	100.0	92.8
Kent	66	100.0	100.0	96.2	89.2	100.0	100.0	100.0	100.0	98.3
QA	69	94.9	87.0	63.6	73.5	78.3	100.0	96.4	100.0	86.9
Talbot	56	100.0	100.0	98.0	48.5	87.5	100.0	100.0	100.0	88.6
DIST. 2 TOTALS	323	98.2	97.4	83.7	71.2	91.9	97.9	95.5	100.0	92.1
Mont/Fairland	56	100.0	100.0	75.0	66.0	100.0	100.0	95.7	100.0	92.3
Mont/Gaithersburg	55	100.0	100.0	65.5	76.9	94.5	100.0	91.7	100.0	91.3
PG/Laurel	59	76.3	88.1	30.0	63.6	79.7	91.7	70.0	100.0	74.3
PG/Marlboro	62	75.0	80.8	50.0	94.6	88.1	100.0	65.7	100.0	80.4
DIST. 3 TOTALS	232	87.8	92.2	55.1	75.3	90.6	97.9	80.8	100.0	84.6
Balt/Golden	53	98.1	100.0	39.5	71.1	98.1	100.0	86.8	87.5	85.6
Balt/Hereford	62	95.9	85.0	57.1	79.6	100.0	100.0	79.2	100.0	86.7
Balt/Owings	63	98.3	98.3	68.4	71.7	88.5	100.0	94.4	100.0	90.2
Harford	64	95.6	96.8	19.4	75.8	93.8	100.0	91.7	100.0	84.4
DIST. 4 TOTALS	242	97.0	95.0	46.1	74.5	95.1	100.0	88.0	96.9	86.7
AA/Annapolis	59	90.7	98.3	34.9	47.4	96.6	100.0	92.3	100.0	82.8
AA/Glen Burnie	62	95.2	95.0	50.0	44.9	83.3	95.2	75.0	75.0	77.3
Calvert	61	100.0	98.1	45.7	80.6	98.4	100.0	100.0	100.0	90.8
Charles	66	100.0	98.0	54.3	88.6	98.4	n/a	87.9	100.0	89.9
St. Mary's	56	97.7	100.0	81.5	65.4	92.5	n/a	95.8	100.0	90.9
DIST. 5 TOTALS	304	96.7	97.9	53.3	65.4	93.8	98.4	90.2	95.0	86.3
Allegany	60	96.4	100.0	38.2	76.2	100.0	100.0	94.3	100.0	88.4
Garret	66	82.8	83.0	84.4	93.3	100.0	n/a	80.0	100.0	88.2
Washington	63	98.2	98.3	62.7	77.8	98.4	100.0	97.8	100.0	91.9
DIST. 6 TOTALS	189	92.5	93.8	61.8	82.4	99.5	100.0	90.7	100.0	89.5
Carroll	63	100.0	100.0	95.8	73.7	95.2	100.0	93.8	100.0	94.9
Frederick	67	100.0	100.0	71.4	95.8	100.0	100.0	98.1	100.0	95.8
Howard	59	96.4	100.0	63.0	79.6	96.6	100.0	95.5	100.0	91.6
DIST. 7 TOTALS	189	98.8	100.0	76.8	83.0	97.3	100.0	95.8	100.0	94.1
STATE TOTALS	1721	95.7	96.0	66.4	77.1	94.6	98.6	91.0	98.7	89.7

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	59	98.3	87.9	79.7	98.0	100.0	100.0	98.0	85.7	94.6	94.0
Somerset	61	59.0	89.5	86.9	81.7	100.0	50.0	50.0	66.7	86.9	74.8
Wicomico	65	81.0	95.2	100.0	78.1	100.0	100.0	100.0	66.7	98.5	92.1
Worcester	57	37.0	93.8	94.7	88.6	100.0	100.0	100.0	100.0	96.5	90.1
DIST. 1 TOTALS	242	68.8	91.6	90.3	86.6	100.0	87.5	87.0	79.8	94.1	87.7
Caroline	68	92.4	100.0	79.4	96.6	100.0	n/a	100.0	100.0	91.2	95.0
Cecil	64	100.0	62.5	84.4	79.4	100.0	100.0	100.0	100.0	92.2	90.9
Kent	66	50.8	95.3	92.4	89.4	100.0	n/a	100.0	100.0	92.4	90.0
QA	69	98.5	63.9	73.5	90.9	98.4	100.0	100.0	100.0	95.7	91.2
Talbot	56	53.6	83.3	64.3	83.3	100.0	0.0	95.8	75.0	80.4	71.4
DIST. 2 TOTALS	323	79.1	81.0	78.8	87.9	99.7	66.7	99.2	95.0	90.4	87.7
Mont/Fairland	56	100.0	71.4	92.7	62.5	100.0	100.0	100.0	100.0	90.9	90.8
Mont/Gaithersburg	55	69.2	83.0	81.8	73.6	98.2	100.0	100.0	100.0	45.5	83.4
PG/Laurel	59	92.9	72.3	55.9	50.8	96.6	100.0	100.0	90.9	94.9	84.1
PG/Marlboro	62	66.7	22.4	39.3	69.5	100.0	100.0	92.0	100.0	71.9	73.4
DIST. 3 TOTALS	232	82.2	62.3	67.5	64.1	98.7	100.0	98.0	97.7	75.8	82.9
Balt/Golden	53	88.7	48.9	71.7	88.7	100.0	n/a	100.0	100.0	71.7	83.7
Balt/Hereford	62	81.7	81.3	90.2	62.3	98.4	100.0	98.3	100.0	95.2	89.6
Balt/Owings	63	90.6	61.3	82.3	83.9	100.0	100.0	100.0	100.0	75.8	88.2
Harford	64	84.4	42.5	82.8	87.5	100.0	n/a	97.6	n/a	89.1	84.0
DIST. 4 TOTALS	242	86.3	58.5	81.7	80.6	99.6	100.0	99.0	100.0	82.9	86.4
AA/Annapolis	59	68.4	63.8	83.1	57.6	100.0	100.0	100.0	100.0	72.4	82.8
AA/Glen Burnie	62	80.8	60.7	83.9	62.7	96.8	100.0	94.1	93.8	51.7	80.5
Calvert	61	78.7	95.0	98.4	86.9	100.0	n/a	97.5	100.0	96.7	94.1
Charles	66	78.5	90.5	92.3	64.1	100.0	n/a	100.0	100.0	76.9	87.8
St. Mary's	56	62.5	67.9	91.1	92.7	100.0	n/a	83.3	100.0	92.7	86.0
DIST. 5 TOTALS	304	73.8	75.6	89.7	72.8	99.4	100.0	95.0	98.8	78.1	86.2
Allegany	60	69.0	77.8	96.7	94.8	100.0	100.0	98.0	100.0	91.7	92.0
Garret	66	67.7	77.1	93.5	93.5	100.0	66.7	91.4	60.0	93.4	83.7
Washington	63	74.2	80.3	96.8	85.7	100.0	100.0	100.0	100.0	98.4	92.8
DIST. 6 TOTALS	189	70.3	78.4	95.7	91.4	100.0	88.9	96.4	86.7	94.5	89.5
Carroll	63	98.3	82.5	100.0	95.2	100.0	100.0	100.0	100.0	93.5	96.6
Frederick	67	98.5	94.3	71.6	95.5	100.0	100.0	100.0	100.0	91.0	94.6
Howard	59	63.8	60.0	86.4	62.7	100.0	100.0	100.0	100.0	89.8	84.8
DIST. 7 TOTALS	189	86.9	79.0	86.0	84.5	100.0	100.0	100.0	100.0	91.5	92.0
STATE TOTALS	1721	78.0	75.2	83.8	80.6	99.6	91.3	96.3	94.0	86.1	87.2

2005

SHOULDER CATEGORY

County	# of sites	Shoulder Joint Separation	Surface Edge/Raveling	Nonpositive Drainage	Vegetation Growth	Potholes	Cracking	Distortion	Dropoff	TOTAL LOS
Dorchester	69	94.0	96.0	98.0	68.0	100.0	60.0	89.8	100.0	87.9
Somerset	66	92.9	75.0	100.0	60.7	96.4	75.0	96.4	100.0	86.9
Wicomico	70	95.5	97.7	100.0	90.9	95.5	75.0	100.0	90.7	92.8
Worcester	69	100.0	97.8	100.0	100.0	100.0	87.0	100.0	82.7	95.9
DIST. 1 TOTALS	274	95.6	91.6	99.5	79.9	98.0	74.2	96.6	93.3	90.9
Caroline	70	74.6	98.5	98.5	82.1	100.0	53.7	100.0	94.0	87.0
Cecil	68	96.2	94.3	100.0	84.6	94.2	39.6	90.4	65.5	82.5
Kent	70	100.0	91.7	100.0	80.6	91.7	25.0	97.2	86.5	82.8
QA	76	100.0	100.0	100.0	84.3	100.0	62.7	100.0	100.0	92.8
Talbot	62	74.6	98.3	98.3	98.3	98.3	86.4	98.3	100.0	93.7
DIST. 2 TOTALS	346	89.1	96.6	99.4	86.0	96.8	53.5	97.2	89.2	87.7
Mont/Fairland	52	100.0	94.1	100.0	100.0	100.0	76.5	100.0	76.5	93.2
Mont/Gaithersburg	63	100.0	100.0	94.7	78.9	94.4	94.1	100.0	94.4	94.7
PG/Laurel	65	100.0	96.2	100.0	100.0	100.0	92.3	100.0	65.4	94.5
PG/Marlboro	66	100.0	94.6	100.0	100.0	100.0	83.8	100.0	89.2	95.7
DIST. 3 TOTALS	246	100.0	96.2	98.7	94.7	98.6	86.7	100.0	81.4	94.5
Balt/Golden	67	94.4	91.9	97.2	97.2	100.0	94.4	100.0	80.0	94.5
Balt/Hereford	70	86.1	94.4	100.0	100.0	97.3	88.9	100.0	91.4	94.5
Balt/Owings	58	100.0	90.9	97.0	97.0	93.9	78.8	100.0	72.7	91.1
Harford	68	78.8	84.8	93.9	81.8	84.8	66.7	90.9	69.7	81.1
DIST. 4 TOTALS	263	89.8	90.5	97.0	94.0	94.0	82.2	97.7	78.5	90.3
AA/Annapolis	66	83.3	83.3	100.0	81.3	89.6	64.6	100.0	66.7	83.2
AA/Glen Burnie	69	100.0	98.0	98.0	98.0	100.0	92.0	96.0	92.0	96.8
Calvert	68	100.0	100.0	100.0	96.0	100.0	78.0	100.0	98.0	96.1
Charles	68	73.6	92.5	100.0	79.2	96.2	69.8	96.2	75.5	85.1
St. Mary's	69	100.0	97.8	95.7	69.6	91.3	52.2	100.0	63.8	83.5
DIST. 5 TOTALS	340	91.4	94.3	98.7	84.8	95.4	71.3	98.4	79.2	88.9
Allegany	70	86.0	90.0	100.0	78.4	94.0	36.5	95.7	84.8	82.2
Garret	70	55.3	91.5	93.5	93.6	97.9	34.8	95.7	68.1	77.8
Washington	67	85.7	100.0	100.0	95.9	98.0	61.2	100.0	88.0	90.4
DIST. 6 TOTALS	207	75.7	93.8	97.8	89.3	96.6	44.2	97.2	80.3	83.5
Carroll	69	100.0	97.6	97.6	80.5	97.6	29.3	100.0	90.2	85.5
Frederick	72	93.2	93.2	97.7	95.5	95.6	58.7	97.7	73.3	87.6
Howard	66	64.5	100.0	100.0	88.7	98.4	82.3	100.0	95.2	90.8
DIST. 7 TOTALS	207	85.9	96.9	98.4	88.2	97.2	56.7	99.2	86.2	87.9
STATE TOTALS	1883	90.3	94.3	98.6	87.9	96.6	67.8	98.0	84.1	89.3

DRAINAGE CATEGORY

County	# of sites	Ditches	Culverts	Catch Basins/ Inlets	Curb/ Gutter	TOTAL LOS
Dorchester	69	100.0	100.0	100.0	100.0	100.0
Somerset	66	82.3	71.9	88.9	47.1	72.8
Wicomico	70	100.0	93.6	100.0	87.5	95.4
Worcester	69	100.0	97.0	100.0	95.2	98.1
DIST. 1 TOTALS	274	95.6	90.6	97.2	82.4	91.6
Caroline	70	100.0	95.2	87.5	100.0	95.8
Cecil	68	93.8	68.3	100.0	89.7	87.5
Kent	70	85.2	76.9	85.7	100.0	86.6
QA	76	75.8	70.7	94.4	89.5	82.0
Talbot	62	95.1	96.0	92.3	88.9	93.2
DIST. 2 TOTALS	346	90.0	81.4	92.0	93.6	89.0
Mont/Fairland	52	100.0	100.0	83.3	90.7	93.9
Mont/Gaithersburg	63	100.0	100.0	86.1	93.8	95.3
PG/Laurel	65	95.0	98.3	98.3	91.3	95.8
PG/Marlboro	66	100.0	100.0	95.8	93.3	97.5
DIST. 3 TOTALS	246	98.8	99.6	90.9	92.3	95.6
Balt/Golden	67	85.7	100.0	83.3	78.8	87.4
Balt/Hereford	70	100.0	100.0	86.2	93.9	95.4
Balt/Owings	58	100.0	94.4	97.8	87.2	95.0
Harford	68	76.0	71.9	81.0	100.0	81.7
DIST. 4 TOTALS	263	90.4	91.6	87.1	90.0	89.9
AA/Annapolis	66	78.1	84.2	81.8	90.6	83.5
AA/Glen Burnie	69	100.0	100.0	96.4	90.5	96.9
Calvert	68	100.0	85.7	92.6	100.0	94.5
Charles	68	72.7	65.8	83.3	93.3	78.2
St. Mary's	69	96.8	87.2	90.5	98.0	93.1
DIST. 5 TOTALS	340	89.5	84.6	88.9	94.5	89.2
Allegany	70	87.5	85.2	89.3	77.8	85.0
Garret	70	90.0	90.3	92.7	76.2	87.5
Washington	67	96.5	100.0	95.5	89.7	95.6
DIST. 6 TOTALS	207	91.3	91.8	92.5	81.2	89.4
Carroll	69	96.8	95.1	93.9	91.9	94.5
Frederick	72	97.1	100.0	94.9	90.9	95.9
Howard	66	100.0	66.7	96.0	82.1	86.0
DIST. 7 TOTALS	207	98.0	87.3	94.9	88.3	92.2
STATE TOTALS	1883	93.0	89.1	91.7	89.6	90.9

TRAFFIC/SAFETY CATEGORY

County	# of sites	Regulatory Signs	Other Signs	Delineators	Pavement Markings	Line Stripping	Concrete Barriers	Guardrail	Impact Attenuators	TOTAL LOS
Dorchester	69	100.0	100.0	98.4	87.1	24.6	100.0	100.0	100.0	89.3
Somerset	66	89.3	86.2	64.7	85.5	84.8	80.0	85.7	86.7	83.2
Wicomico	70	100.0	100.0	51.5	82.7	94.3	100.0	92.9	100.0	90.4
Worcester	69	100.0	100.0	65.0	87.9	85.3	100.0	100.0	100.0	92.7
DIST. 1 TOTALS	274	97.3	96.6	69.9	85.8	72.3	95.0	94.6	96.7	88.9
Caroline	70	100.0	100.0	96.0	91.5	100.0	100.0	94.1	75.0	95.1
Cecil	68	92.7	96.7	100.0	51.2	80.0	93.8	90.9	94.1	87.7
Kent	70	97.8	100.0	92.9	73.1	77.9	50.0	100.0	66.7	84.5
QA	76	98.2	92.3	56.7	71.4	67.1	100.0	100.0	100.0	86.3
Talbot	62	97.3	100.0	83.3	81.8	95.1	100.0	88.5	100.0	93.1
DIST. 2 TOTALS	346	97.2	97.8	85.8	73.8	84.0	88.8	94.7	87.2	89.3
Mont/Fairland	52	91.5	96.1	33.3	56.5	73.1	100.0	84.0	100.0	79.5
Mont/Gaithersburg	63	100.0	100.0	77.8	84.8	96.3	100.0	96.6	66.7	91.2
PG/Laurel	65	98.4	100.0	34.5	72.4	90.8	100.0	90.9	88.9	85.1
PG/Marlboro	66	100.0	100.0	30.6	71.9	84.8	100.0	91.3	92.3	84.5
DIST. 3 TOTALS	246	97.5	99.0	44.1	71.4	86.2	100.0	90.7	87.0	85.1
Balt/Golden	67	94.0	100.0	72.2	74.6	80.6	100.0	53.8	100.0	83.4
Balt/Hereford	70	98.4	95.7	54.4	80.4	80.0	100.0	94.3	90.0	87.2
Balt/Owings	58	98.3	96.6	34.9	78.6	87.9	100.0	82.9	100.0	85.0
Harford	68	89.1	91.2	60.5	67.7	86.2	100.0	92.5	100.0	85.9
DIST. 4 TOTALS	263	95.0	95.9	55.5	75.3	83.7	100.0	80.9	97.5	85.4
AA/Annapolis	66	91.2	81.0	46.5	67.6	72.3	100.0	81.0	100.0	79.7
AA/Glen Burnie	69	100.0	100.0	65.2	58.6	97.1	100.0	86.0	93.8	87.8
Calvert	68	100.0	100.0	96.9	95.0	81.3	100.0	100.0	100.0	96.8
Charles	68	92.2	98.2	42.1	65.4	91.0	100.0	97.4	100.0	86.1
St. Mary's	69	98.3	100.0	95.3	40.0	88.4	100.0	100.0	100.0	90.7
DIST. 5 TOTALS	340	96.3	95.8	69.2	65.3	86.0	100.0	92.9	98.8	88.2
Allegany	70	98.1	100.0	58.3	72.4	31.9	100.0	64.7	100.0	78.0
Garret	70	97.1	95.7	66.0	87.8	95.7	50.0	100.0	86.7	86.5
Washington	67	95.7	98.2	34.0	67.6	97.0	100.0	95.6	100.0	86.4
DIST. 6 TOTALS	207	97.0	98.0	52.8	75.9	74.8	83.3	86.8	95.6	83.6
Carroll	69	96.9	100.0	100.0	87.2	26.1	100.0	94.6	100.0	88.4
Frederick	72	100.0	100.0	61.3	88.9	100.0	100.0	88.9	100.0	92.4
Howard	66	98.4	100.0	62.1	90.2	89.4	100.0	94.3	100.0	92.0
DIST. 7 TOTALS	207	98.4	100.0	74.5	88.7	71.8	100.0	92.6	100.0	90.9
STATE TOTALS	1883	96.9	97.4	65.5	75.7	80.7	95.5	90.7	94.3	87.5

ROADSIDE CATEGORY

County	# of sites	Mowing	Vegetation Growth at Structure	Litter	Brush & Tree Control	Graffiti	Fence	Slopes	Landscaping	Debris	TOTAL LOS
Dorchester	69	75.4	76.1	97.1	85.7	100.0	88.9	94.7	87.5	100.0	89.8
Somerset	66	60.6	38.2	65.2	81.3	98.5	100.0	100.0	100.0	95.5	82.1
Wicomico	70	95.7	91.4	100.0	92.9	100.0	100.0	100.0	90.0	82.9	95.1
Worcester	69	85.2	79.2	97.1	92.8	100.0	100.0	94.4	100.0	98.6	94.1
DIST. 1 TOTALS	274	79.2	71.2	89.8	88.1	99.6	97.2	97.3	94.4	94.2	90.3
Caroline	70	92.8	95.7	95.7	100.0	100.0	100.0	100.0	n/a	98.6	97.9
Cecil	68	84.6	37.5	94.0	86.6	98.5	62.5	70.0	72.7	94.1	78.2
Kent	70	100.0	87.2	75.4	93.6	100.0	100.0	100.0	100.0	87.1	93.7
QA	76	46.1	51.6	82.9	90.3	98.7	n/a	100.0	100.0	88.2	82.2
Talbot	62	69.4	74.2	73.8	83.9	100.0	100.0	100.0	100.0	100.0	89.0
DIST. 2 TOTALS	346	78.6	69.2	84.4	90.9	99.4	90.6	94.0	93.2	93.6	88.2
Mont/Fairland	52	80.9	42.0	90.4	25.0	98.1	100.0	100.0	94.1	50.0	75.8
Mont/Gaithersburg	63	74.2	67.8	96.7	56.5	100.0	100.0	100.0	100.0	89.7	87.2
PG/Laurel	65	52.7	72.3	67.7	81.5	100.0	100.0	100.0	100.0	84.6	84.3
PG/Marlboro	66	71.9	44.6	47.0	65.2	100.0	100.0	100.0	100.0	90.9	79.9
DIST. 3 TOTALS	246	69.9	56.7	75.4	57.0	99.5	100.0	100.0	98.5	78.8	81.8
Balt/Golden	67	66.7	74.6	78.8	81.5	100.0	100.0	100.0	90.0	73.1	85.3
Balt/Hereford	70	60.3	70.0	92.9	50.7	100.0	100.0	100.0	100.0	90.0	84.9
Balt/Owings	58	76.6	68.4	61.4	82.8	96.5	100.0	100.0	100.0	75.9	84.6
Harford	68	84.6	60.9	83.6	70.8	100.0	100.0	98.5	100.0	80.0	86.5
DIST. 4 TOTALS	263	72.0	68.5	79.2	71.4	99.1	100.0	99.6	97.5	79.7	85.3
AA/Annapolis	66	65.1	55.0	66.2	40.6	96.9	100.0	100.0	87.5	75.4	76.6
AA/Glen Burnie	69	88.1	72.5	59.4	65.2	100.0	100.0	100.0	100.0	92.5	86.4
Calvert	68	98.5	86.8	92.6	82.1	100.0	50.0	83.3	90.0	95.5	86.6
Charles	68	52.2	42.4	82.1	76.1	97.0	50.0	94.9	77.8	86.4	73.8
St. Mary's	69	46.4	90.9	88.4	88.2	100.0	n/a	73.9	100.0	88.2	84.0
DIST. 5 TOTALS	340	70.1	69.5	77.7	70.5	98.8	75.0	90.4	91.1	87.6	81.5
Allegany	70	62.7	57.4	87.0	89.7	100.0	100.0	93.8	85.7	92.9	85.8
Garret	70	97.0	85.5	92.8	98.6	100.0	83.3	98.5	80.0	98.6	93.3
Washington	67	77.6	86.8	94.0	85.1	98.5	100.0	100.0	100.0	91.0	92.5
DIST. 6 TOTALS	207	79.1	76.6	91.2	91.1	99.5	94.4	97.4	88.6	94.2	90.5
Carroll	69	81.2	68.7	97.1	89.9	100.0	100.0	100.0	100.0	76.8	90.4
Frederick	72	73.6	91.7	95.8	94.4	98.6	100.0	100.0	100.0	86.1	93.3
Howard	66	59.1	61.8	84.8	68.2	98.5	100.0	100.0	66.7	87.9	81.8
DIST. 7 TOTALS	207	71.3	74.0	92.6	84.2	99.0	100.0	100.0	88.9	83.6	88.5
STATE TOTALS	1883	74.2	69.0	83.6	78.5	99.3	93.6	96.5	93.4	87.5	86.3

APPENDIX C

Geographical Breakdown and Peer Review

The state of Maryland can be broken down into a number of regions both by climate and by population density. The primary regions are the Eastern Shore, Central Maryland, Southern Maryland, and Western Maryland.

Some of the 29 maintenance elements reviewed in Peer Review are found in each and every site of all regions during the Peer Review season. This list includes line striping, litter, graffiti, and debris. Some elements cannot be regionalized such as brush and tree, mowing, delineators, and pavement markings. There are, however, a handful of maintenance elements that if present, might be an indicator of a particular region. The following geographical breakdown attempts to identify these elements. The basis of the determination is the 2006 Peer Review data.

Eastern Shore

The Eastern Shore consists of SHA's Districts One and Two. The lower shore is flat while the upper shore is primarily flat but does have some higher elevations. With the exception of small cities such as Salisbury, Easton, and Cambridge, and the resort area of Ocean City, the two districts are primarily rural. The climate of the region is moderated by its proximity to the Chesapeake Bay and Atlantic Ocean.

The growing season begins early on the Eastern Shore and ends later in the fall than it does in the remainder of the state. In this regard, mowing is a more demanding operation with many cycles. On the plus side, the Eastern Shore does not have excessive shoulder damage due to winter weather. In addition, the milder climate allows for line striping and pavement marking installation to begin early in the season and be completed well before fall.

The following elements were commonly seen along Eastern Shore roads in 2006:

Shoulders - 73% of the sites

Ditches - 89% of the sites with a corresponding high number of culverts

Regulatory and Non-regulatory Signs - 81% of the sites (below the statewide average)

The following elements were not commonly seen along Eastern Shore roads:

Curb and Gutter - 29% of the sites

Concrete Barrier - 6% of the sites

Guardrail - 34% of the sites

It can be reasonably inferred that the Eastern Shore has roads with open sections of drainage. Ditches are found along most of the roads, often with culverts. Since the roads are rural in nature and support lower traffic volumes, the occurrence of signs is lower than that in metro areas. Since the region does not boast large population centers, curb and gutter is not often seen. Since the terrain is flat, guardrail is not found very often. In addition, the lack of interstate highways limits the occurrence of concrete barrier.

This region includes Dorchester, Somerset, Wicomico, Worcester, Talbot, Caroline, Queen Anne's, Kent, and Cecil Counties.

Central Maryland

Central Maryland consists of the piedmont plateau area of the state. The area is hilly but not mountainous. It contains the metropolitan Districts Three and Four along with Anne Arundel, Carroll, and Howard Counties. Parts of the region are more urbanized than others but for the most part, the metro area can be viewed as one distinct region.

The following elements are commonly seen in this area:

- Curb and Gutter - 60% of the sites with a corresponding high number of inlets/catch basins
- Concrete Barrier - 21% of the sites, primarily along interstate and primary highways
- Guardrail - 63% of the sites
- Regulatory and Non-Regulatory Signs - 93% of the sites (above the statewide average)

The following elements are not commonly seen in Central Maryland:

- Shoulders - 57% of sites
- Ditches - 54% of sites with a corresponding lower number of culverts

It can be reasonably inferred that the region does not have a large number of roads with open shoulders. Shoulders, over the years gave way to additional travel lanes or parking lanes. Ditches are limited while curb and gutter and closed drainage systems are the norm. Guardrail is found in an average number of sites while concrete barrier is at its highest level in the state. This is due to the extensive interstate system in the region. Signs are found at their highest level due to the traffic volumes and the consequent need for more traffic regulation and traveler information.

This region includes Montgomery, Prince George's, Baltimore, Harford, Carroll, Howard and Anne Arundel Counties.

Southern Maryland

Southern Maryland consists of the southern piedmont region of the state. It is less urbanized than the northern, more densely populated part of Central Maryland. It has a mild winter season and a long growing season. Like the Eastern Shore, it doesn't have large cities, but it has fast growing population centers.

The following elements are commonly seen in the region:

- Shoulders – 75% of the sites
- Ditches – 72% of the sites with a corresponding high number of culverts
- Curb and Gutter – 56% of the sites with a corresponding high number of inlets/catch basins
- Regulatory and Non-regulatory Signs - 85% of the sites (near the statewide average)

The following elements are not commonly seen in Southern Maryland:

- Concrete Barrier - 1% of sites

Guardrail – 55% of sites

It can be inferred that this region has some of the aspects of the Eastern Shore and some of the aspects of Central Maryland. You find more areas with open drainage than can be found in Central Maryland yet less than what would be found on the Eastern Shore. Conversely, you find less areas of closed section than in Central Maryland but more than you would find on the Eastern Shore. You find an average number of signs along Southern Maryland highways. You find more guardrail than you would find on the Eastern Shore and in Central Maryland. At the same time, you find less concrete barrier than in any other part of the state.

This region includes Charles, Calvert, and St. Mary's Counties.

Western Maryland

Western Maryland consists of the ridge and valley section of Frederick, Washington, and Eastern Allegany Counties as well as the Allegany Mountain region of Garrett and Western Allegany Counties. Winter weather has a major effect on this region. The growing season begins later in Western Maryland and comes to an end earlier. This has an effect on roadside elements such as mowing, and brush and tree control. The weather also has an adverse effect on shoulder elements. Finally, the weather also creates a narrower window of opportunity to perform line striping and pavement marking operations.

The following elements are commonly seen in the region

Guardrail - 78% of the sites

Shoulders - 73% of the sites

Ditches - 81% of the sites with a corresponding high number of culverts

The following items are not commonly seen in the region:

Curb and Gutter - 32% of the sites

Regulatory and Non-Regulatory Signs - 87% of the sites

Concrete Barrier - 8% of the sites

It can be inferred that Western Maryland has a large number of routes with open shoulders and open drainage systems. Curb and gutter is found in less than a third of the sites reviewed. It can also be inferred that the mountainous region leads to a high incidence of sites with guardrail. Concrete barrier is seen more often than in Southern Maryland and the Eastern Shore, but less often than in Central Maryland. The lower traffic volumes lead to an average number of routes with signs.

This region includes Frederick, Washington, Allegany, and Garrett Counties.