REPORT TO THE GOVERNOR AND THE LEGISLATURE ON NEW JERSEY'S ROADWAY PAVEMENT SYSTEM

FISCAL YEAR 2019

Prepared by:

New Jersey Department of Transportation

December 2019

State of New Jersey

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Lt. Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

December 16, 2019

Dear New Jersey Citizens:

In compliance with N.J.S.A. 27:1B-21.23 and 21.24, I am pleased to submit the Department's report on New Jersey's state maintained pavement system for State Fiscal Year 2019. The state highway network is one of New Jersey's largest assets and preserving our pavement investment continues to be a high priority for the Department. The state highway system carries approximately 40% of the state's vehicular travel and is an essential element of New Jersey's economy.

The Department strives to maintain the roadway infrastructure in a state of good repair and address deficiencies. Funding for pavement projects remains a critical criterion for how much roadway repair and improvements can be accomplished.

The Department utilizes a comprehensive Pavement Management Plan to make the most effective use of available resources. This strategy includes using a mix of pavement treatments and various techniques, ranging from preventive maintenance to rehabilitation and reconstruction.

This report highlights work completed through the Plan in State Fiscal Year 2019. Additionally, in compliance with statutory mandates, Appendix A of this report details pavement segments of the state highway system in need of major repair in the future.

Sincerely,

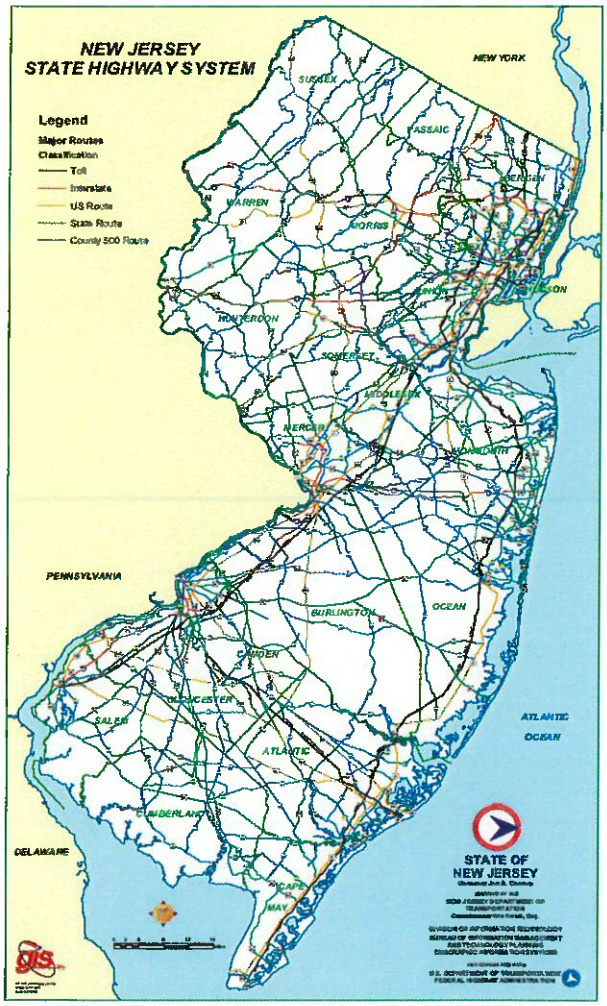
Diane Gutierrez-Scaccetti
Commissioner

TABLE OF CONTENTS

CURRENT STATUS OF THE STATE HIGHWAY SYSTEM

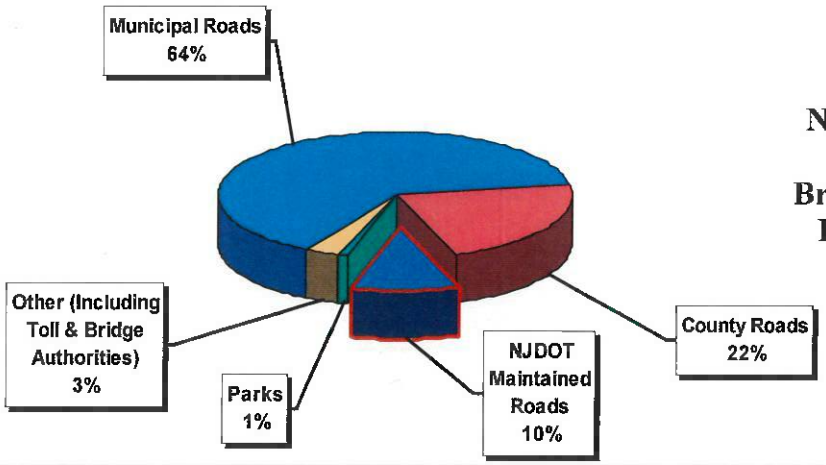
Description of System

There are approximately 38,919 centerline (CL) miles of roadways in New Jersey. NJDOT maintains approximately 2,333 CL miles of roads, commonly referred to as the state highway system. Most of the remaining mileage is under the jurisdiction of counties (6,706 CL miles) and municipalities (28,754 CL miles). Other mileage consists of toll roads including: the Garden State Parkway (174 CL miles) and the New Jersey Turnpike (150 CL miles), administered by the New Jersey Turnpike Authority; the Atlantic City Expressway (46 CL miles), administered by the South Jersey Transportation Authority; the Palisades Interstate Parkway (12 CL miles); mileage maintained by bridge authorities (33 CL miles); the park roads both state and local (401 CL miles); and finally Federal Agencies Fish & Wildlife Service, National Park Services & Military (310 CL miles).



To get a better idea of pavement quantities, lane miles rather than centerline miles are used (1 mile of a 2-lane road represents 2 lane miles). As shown in Figure 1 below, NJDOT maintains about 10% of the total statewide lane mileage, but approximately 41% of all traffic, including a high percentage of heavy trucks, is carried on NJDOT maintained roads.

FIGURE 1



NJ Roadway System Breakdown by Lane Miles

Assessment of the State Highway System

Evaluation of the New Jersey state highway system is based upon data collected on state-maintained roads and stored in the Pavement Management System. Analysis of this data to assess current pavement conditions considers the following functional adequacy indices:

- **IRI (International Roughness Index)** estimates roughness as perceived by vehicle occupants by using lasers to determine the actual variations in the pavement surface from a perfectly flat condition, measured in inches per mile. Although IRI can vary theoretically from 0 to an unlimited number, practical ranges seen on pavement are 30 to 400 (higher values mean rougher pavements). The FHWA acceptable ranges for IRI are: IRI <= 400 and IRI >= 30.
- **SDI (Surface Distress Index)** assesses surface distress and visible deterioration by evaluating cracking, patching, faulting, shoulder drop, rut depth and joint deterioration. SDI is reported on a scale of 0 to 5 (5 is a perfect pavement free of any distress). Rut depth measures depths of cracking primarily in vehicle wheel paths.
- **Skid Number** measures the pavement surface frictional characteristics.

While all of the indices listed above are considered in selecting locations and types of pavement treatments, IRI and SDI are most indicative of functional adequacy and are used to evaluate the system status. IRI is a national standard supported by the Federal Highway Administration and SDI is a New Jersey standard used for many years in roadway assessment.

The analyses discussed herein utilized road data collected in 2018 to evaluate the state highway system consisting of approximately 2333 centerline miles of roadway. In terms of pavement quantities, this amounts to 8563 lane miles of mainline roadway, approximately 4050 miles of shoulders, and 550 miles of ramps that are state owned and maintained. The criteria shown in Table 1 below were used to evaluate the mainline roadway condition.

TABLE 1 - CONDITION CRITERIA

Status	Condition Index Criteria (IRI = International Roughness Index, in/mi; SDI = Surface Distress Index, 0 – 5 Scale)	Engineering Significance
Deficient (Poor)	**IRI > 170 *AND/OR* SDI ≤ 2.4 (Deficient classification results from either deficient roughness alone or surface distress alone or both).**	**These roads are due for treatment.** Drivers on these roads will notice that they are driving on a rough surface and may be barely tolerable for high-speed traffic. These pavements may have deteriorated to such an extent that they affect the speed of free flow traffic and may cause damage to vehicles. There will be signs of significant deterioration, including potholes and deep cracks. Deficient pavements will generally be most costly to rehabilitate.
Fair	**All combinations of IRI and SDI between those above and below listed range. IRI ≥ 95 and IRI ≤ 170 and/or SDI > 2.4 and < 3.5**	**These roads exhibit minimally acceptable smoothness that is noticeably inferior to those of new paving.** These pavements may show some signs of deterioration such as rutting and `cracking or patching. Most importantly, roads in this category are in jeopardy and should immediately be programmed for some cost-effective treatment that will restore them to a good condition and avoid costly rehabilitation in the near future.
Good	**IRI < 95 *AND* SDI ≥ 3.5 (Both IRI and SDI must be good to rate this classification).**	**These roads exhibit good ride quality with little or no signs of deterioration.** A proactive preventive maintenance strategy is necessary to keep roads in this category as long as possible.

The road data analysis results are presented in tabular form in Table 2 below and graphically in Figure 2.

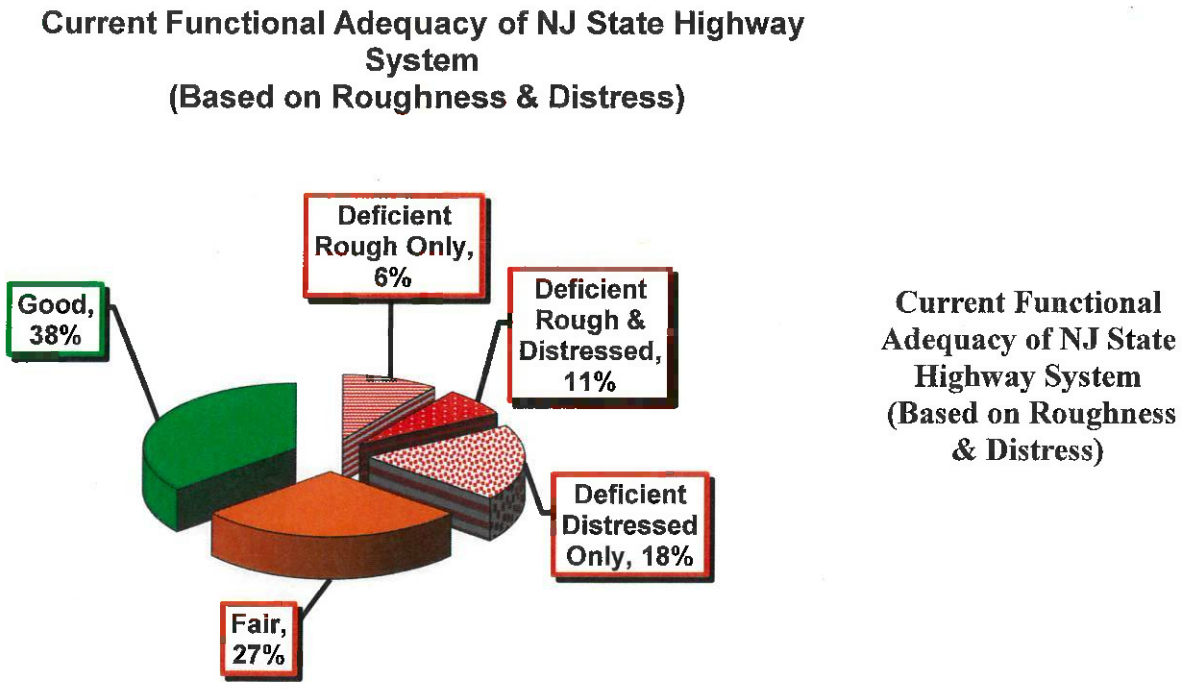
TABLE 2
Functional Adequacy of NJ State Highway System
(Based on Roughness and Distress)

Condition	Road Miles (Two Directions)	Lane Miles (Two Directions)	% of Total System Performance by Lane Miles
Deficient by Roughness Alone (IRI > 170)	277.5	517.89	6%
Deficient by Roughness & Distress (Both)	587.28	935.74	11%
Deficient by Distress Alone (SDI ≤ 2.4)	895.08	1526.28	18%
Total Deficient	1759.9	2979.91	35%
Total Fair	1216.81	2255.75	27%
Total Good	1685.64	3267.89	38%
Total State System	4662.4 †	8503.55 †	100%

Source: NJDOT Pavement Management System, 2018 Data

† Note: Mileage in Table 2 represents tested mileage which is slightly less than system mileage (4662.36 out of 4672.2 and 8503.55 out of 8563.33) due to inaccessibility of some areas for testing.

FIGURE 2

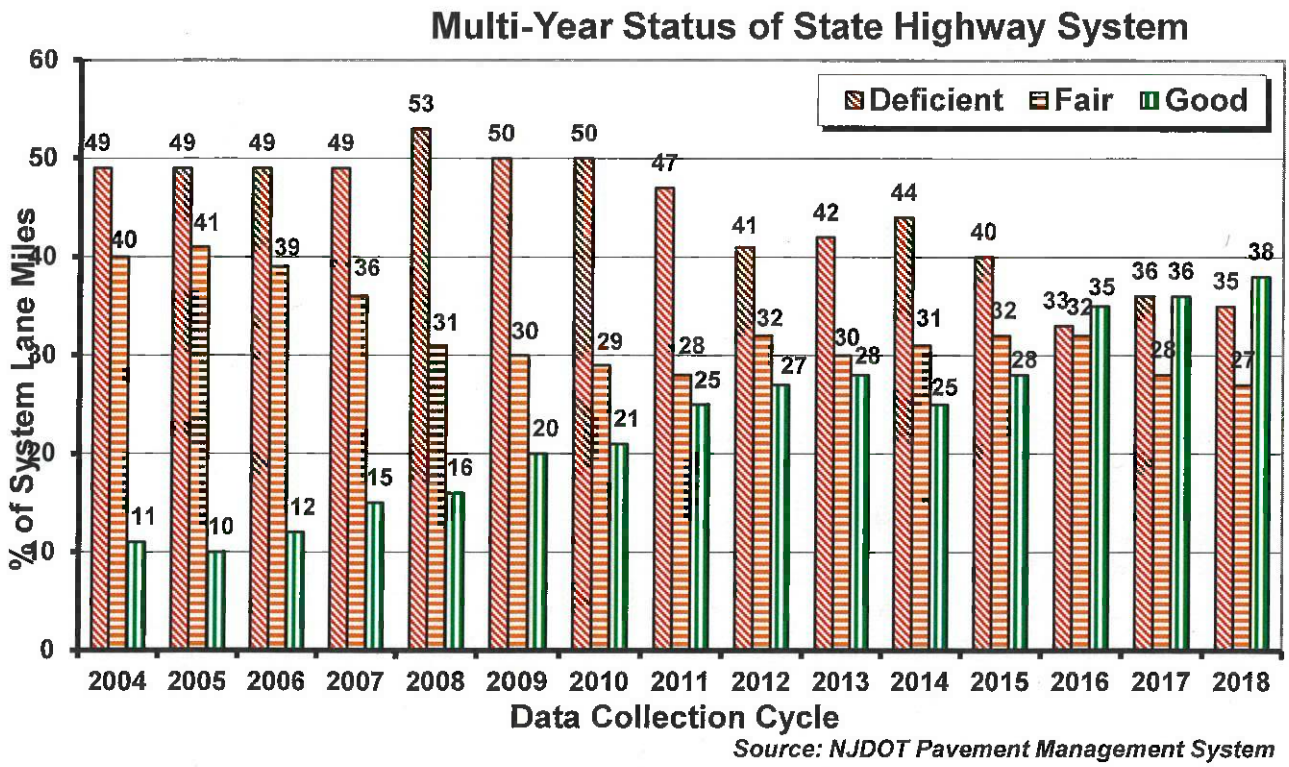


Source: NJDOT Pavement Management System, 2018 Data

NJDOT considers the 35% total deficiency (combination of 3 deficient subcategories above) as a serious condition which warrants treatment as soon as possible. Deficiency by IRI could indicate a safety or vehicle damage concern. SDI deficiency indicates a serious condition with regards to pavement breakup, potholes, shortened pavement life, etc. Obviously, the presence of both deficiencies is even more serious. The type of deficiency is important in that it can aid in selecting the most efficient treatment methodology and can indicate whether materials currently in use are performing adequately by the amount of deficiency due to cracking.

Similar analyses using data collected over the last 15 years show that, while the total deficiency has remained significant over time, current efforts have resulted in reduced deficiencies (see Figure 3). Year 2016 was a milestone year in NJDOT's Pavement Management and Asset Management history. For the first time since NJDOT has been performing annual network condition assessments on its pavement assets, the number of pavements classified as "good" has grown to be the largest of the three Functional Adequacy categories. This trend has continued in 2017 and 2018 as shown in Figure 2 and 3.

FIGURE 3



Source: NJDOT Pavement Management System

SUMMARY OF PAVEMENT PROJECT EXPENDITURES

A summary of pavement projects expenditures in State Fiscal Year 2019 is provided in Table 3 below. Costs for individual projects awarded in State FY 2019 are shown on pages 6 through 13.

TABLE 3
Summary of Pavement Projects Expenditures for State Fiscal Year 2019
(Individual costs for projects awarded in State FY 2019 are shown on pages 6 through 13)

Program Category	Description	Expenditure In $ Million
Highway Capital Maintenance (Betterments) Projects	This is an ongoing program of minor improvements / betterments to the state highway system for miscellaneous maintenance repair projects, repair parts, miscellaneous needs for emergent projects, handicap ramps, and drainage rehabilitation / maintenance. (Table 4)	**$24.59**
Highway Resurfacing – Division of Operations Support Projects	This is a comprehensive program of providing renewed riding surfaces to state highways to prolong the life of the pavement and provide a smoother ride for users of the system. (Table 5)	**$82.43**
Highway Resurfacing / Rehab & Reconstruct – Division of Capital Program Management Projects	This program funds larger scale projects administered through Capital Program Management which are primarily involved with pavement restoration. (Table 6)	**$176.66**
Pavement Preservation Preventive Maintenance – Division of Capital Program Management Projects	This program provides funding for eligible federal pavement preservation preventive maintenance activities which help to keep New Jersey's highway system in a state of good repair. (Table 7)	**$161.80**
Pavement Preservation Preventive Maintenance – Division of Operations Support Projects	This program provides funding for eligible federal pavement preservation preventive maintenance activities which help to keep New Jersey's highway system in a state of good repair. (Table 8)	**$7.98**
Totals		**$ 453.46**

WORK COMPLETED IN STATE FISCAL YEAR 2019

The Department's Division of Operations Support administers highway capital maintenance and selected resurfacing projects. Alternatively, the Division of Capital Program Management administers resurfacing and major rehabilitation/reconstruction projects which are more involved with regard to required project documents, scoping and design. Each of these types of projects, which result in significant pavement system improvement, is broken down and described by program categories in the sections which follow.

State Fiscal Year 2019 Highway Capital Maintenance (Betterments) Projects

As described in Table 4, Highway Capital Maintenance dollars, which are also the state TTF dollars, were spent in State Fiscal Year 2019 on pavement-related maintenance work administered through the Division of Operations Support of NJDOT. In-house operations (maintenance) crews regularly performed a variety of maintenance tasks to extend the life of pavement and address emergency conditions, including the following:

- Patching potholes to keep the riding surface intact and prevent intrusion of moisture into the pavement layers.
- Quick-set concrete to patch and repair bridge decks.

In addition, specialized maintenance work was performed through projects awarded and administered through Division of Operations Support, including the following:

- "If-And-Where" resurfacing projects statewide administered through Regional Operations personnel to quickly address emergency conditions.
- Crack sealing and longitudinal joint patching to prolong pavement life.
- Diamond grinding of concrete pavement to improve ride quality, skid resistance, wet weather visibility and to reduce tire noise.

TABLE 4

Highway Capital Maintenance (Betterments) Projects –Awarded by Division of Operations Support
State FY 2019

Projects	Route, Direction and MP Limits	Total Lane Miles	County	Total Cost In $ Million
MRC North-2019	Various Locations within the regions mostly as temporary restoration of surface, curb to curb for a short distance OR a short distance of travel lane and shoulder to extend the life of pavement until a full resurfacing project is initiated and constructed.	N/A	Bergen, Essex, Hudson, Morris, Passaic, Sussex, Union and Warren – including and North of Route 57	$9.65
MRC Central - 2019			Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset and Warren – South of Route 57	$7.24
MRC South - 2019			Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem	$7.70
Totals				**$24.59**

***MRC** - Maintenance Resurfacing Contract*

State Fiscal Year 2019 Highway Resurfacing – Division of Operations Support Projects

As mentioned previously, selected resurfacing projects are administered through the Department's Division of Operations Support. These projects are funded with state TTF dollars. Table 5 below lists the resurfacing projects valued at **$82.43M** that were awarded in State Fiscal Year 2019.

TABLE 5

Highway Resurfacing Projects – Division of Operations Support Projects Awarded in SFY 2019

Project	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Million
MRRC #N108	22	WB	0.30	4.52	10.60	Warren	$9.06
	206	NB & SB	103.00	107.66	9.20	Sussex	
MRRC #N210	23	NB	16.80	19.50	5.40	Morris & Passaic	$12.46
		SB	14.20	17.00	7.80		
	46	EB & WB	31.50	33.38	7.00		
	287	SB	42.15	47.10	14.70		
MRRC #N316	1	NB & SB	62.80	64.00	5.60	Bergen	$4.68
	17	SB	17.04	18.95	5.70		
			19.21	19.50	0.90		
MRRC #C112	206	NB & SB	36.27	38.81	9.80	Burlington & Mercer	$11.64
			44.50	53.94	20.00		
MRRC #C113	31	NB & SB	1.15	4.70	14.00	Mercer	$4.08
MRRC#C311	33B	EB & WB	1.57	3.98	4.80	Monmouth	$7.24
	35	NB	34.50	39.46	10.10		
		SB	38.02	39.46	2.80		
MRRC#S112	70	EB & WB	12.05	18.62	15.00	Burlington	$9.53
	72	EB & WB	6.00	13.00	14.00	Burlington & Ocean	
MRRC#S113	38	EB	6.55	9.53	5.90	Burlington	$10.30
	130	NB	32.15	36.40	12.60	Burlington & Camden	
	295	NB	41.00	45.20	14.30	Burlington	
		SB	41.00	46.50	18.20		
MRRC#S209	40	EB & WB	27.40	32.70	10.60	Atlantic & Gloucester	$5.45
	47	NB & SB	38.10	39.29	2.20	Cumberland	
	55	NB	30.20	34.30	8.20	Cumberland	
MRRC#S308	9	NB & SB	33.14	34.23	2.00	Atlantic	$7.99
			34.60	40.84	12.40	Atlantic	
	147	EB & WB	0.00	3.50	13.20	Cape May	
Total					**257.00**		**$82.43M**

MRRC - Maintenance Roadway Repair Contracts

State Fiscal Year 2019 Highway Resurfacing/Rehabilitation/Reconstruction - Division of Capital Program Management Projects

This funding category includes pavement projects administered through Division of Capital Program Management. These projects are more involved than those administered through the Division of Operations Support with regard to required project design, documentation and scoping. This program consists primarily of resurfacing/rehabilitation/reconstruction of highway pavements, but may also include more repair activities, upgrades to sidewalks/curbing and guiderails, Americans with Disabilities Act (ADA) improvements, application of long-life pavement markings and raised pavement markers, and safety improvements. Table 6 below lists **15** highway resurfacing/rehab/reconstruct projects awarded in State Fiscal Year 2019 administered through the Division of Capital Program Management valued at **$176.66 million**.

TABLE 6
Highway Resurfacing/Rehabilitation/Reconstruction Projects Awarded in State FY 2019 Administered Through the Division of Capital Program Management

Project Description	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Fund Source	Cost In $ Million
Rt 22, Commons Way to Route 287	143560	22	WB	34.30	36.87	7.80	Somerset	Federal	$11.35
			EB	34.30	36.72	6.80			
Rt 22 EB, Rt 78 to Rt 28 (CR 614, Easton Turnpike)	114090	22	EB	19.25	31.41	24.00	Hunterdon	Federal	$14.49
Rt 31, Bull Run Rd to Branch of Stoney Brook	124010	31	NB & SB	4.70	5.80	4.40	Mercer	Federal	$8.86
				7.50	10.60	6.60			
				12.00	12.50	1.00			
				13.60	14.30	1.40			
Rt 49, Sarah Run Dr to Garrison Ln, Pavement	114230	49	EB & WB	18.78	25.08	13.00	Cumberland	Federal	$14.78
				25.72	26.40	1.40			
				31.40	37.23	11.60			
				38.55	40.10	3.00			

TABLE 6 (Cont'd)
Highway Resurfacing/Rehabilitation/Reconstruction Projects Awarded in State FY 2019
Administered Through the Division of Capital Program Management

Project Description	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Fund Source	Cost In $ Million
Rt 73, CR 721 to NJ Transit Bridge	124180	73	NB & SB	8.89	15.90	28.00	Camden	Federal	$10.42
Rt 195 WB, Rt 295 to CR 524/539 (Old York Rd)	143770	195	WB	0.00	9.25	19.50	Mercer & Monmouth	Federal	$11.25
Rt 206, Pines Rd to CR 521 (Montague River Rd)	123980	206	NB & SB	115.93	129.30	30.00	Sussex	Federal	$18.77
Rt 287 NB, Rt 202/206 to South St (CR 601)	154050	287	NB	23.00 30.00	28.00 35.57	34.00	Somerset & Morris	Federal	$20.60
RT 295, Rt 195/29 to Rt 1	143780	295	NB & SB	60.40	67.50	42.60	Mercer	Federal	$22.81
Rt 295, CR 579 (Bear Tavern Road) to Railroad Bridge	124120	295	NB & SB	73.14	75.27	12.00	Mercer	Federal	$7.13
Rt 322, Rt 295 to Tomlin Station Rd (CR 607)	124170	322	EB & WB	3.95 7.23 8.07	6.73 7.55 8.50	6.60 0.80 0.80	Gloucester	Federal	$7.26
Rt 40, NJ Turnpike to E Quillytown Rd	124110	40	EB & WB	1.70	5.73	15.80	Salem	State	$3.80
Rt 40, Wilson Ave to Route 77	114210	40	EB & WB	10.87	16.40	11.00	Salem	State	$7.26

TABLE 6 (Cont'd)
Highway Resurfacing/Rehabilitation/Reconstruction Projects Awarded in State FY 2019
Administered Through the Division of Capital Program Management

Project Description	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Fund Source	Cost In $ Million
Rt 46, Stiger St to Sand Shore Rd/Naughright **Rd**	153870	46	EB & WB	21.00	24.60	11.50	Morris & Warren	State	$8.49
Rt 57, Rt 22 to Rt 31	143720	57	EB & WB	0.00 3.90	3.10 11.06	6.20 14.40	Warren	State	$9.39
Total						**314.20**			**$176.66**

State Fiscal Year 2019 Pavement Preservation Preventive Maintenance Projects

NJDOT has significantly increased the use of preventive maintenance treatments over the last several years. Instead of waiting until pavements deteriorate to a poor condition which then requires conventional resurfacing or rehabilitation treatments, preventive maintenance treatments are applied at a fraction of the cost to roadway sections in good or fair condition. While much of the pavement funding is still applied to conventional restoration of deficient pavements, the preventive maintenance strategy applied to non-deficient pavements slows the rate of deterioration and allows NJDOT to reduce the backlog of deficient pavements with the funding available.

In State FY 2019, the following specialized preventive maintenance treatments were utilized:

- **Microsurfacing / Slurry Seal:** This process involves sealing the entire pavement surface with a special cold mixture of polymer modified asphalt emulsion, mineral aggregate, mineral filler, water, and other additives applied in a thin layer on the existing pavement surface.
- **Ultra-Thin Friction Course (UTFC):** A surface treatment that places a 0.75-in. thick polymer-modified hot mix asphalt layer placed on a polymer-modified emulsified asphalt membrane. This process utilizes a specially designed "spray paver" or "ultra-thin lift paver" to rapidly place polymer modified asphalt emulsion material just ahead of the hot mix asphalt that allows for faster opening to traffic and improved overlay performance.
- **High Performance Thin Overlay (HPTO):** Application of a special hot mix asphalt overlay using a modified asphalt binder generally with an average thickness of 1 inch to the entire pavement surface. This process sometimes utilizes a specially designed "spray paver" or "ultra-thin lift paver" for improved overlay performance.
- **Asphalt Rubber Chip Seal (AR Chip Seal):** Application of asphalt rubber modified binder to the roadway followed by spreading pre-coated high quality chip seal aggregate, over the binder which is then rolled with pneumatic tire rollers.

- **Cape Seal:** A surface treatment that involves the application of slurry seal to a newly constructed surface treatment or chip seal. Cape seals are used to provide a dense, waterproof surface with improved skid resistance and ride quality.

Projects which were completed in State FY 2019 through the Division of Capital Program Management are listed in Table 7 below.

TABLE 7

Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2019 Administered Through the Division of Capital Program Management

Project Description	Treatment	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Million
Route 18 SB, Route 138 to Deal Road	Cape Seal	183290	18	SB	5.14	11.25	12.10	Monmouth	$3.52
Rt 18, Rt 27 to Buckingham Dr.	1" Micro mill+ 1" HPTO	193290	18	NB & SB	42.60	45.30	12.30	Middlesex	$5.75
Route 22 WB, Ramp from Route 78 EB to CR 523 (Oldwick Road)	Chip Seal	183400	22	WB	19.3	25.5	11.60	Hunterdon	$3.69
Rt 24, Route 287 to Route 78	Ultra-Thin Friction Course	183360	24	EB	0.00	10.20	24.10	Morris, Union and Essex	$14.20
				WB	0.00	7.00	13.60		
					9.10	10.20	3.10		
Rt 33, CR 527 (Millhurst Rd/Sweetmans Ln) to Howell Rd	0.75" UTFC over Slurry Seal	193300	33	EB	24.30	28.90	9.00	Monmouth	$7.85
				WB	24.30	29.15	9.00		
Rt 35, CR4 (Homdel Rd/Main St) to Rt 9	Slurry Seal	193310	35	NB	42.75	49.38	14.00	Monmouth & Middlesex	$4.37
				SB	44.30	45.75	3.00		
					47.50	49.38	4.00		

TABLE 7 (Cont'd)

Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2019 Administered Through the Division of Capital Program Management

Project Description	Treatment	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Million
Route 36, Bay Ave (CR 8) to Ocean Avenue	Slurry + HPTO	183420	36	NB & SB	11.77	22.35	42.40	Monmouth	$6.73
Rt 55, Leaming Mill Rd (CR684) to Ellis Mill Rd (CR 641)	0.75" UTFC over Slurry Seal	193350	55	NB	25.00 34.30	30.20 48.40	10.40 28.20	Cumberland, Salem, & Gloucester	$18.70
				SB	26.50	40.00	27.00		
Rt 72, Rt 70 to Savoy Blvd. and Stevens Rd to Ash Road	CAPE Seal	193340	72	EB & WB	0.00 13.00	6.00 18.46	12.00 11.00	Burlington & Ocean	$5.65
Rt 78, Washington Valley Rd to Plainfield Ave (CR 663)	Slurry +HPTO	183380	78	EB & WB	32.20	42.70	63.00	Somerset	$16.96
Rt 78, Union Ave to NJ Turnpike Exit 58	1" Micro mill+ 1" HPTO	193190	78	EB & WB	53.40	57.70	14.40	Union & Essex	$8.95
			78L	EB & WB	53.40	57.70	19.70		

TABLE 7 (Cont'd)

Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2019
Administered Through the Division of Capital Program Management

Project Description	Treatment	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Million
Rt 80, Fox Hill Rd to Rt 46 (EB)/Rt 280 & CR 57 (S Summit Ave) to Rt 95	Slurry +HPTO	193160	80	EB	41.50	43.90	47.30	Morris & Bergen	$16.55
				WB	43.10	44.10			
			80EX & 80L	EB	43.90	45.60			
				WB	44.10	45.60			
			80L	EB	65.02	68.08			
				WB	65.28	68.25			
Rt 202, Alexauken Creek Rd to Rt 179/CR 514/Old York Rd	AR Chip Seal	183340	202	NB & SB	0.60	7.00	25.90	Hunterdon	$9.40
Rt 206, Farmers Market Drive to Route 68	Slurry +HPTO	183310	206	NB & SB	30.43	33.07	10.80	Burlington	$3.46
Route 287, CR 533 (Main Street) to Route 78 Ramp	Slurry + HPTO	183430	287	NB & SB	12.90	20.60	45.30	Somerset	$16.11
			287L	NB & SB	17.84	20.60	11.80		
Rt 287, South St (CR 601) to Littleton Road (CR 630)	Slurry +HPTO	183320	287	NB	35.57	42.15	23.90	Morris	$14.55
				SB	35.50	42.15	20.90		
			287L	SB	40.50	41.90	4.80		

TABLE 7 (Cont'd)

Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2019 Administered Through the Division of Capital Program Management

Project Description	Treatment	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Million
Rt 287, CR 591 (W. Oakland Ave) to CR 84 (Franklin Ave)	Slurry +HPTO	183330	287	NB & SB	58.40	60.60	11.40	Bergen	$5.36
Total							**546.00**		**$161.80**

Pavement Preservation Projects which were completed in State FY 2019 through the Division of Operations Support are listed in Table 8 below:

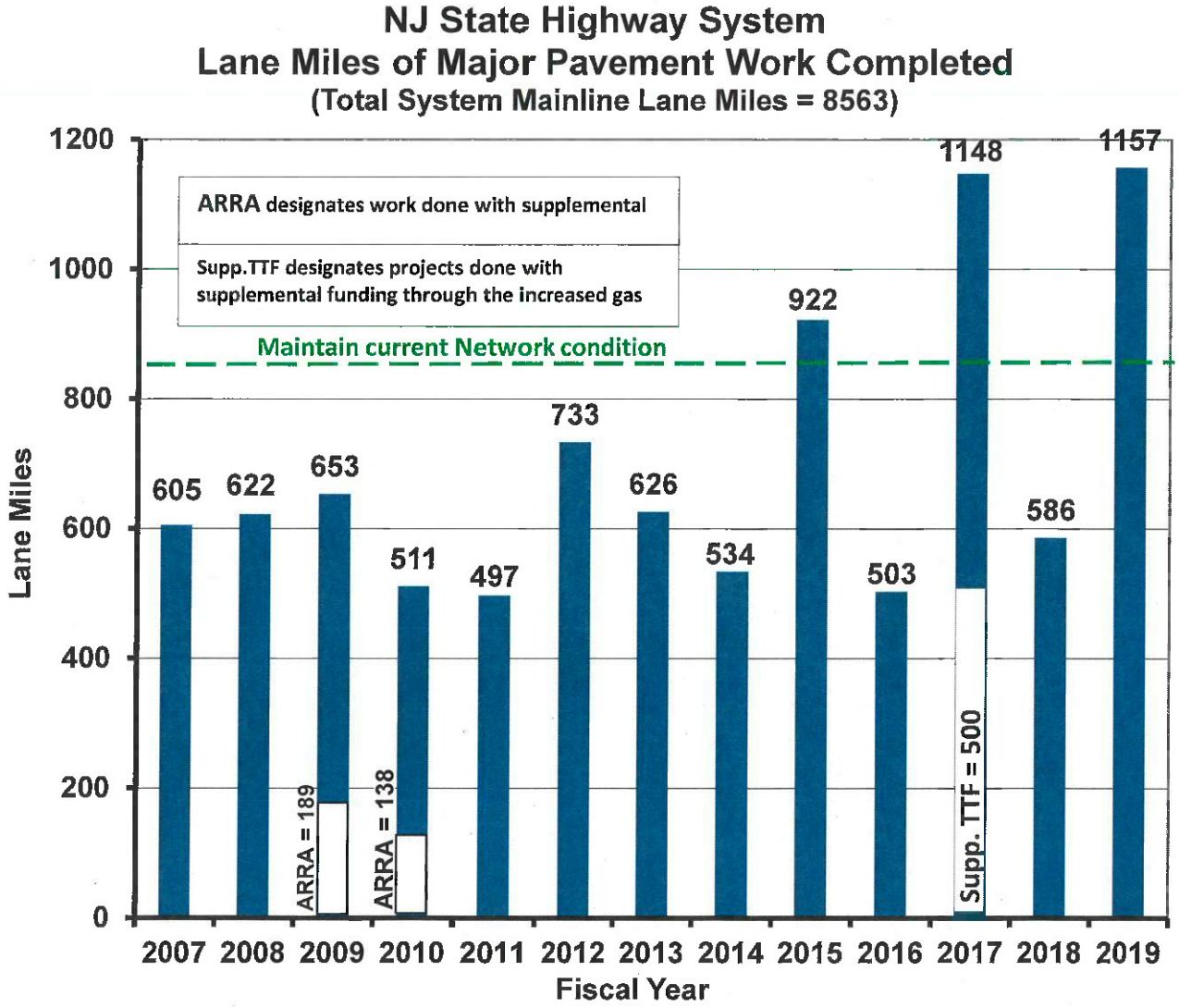
TABLE 8
Pavement Preservation - Preventive Maintenance Projects Awarded in State FY 2019 Administered Through the Division of Operations Support

Project Description	Treatment	DOT DP No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Million
Rt. 295 Pavement Preservation Contract South - 2018	UTFC over Slurry Seal	18412	295	NB	4.46	14.00	26.60	Salem & Gloucester	$7.98
				SB	4.46	11.22	13.40		
Total							**40.00**		**$7.98**

MULTI-YEAR SUMMARY OF MAJOR PAVEMENT WORK

Figure 4 below shows the lane miles of mainline pavement that received restoration over the last 13 fiscal years. It should be noted that the availability of funding as well as the schedules of Capital Program Management projects are the major factors which affect the total lane miles restored during the state fiscal year. In the FY 2017, Supplemental Transportation Trust Funds were available and hence the number of lane miles paved was much higher than other years. In FY 2019, there was a significant increase in the number of lane miles that received preservation treatments compared to previous years, resulting in a large increase in the total lane miles treated for the year.

FIGURE 4



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1. New Jersey Department of Transportation, *STATE FY 2018 – 2027 Statewide Transportation Improvement Program,* October 1, 2017.

2. New Jersey Department of Transportation, *Pavement Management System.*

3. New Jersey Department of Transportation, *Transportation Capital Program, State Fiscal Year 2019,* July 1, 2018.

APPENDIX A

DEFICIENT PAVEMENT SECTIONS NEEDING FUTURE RESTORATION

DEFICIENT PAVEMENTS NEEDING FUTURE RESTORATION
328 Candidate Projects Sorted By Benefit Rank

Notes:

(1) Candidate projects are based on 2018 Pavement Management Database. Minimum project length = 0.5 mile.
(2) Many of the projects shown below are already programmed for future work and are in design.
(3) AADT = Average Annual Daily Traffic. FPR = Final Pavement Rating (0-5 scale, 5 = perfect pavement).
(4) Benefit = 0.9(5.0-Avg FPR) + 0.1(Traffic Factor) and Traffic Factor = (5/60000)(Avg AADT), with Max = 5.0
(5) For undivided routes (Dir = B): FPR and Benefit shown are the most critical set of values in either direction.
(6) In Rte designation, L=Local, B=Business, T=Truck, U=Upper, 095M = NJDOT maintained portion of Rte I-95.

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
1	139L	W	0	0.5	0.5	1.0	Hudson	32564	0.00	4.771	0.350
2	022	E	46.2	47	0.8	2.4	Somerset	31768	0.00	4.765	0.840
3	003L	W	9.3	9.8	0.5	1.0	Hudson	29373	0.00	4.745	0.350
4	139L	E	0.2	1.3	1.1	2.3	Hudson	32564	0.03	4.743	0.805
5	024	W	8.7	9.1	0.4	1.2	Essex, Union	51813	0.22	4.732	0.420
6	015	B	0.2	2	1.8	4.4	Morris	58572	0.02	4.722	1.540
7	021	B	1	2.1	1.1	4.4	Essex	49152	0.00	4.705	1.540
8	130	S	42.8	45.69	2.9	8.7	Burlington	23444	0.00	4.694	3.045
9	073	N	22.6	23.8	1.2	2.4	Burlington	20219	0.00	4.668	0.840
10	130	S	46.73	47.38	0.7	1.4	Burlington	18820	0.00	4.657	0.490
11	046	W	59.3	60.7	1.4	3.6	Passaic	53704	0.35	4.636	1.260
12	295	N	75.27	76.5	1.2	3.6	Mercer	39231	0.22	4.632	1.260
13	037	W	12.8	13.43	0.6	1.7	Ocean	15546	0.00	4.630	0.595
14	042	N	0	3.4	3.4	6.8	Gloucester	14800	0.00	4.623	2.380
15	202	S	50.1	50.6	0.5	1.0	Morris	13791	0.00	4.615	0.350
16	182	B	0	1	1	2.8	Warren	25356	0.00	4.606	0.980
17	066	E	3.1	3.62	0.5	1.0	Monmouth	11530	0.00	4.596	0.350
18	031	B	13	13.6	0.6	1.2	Hunterdon	21866	0.00	4.591	0.420
19	001	N	36.8	38.1	1.3	3.9	Middlesex	29472	0.18	4.585	1.365
20	009	B	90.2	90.7	0.5	1.7	Ocean	25572	0.02	4.585	0.595
21	322	B	2.4	3.4	1	2.2	Gloucester	18882	0.00	4.579	0.770
22	322	W	3.4	3.95	0.5	1.2	Gloucester	9441	0.00	4.579	0.420
23	023	B	30.6	31.2	0.6	1.2	Sussex	18488	0.00	4.577	0.420
24	030	B	32	32.8	0.8	3.2	Atlantic	19110	0.01	4.573	1.120
25	028	B	21.5	22.9	1.4	2.8	Union	17208	0.00	4.572	0.980
26	124	B	12.5	13.3	0.8	1.6	Union	16444	0.00	4.569	0.560
27	055	B	20	20.8	0.8	1.6	Cumberland	14094	0.00	4.559	0.560

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 2 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
28	028	B	3	6.2	3.2	6.4	Somerset	13914	0.00	4.558	2.240
29	046	W	61.8	62.5	0.7	1.4	Passaic	23133	0.16	4.548	0.490
30	168	B	5.4	8.6	3.2	9.0	Camden	21252	0.05	4.548	3.150
31	120	N	2.1	2.6	0.5	1.0	Bergen	10428	0.05	4.542	0.350
32	202	B	33	36.4	3.4	6.8	Somerset	9860	0.00	4.541	2.380
33	001	S	64	64.88	0.9	1.8	Bergen	23489	0.18	4.535	0.630
34	071	B	5.4	6	0.6	1.4	Monmouth	7516	0.00	4.531	0.490
35	071	N	6	6.6	0.6	0.6	Monmouth	3758	0.00	4.531	0.210
36	001	S	29.62	30.6	1	3.0	Middlesex	38496	0.33	4.526	1.050
37	049	B	26.4	27.2	0.8	1.6	Cumberland	12768	0.03	4.522	0.560
38	094	S	0.1	0.7	0.6	0.9	Warren	3309	0.01	4.515	0.315
39	028	E	22.24	23.24	1	1.3	Union	8534	0.07	4.507	0.455
40	130	N	60.4	60.9	0.5	1.2	Mercer	14127	0.13	4.502	0.420
41	094	B	35.5	36	0.5	1.0	Sussex	12032	0.07	4.488	0.350
42	175	B	0.3	3	2.7	5.6	Mercer	2080	0.04	4.471	1.960
43	036	S	0.4	1.9	1.5	4.0	Monmouth	19093	0.22	4.463	1.400
44	001	N	40.7	41.3	0.6	1.8	Union	31924	0.35	4.455	0.630
45	202	N	50.1	50.6	0.5	1.2	Morris	13791	0.18	4.449	0.420
46	022	W	4.52	5.07	0.6	1.2	Warren	20312	0.26	4.433	0.420
47	072	W	21.2	22.6	1.4	3.6	Ocean	17622	0.24	4.429	1.260
48	001	S	0.6	1.2	0.6	1.2	Mercer	22608	0.29	4.427	0.420
49	124	B	10	11.3	1.3	4.8	Union	16444	0.17	4.416	1.680
50	066	W	3	3.62	0.6	1.4	Monmouth	11530	0.21	4.411	0.490
51	031	B	12.5	12.9	0.4	0.8	Hunterdon	21866	0.20	4.409	0.280
52	045	B	27.7	28.2	0.5	2.0	Gloucester	15960	0.19	4.397	0.700
53	040	E	58	59.5	1.5	3.0	Atlantic	14141	0.25	4.393	1.050
54	130	N	39.9	40.8	0.9	2.7	Burlington	28246	0.38	4.389	0.945
55	206	S	34.1	35.5	1.4	3.0	Burlington	12631	0.24	4.388	1.050
56	036	B	3.9	5.7	1.8	3.7	Monmouth	25542	0.26	4.371	1.295
57	001B	N	1.4	2.7	1.3	2.8	Mercer	17434	0.31	4.366	0.980
58	280	E	16.8	17.3	0.5	1.0	Hudson	38233	0.51	4.357	0.350
59	071	B	6.6	7.9	1.3	3.0	Monmouth	8986	0.20	4.356	1.050
60	001	N	35.7	36.2	0.5	1.5	Middlesex	22187	0.37	4.354	0.525
61	017	B	0	3.4	3.4	7.6	Bergen	72039	0.51	4.340	2.660
62	130	N	53.07	53.88	0.8	1.6	Burlington	12706	0.30	4.332	0.560
63	133	E	0	2.8	2.8	5.6	Mercer	8177	0.28	4.317	1.960
64	280	W	16.5	17.3	0.8	1.7	Hudson	36924	0.55	4.311	0.595
65	088	B	0	1.2	1.2	2.4	Ocean	23932	0.33	4.306	0.840
66	133	W	0	3.5	3.5	7.0	Mercer	8636	0.30	4.305	2.450
67	044	B	9.4	10.2	0.8	1.6	Gloucester	5966	0.25	4.299	0.560
68	001	S	6	6.5	0.5	1.0	Mercer	27225	0.48	4.293	0.350

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 2 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
69	195	E	0.1	0.6	0.5	1.5	Mercer	30295	0.52	4.286	0.525
70	077	B	0	2.6	2.6	5.2	Cumberland	14172	0.31	4.279	1.820
71	001B	N	0	0.5	0.5	1.0	Mercer	7064	0.31	4.276	0.350
72	015	N	2	2.56	0.6	1.4	Morris	29286	0.54	4.261	0.490
73	001	S	31.1	31.6	0.5	1.5	Middlesex	37942	0.64	4.243	0.525
74	001T	W	2.7	4.2	1.5	3.0	Hudson	22093	0.49	4.242	1.050
75	053	B	0	1.9	1.9	5.6	Morris	15776	0.36	4.240	1.960
76	130	S	69.71	70.1	0.4	0.8	Mercer, Middlesex	14447	0.43	4.233	0.280
77	001	S	42.8	45.6	2.8	7.5	Union	43726	0.70	4.232	2.625
78	013	B	0	0.6	0.6	2.2	Ocean	15108	0.38	4.218	0.770
79	007	S	0.8	1.6	0.8	2.2	Hudson	10060	0.42	4.205	0.770
80	130	N	25	26	1	1.8	Camden, Gloucester	11667	0.44	4.204	0.630
81	027	B	20.9	23.8	2.9	6.2	Middlesex	20748	0.43	4.202	2.170
82	081	N	0.6	1.1	0.5	0.7	Union	20456	0.52	4.199	0.245
83	042	S	0	3.4	3.4	6.8	Gloucester	14800	0.49	4.179	2.380
84	009	N	134.2	136	1.8	5.4	Middlesex	28983	0.63	4.176	1.890
85	028	B	9	12.4	3.4	10.0	Middlesex	22272	0.46	4.175	3.500
86	027	B	7.5	15.4	7.9	22.0	Middlesex	23154	0.48	4.168	7.700
87	007	N	0.6	1.6	1	2.8	Hudson	10060	0.46	4.166	0.980
88	072	E	22	22.6	0.6	1.8	Ocean	23214	0.59	4.166	0.630
89	009	B	75.7	76.4	0.7	1.4	Ocean	16218	0.46	4.158	0.490
90	031	B	22.2	25.1	2.9	9.3	Hunterdon	21766	0.48	4.157	3.255
91	071	B	0	5.1	5.1	10.2	Monmouth	12998	0.45	4.150	3.570
92	206	N	33.9	34.6	0.7	1.5	Burlington	14435	0.52	4.149	0.525
93	071	N	10.5	11.6	1.1	2.2	Monmouth	6239	0.45	4.147	0.770
94	031	B	10.6	11.9	1.3	2.6	Mercer	12842	0.45	4.146	0.910
95	009	S	125.4	130.88	5.5	15.4	Middlesex	37973	0.76	4.135	5.390
96	080	E	67.97	68.5	0.5	1.2	Bergen	32366	0.71	4.134	0.420
97	038	W	8.9	9.9	1	2.3	Burlington	22072	0.62	4.128	0.805
98	001B	S	0	2.73	2.7	5.6	Mercer	14359	0.56	4.116	1.960
99	009	B	70.7	71.3	0.6	1.2	Ocean	18946	0.55	4.088	0.420
100	023	B	35.7	36.4	0.7	1.6	Sussex	17246	0.54	4.086	0.560
101	295	S	75.27	76.56	1.3	3.9	Mercer	39447	0.83	4.086	1.365
102	173	B	10.6	11.3	0.7	1.4	Hunterdon	8984	0.50	4.084	0.490
103	001L	N	49	49.4	0.4	0.8	Essex	21575	0.67	4.079	0.280
104	130	S	55.75	56.4	0.7	2.4	Burlington	12373	0.60	4.068	0.840
105	080	E	46.3	46.8	0.5	1.5	Morris	54148	1.00	4.055	0.525
106	035	B	29.5	34.3	4.8	23.5	Monmouth	29170	0.63	4.055	8.225
107	124	B	0	7.3	7.3	17.4	Morris	17236	0.58	4.047	6.090

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 3 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
108	010	W	0	0.5	0.5	1.0	Morris	18579	0.68	4.043	0.350
109	072	W	25.4	26.8	1.4	2.8	Ocean	12077	0.62	4.040	0.980
110	029	N	2.6	4.1	1.5	4.5	Mercer	22687	0.73	4.028	1.575
111	035	B	16.3	17.6	1.3	3.3	Monmouth	21832	0.63	4.027	1.155
112	073	N	17.6	21.2	3.6	7.4	Camden	18549	0.70	4.023	2.590
113	073	N	25.2	25.7	0.5	1.0	Burlington	32568	0.84	4.018	0.350
114	009	N	125.3	128.5	3.2	9.6	Middlesex	39066	0.90	4.013	3.360
115	094	B	7.7	8.4	0.7	1.4	Warren	8852	0.58	4.010	0.490
116	080L	W	45.8	46.3	0.5	1.0	Morris	40892	0.94	3.993	0.350
117	109	S	1.8	2.2	0.4	0.8	Cape May	8468	0.64	3.993	0.280
118	001	N	0.6	1.2	0.6	1.2	Mercer	22608	0.79	3.979	0.420
119	001	N	48.5	55.9	7.4	4.6	Essex, Hudson	25315	0.82	3.976	1.610
120	047	B	34.6	35.2	0.6	1.2	Cumberland	15712	0.66	3.975	0.420
121	009	B	17.7	18.2	0.5	1.0	Cape May	14672	0.65	3.975	0.350
122	041	B	1.1	5	3.9	9.2	Camden, Gloucester	18606	0.68	3.964	3.220
123	001	S	7.4	8.6	1.2	3.6	Mercer	41040	1.01	3.934	1.260
124	072	B	18.5	21.2	2.7	6.2	Ocean	15110	0.71	3.924	2.170
125	173	B	12.9	14.6	1.7	3.7	Hunterdon	12384	0.70	3.920	1.295
126	027	B	1.4	1.9	0.5	1.0	Mercer	11716	0.71	3.908	0.350
127	130	N	30.48	31.1	0.6	2.1	Camden	21624	0.86	3.907	0.735
128	042	S	7.1	7.6	0.5	1.5	Camden	35415	0.99	3.902	0.525
129	001	N	44.2	45.5	1.3	3.9	Union	45214	1.10	3.891	1.365
130	173	B	9.7	10.2	0.5	1.0	Hunterdon	8984	0.74	3.874	0.350
131	001	S	40.3	41.3	1	3.0	Union	31924	1.00	3.870	1.050
132	072	E	25.5	26.5	1	2.0	Ocean	12077	0.81	3.869	0.700
133	063	B	0	2.9	2.9	7.4	Bergen, Hudson	19724	0.79	3.868	2.590
134	181	B	4.6	6.3	1.7	3.7	Sussex	11364	0.78	3.843	1.295
135	088	B	2.1	9.8	7.7	18.0	Ocean	20750	0.83	3.841	6.300
136	001L	S	46.75	47.7	1	1.8	Essex	29230	1.01	3.831	0.630
137	046	B	20.4	21	0.6	1.2	Warren	13398	0.81	3.830	0.420
138	040	E	51.6	52.26	0.7	1.6	Atlantic	18389	0.92	3.822	0.560
139	035	N	14.52	15.2	0.7	1.4	Monmouth	10370	0.86	3.815	0.490
140	007	B	0.1	0.6	0.5	2.0	Hudson	20120	0.85	3.815	0.700
141	130	N	55.75	58.3	2.5	5.7	Burlington	11341	0.87	3.815	1.995
142	001	S	54.6	56.2	1.6	3.2	Hudson	31673	1.06	3.813	1.120
143	009	N	128.9	129.8	0.9	2.3	Middlesex	28823	1.05	3.797	0.805
144	028	E	25.24	26.2	1	2.0	Union	8534	0.92	3.747	0.700
145	001	N	5.2	7.5	2.3	5.1	Mercer	29894	1.12	3.739	1.785
146	027Z	S	33.5	34	0.5	0.9	Union	10235	0.94	3.736	0.315

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 4 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
147	001	N	28.42	29.6	1.2	3.6	Middlesex	41626	1.24	3.728	1.260
148	046	E	66.6	66.95	0.3	0.6	Bergen	29679	1.15	3.708	0.210
149	166	B	2	3.7	1.7	3.6	Ocean	16992	0.96	3.704	1.260
150	040	B	9.8	15.7	5.9	11.8	Salem	14401	0.95	3.702	4.130
151	023	B	37.6	39.4	1.8	3.6	Sussex	17956	0.97	3.701	1.260
152	173	B	0	0.5	0.5	1.0	Warren	7964	0.93	3.697	0.350
153	073	N	26.1	27.3	1.2	2.7	Burlington	34482	1.21	3.696	0.945
154	035Z	S	13.6	14.1	0.5	1.0	Ocean	14265	1.04	3.686	0.350
155	046	E	63	63.8	0.8	1.8	Passaic	37314	1.25	3.686	0.630
156	073	N	33.6	34.1	0.5	1.3	Burlington	29161	1.17	3.686	0.455
157	676	S	2.90	3.60	0.7	1.8	Camden	25837	1.15	3.680	0.630
158	033	B	40.8	41.9	1.1	3.6	Monmouth	13916	0.98	3.679	1.260
159	009	B	68.5	70.2	1.7	3.4	Ocean	20328	1.01	3.671	1.190
160	046	B	29.6	31.3	1.7	5.2	Morris	17952	1.01	3.667	1.820
161	023	B	42.1	49.8	7.7	15.4	Sussex	4470	0.96	3.657	5.390
162	001T	E	2.7	3.9	1.2	2.4	Hudson	21336	1.14	3.647	0.840
163	028	B	7.4	8.6	1.2	3.4	Middlesex, Somerset	23204	1.06	3.647	1.190
164	027	B	2.8	5.5	2.7	5.7	Mercer, Middlesex, Somerset	11280	1.00	3.643	1.995
165	130	S	68.6	69.26	0.7	1.4	Mercer	15582	1.11	3.628	0.490
166	009	B	6.9	7.8	0.9	2.6	Cape May	11142	1.03	3.621	0.910
167	181	B	6.4	7.5	1.1	2.2	Sussex	6360	1.02	3.606	0.770
168	009	B	15	16.2	1.2	2.4	Cape May	11288	1.06	3.595	0.840
169	081	S	0.6	1.18	0.6	1.2	Union	20456	1.20	3.590	0.420
170	070	W	53.2	57.3	4.1	8.5	Ocean	16109	1.16	3.589	2.975
171	071	B	11.6	14.9	3.3	6.6	Monmouth	14564	1.08	3.589	2.310
172	130	N	13.6	14.29	0.7	1.0	Gloucester	11048	1.12	3.586	0.350
173	037	E	12.7	13.43	0.7	2.0	Ocean	17209	1.18	3.580	0.700
174	439	B	0	2.2	2.2	4.4	Union	23098	1.14	3.572	1.540
175	676	N	2.60	3.20	0.6	1.8	Camden	25837	1.27	3.569	0.630
176	042	S	9.3	12.1	2.8	8.4	Camden, Gloucester	56996	1.57	3.558	2.940
177	094	B	27.1	28	0.9	1.2	Sussex	9078	1.10	3.547	0.420
178	202	B	29.2	29.8	0.6	1.4	Somerset	18898	1.15	3.545	0.490
179	001	N	42.4	43.6	1.2	3.6	Union	38215	1.42	3.539	1.260
180	140	B	0.4	0.9	0.5	1.0	Salem	10860	1.12	3.535	0.350
181	071	S	6	6.6	0.6	0.6	Monmouth	3758	1.11	3.534	0.210
182	047	B	39.3	41.2	1.9	4.0	Cumberland	14050	1.14	3.532	1.400
183	038	E	9.53	9.9	0.4	1.1	Burlington	20544	1.27	3.526	0.385
184	077	B	9.2	9.8	0.6	1.2	Cumberland	5846	1.12	3.521	0.420
185	047	B	4.5	10.1	5.6	11.2	Cape May	12270	1.15	3.518	3.920

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 5 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
186	045	B	24.9	27.3	2.4	7.2	Gloucester	16894	1.17	3.516	2.520
187	001	S	50.4	51.2	0.8	1.6	Essex	21575	1.29	3.516	0.560
188	027	B	27.2	28.2	1	3.9	Union	29860	1.24	3.505	1.365
189	055	N	24.1	25	0.9	1.8	Cumberland	8419	1.19	3.503	0.630
190	030	B	14.9	18.1	3.2	11.8	Camden	15660	1.19	3.495	4.130
191	055	S	20.8	21.8	1	2.0	Cumberland	6955	1.18	3.493	0.700
192	001	N	64	64.88	0.9	1.8	Bergen	23489	1.34	3.491	0.630
193	029	N	8.6	9.4	0.8	1.6	Mercer	8666	1.21	3.482	0.560
194	173	B	7.5	8	0.5	2.5	Hunterdon	8984	1.18	3.478	0.875
195	009	S	124	124.5	0.5	1.5	Middlesex	35042	1.46	3.476	0.525
196	071	B	15.5	16.8	1.3	2.6	Monmouth	12162	1.20	3.475	0.910
197	029	S	1.7	3.1	1.4	3.1	Mercer	22962	1.39	3.442	1.085
198	001	N	30.6	31.7	1.1	3.3	Middlesex	37942	1.53	3.435	1.155
199	021	N	0.3	1	0.7	2.1	Essex	45393	1.61	3.425	0.735
200	034	B	12.6	13.2	0.6	1.2	Monmouth	15840	1.27	3.420	0.420
201	007	B	2.4	3.1	0.7	1.4	Hudson	20120	1.30	3.416	0.490
202	023	B	40.1	40.7	0.6	1.2	Sussex	10788	1.26	3.412	0.420
203	040	B	33.8	34.4	0.6	1.2	Atlantic	9554	1.26	3.410	0.420
204	166	B	0.1	1.5	1.4	2.5	Ocean	25416	1.33	3.407	0.875
205	130	S	60.1	60.7	0.6	1.4	Mercer	14127	1.35	3.401	0.490
206	046	E	46.4	47.2	0.8	1.6	Morris	21077	1.43	3.393	0.560
207	070	E	54.3	56.2	1.9	4.5	Ocean	18588	1.41	3.390	1.575
208	021	S	4.02	4.7	0.7	2.1	Essex	26311	1.49	3.381	0.735
209	047	B	31.5	32.7	1.2	2.4	Cumberland	11920	1.30	3.375	0.840
210	001	N	10.6	11.5	0.9	2.7	Mercer	38673	1.61	3.371	0.945
211	035	S	24.9	27.6	2.7	5.4	Monmouth	9198	1.35	3.362	1.890
212	001	S	22	22.6	0.6	1.8	Middlesex	37250	1.64	3.332	0.630
213	030	B	8.3	14.4	6.1	24.7	Camden	30444	1.47	3.303	8.645
214	206	B	56.6	62.3	5.7	12.6	Mercer, Somerset	19337	1.42	3.300	4.410
215	035	S	0.8	1.3	0.5	1.0	Ocean	6642	1.40	3.292	0.350
216	023	N	4.9	6.5	1.6	4.4	Passaic	33950	1.67	3.277	1.540
217	147	B	3.5	4.2	0.7	2.8	Cape May	14174	1.43	3.268	0.980
218	322	B	7.6	8.1	0.5	1.0	Gloucester	13734	1.46	3.246	0.350
219	009	S	132	136.2	4.2	11.3	Middlesex	32608	1.70	3.243	3.955
220	009	B	4.1	5.7	1.6	3.2	Cape May	5462	1.42	3.242	1.120
221	009	B	66.6	67.1	0.5	1.0	Ocean	20328	1.50	3.231	0.350
222	046	B	27.1	28.9	1.8	7.2	Morris	29040	1.55	3.230	2.520
223	009	N	132.7	133.8	1.1	2.7	Middlesex	34437	1.73	3.229	0.945
224	047	B	18.3	19.4	1.1	2.2	Cape May	16842	1.49	3.228	0.770
225	090	W	2	2.7	0.7	1.8	Camden	14949	1.57	3.211	0.630
226	036	N	1.5	2.3	0.8	2.3	Monmouth	22962	1.65	3.210	0.805
227	071	S	11	11.6	0.6	1.2	Monmouth	6239	1.50	3.202	0.420
228	046	E	54.92	55.85	0.9	1.8	Essex, Passaic	31141	1.75	3.188	0.630

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 6 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
229	031	S	25.1	25.6	0.5	1.0	Hunterdon	10883	1.56	3.187	0.350
230	035	N	24.8	29.4	4.6	9.2	Monmouth	9198	1.58	3.155	3.220
231	046	E	58.96	60.1	1.1	3.3	Passaic	64180	2.06	3.150	1.155
232	046	E	61.8	62.5	0.7	1.4	Passaic	23133	1.72	3.143	0.490
233	045	B	0	1.5	1.5	3.0	Salem	11466	1.58	3.125	1.050
234	031	B	6.8	7.3	0.5	1.0	Mercer	32200	1.68	3.125	0.350
235	031	S	27.4	28.3	0.9	1.8	Hunterdon	10928	1.64	3.116	0.630
236	010	E	17.3	17.8	0.5	1.0	Morris	15917	1.69	3.112	0.350
237	026	B	0.3	1.6	1.3	3.2	Middlesex	16210	1.62	3.107	1.120
238	041	B	0	0.6	0.6	1.2	Gloucester	14034	1.62	3.103	0.420
239	028	W	22.9	23.24	0.3	0.6	Union	8534	1.63	3.103	0.210
240	154	B	0	1.6	1.6	4.0	Camden	19522	1.65	3.097	1.400
241	045	N	22.7	24.9	2.2	4.4	Gloucester	9226	1.65	3.091	1.540
242	046	W	65.3	65.9	0.6	1.2	Bergen	29679	1.84	3.088	0.420
243	046	W	63.4	63.9	0.5	1.2	Passaic	45823	1.99	3.088	0.420
244	047	B	14	15.6	1.6	3.2	Cape May	7680	1.61	3.083	1.120
245	040	B	19.7	22.9	3.2	6.4	Salem	10646	1.63	3.080	2.240
246	035	N	39.46	42.75	3.3	7.3	Monmouth	21731	1.80	3.064	2.555
247	076	N	0.9	1.9	1	4.8	Camden	91059	2.15	3.063	1.680
248	077	B	6.3	6.9	0.6	1.2	Cumberland	5846	1.63	3.055	0.420
249	057	B	19.2	20.2	1	2.0	Warren	15520	1.68	3.055	0.700
250	009	S	116.9	122	5.1	11.2	Middlesex, Monmouth	27466	1.86	3.051	3.920
251	047	B	33.2	34	0.8	1.6	Cumberland	18140	1.71	3.038	0.560
252	035	B	18.1	20.1	2	6.0	Monmouth	22256	1.74	3.026	2.100
253	206	B	86.6	87.6	1	3.5	Morris	20808	1.74	3.019	1.225
254	206	B	63.4	64.1	0.7	1.4	Somerset	29094	1.79	3.013	0.490
255	181	B	3.1	4.1	1	2.3	Sussex	12562	1.73	2.997	0.805
256	109	N	1.8	2.4	0.6	1.2	Cape May	8685	1.77	2.979	0.420
257	027	B	31.6	33.4	1.8	6.0	Union	23750	1.81	2.968	2.100
258	202	S	11.2	11.7	0.5	1.0	Hunterdon	16891	1.88	2.949	0.350
259	070	W	51.8	52.5	0.7	1.4	Ocean	17155	1.89	2.944	0.490
260	035	S	28.7	29.5	0.8	1.6	Monmouth	9551	1.82	2.939	0.560
261	001	S	17	18	1	2.0	Middlesex	28144	2.00	2.937	0.700
262	050	S	23.6	24.1	0.5	1.0	Atlantic	3884	1.78	2.932	0.350
263	030	B	35.7	36.4	0.7	2.8	Atlantic	18418	1.83	2.931	0.980
264	034	S	2	2.8	0.8	1.6	Monmouth	17979	1.91	2.928	0.560
265	030	E	3.5	4.1	0.6	1.2	Camden	29265	2.02	2.925	0.420
266	070	W	58.7	59.84	1.1	2.8	Monmouth	12551	1.87	2.917	0.980
267	027	B	29.2	31.2	2	8.0	Union	25320	1.88	2.916	2.800
268	072	W	27.4	28.74	1.3	2.8	Ocean	12077	1.87	2.916	0.980
269	040	W	51.7	52.26	0.6	1.4	Atlantic	19374	1.94	2.913	0.490
270	050	B	1.2	1.7	0.5	1.0	Cape May	9344	1.81	2.911	0.350

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 7 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
271	094	B	36.4	37.5	1.1	2.2	Sussex	11966	1.83	2.906	0.770
272	278	E	0	0.8	0.8	1.9	Union	12047	1.88	2.906	0.665
273	206	B	53.9	55.1	1.2	2.9	Mercer	22274	1.89	2.892	1.015
274	001	S	1.7	3.9	2.2	4.4	Mercer	22093	1.99	2.890	1.540
275	047	B	22.3	22.8	0.5	1.0	Cape May	3720	1.81	2.884	0.350
276	045	S	23.9	24.4	0.5	1.0	Gloucester	9226	1.90	2.870	0.350
277	009W	B	6.7	7.3	0.6	1.2	Bergen	11392	1.87	2.867	0.420
278	035	N	2.6	3.5	0.9	2.7	Ocean	9985	1.91	2.864	0.945
279	009	B	12.2	13.2	1	2.4	Cape May	12826	1.88	2.864	0.840
280	078	W	30.8	32.2	1.4	3.8	Somerset	39562	2.19	2.862	1.330
281	047	B	27.5	28.2	0.7	1.4	Cumberland	3210	1.85	2.845	0.490
282	022	W	32.2	32.7	0.5	1.0	Somerset	19919	2.03	2.843	0.350
283	001L	N	45.7	46.8	1.1	2.7	Essex, Union	29164	2.12	2.837	0.945
284	047	B	61.7	62.3	0.6	1.2	Gloucester	12376	1.91	2.832	0.420
285	077	B	8	8.6	0.6	1.2	Cumberland	5846	1.89	2.823	0.420
286	181	B	1.9	2.5	0.6	1.8	Sussex	12562	1.93	2.815	0.630
287	022	W	33.9	34.3	0.4	0.8	Somerset	48694	2.33	2.812	0.280
288	001	S	34.2	34.7	0.5	1.0	Middlesex	32161	2.21	2.775	0.350
289	040	E	57.1	57.6	0.5	1.0	Atlantic	16498	2.07	2.774	0.350
290	035	B	23.6	24.4	0.8	1.6	Monmouth	18396	2.02	2.763	0.560
291	001	N	21.4	22.2	0.8	2.4	Middlesex	36997	2.28	2.760	0.840
292	022	E	31.41	33.9	2.5	5.7	Somerset	19950	2.13	2.753	1.995
293	001	S	14.1	14.6	0.5	1.0	Middlesex	26262	2.20	2.740	0.350
294	070	E	58.7	59.7	1	2.2	Monmouth	12551	2.09	2.727	0.770
295	077	B	3.2	5.9	2.7	5.4	Cumberland	8152	2.02	2.716	1.890
296	050	B	19.1	19.7	0.6	1.2	Atlantic	7892	2.03	2.702	0.420
297	010	W	17.4	18.8	1.4	2.8	Essex, Morris	19123	2.18	2.696	0.980
298	046	W	53.8	54.6	0.8	1.6	Essex	31141	2.34	2.658	0.560
299	029	N	0.5	1.9	1.4	3.8	Mercer	26997	2.32	2.634	1.330
300	046	W	66.5	66.95	0.4	0.9	Bergen	29679	2.35	2.631	0.315
301	027	B	24.5	25.1	0.6	2.4	Middlesex	20994	2.19	2.614	0.840
302	010	W	16.4	16.9	0.5	1.0	Morris	15917	2.25	2.605	0.350
303	322	B	6.7	7.2	0.5	1.0	Gloucester	13590	2.17	2.601	0.350
304	156	B	0.3	1.3	1	2.0	Mercer	2428	2.14	2.587	0.700
305	082	B	0.4	1.9	1.5	6.0	Union	27716	2.28	2.562	2.100
306	009W	B	1.1	3.2	2.1	9.7	Bergen	24686	2.29	2.539	3.395
307	094	B	25.7	26.7	1	2.0	Sussex	9078	2.23	2.535	0.700
308	036	S	3.3	3.8	0.5	1.0	Monmouth	12771	2.33	2.513	0.350
309	040	B	43.6	44.9	1.3	2.6	Atlantic	7928	2.27	2.486	0.910

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 8 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
310	130	S	10.98	11.6	0.6	1.2	Gloucester	3266	2.28	2.476	0.420
311	009	B	80.8	81.3	0.5	1.0	Ocean	20298	2.35	2.473	0.350
312	287	S	21.1	22	0.9	2.6	Somerset	40718	2.68	2.423	0.910
313	010	W	14.3	15.3	1	2.0	Morris	18500	2.53	2.380	0.700
314	080	W	67.5	68	0.5	1.0	Bergen	32366	2.71	2.335	0.350
315	078	E	7.5	8.7	1.2	3.6	Hunterdon	41292	2.79	2.332	1.260
316	022	W	37	37.5	0.5	1.2	Somerset	34122	2.79	2.271	0.420
317	047	B	54.3	55.2	0.9	1.8	Gloucester	12376	2.57	2.235	0.630
318	078	W	8.6	11.3	2.7	8.1	Hunterdon	41292	2.93	2.204	2.835
319	078	W	48.6	49.7	1.1	2.2	Union	25605	2.80	2.197	0.770
320	009W	B	9.6	10.6	1	2.1	Bergen	3036	2.64	2.133	0.735
321	046	W	29	29.6	0.6	1.1	Morris	17349	2.80	2.126	0.385
322	080	E	24.6	25.1	0.5	1.7	Morris	33536	2.96	2.119	0.595
323	322	B	22.5	23.2	0.7	1.4	Gloucester	9356	2.69	2.117	0.490
324	173	B	3.8	4.4	0.6	1.3	Hunterdon	8984	2.71	2.100	0.455
325	206	B	89.1	89.7	0.6	1.5	Morris	21686	2.79	2.081	0.525
326	206	B	64.7	65.2	0.5	1.1	Somerset	29094	3.04	1.889	0.385
327	001	S	47.7	48.2	0.5	1.0	Essex	26802	3.16	1.881	0.350
328	206	B	94.4	95	0.6	2.0	Morris	25272	3.08	1.833	0.700
Totals						**1061.1**					**$371.385**