State of New Jersey
DEPARTMENT OF TRANSPORTATION
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PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

May 8, 2023

Dear Governor Murphy and members of the Legislature:

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 2022. 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 traffic 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 how many improvements can be accomplished.

The Department utilizes a comprehensive Pavement Management System 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 milling and resurfacing, rehabilitation, and reconstruction.

This report highlights work completed through the plan during State Fiscal Year 2022. Additionally, 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

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

FISCAL YEAR 2022

July 01, 2021-June 30, 2022

Prepared by:

New Jersey Department of Transportation

September 2022

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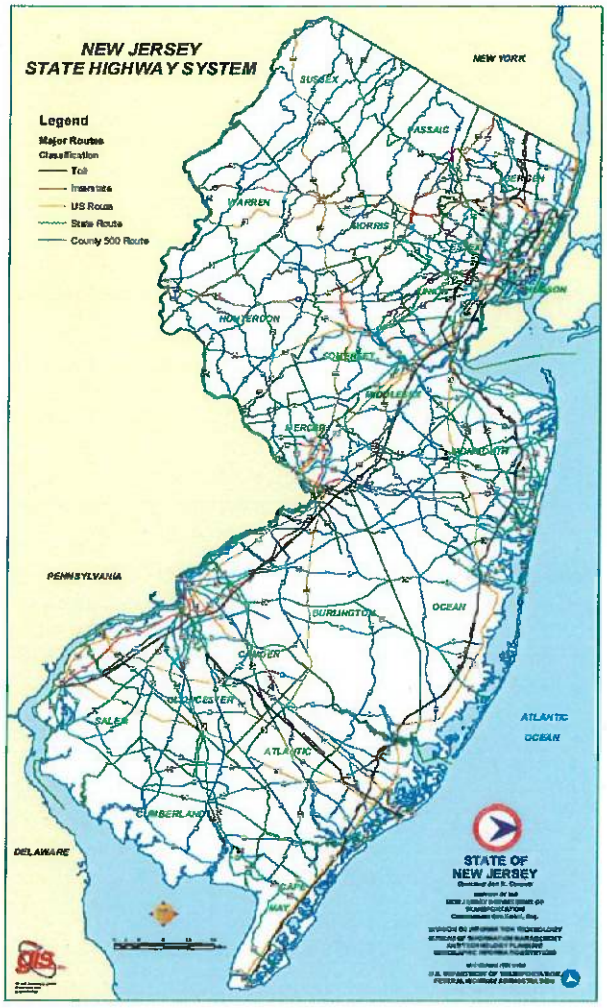
CURRENT STATUS OF THE STATE HIGHWAY SYSTEM

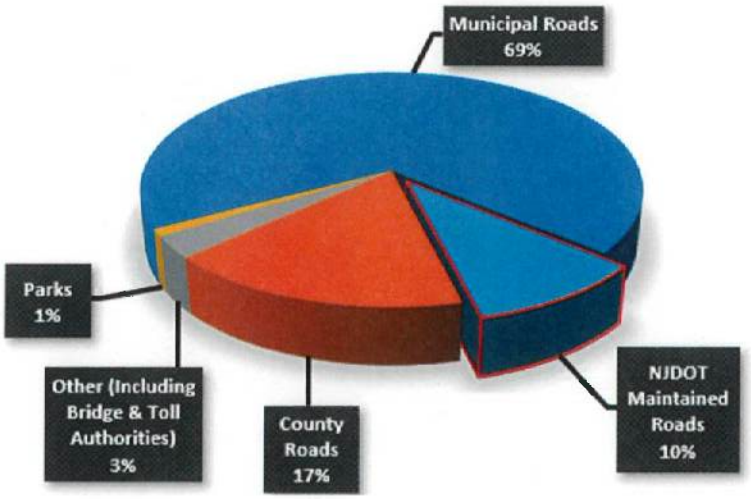
Description of System

There are approximately 38,781 centerline (CL) miles of roadways in New Jersey. NJDOT maintains approximately 2,330 CL miles of those roadways, commonly referred to as the state highway system. Most of the remaining mileage is under the jurisdiction of counties (6,713 CL miles) and municipalities (28,823 CL miles). Other mileage consists of toll roads including the Garden State Parkway and the New Jersey Turnpike, administered by the New Jersey Turnpike Authority (324 CL miles), the Atlantic City Expressway (46 CL miles) administered by the South Jersey Transportation Authority and mileage maintained by bridge authorities (33 CL miles), park roads both state and local (400 CL miles), other facilities such as the Palisades Interstate Parkway (12 CL miles), and finally federal agencies including the U.S. Fish & Wildlife Service, the National Park Services, and the Military (100 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 40% 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)** is a composite index that is used to assess 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 load related pavement consolidation within the vehicle wheel paths.
- **Skid Number** measures the pavement surface frictional characteristics.

While all 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 index used for many years in roadway assessment.

The analyses discussed herein utilized road data collected in 2021 to evaluate the State-owned and maintained highway system consisting of approximately 2,330 centerline miles of roadway. In terms of pavement quantities, this amounts to 8,560 lane miles of mainline roadway, approximately 4,050 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 a cost-effective treatment that will restore them to a good condition and avoid costly rehabilitation soon.
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 sign of deterioration.** A proactive preventive maintenance strategy is necessary to keep roads in this category if possible.

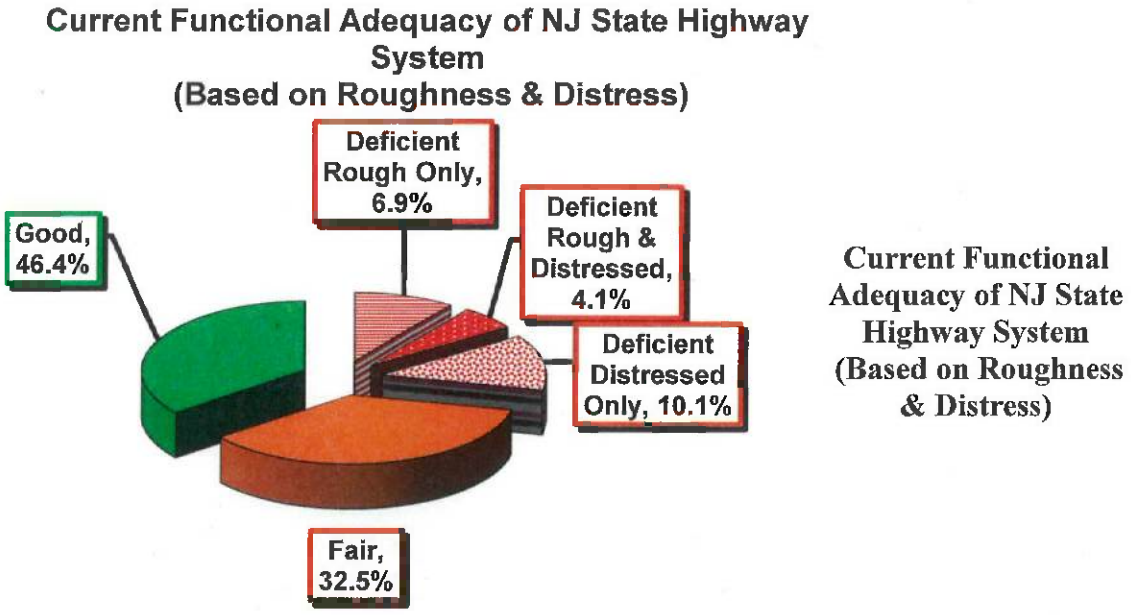
The road data analysis results are presented in tabular form in Table 2 below and graphically in Figure 2.

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)	329.93	584.98	6.9%
Deficient by Roughness & Distress (Both)	212.47	346.98	4.1%
Deficient by Distress Alone (SDI ≤ 2.4)	496.41	864.96	10.1%
Total Deficient	1038.81	1796.92	21.1%
Total Fair/Mediocre	1566.81	2762.68	32.5%
Total Good	2054.58	3949.77	46.4%
Total State System	4660.2 †	8509.37 †	100.0%

Source: NJDOT Pavement Management System, 2021 Data
† Note: Mileage in Table 2 represents tested mileage.

FIGURE 2



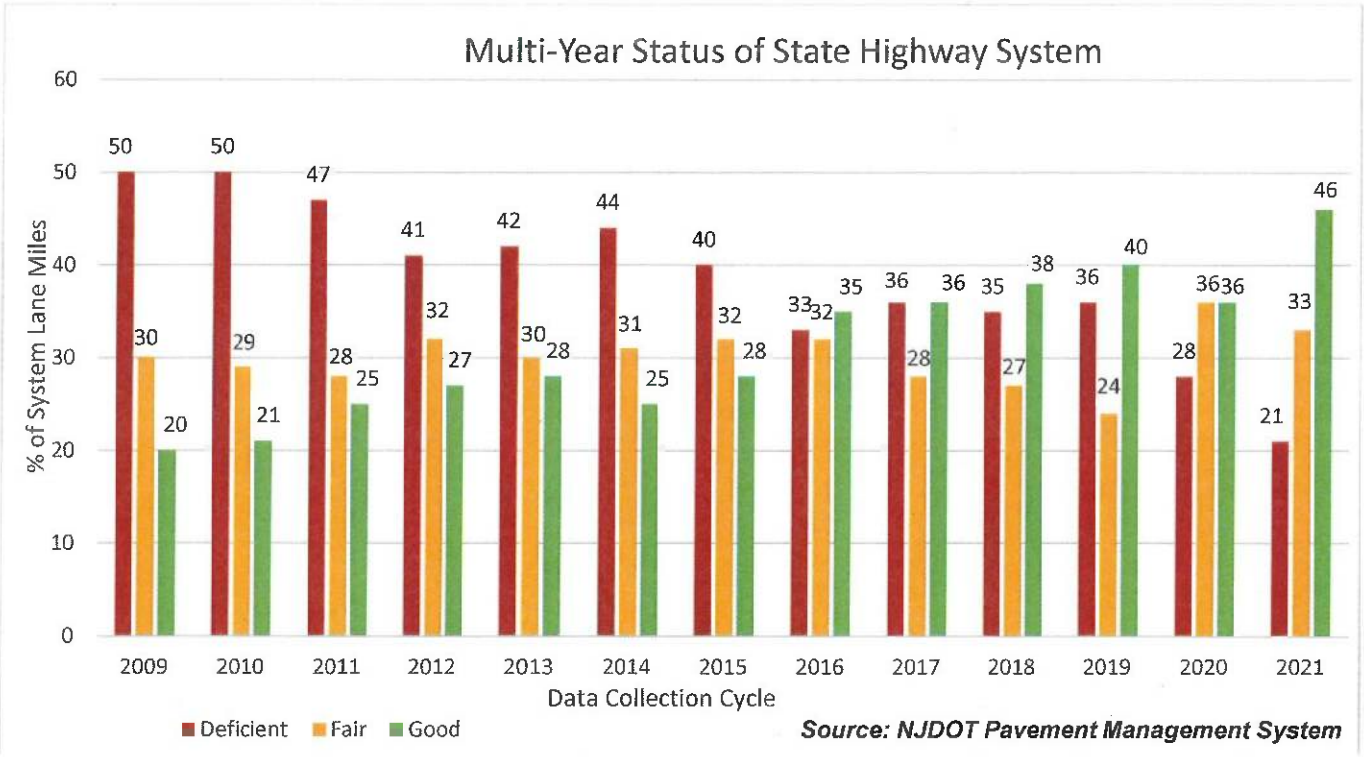
Source: NJDOT Pavement Management System, 2021

NJDOT considers the 21.1% total deficiency (combination of three deficient subcategories above) as a serious condition that 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).

FIGURE 3



SUMMARY OF PAVEMENT PROJECT EXPENDITURES

A summary of pavement projects expenditures in State Fiscal Year 2022 is provided in Table 3 below. Costs for individual projects awarded in State FY 2022 are shown on pages 6 through 13.

TABLE 3
Summary of Pavement Projects Expenditures for State Fiscal Year 2022
(Individual costs for projects awarded in State FY 2022 are shown on pages 6 through 13)

Program Category	Description	Expenditure In $ Millions
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)	**$5.837**
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)	**$75.453**
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)	**$167.440**
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)	**$88.020**
Totals		**$336.750**

WORK COMPLETED IN STATE FISCAL YEAR 2022

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 regarding 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 FY 2022 Highway Capital Maintenance (Betterments) Projects

As described in Table 4, Highway Capital Maintenance dollars, which are also the state Transportation Trust Fund (TTF) dollars, were spent in State Fiscal Year 2022 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 the 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 2022

Projects	Description of Work	County	Total Cost In $ Millions
Maintenance Resurfacing Contract#524 (MRC), DP#22449	This is a Statewide "If and Where Directed" contract which will address various locations within the regions. The work will be mostly temporary restoration of pavement surface for a short distance. It may be limited to pavement between two curb lines or may include a travel lane and shoulder also. The purpose of such work is to extend the life of pavement until a full resurfacing project is initiated and constructed.	Various locations in different counties will be addressed on an "as and when needed" basis	$5.837
Totals			**$5.837**

***MRC** - Maintenance Resurfacing Contract*

State FY 2022 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 **$75.453M** that were awarded in State Fiscal Year 2022.

TABLE 5

Highway Resurfacing Projects – Division of Operations Support Projects Awarded in SFY 2022

Project	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost In $ Millions
MRC #N213	23	NB & SB	4.90	6.72	9.42	Passaic	$10.077
	46	EB & WB	27.06	29.00	7.88	Morris	
MRC #N318	28	EB & WB	18.40	23.24	10.56	Union	$8.217
MRC #C117	1	NB	9.22	11.11	5.52	Mercer, Somerset	$9.861
	1B	NB	1.44	2.73	2.62		
	1B	SB	1.44	2.72	2.62		
	206	NB & SB	56.58	58.64	4.52		
MRC #C216	9	SB	132.75	136.38	9.51	Middlesex	$9.213
	27	NB & SB	3.16	4.89	3.60	Somerset, Middlesex	
MRC #C312	9	SB	116.80	122.49	12.99	Middlesex, Monmouth	$11.886
	36	NB	1.29	4.10	6.17		
	36	SB	0.00	4.10	8.90		
	36	NB & SB	4.10	5.69	3.30		
MRC #S117	130	SB	36.35	42.80	19.23	Burlington	$8.519
		NB	39.83	43.01	9.54		
MRC #S213	47	NB & SB	32.17	36.18	8.09	Cumberland, Gloucester	10.491
	47	NB & SB	46.55	50.37	7.69		
	47	NB & SB	55.22	56.82	3.20		
MRC #S310	30	EB & WB	32.00	36.40	17.60	Atlantic	$7.189
If And Where Directed Paved Miles for Various Routes Statewide					66.28	Various	Included In Individual MRC Contracts
Total					**219.23**		**$75.453**

***MRC# Region Contract#** - Maintenance Resurfacing Contracts*

State Fiscal Year 2022 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 regarding required project design, documentation, and scoping. This program consists primarily of resurfacing, rehabilitation, or 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 **5** highway resurfacing, rehabilitation, or reconstruction projects awarded in State Fiscal Year 2022, administered through the Division of Capital Program Management valued at **$167.440 million**.

TABLE 6
Highway Resurfacing, Rehabilitation, Reconstruction Projects Awarded in State FY 2022 Administered Through 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 $ Million
Rt 9, Indian Head Rd to Central Ave/ Hurley Ave	114180	9	NB & SB	95.00	101.90	14.20	Ocean	Federal	$48.481
Rt 17, Pierrepont Ave to Terrace Ave/ Polifly Rd (CR 55)	153830	17	NB	4.54	5.87	4.20	Bergen	Federal	$5.473
				7.5	8.85	3.30			
			SB	4.49	5.40	2.70			
				7.5	8.48	3.00			
Rt 18, East Brunswick, Drainage and Pavement Rehabilitation	103540	18	NB & SB	35.40	39.50	12.30	Middlesex	Federal	$86.114
				35.50	39.20	11.10			
Rt 22, Broad St (CR 623) to Rt 27 (Empire St)	183730	22	EB & WB	58.3	59.46	4.80	Union, Essex	Federal	$2.042
Rt 27, Dehart Place to Rt 21	153710	27	NB & SB	33.40	38.53	19.50	Union, Essex	Federal	$25.330
Total						**75.10**			**$167.440**

State Fiscal Year 2022 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 the majority 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.

NJDOT utilizes the following specialized preventive maintenance treatments depending upon the roadway conditions. In FY 2022 some of these treatments were utilized.

- **Microsurfacing / Slurry Seal:** This process involves sealing the entire pavement surface with a special cold mixture of polymer modified asphalt emulsion, high quality 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 asphalt mixture incorporates performance testing requirements, and the process sometimes utilizes a specially designed "spray paver" or "ultra-thin lift paver" for improved overlay performance.
- **Chip Seal:** Application of modified asphalt 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 2022 up to June 30 through Capital Program Management are listed in Table 7 below.

TABLE 7

Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2022 Administered Through 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 $ Million
Rt 15, Union Turnpike to Blue Heron Road	Slurry Seal	213060	15	SB	3.43	3.79	9.90	Morris	$2.788
					4.43	8.84			
Rt 18, Buckingham Drive to Knightsbridge Rd/Ramp to I-287	High Performance Thin Overlay	213410	18	NB & SB	45.3	47.92	10.48	Middlesex	$2.279
Rt 21, Terry Street to Dayton Street	High Performance Thin Overlay	213680	21	NB	7.10	12.60	16.30	Essex, Passaic	$8.773
				SB	7.20	12.60	16.00		
Rt 22, From Rt 287 To Maple Avenue	High Performance Thin Overlay	213480	22	EB	36.70	44.00	15.30	Somerset	$5.524
				WB	36.87	42.00	11.09		
Rt 29, To US 1/ to State House Complex to Rt 295	Ultra-Thin Friction Course	213490	29	NB & SB	3.90	8.82	20.38	Mercer	$3.431

TABLE 7 (cont'd)

Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2022 Administered Through 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 $ Million
Rt 29, Rt 175 to Weeden street	Slurry Seal	213500	29	NB & SB	9.40	18.10	17.40	Hunterdon, Mercer	$2.445
Rt 30, Turner Avenue/Illinois Avenue (CR 631) to Grammercy Avenue	Micro surfacing	203490	30	NB & SB	52.30	56.69	17.94	Atlantic	$2.408
Rt 38, Rt 30 to Nixon Drive	Micro Surfacing	203500	38	EB &WB	0.00	6.55	33.80	Camden, Burlington	$6.592
Rt 42, Rt 168 (Black horse pike)/Atlantic city Expressway to Rt 55	High Performance Thin Overlay	213090	42	NB	6.22	12.57	18.56	Camden, Gloucester	$13.589
				SB	6.33	12.57	18.25		
Rt 49, Estell Manor Rd to Head of River Rd	Slurry Seal	213100	49	EB & WB	44.22	49.82	11.22	Atlantic, Cape May, Cumberland	$2.720
Rt 55, Schooner Landing Road to CR 555 (Sherman Avenue)	UTFC over Slurry Seal	203510	55	SB	22.00	26.50	9.00	Cumberland	$2.195

TABLE 7 (cont'd)

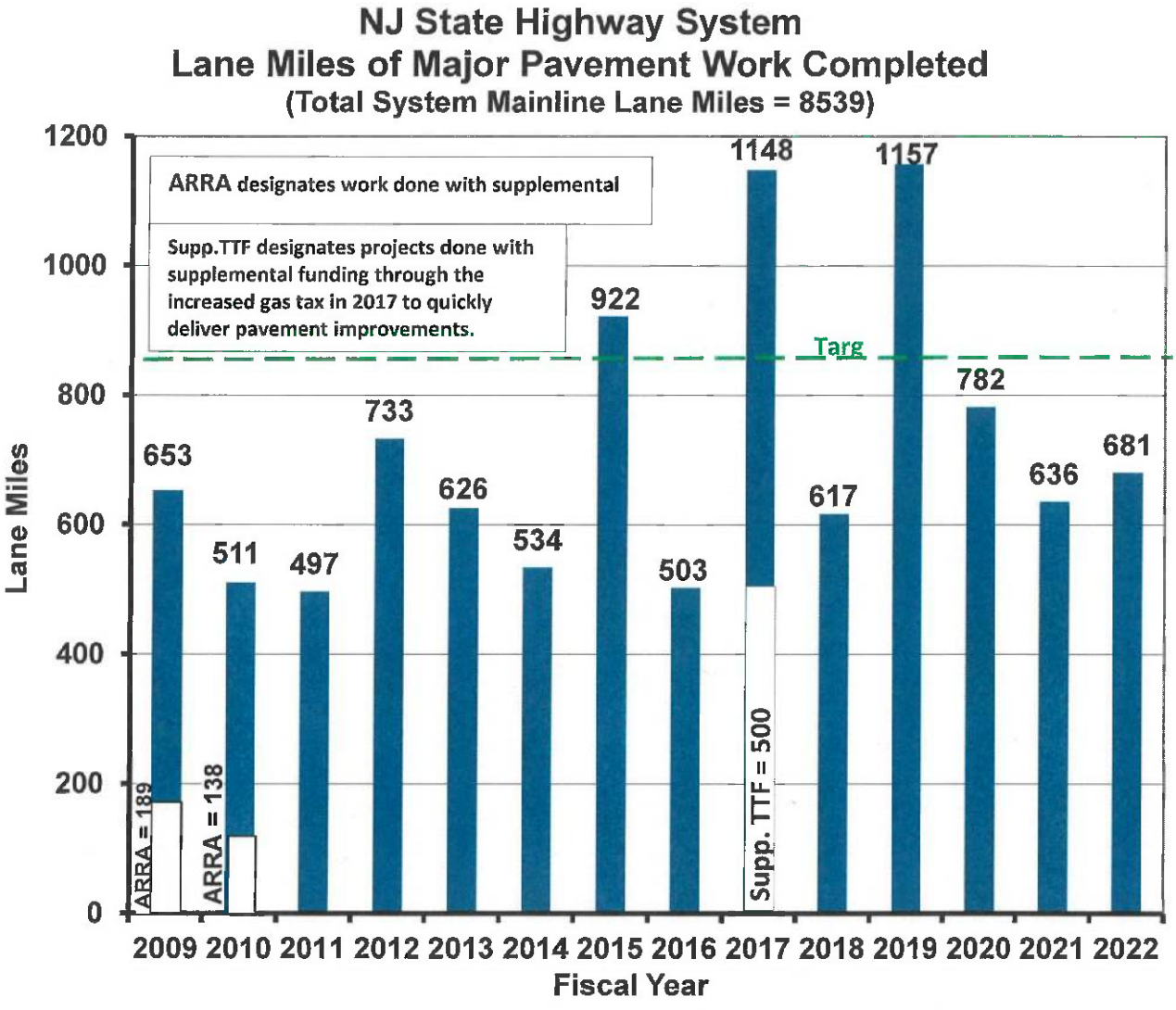
Pavement Preservation Preventive Maintenance Projects Awarded in State FY 2022 Administered Through Division of Capital Program Management

Project Description	Treatment	DOT UPC No.	Route	Direction	Start Mile Post	End Mile Post	Total Lane Miles	County	Total Cost $ Million
Rt 68, Cavell Street to Rt 206 and Rt 206, White Pine Road to NJTP	Slurry Seal	213070	68	NB & SB	0.55	7.80	22.90	Burlington	$4.981
			206	NB & SB	33.10	33.90	4.10		
Rt 80, Beverwyck Road (CR 637) to Rt 23	HPTO over Slurry Seal	203520	80	EB	45.64	53.05	22.28	Essex, Morris, Passaic	$5.478
			80L	EB	45.64	46.10	0.92		
Rt 83, Rt 47 to Rt 9 & Rt 9, Goshen-Swainton Rd (CR 646) to Corsons Tavern Rd	Slurry Seal	213050	Rt 9	NB & SB	16.10	23.40	14.60	Cape May	$4.474
			Rt 83	EB & WB	0.00	3.81	8.02		
Rt 130, Rt 206 to CR 526 (Robbinsville/ Allentown Road)	High Performance Thin Overlay	203530	130	NB	58.30	60.15	3.70	Burlington, Mercer	$5.057
				NB	61.80	62.39	1.18		
				SB	56.76	59.80	6.08		
Rt 179, Rt 29 to Rt 202/Rt 31	Slurry Seal	213520	179	NB & SB	0.37	7.46	16.24	Hunterdon	$2.571
Rt 206, Furnace Road to Rt 80	Micro Surfacing	203550	206	NB & SB	88.46	95.61	19.24	Morris	$2.831
Rt 208 from Rt 4 to Rt 287	Ultra-Thin Friction Course	203380	208	NB	0.00	6.08	41.30	Bergen, Passaic	$9.884
				NB	6.45	10.07			
				SB	0.00	6.19			
				SB	6.51	10.07			
Total							**386.18**		**$ 88.020**

MULTI-YEAR SUMMARY OF MAJOR PAVEMENT WORK

Figure 4 below shows the lane miles of mainline pavement that received restoration over the last 14 fiscal years. It should be noted that the availability of funding of Capital Program Management projects is a major factor which affects the total lane miles restored during the state fiscal year. A higher number of lane miles paved during SFY 2017 and SFY 2019 can be attributed to Supplemental Transportation Trust Funds, and to a significant increase in preservation lane miles, respectively.

FIGURE 4



REFERENCES

1. New Jersey Department of Transportation, *STATE FY 2022 – 2031 Statewide Transportation Improvement Program,* November 22, 2021.

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

3. New Jersey Department of Transportation, *Transportation Capital Program, State Fiscal Year 2022.*

APPENDIX A
DEFICIENT PAVEMENT SECTIONS
NEEDING FUTURE RESTORATION

DEFICIENT PAVEMENTS NEEDING FUTURE RESTORATION
98 Candidate Projects Sorted by Benefit Rank

Notes:

(1) Candidate projects are based on 2021 Pavement Management Database. Minimum project length = 0.5 miles.
(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.
(7) Dir =Direction; B=Both; N=North; S=South; E=East; W=West

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
1	029	B	19.2	19.8	0.6	1.2	Hunterdon	7902	0.07	4.471	0.42
2	202	S	50.1	50.6	0.5	2	Morris	26624	0.35	4.293	0.7
3	027	B	8.5	9.1	0.6	1.4	Middlesex, Somerset	24212	0.71	3.966	0.49
4	001	S	54.4	55	0.6	2.4	Hudson	71293	0.95	3.946	0.84
5	280	E	3.8	4.5	0.7	3.6	Essex	97440	1.08	3.932	1.26
6	027	B	0	1.2	1.2	2.5	Mercer	11021	0.75	3.875	0.875
7	033	E	15.2	16.1	0.9	5.2	Mercer	29101	0.89	3.818	1.82
8	094	B	7.7	8.2	0.5	1	Warren	7376	0.81	3.801	0.35
9	206	B	17.1	20.8	3.7	8	Burlington	12764	0.89	3.75	2.8
10	206	B	54.7	55.2	0.5	1	Mercer	17388	0.92	3.742	0.35
11	028	B	5	6.1	1.1	2.2	Somerset	14926	0.93	3.722	0.77
12	001	S	0.6	1.2	0.6	2.4	Mercer	67152	1.19	3.71	0.84
13	063	B	0.3	1.2	0.9	1.8	Bergen	21688	1.14	3.569	0.63
14	206	S	97.2	97.8	0.6	2.4	Morris, Sussex	14630	1.14	3.531	0.84
15	206	B	25.6	26.5	0.9	1.8	Burlington	16304	1.16	3.523	0.63
16	001	N	54.5	56	1.5	6	Hudson	69971	1.48	3.458	2.1
17	027	B	11.7	13.2	1.5	3	Middlesex, Somerset	23534	1.27	3.457	1.05
18	035	S	46.8	47.4	0.6	2.4	Middlesex	44280	1.36	3.456	0.84
19	007	B	0.1	0.6	0.5	2	Hudson	50332	1.4	3.452	0.7
20	046	W	59.7	60.6	0.9	4.4	Passaic	83206	1.58	3.425	1.54
21	001T	W	3.3	4.1	0.8	3.2	Hudson	30048	1.34	3.423	1.12
22	001	N	6.5	7.6	1.1	5.6	Mercer	119653	1.76	3.417	1.96
23	033	B	14.6	15.1	0.5	1	Mercer	10824	1.3	3.371	0.35
24	206	B	23.8	25.1	1.3	2.6	Burlington	15151	1.38	3.319	0.91
25	046	B	34.7	35.6	0.9	1.9	Morris	15804	1.39	3.315	0.665

DEFICIENT PAVEMENTS SORTED BY BENEFIT RANK – Continued from 1 | Appendix A

Benefit Rank	Rte	Dir	MP Start	MP End	Center Line Length	Lane Miles	County	Avg AADT	Avg FPR	Benefit	Cost Estimate (Millions)
26	035	N	39.5	40.3	0.8	4	Monmouth	42056	1.52	2.60	3.311
27	022	E	31.4	32.4	1	4	Somerset	34666	1.5	3.32	3.291
28	030	B	10.9	11.6	0.7	2.8	Camden	32478	1.5	0.73	3.284
29	044	B	9.6	10.2	0.6	1.2	Gloucester	8300	1.41	3.82	3.266
30	010	W	0.2	0.7	0.5	2	Morris	31156	1.52	12.70	3.264
31	173	B	13.8	14.62	0.82	1.64	Hunterdon	9756	1.42	9.39	3.259
32	130	S	69.9	72.8	2.9	11.6	Mercer, Middlesex	37978	1.59	2.91	3.23
33	130	S	61.8	62.4	0.6	2.4	Mercer	28624	1.55	1.08	3.226
34	094	B	14	19.5	5.5	11	Sussex, Warren	5049	1.44	7.61	3.223
35	005	B	0	1.2	1.2	2.8	Bergen	6888	1.52	8.13	3.16
36	027	B	9.7	11.4	1.7	4.2	Middlesex, Somerset	21140	1.63	4.39	3.124
37	001	S	50.7	51.2	0.5	2	Essex	74600	1.91	5.42	3.093
38	130	S	43.5	45.4	1.9	11.4	Burlington	40200	1.8	2.44	3.05
39	206	B	13	16.5	3.5	7	Burlington	11888	1.68	7.87	3.041
40	130	S	68	69.26	1.26	5.84	Mercer	28608	1.76	1.86	3.039
41	026	B	0.9	1.54	0.64	1.88	Middlesex	12795	1.73	6.90	2.998
42	040	B	32.8	35	2.2	4.4	Atlantic	7868	1.71	2.85	2.998
43	124	B	4.8	5.7	0.9	1.8	Morris	19296	1.78	7.42	2.978
44	018	N	40.7	41.3	0.6	4.6	Middlesex	96172	2.15	3.18	2.963
45	206	B	63.9	65.9	2	5.2	Somerset	27169	1.85	3.10	2.952
46	028	B	3.4	4	0.6	1.2	Somerset	9212	1.77	10.28	2.945
47	009W	B	7.2	8.9	1.7	4	Bergen	7714	1.79	1.80	2.925
48	030	B	13.2	16.2	3	12	Camden	29045	1.9	1.00	2.908
49	013	B	0	0.56	0.56	2.12	Ocean	14466	1.84	2.55	2.906
50	033	W	34.9	35.5	0.6	2.4	Monmouth	27356	1.9	1.48	2.904
51	029	B	27.4	30.4	3	6	Hunterdon	1900	1.79	3.37	2.892
52	040	E	51.6	52.26	0.66	3.04	Atlantic	22233	1.92	0.46	2.862
53	046	E	60.1	60.6	0.5	2	Passaic	56637	2.09	2.62	2.852
54	022	W	56.8	58.1	1.3	5.2	Union	66169	2.14	3.65	2.845
55	003	W	0	0.5	0.5	2.6	Passaic	99796	2.33	6.72	2.822
56	206	B	60.5	61.3	0.8	1.6	Somerset	15961	1.96	5.85	2.803
57	206	B	11.1	11.9	0.8	3.2	Burlington	9152	1.95	3.54	2.787
58	046	W	48.6	49.7	1.1	4.4	Morris	40074	2.11	2.22	2.771
59	030	B	8.4	9.2	0.8	3.2	Camden	40788	2.13	0.36	2.751
60	046	W	46.4	47.6	1.2	5	Morris	36975	2.13	2.63	2.741
61	007	B	9.4	9.9	0.5	1	Essex	9082	2	4.84	2.737
62	045	B	24.9	25.5	0.6	2.4	Gloucester	16822	2.04	2.78	2.731
63	023	B	30.6	31.2	0.6	1.2	Sussex	15806	2.04	5.05	2.729
64	046	B	29.8	31.2	1.4	4.4	Morris	12146	2.05	2.71	2.705

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)
65	122	B	0.8	2.3	1.5	3	Warren	9868	2.08	2.666	1.05
66	070	B	17.7	18.4	0.7	1.4	Burlington	18294	2.14	2.648	0.49
67	035	N	40.7	42.1	1.4	6.2	Monmouth	42056	2.29	2.615	2.17
68	322	B	7.55	8.07	0.52	1.04	Gloucester	17846	2.19	2.604	0.364
69	056	B	6.4	7.4	1	2	Salem	12660	2.18	2.588	0.7
70	023	B	28.4	29	0.6	1.2	Sussex	16398	2.22	2.571	0.42
71	010	B	22	22.9	0.9	2.5	Essex	8781	2.19	2.569	0.875
72	046	W	64.2	65.2	1	4	Bergen	68484	2.46	2.568	1.4
73	295	N	55.7	56.6	0.9	5.4	Burlington	93288	2.6	2.553	1.89
74	010	E	10.6	11.3	0.7	2.8	Morris	58434	2.44	2.549	0.98
75	042	N	1.4	2	0.6	2.4	Gloucester	23448	2.32	2.509	0.84
76	166	B	2.9	3.6	0.7	1.4	Ocean	11864	2.27	2.504	0.49
77	040	B	43.6	44.3	0.7	1.4	Atlantic	5524	2.29	2.464	0.49
78	206	S	34.3	35.5	1.2	4.8	Burlington	18620	2.35	2.46	1.68
79	078	E	52.6	53.2	0.6	2.4	Union	188892	2.83	2.453	0.84
80	021	S	4.9	5.4	0.5	3	Essex	73644	2.62	2.446	1.05
81	033	W	15.2	15.7	0.5	2.8	Mercer	24650	2.43	2.416	0.98
82	206	N	34.3	35	0.7	2.8	Burlington	18620	2.54	2.291	0.98
83	010	W	14.3	14.8	0.5	2	Morris	33020	2.61	2.286	0.7
84	094	B	19.9	20.4	0.5	1	Sussex	5520	2.54	2.237	0.35
85	001	S	6.9	7.4	0.5	2.8	Mercer	135180	3.09	2.221	0.98
86	042	N	0.3	0.9	0.6	2.4	Gloucester	23448	2.69	2.179	0.84
87	173	B	4.8	5.4	0.6	1.2	Hunterdon	4116	2.6	2.174	0.42
88	047	B	25.4	26.6	1.2	2.4	Cumberland	3672	2.6	2.171	0.84
89	023	N	9.5	10.2	0.7	4.2	Morris	51830	2.87	2.137	1.47
90	023	B	32.1	32.6	0.5	1	Sussex	22823	2.77	2.106	0.35
91	202	N	7.9	8.6	0.7	2.8	Hunterdon	34424	2.84	2.087	0.98
92	073	B	6.7	7.4	0.7	2.8	Camden	12956	2.77	2.064	0.98
93	046	W	52.9	55	2.1	8.4	Essex	45306	2.93	2.052	2.94
94	206B	N	0.6	1.1	0.5	1	Somerset	1600	2.8	1.988	0.35
95	003	E	9.8	10.3	0.5	2.8	Hudson	30080	2.99	1.936	0.98
96	046	E	62.1	63	0.9	3.6	Passaic	41692	3.05	1.933	1.26
97	047	B	37.6	38.1	0.5	1	Cumberland	3386	2.92	1.89	0.35
98	045	N	24.3	24.8	0.5	2	Gloucester	23360	3.31	1.618	0.7