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PAVEMENT MANAGEMENT FINAL PROJECT REPORT

August 7th, 2024

Prepared for:
Putnam County, NY

Prepared by:
Pavement Management Group

James Burpoe
Deputy County Executive, Putnam County, NY

August 7, 2024

John Tully
Director of Purchasing, Putnam County, NY

Putnam County, NY Pavement Management Final Project Report

Dear Mr. Burpoe and Mr. Tully,

On behalf of Pavement Management Group, we would like to extend our sincere gratitude to Putnam County for partnering with us to provide our turnkey pavement management solution. It has been a pleasure and privilege to collaborate with your team and we are excited to share the comprehensive results of our work.

The enclosed report details the final project outcomes, highlighting the roadway inventory and current conditions. Our dashboard, RoadINSights, is an interactive experience that incorporates all project deliverables, including video streaming of all roadways, the Pavement Condition Index (PCI), and optimized treatments with estimated costs, maximizing your investment by presenting a plan to preserve and improve each roadway. The spreadsheets include all the data that supports our findings. We are confident that the insights and optimized treatment recommendations provided in this report will significantly contribute to the sustainable management and enhancement of your roadway infrastructure.

Thank you for entrusting PMG with this vital project. Our mission at Pavement Management Group is to empower municipal officials to make data-driven decisions that improve infrastructure while saving taxpayer dollars. This pavement management report will help you to allocate your resources as impactfully as possible. We believe that this report will assist the government of Putnam County to effectively and transparently communicate your infrastructure planning and budgeting with your constituents.

We look forward to continuing our partnership with Putnam County and providing on-going support and consultation supporting your pavement management objectives.

Respectfully Submitted,

James Golden, Founder and CEO

Howard Mills, Executive Vice President

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EXECUTIVE SUMMARY

Pavement Management Group (PMG) is proud to present the final project report for Putnam County, NY. Our mission at PMG is to empower municipalities to maximize their roadway investments by leveraging advanced technology and data-driven insights. This project exemplifies our commitment to delivering high-quality, turn-key pavement management solutions.

2024 ROADWAY NETWORK SUMMARY

- 116.8 centerline miles
- 228.4 lane miles (lane = 13 feet wide)
- 15,674,914 square feet
- 103 management sections
- Average network PCI is 72
- Average condition category of "2"

Putnam County engaged PMG to implement a comprehensive Pavement Management Program (PMP) utilizing our state-of-the-art RoadINsights™ platform. This project included a detailed assessment of the County's 116.8 centerline miles of roadways, encompassing over 15.5 million square feet and 103 management sections.

Our advanced technology, RoadINsights™, played a crucial role in this project, providing high-definition video capture and AI-driven distress detection to ensure accurate and efficient pavement condition assessments. The average network PCI of 72 indicates that while the roadways are in a good condition state "2", there is opportunity for improvement. Our analysis revealed specific areas requiring immediate attention and others where preventive maintenance can extend roadway life and enhance safety.

PMG's turn-key PMP, underpinned by the pavement management expertise of our team, equips Putnam County with powerful tools for pavement modeling, maintenance decision-making, and budget optimization. By generating targeted, prioritized maintenance and rehabilitation plans, we help maximize the return on investment from available funds.

The outcome of this project is a clear, actionable roadmap for improving the County's road network, ensuring safer and more reliable roadways for the community. We look forward to continuing our partnership with Putnam County, helping to pave the way toward a more sustainable and efficient roadway infrastructure.

INTRODUCTION

Project Background

Putnam County, NY, like all municipalities, faces an ongoing challenge in maintaining and improving its roadway infrastructure to ensure safe and efficient transportation for its residents, businesses, and visitors. Recognizing the critical importance of a well-maintained roadway network, Putnam County engaged Pavement Management Group (PMG) to implement a comprehensive Pavement Management Program (PMP).

Objectives

The primary objective of this project was to assess the current condition of the County's roadways and develop a strategic recommendation plan for maintenance and rehabilitation. Specific goals included:

- Conducting a thorough pavement condition assessment of the County's 116.8 centerline miles and 228.4 lane miles of roadways.
- Utilizing PMG's RoadINsights™ technology to capture high-definition video and employ AI-driven distress detection.
- Calculating the Pavement Condition Index (PCI) for each roadway segment to provide an accurate overview of the network's health.
- Identifying areas in need of immediate repair, as well as sections that would benefit from preventive maintenance to extend their lifespan.
- Providing Putnam County with a prioritized maintenance and rehabilitation plan, supported by budget-driven scenarios, to maximize the return on investment from available funds.

Scope of Work

The scope of work for this project included several key components:

- Organization of the Roadway Network: The roadway network was divided into logical sections, facilitating detailed and manageable assessments.
- Complete Inventory of Attributes: An extensive inventory was created for each pavement section, capturing all relevant attributes for accuracy.
- High-Definition Streaming Video: Each pavement section was recorded in high-definition video, allowing for detailed visual inspection and analysis.
- Industry Standard Distress Identification: Distress types were identified following ASTM Standard D6433, ensuring consistency and accuracy in the assessment process.
- Pavement Condition Index (PCI) Calculation: The PCI for each pavement section was calculated, providing a quantitative measure of the roadway condition.
- Geographic Information System (GIS) Mapping and Integration: GIS technology was used to map and integrate roadway data, enabling spatial analysis and visualization of the network conditions.

- Data Analysis and Reporting: Comprehensive analysis of the roadway network inventory and conditions was conducted, with findings presented in detailed reports.
- RoadINsights Dashboard: An intuitive and strategic dashboard was developed to provide insights and facilitate decision-making, leveraging the full capabilities of the RoadINsights™ platform.
- Maintenance and Repair Treatment Qualification: Each section was evaluated to determine the most appropriate maintenance and repair treatments, optimizing the allocation of resources.

Through these efforts, PMG aimed to deliver a robust and actionable plan for Putnam County, ensuring that its roadway network is well-maintained and capable of supporting the community's needs well into the future.

METHODOLOGY

Data Collection

The tools used for this project included a combination of legacy data provided by Putnam County and PMG's proprietary data analysis resources. To develop an accurate and robust inventory, PMG's data capture vehicle traversed all pavement sections, capturing high-definition video footage essential for subsequent data analysis.

Data Analysis

PMG has developed proprietary data analysis tools leveraging our internal expertise and advanced AI technologies. The high-definition video captured by our data capture vehicle is processed to extract single image frames. Each frame is meticulously analyzed to identify and locate all distresses within each pavement section. The system documents and quantifies all identified distresses, ensuring a comprehensive understanding of the roadway conditions.

A critical part of our methodology involves Quality Assurance (QA). Our QA team reviews all distress data, providing necessary remediation actions to ensure accuracy and reliability. This rigorous QA process finalizes the data analysis phase and prepares the data for condition assessment.

Pavement Distress Definition

For asphalt-based surfaces, there are 20 possible distress types, while concrete surfaces can exhibit 19 possible distress types. The U.S. Army Corps of Engineers publishes the Asphalt and Concrete Distress Manuals, which describe each distress type, the criteria to determine each severity level (low, medium, high), and the methods for measuring each. These manuals serve as essential references for our condition assessment process.

By adhering to these rigorous standards and utilizing advanced technologies, PMG ensures that the condition assessment is thorough, accurate, and reliable, providing Putnam County with valuable insights into the state of its roadway network.

Condition Assessment

PMG adheres to the ASTM D6433-23 standard for assessing the condition of asphalt and concrete surfaces. This standard, developed by the U.S. Army Corps of Engineers and supported by the American Public Works Association, is a globally recognized benchmark for roadway surface condition assessment.

Our skilled Condition Assessment team facilitates the input of all quality-checked distress data into the PAVER™ Pavement Management System (PMS) for Pavement Condition Index (PCI) calculation. The PCI is a numerical indicator ranging from 0 to 100, with 0 representing the worst possible condition and 100 representing the best. This process results in a PCI score for each management section within the network, providing a clear and quantitative measure of the roadway condition.

Maintenance and Repair Qualification

PMG leverages the final calculated PCI scores and our condition categories to qualify roadways into one of the following five maintenance and repair groups. This classification ensures that all activities are appropriately tailored to the specific needs of each pavement section, optimizing resource allocation and extending the lifespan of the roadway network.

1. Rejuvenation - Targeted at roadways with high PCI scores (typically 90-100), rejuvenation treatments aim to restore and preserve the surface condition, extending the pavement's life and delaying the need for more extensive repairs.

2. Preventive Maintenance - Suitable for roadways with PCI scores ranging from 70 to 89, preventive maintenance focuses on addressing minor issues before they escalate. This category includes activities such as crack sealing, minor patching, and surface treatments designed to protect and prolong the service life.

3. Preservation - Roadways with PCI scores between 50 and 69 fall into the preservation category. These sections require more significant interventions to maintain their usability and prevent further deterioration. Treatments may include overlay applications, surface treatments, and other measures that provide minor corrections, while preserving the existing pavement structure to extend service life.

4. Structural Maintenance - For roadways with PCI scores from 30 to 50, structural maintenance is necessary to address more severe distresses. This category involves substantial repairs such as full-depth patching, structural overlays, and partial reconstructions to restore the pavement's integrity and load-bearing capacity.

5. Rehabilitation - Roadways with low PCI scores (0-29) are categorized for rehabilitation. These sections have extensive damage and require comprehensive reconstruction or major rehabilitation efforts. Activities may include complete

pavement removal and replacement, extensive base repairs, and other significant interventions to restore the roadway to a functional condition.

By categorizing maintenance and repair activities in this manner, PMG ensures a systematic and effective approach to managing Putnam County's roadway network. This strategic qualification process maximizes the return on investment for maintenance funds and enhances the overall performance and longevity of the roadway network.

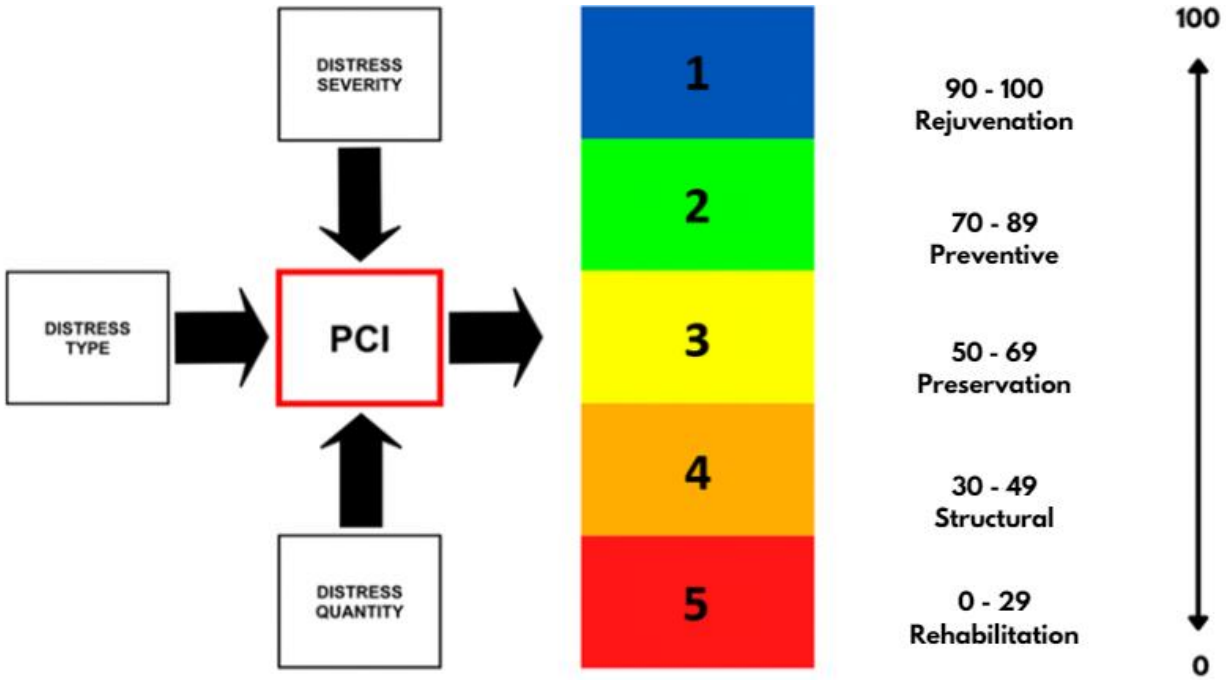


Figure 1. PCI, Condition Categories and Correlating Treatment Categories

FINDINGS

After completing the 2024 pavement management project, PMG has determined that the average PCI for Putnam County's 116.8 centerline mile roadway network is 72, placing it in the category "2" condition. This assessment provides a clear understanding of the overall health of the County's roadways and highlights areas that require immediate attention as well as those that need preventive and preservation maintenance to extend their service life.

Table 1 displays the condition summary data by category across the network, providing a comprehensive overview of the key performance indicators such as the total number of sections, miles, and area or percentage area of roadways in each category. Figure 2 further illustrates these conditions in a graphical format, offering a visual representation of the data for easier interpretation.

A complete Inventory and Condition Report in an Excel spreadsheet was provided as part of this project deliverable, ensuring that all data is accessible and can be used for future planning and maintenance activities.

CONDITION CATEGORY	SECTIONS	CENTERLINE MILES	LANE MILES	PAVEMENT AREA (SF)	PERCENT AREA	AVERAGE CONDITION
1	14	8.46	16.32	1,120,223	7.1%	96
2	50	64.27	130.45	8,954,274	57.1%	80
3	19	28.68	52.65	3,613,833	23.1%	61
4	20	15.40	28.94	1,986,584	12.7%	43
5	0	0.00	0.00	0	0.0%	0
TOTALS	**103**	**116.81**	**228.36**	**15,674,914.01**	**100%**	

Table 1: Condition Summary Data by Category

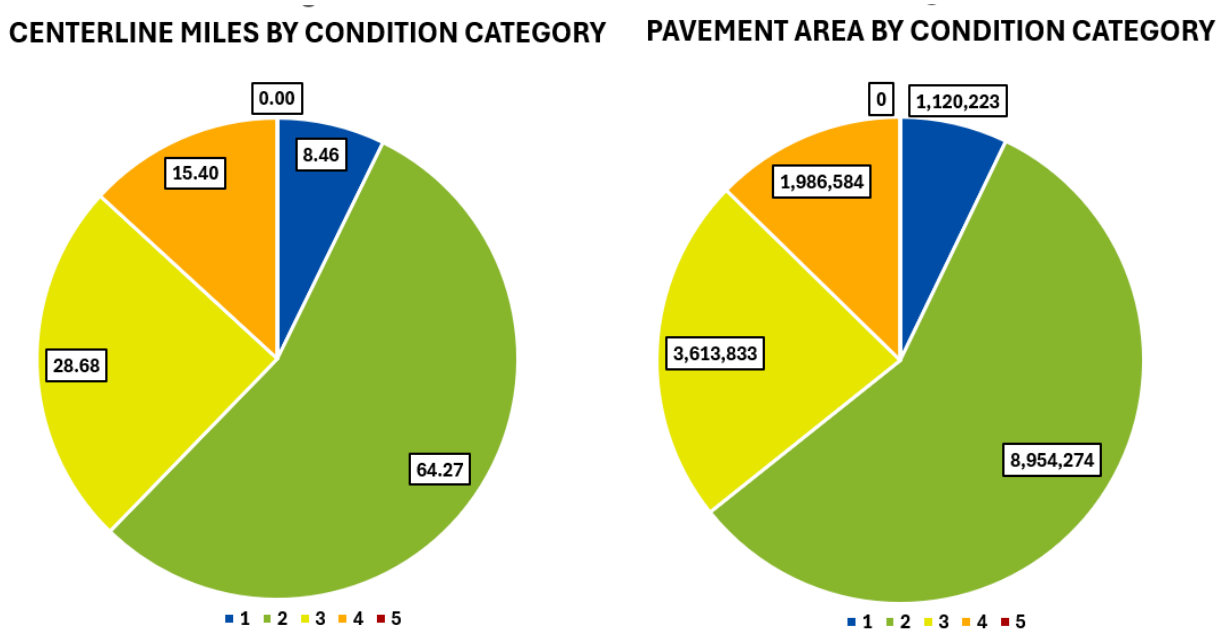


Figure 2: Graphical Representation of Roadway Conditions by Miles and Area

These findings indicate that while the overall network is in good condition, there are significant variances across different sections. The detailed condition assessment and PCI scores allow for targeted interventions, ensuring that maintenance and repair efforts are both efficient and effective. By addressing the most critical areas first and employing preventive measures where necessary, Putnam County can optimize its roadway maintenance strategy and extend the lifespan of its infrastructure.

RECOMMENDATIONS

Maintenance and Repair Treatments with Examples

Based on PMG's standardized approach to condition assessment and our findings, we present the following maintenance and repair recommendations with real-world examples for each category. These tailored recommendations are designed to help Putnam County optimize its roadway network conditions, extend the service life of its infrastructure, and maximize budget efficiency. By implementing these strategies, the County can achieve significant improvements in roadway performance and longevity, ensuring safer and more reliable transportation for its residents and visitors.

Category 1 Roads: Rejuvenation

Rejuvenation treatments are recommended for roads such as Stoneleigh Avenue Section 01, which currently has an average PCI of 100 (see Figure 3 below). These treatments are designed to restore and preserve the asphalt surface condition. An asphalt rejuvenator penetrates the asphalt surface, restoring flexibility and extending the pavement's life by replenishing the oils and maltenes lost over time.

These treatments should be implemented within the first 3 years of the pavement's life, when PCI scores are between 90 and 100, and can be applied a maximum of two times. Rejuvenation, with an average cost of $1-$2 per square yard, effectively extends the pavement life by addressing minor surface issues early, maintaining excellent road conditions, and projecting an additional 7-10 years of service life.

Figure 3. Stoneleigh Avenue, Section 01

Category 2 Roads: Preventive Maintenance

Preventive maintenance activities are recommended for roads like Stebbins Road Section 01, which currently has a PCI of 75 (see Figure 4 below). The target PCI range for these treatments is between 70 and 89. Preventive maintenance may include crack sealing and minor patching. Crack sealing involves filling existing cracks with a specialized sealant to prevent water intrusion and further pavement deterioration. Asphalt patching addresses localized areas of distress by removing the damaged pavement and replacing it with new asphalt.

Preventive maintenance, with an average cost of $1-$5 per square yard, should be implemented within the first year of surface-based distress occurring and should be applied on a three-year schedule. This proactive approach helps to prevent further deterioration and extends the pavement's service life by an additional 7-10 years.

The primary objective of preventive maintenance is to prolong the pavement life and prevent minor issues from becoming severe problems. By addressing these issues early, Putnam County can maintain better road conditions and optimize the use of their maintenance budget.

Figure 4. Stebbins Road, Section 01

Category 3 Roads: Preservation

Preservation treatments are recommended for roads like Drewville Road Section 02, which currently has a PCI of 55 (see Figure 5 below). The target PCI range for these treatments is between 50 and 69. Preservation activities may include preventive maintenance followed by surface treatments to manage low to medium climate-related and minor structural distresses.

These treatments, with a typical cost of $5-$10 per square yard, should be implemented as needed to address evolving distresses and should be scheduled based on regular inspections. This ensures the roadways remain in good condition, delaying the need for more extensive repairs. The preservation approach projects an additional 5-7 years of service life extension.

The primary objective of preservation treatments is to maintain the current condition and extend the lifespan of the roadways by implementing timely preservation measures. By addressing distresses early, Putnam County can prevent more severe issues and maximize the efficiency of their maintenance budget.

Figure 5. Drewville Road, Section 02

Category 4 Roads: Structural Maintenance

Structural maintenance is recommended for roads like Peekskill Hollow Road Section 02, which currently has a PCI of 34 (see Figure 6 below). The target PCI range for these treatments is between 30 and 49. Structural maintenance involves partial and full-depth repairs to address medium to high climate-related and structural distresses, followed by structural overlays.

Structural maintenance, with a typical cost of $12-$25 per square yard depending on the amount of full-depth repairs required, milling thickness, and asphalt surface thickness, should be carried out as soon as significant distresses are identified. Regular inspections will help prioritize these repairs to prevent further degradation. This approach projects an additional 5-10 years of service life extension.

The primary objective of structural maintenance is to restore the structural integrity of the roadways and extend their service life by addressing significant distress areas. By implementing these repairs, Putnam County can maintain safer road conditions and optimize their investment in roadway infrastructure.

Figure 6. Peekskill Hollow Road, Section 02

Category 5 Roads: Rehabilitation

Rehabilitation costs can range between $25-$50 per square yard depending on several factors, including the extent of full-depth repairs required, the condition of the base layer, the depth of milling needed, and the thickness of the new asphalt surface.

PMG has identified that no roadways currently fall into the Rehabilitation category based on our findings of roadways with PCIs between 0-29. This does not necessarily mean that there are no roadways that could benefit from rehabilitation; rather, it indicates that, based on condition alone, no roadways qualify for this type of maintenance and repair.

The primary objective of rehabilitation is to address extensive structural failures and restore the roadways to a functional condition through major reconstruction efforts. By undertaking these comprehensive repairs, Putnam County can significantly improve roadway conditions and ensure the long-term performance of their infrastructure.

By following these tailored treatment recommendations and implementation schedules, Putnam County can effectively manage its roadway network, ensuring safe and reliable transportation for its residents and visitors. These strategic maintenance and rehabilitation efforts will maximize return on investment, extend roadway lifespans, and enhance overall conditions. PMG is committed to supporting Putnam County in achieving these goals and maintaining a high-quality roadway infrastructure.

Network Area and Backlog by Recommended Treatment

PMG has thoroughly researched the average unit costs for performing the various treatments within each category to develop a comprehensive estimated backlog by treatment for Putnam County. These calculations provide a clear understanding of the financial requirements needed to address the current roadway conditions effectively. The total estimated backlog based on PMG's recommended treatment categories is $11,555,989.95. Below are the detailed results of this analysis, broken down by the qualified area, unit cost, and amount in Table 2:

TREATMENT RECOMMENDATION	QUALIFIED AREA (SF)	UNIT COST (SF)	BACKLOG COST
Rejuvenation	1,120,223	$0.17	$190,437.91
Maintenance	8,954,274	$0.22	$1,969,940.28
Preservation	3,613,833	$1.44	$5,203,919.52
Structural	1,986,584	$2.11	$4,191,692.24
Rehabilitation	0	$4.11	$0.00

Table 2: Treatment Backlog by Area

Qualifying and visualizing these figures with RoadINSights provides a map-driven, data-driven strategic opportunity to begin planning projects against the goals and annual budgets available for these maintenance activities. This approach allows Putnam County to quickly identify priorities and allocate resources efficiently. These figures provide a robust framework for understanding the financial investment required to maintain and improve Putnam County's roadway infrastructure.

Annual Funding Scenarios with Estimated Five-Year Conditions

To project the future conditions of Putnam County's roadway network, we have analyzed the potential impacts of different funding scenarios over the next five years. These scenarios leverage the unit costs and treatment plan recommendations provided earlier. Based on the data provided, the following table and figures summarize the projected 2028 conditions (PCI) and the completion cycles for different annual budget scenarios:

ANNUAL BUDGET SCENARIO	2028 CONDITION (PCI)	COMPLETION CYCLE (YEARS)
$750,000	67	15
$1,000,000	70	12
$1,250,000	71	9
$1,500,000	73	8
$1,750,000	75	7

Table 3: Estimated Condition and Cycle by Annual Funding Scenario

Scenario 1: $750,000 Annual Budget

With an annual budget of $750,000, the network PCI is projected to decline to 67 by 2028, with a completion cycle of 15 years. This scenario shows the steepest decline in PCI over the five-year period and suggests that decreasing annual funding towards the overall maintenance and repair program will only address the most critical areas.

Scenario 2: $1,000,000 Annual Budget

An annual budget of $1,000,000 allows for a projected PCI of 70 by 2028, with a completion cycle of 12 years. However, this budget shows a reduction in overall PCI over the five-year period. While it may address some critical and intermediate needs, the overall impact on the roadway network will be less effective, leading to a deterioration in road conditions over time.

Scenario 3: $1,250,000 Annual Budget

With an annual budget of $1,250,000, the network PCI is projected to reach 71 by 2028, with a completion cycle of 9 years. However, this budget suggests that the network will begin to decline over the five-year period rather than supporting a more aggressive maintenance schedule. As a result, the improvements in roadway conditions will be less significant, maintaining conditions similar to the current state of the roadway network. This highlights the need for a more robust investment to achieve noticeable enhancements in overall roadway quality.

Scenario 4: $1,500,000 Annual Budget

An annual budget of $1,500,000 allows for a projected PCI of 73 by 2028, with a completion cycle of 8 years. This budget allocation will support comprehensive maintenance and rehabilitation, preventive and preservation efforts, substantially enhancing the overall network condition.

Scenario 5: $1,750,000 Annual Budget

With an annual budget of $1,750,000, the network PCI is projected to improve to 75 by 2028, with a completion cycle of 7 years. This higher budget level allows for extensive maintenance and rehabilitation, preventive and preservation, leading to optimal roadway conditions in a shorter timeframe.

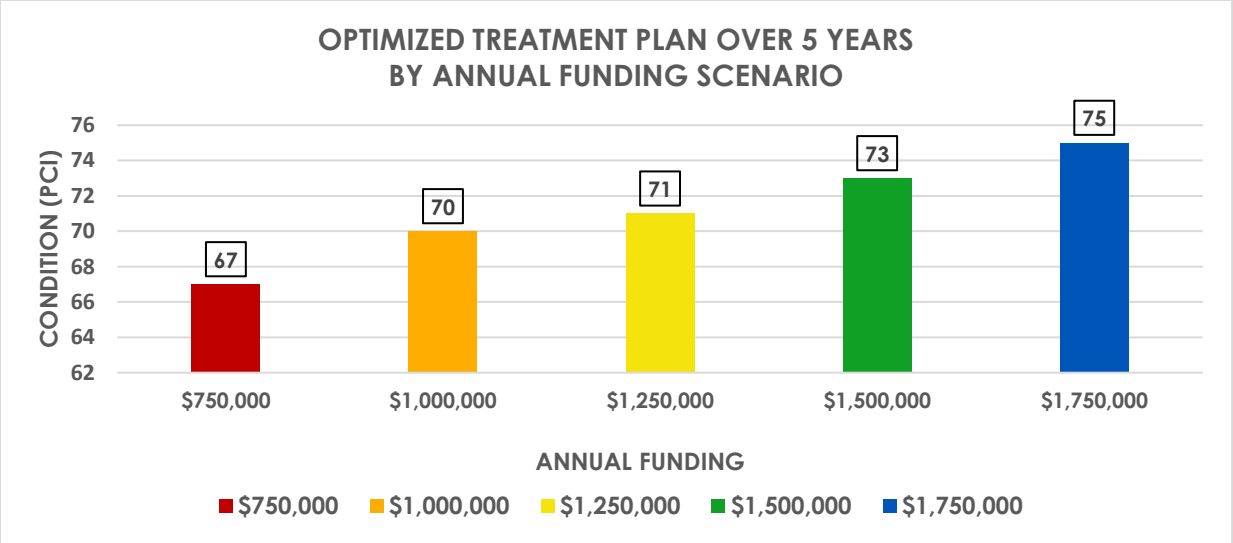


Figure 7. Projected 5 Year Condition Chart by Funding Scenario

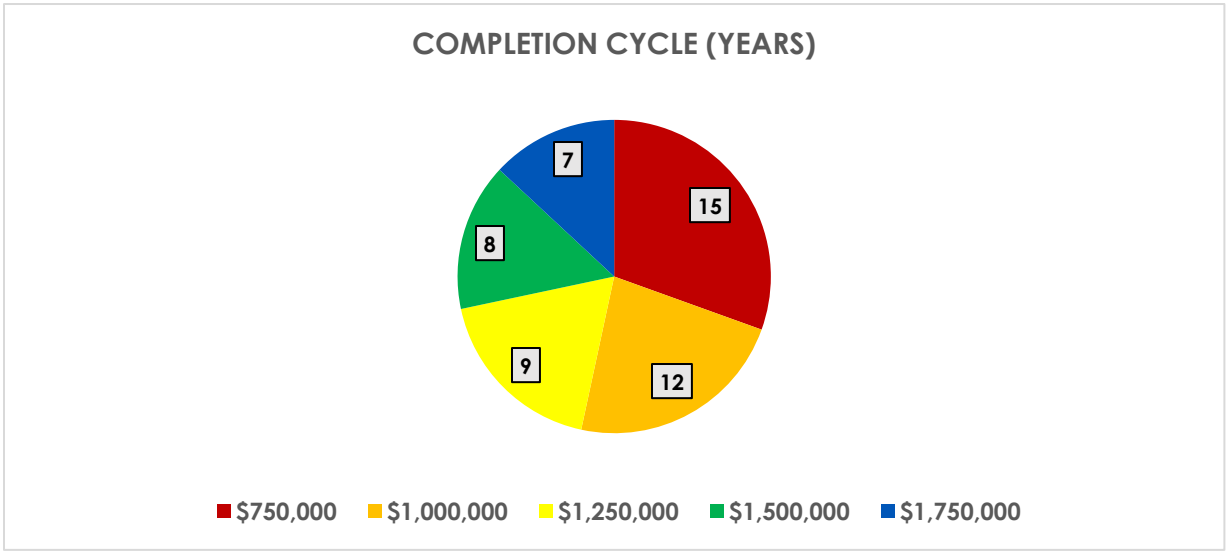


Figure 8. Projected 5 Year Condition Chart by Funding Scenario

By evaluating these funding scenarios, Putnam County can make informed decisions about their annual budget allocations for roadway maintenance. Each scenario provides insights into how different levels of investment impact the network's condition over time.

PMG recommends following our maintenance and repair treatment strategy with a budget of $1,750,000 annually, accounting for an expected 3% rate of inflation. This approach aims to achieve a network PCI of 75 by year five, establishing a 7-year maintenance cycle for all roadways. By increasing the network's average PCI from the current 72 to 75, each street will receive the recommended maintenance to extend its life. This results in an overall three-point gain in PCI.

If the County were to follow a "worst-to-first" maintenance and repair approach, only addressing roadways in the "4" (poor) category each year with structural and rehabilitation treatments, the network's average PCI is expected to decline, even with additional funding. This strategy would result in increasing backlog costs and further deterioration of the overall roadway network.

This is why PMG recommends a balanced maintenance and repair strategy consisting of rejuvenation, preventive maintenance, preservation, structural, and rehabilitation treatments. By following this comprehensive approach, the County can achieve improved road conditions and a more sustainable roadway network.

IMPORTANT NOTE: Please note that the unit and total costs provided in this report are specific to the asphalt maintenance and repair treatments only and are derived from actual unit costs provided by reputable contractors who perform these work activities within your area. Additional costs associated with actual project work such as curb and gutter, handicap ramps, mobilization, traffic control, additional asset repairs, stripping, and other related activities are not included in these estimates.

CONCLUSION

Our mission at PMG is to empower municipalities to maximize their roadway investments by leveraging advanced technology and data-driven insights. This project exemplifies our commitment to delivering high-quality, turn-key pavement management solutions.

Through our detailed assessment and analysis, we have provided a clear understanding of the current condition of Putnam County's roadway network. Our findings indicate that the average Pavement Condition Index (PCI) stands at 72, with opportunities for maintenance and improvement across various categories. By implementing our recommended treatment strategies, the County can effectively manage its roadways, ensuring safe and reliable transportation for its residents and visitors.

Key Findings and Recommendations

Estimated Treatment Backlog

PMG has calculated a total estimated backlog of $11,555,989.95 based on our recommended maintenance and repair strategy. This comprehensive analysis includes detailed costs and treatment opportunities across five categories: Rejuvenation, Preventive Maintenance, Preservation, Structural Maintenance, and Rehabilitation. Visualizing these figures with RoadINSights provides a strategic, map-driven approach to planning and executing these maintenance activities efficiently.

If the County were to move towards a worst-to-first maintenance and repair approach, focusing only on roadways in the poor "4" category each year and applying only structural and rehabilitation treatments, the network's average PCI is expected to decline over a five year period. This strategy would result in increasing backlog costs and further deterioration of the overall roadway network.

Funding Scenarios

We have projected the future conditions of the roadway network under various annual budget scenarios to help the County make informed decisions about budget allocations and ensure optimal investment in infrastructure. The estimated completion cycles and resulting PCI scores for different funding levels highlight the impact of financial commitment on the overall network condition. The goal is to achieve a PCI of 75 over five years with a 7-year completion cycle, projected at an annual cost of $1,750,000.00 which is PMG's recommendation as stated above.

Strategic Approach

Our approach combines advanced data collection, AI-driven analysis, and strategic planning to deliver actionable insights and recommendations. By addressing the identified treatment opportunities systematically, Putnam County can:

- Extend the service life of its roadways.
- Improve overall roadway conditions.
- Maximize return on investment.
- Ensure the safety and reliability of transportation for all users.

Commitment to Excellence

PMG is dedicated to supporting Putnam County in achieving its infrastructure goals. Our state-of-the-art Road Insights platform and rigorous methodology ensure that the County can make data-driven decisions, prioritize maintenance activities, and allocate resources effectively. By implementing our recommendations, the County can achieve a high-quality roadway network that meets the needs of its community.

In conclusion, we would like to express our sincere gratitude for the opportunity to work with Putnam County on this important project. Your commitment to proactive pavement management is commendable, and together, we are paving the way for a sustainable and efficient roadway infrastructure. Thank you for trusting PMG to support your efforts in

creating safer, more reliable roads for your community. It has been a privilege to be part of this journey, and we look forward to continuing our partnership in the years to come.

James Golden

Chief Executive Officer

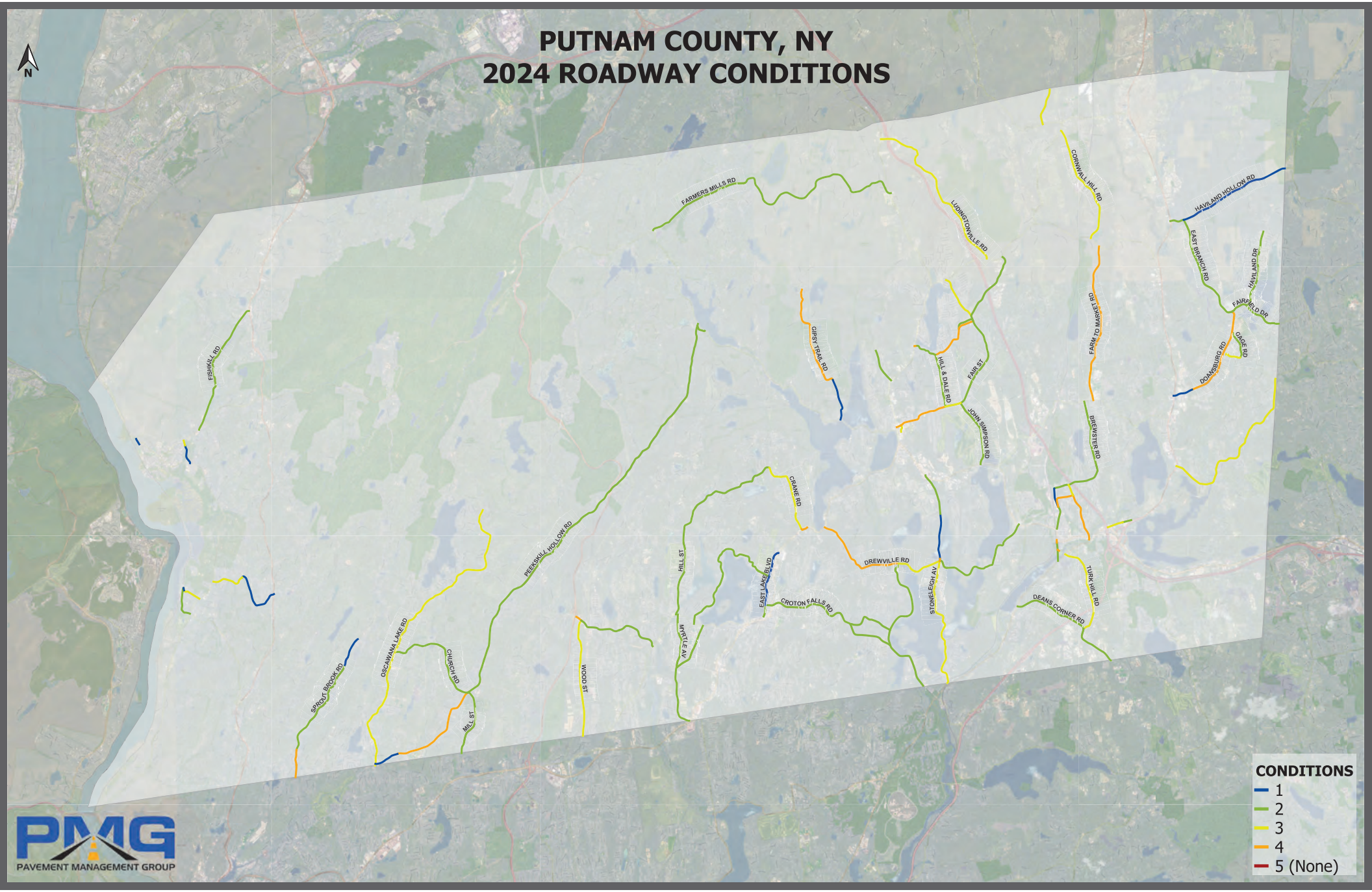
Howard Mills

Executive Vice President

APPENDIX A

Roadway Inventory and Condition List

PUTNAM COUNTY, NY
2024 ROADWAY CONDITIONS



PAVEMENT MANAGEMENT GROUP

2024 ROADWAY
INVENTORY AND CONDITION LIST

ROAD NAME	SECTION	FROM	TO	MILES	LENGTH (FT)	WIDTH (FT)	AREA (SQFT)	PCI	CONDITION
BALDWIN PLACE RD	01	ROUTE 6	MYRTLE AV	1.19	6,288.49	30	188,654.70	82	2
BALDWIN PLACE RD	02	MYRTLE AV	SOUTH LAKE BLVD	0.98	5,197.95	26	135,146.60	88	2
BREWSTER RD	01	TONETTA LAKE RD	ROUTE 312	1.38	7,270.64	27	196,307.22	87	2
BRYANT POND RD	01	TACONIC STATE PARKWAY	WOOD ST	0.12	651.64	46	29,975.31	43	4
CHURCH RD	01	OSCAWANA LAKE RD	PEEKSKILL HOLLOW RD	2.13	11,261.09	24	270,266.09	70	2
CORNWALL HILL RD	01	ROUTE 164	ROUTE 311	2.36	12,457.43	23	286,520.89	67	3
COUNTY CTR	01	DEAD END	FAIR ST	0.13	706.38	24	16,953.06	50	3
CRANE RD	01	ROUTE 6	DIXON RD	1.52	8,033.26	24	192,798.35	69	3
CROSBY AV	01	NORTH MAIN ST	PEACEABLE HILL RD	0.48	2,512.01	24	60,288.30	41	4
CROTON FALLS RD	01	EAST LAKE BLVD	STEBBINS RD	1.92	10,160.31	30	304,809.26	70	2
CROTON FALLS RD	02	STEBBINS RD	WEST SHORE DR	0.95	5,016.9	29	145,490.12	77	2
CROTON FALLS RD	03	WEST SHORE DR	WESTCHESTER COUNTY LINE	1.12	5,892.19	27	159,089.23	80	2
DEANS CORNER RD	01	ROUTE 22	SALEM RD	1.49	7,841.07	30	235,232.19	87	2
DOANSBURG RD	01	ROUTE 22	MOUNT EBO RD N	0.30	1,575.41	46	72,468.98	94	1
DOANSBURG RD	02	MOUNT EBO RD N	PAVEMENT CHANGE	0.08	448.55	26	11,662.30	100	1
DOANSBURG RD	03	PAVEMENT CHANGE	GAGE RD	1.44	7,578.11	26	197,030.86	41	4
DOANSBURG RD	04	GAGE RD	EAST BRANCH RD	0.43	2,245.67	27	60,633.09	45	4
DREWVILLE RD	01	ROUTE 6	WEST SHORE DR	1.86	9,827.25	24	235,854.00	46	4
DREWVILLE RD	02	WEST SHORE DR	STONELEIGH AV	0.91	4,801.36	26	124,835.40	55	3
EAST BRANCH RD	01	FAIRFIELD DR	HAVILAND HOLLOW RD	2.16	11,399.98	28	319,199.47	76	2
EAST LAKE BLVD	01	MARINA DR	CROTON FALLS RD	0.23	1,197.92	36	43,125.24	86	2
EAST LAKE BLVD	02	CROTON FALLS RD	NORTH LAKE BLVD	0.57	3,019.77	27	81,533.69	91	1
EAST LAKE BLVD	03	NORTH LAKE BLVD	ROUTE 6	0.51	2,712.75	27	73,244.21	99	1
FAIR ST	01	GLENEIDA AV	COUNTY CTR	0.09	487.99	32	15,615.78	46	4
FAIR ST	01	END COUNTY MAINTENANCE	ROUTE 9D	0.12	638.59	20	12,771.73	95	1
FAIR ST	02	COUNTY CTR	HILL & DALE RD	0.97	5,118.84	23	117,733.26	44	4
FAIR ST	03	HILL & DALE RD	JOHN SIMPSON	0.30	1,593.84	27	43,033.57	52	3
FAIR ST	04	JOHN SIMPSON	TOWNERS RD	1.83	9,682.9	29	280,804.03	80	2
FAIR ST	05	TOWNERS RD	NOONAN DR	0.05	241.97	28	6,775.04	74	2
FAIR ST	06	NOONAN DR	TERRY HILL RD	0.07	348.38	27	9,406.31	85	2
FAIR ST	07	TERRY HILL RD	ROUTE 311	1.38	7,276.59	26	189,191.38	84	2

2024 ROADWAY
INVENTORY AND CONDITION LIST

ROAD NAME	SECTION	FROM	TO	MILES	LENGTH (FT)	WIDTH (FT)	AREA (SQFT)	PCI	CONDITION
FAIRFIELD DR	01	DOANSBURG RD	HAVILAND DR	0.33	1,752.22	25	43,805.40	77	2
FAIRFIELD DR	02	HAVILAND DR	CONNECTICUT STATE LINE	0.77	4,087.66	28	114,454.37	86	2
FARM TO MARKET RD	01	ROUTE 312	ROUTE 164	3.10	16,384.7	24	393,232.82	46	4
FARMERS MILLS RD	01	ROUTE 301	ROUTE 52	5.96	31,493.14	24	755,835.35	73	2
FISHKILL RD	01	MAIN ST	ROUTE 9	2.63	13,868.98	26	360,593.57	83	2
FRANCES KIERNAN PL	01	ROUTE 6	DEAD END	0.12	657.02	30	19,710.69	40	4
GAGE RD	01	OLD DOANSBURG LN	DOANSBURG RD	0.56	2,931.77	24	70,362.43	75	2
GALLOWS HILL RD	01	WESTCHESTER COUNTY LINE	SPROUT BROOK RD	0.24	1,241.57	34	42,213.51	45	4
GIPSY TRAIL RD	01	ROUTE 301	PAVEMENT CHANGE	0.82	4,316.47	22	94,962.34	91	1
GIPSY TRAIL RD	02	PAVEMENT CHANGE	PINE POND RD	2.08	10,997.05	22	241,935.10	36	4
HARMONY RD	01	ROUTE 292	DUTCHESS COUNTY LINE	0.71	3,757.35	22	82,661.67	61	3
HAVILAND DR	01	FAIRFIELD DR	IRBY RD	1.52	8,009.99	25	200,249.76	87	2
HAVILAND HOLLOW RD	01	ROUTE 22	EAST BRANCH RD	0.27	1,421.38	25	35,534.49	86	2
HAVILAND HOLLOW RD	02	EAST BRANCH RD	CONNECTICUT STATE LINE	2.23	11,760.8	25	294,019.91	93	1
HILL & DALE RD	01	FAIR ST	TOWNERS RD	1.02	5,406.93	32	173,021.76	83	2
HILL ST	01	SOUTH LAKE BLVD	HITCHCOCK HILL RD	2.21	11,653.84	29	337,961.39	72	2
HORSEPOUND RD	01	ROUTE 52	NICJOLD ST	0.66	3,508.4	32	112,268.66	78	2
JOHN SIMPSON RD	01	ROUTE 6	FAIR ST	1.33	7,036.85	28	197,031.91	75	2
LONG POND RD	01	HITCHCOCK HILL RD	DIXON RD	1.77	9,336.81	28	261,430.67	77	2
LOWER STATION RD	01	ROUTE 9D	UPPER STATION RD	0.62	3,262.25	24	78,294.07	72	2
LUDINGTONVILLE RD	01	ROUTE 311	ROUTE 52	3.46	18,292.9	26	475,615.46	63	3
MILL ST	01	WESTCHESTER COUNTY LINE	PEEKSKILL HOLLOW RD	1.31	6,897.43	23	158,640.94	81	2
MILLTOWN RD	01	ROUTE 22	SHERWOOD HILL RD	3.50	18,458.51	24	443,004.19	67	3
MORNINGTHORPE AV	01	RAILROAD AV	PARK ST	0.03	175.82	26	4,571.29	44	4
MYRTLE AV	01	BALDWIN PLACE RD	SOUTH LAKE BLVD	1.05	5,558.38	26	144,517.83	80	2
NOONAN DR	03	TOWNERS RD	NOONAN DR	0.35	1,870.6	28	52,376.79	72	2
NORTH LAKE BLVD	01	LONGWOOD RD	EAST LAKE BLVD	1.31	6,898.93	27	186,271.15	83	2
NORTH MAIN ST	01	CARMEL AVE	CROSBY AV	0.44	2,348.87	28	65,768.48	89	2
NORTH MAIN ST	02	CROSBY AV	PROSPECT HILL RD	0.37	1,930.09	26	50,182.23	99	1
NORTH SALEM RD	01	WESTCHESTER COUNTY LINE	TURK HILL RD	0.90	4,758.12	28	133,227.49	85	2
OLD DOANSBURG LN	01	DEAD END	GAGE RD	0.34	1,787.63	26	46,478.32	67	3

2024 ROADWAY
INVENTORY AND CONDITION LIST

ROAD NAME	SECTION	FROM	TO	MILES	LENGTH (FT)	WIDTH (FT)	AREA (SQFT)	PCI	CONDITION
OLD ROUTE 301	01	PEEKSKILL HOLLOW RD	ROUTE 301	0.20	1,030.7	26	26,798.13	71	2
OSCAWANA LAKE RD	01	WESTCHESTER COUNTY LINE	OSCAWANA HEIGHTS RD	6.28	33,143.4	22	729,154.79	53	3
PEACEABLE HILL RD	01	MAIN ST	CROSBY AV	0.94	4,962.9	23	114,146.71	41	4
PEACEABLE HILL RD	02	CROSBY AV	TONETTA LAKE RD	0.22	1,152.7	24	27,664.70	65	3
PEEKSKILL HOLLOW RD	01	OSCAWANA LAKE RD	PAVEMENT CHANGE	0.48	2,537.31	22	55,820.82	100	1
PEEKSKILL HOLLOW RD	02	PAVEMENT CHANGE	MILL ST	1.99	10,518.73	22	231,412.06	34	4
PEEKSKILL HOLLOW RD	03	MILL ST	TACONIC STATE PARKWAY	5.02	26,498.13	25	662,453.30	87	2
PEEKSKILL HOLLOW RD	04	TACONIC STATE PARKWAY	ROUTE 301	3.85	20,325.83	26	528,471.46	87	2
PEEKSKILL RD	01	ROUTE 9D	PAVEMENT CHANGE	0.38	1,981.31	29	57,457.99	93	1
PEEKSKILL RD	02	PAVEMENT CHANGE	MAIN ST	0.10	511.79	29	14,841.91	51	3
RAILROAD AV	01	ROUTE 22	PAVEMENT CHANGE	0.36	1,881.54	27	50,801.58	86	2
RAILROAD AV	02	PAVEMENT CHANGE	MAIN ST	0.05	268.7	27	7,254.90	41	4
SECOR RD	01	WOOD ST	PAVEMENT CHANGE	0.82	4,304.61	28	120,529.08	71	2
SECOR RD	02	PAVEMENT CHANGE	ROUTE 6N	0.88	4,621.84	28	129,411.52	85	2
SNAKE HILL RD	01	ROUTE 9D	PAVEMENT CHANGE	0.66	3,477.34	22	76,501.48	61	3
SNAKE HILL RD	02	PAVEMENT CHANGE	ROUTE 9	1.10	5,819.16	22	128,021.52	95	1
SODOM RD	01	ROUTE 22	SODOM LN N	0.30	1,600.28	28	44,807.76	69	3
SODOM RD	02	SODOM LN N	DEAD END	0.17	898.92	31	27,866.37	72	2
SPROUT BROOK RD	01	SPROUT BROOK RD	PAVEMENT CHANGE	0.30	1,589.1	23	36,549.30	39	4
SPROUT BROOK RD	02	PAVEMENT CHANGE	PAVEMENT CHANGE	1.99	10,531.57	23	242,226.11	79	2
SPROUT BROOK RD	03	PAVEMENT CHANGE	CAMP COLLINS RD	0.57	3,032.55	23	69,748.65	94	1
STEBBINS RD	01	CROTON FALLS RD	WEST SHORE DR	0.93	4,931.13	24	118,347.22	75	2
STONELEIGH AV	01	WESTCHESTER COUNTY LINE	DREWVILLE RD	2.61	13,762.45	26	357,823.63	60	3
STONELEIGH AV	02	DREWVILLE RD	PAVEMENT CHANGE	0.04	218.2	24	5,236.80	48	4
STONELEIGH AV	03	PAVEMENT CHANGE	PAVEMENT CHANGE	0.88	4,658.49	24	111,803.76	100	1
STONELEIGH AV	04	PAVEMENT CHANGE	ROUTE 6	0.82	4,338.76	24	104,130.24	83	2
TERRY HILL RD	01	FAIR ST	ROUTE 31	0.88	4,625.79	26	120,270.59	69	3
TONETTA LAKE RD	01	PROSPECT HILL RD	PEACEABLE HILL RD	0.29	1,535.	23	35,305.10	88	2
TONETTA LAKE RD	02	PEACEABLE HILL RD	TONETTA LAKE RD	0.67	3,561.35	27	96,156.41	82	2
TOWNERS RD	01	ROUTE 52	PAVEMENT CHANGE	0.02	91.55	31	2,838.05	49	4
TOWNERS RD	02	PAVEMENT CHANGE	HILL & DALE RD	0.46	2,411.13	31	74,745.03	80	2

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2024 ROADWAY
INVENTORY AND CONDITION LIST

ROAD NAME	SECTION	FROM	TO	MILES	LENGTH (FT)	WIDTH (FT)	AREA (SQFT)	PCI	CONDITION
TOWNERS RD	03	HILL & DALE RD	NOONAN DR	0.77	4,084.69	31	126,625.41	44	4
TOWNERS RD	04	NOONAN DR	FAIR ST	0.32	1,681.8	26	43,726.85	43	4
TURK HILL RD	01	NORTH SALEM RD	ROUTE 22	1.79	9,442.65	23	217,180.86	61	3
UPPER STATION RD	01	LOWER STATION RD	PAVEMENT CHANGE	0.05	241.66	27	6,524.82	95	1
UPPER STATION RD	02	PAVEMENT CHANGE	ROUTE 9D	0.35	1,843.95	27	49,786.65	63	3
WEST LAKE BLVD	01	ROUTE 6N	LONGWOOD RD	1.66	8,741.35	25	218,533.74	78	2
WEST SHORE DR	01	CROTON FALLS RD	STEBBINS RD	0.30	1,583.31	26	41,166.02	83	2
WEST SHORE DR	02	STEBBINS RD	DREWVILLE RD	1.70	8,966.47	25	224,161.65	80	2
WEST SHORE DR	03	STONELEIGH AV	CARMEL AV	2.27	12,001.14	24	288,027.36	85	2
WOOD ST	01	WESTCHESTER COUNTY LINE	SECOR RD	2.27	11,995.45	22	263,899.98	59	3

2024 ROADWAY
INVENTORY AND CONDITION LIST

ROAD NAME	SECTION	FROM	TO	MILES	LENGTH (FT)	WIDTH (FT)	AREA (SQFT)	PCI	CONDITION

NETWORK INVENTORY SUMMARY	
TOTAL SECTIONS	103
TOTAL PAVEMENT AREA (SQFT)	15,674,914.01
TOTAL CENTERLINE MILES	116.81
TOTAL LANE MILES (AVG 13' WIDE)	228.4

NETWORK CONDITION SUMMARY	
AVERAGE PCI	72
AVERAGE CONDITION CATEGORY	2

CONDITION RANGES		
CONDITION CATEGORY	LOW PCI VALUE	HIGH PCI VALUE
1	90.00	100.00
2	70.00	89.00
3	50.00	69.00
4	30.00	49.00
5	.00	29.00

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