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2021 PAVEMENT MANAGEMENT REPORT

PREPARED FOR: The Heritage Isles Community Development District

DATE: Thursday, October 7, 2021



HERITAGE ISLES
GOLF & COUNTRY CLUB
Community Development District



COMPLETE PAVEMENT MANAGEMENT SOLUTIONS

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EXECUTIVE SUMMARY

The Heritage Isles Community Development District contracted Pavement Management Group (PMG) to provide a turnkey Pavement Management Program (PMP). The backbone of PMG's turnkey solution is the PAVER™ Pavement Management System (PMS).™ provides specific tools such as pavement modeling, maintenance decision trees, and budget/target driven scenarios, maximizing the return on investment from available maintenance and rehabilitation funds, generating a prioritized plan, and identifying specific areas needing maintenance and rehabilitation.

PROJECT SCOPE

The following items were a part of this project:

- Establish the roadway network inventory
- Provide an HD video of each roadway section
- Provide an ASTM D6433-20 condition assessment for each roadway section
- Calculate the Pavement Condition Index (PCI) for each roadway section
- Assign all road pavement management data to GIS for mapping
- Create a GIS based current condition map
- Provide a complete inventory and condition listing for each roadway section
- Provide a final report of findings
- Provide continued support services

2021 ROADWAY NETWORK SUMMARY

- 8 centerline miles
- 18 lane miles (lane = 10 feet wide)
- 925,536 square feet of pavement area
- 47 roadway management sections
- Average roadway network PCI is **77**
- Average roadway network condition category of **Good**

INTRODUCTION

The Heritage Isles Community Development District contracted Pavement Management Group (PMG) to provide pavement management services for their 8 centerline mile roadway network. These services include an inventory review, work history update, high-definition (HD) video capture, and a calculated condition for each section within each pavement network. This report identifies the processes and systems used by to provide all project deliverables to the client while outlining the current state of the roadway network.

CONDITION ASSESSMENT PROCESS

PMG adheres to the ASTM D6433-20 standard for assessing the condition of asphalt and concrete roadway surfaces. Our skilled inspection team reviews high-definition video of each pavement section in conjunction with our proprietary artificial intelligence (AI) model to identify and document the distress types, severity levels, and quantities that are occurring. The data goes into the PMS for Pavement Condition Index (PCI) calculation, resulting in a PCI score for each management section within the network.

PAVEMENT DISTRESS DEFINITION

Twenty (20) possible distress types can occur within asphalt-based surfaces, and *nineteen (19) can occur within a concrete surface. The U.S. Army Corps of Engineers publishes the Asphalt Distress Manual and the Concrete Distress Manual. These manuals describe each distress type, the criteria to determine each severity level (low, medium, high), and how to measure each. The asphalt and concrete distress types are highlighted below in Figure 1:

ASPHALT DISTRESSES

01 – Alligator Cracking	06 – Depression	11 – Patch/Utility Cut	16 – Shoving
02 – Bleeding	07 – Edge Cracking	12 – Polished Aggregate	17 – Slippage Cracking
03 – Block Cracking	08 – Joint Reflection	13 – Pothole	18 – Swell
04 – Bumps and Sags	09 – Lane/Shoulder Drop	14 – Railroad Crossing	19 – Raveling
05 - Corrugation	10 – L&T Cracking	15 – Rutting	20 – Weathering

LOAD ASSOCIATED DISTRESS	CLIMATE ASSOCIATED DISTRESS	NON CLIMATE/LOAD DISTRESS
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CONCRETE DISTRESSES

21 – Blow Up/Buckling	26 – Joint Seal Damage	31 – Polished Aggregate	36 – Scaling
22 – Corner Break	27 – Lane/Shoulder Drop	32 – Popouts	37 – Shrinkage Cracks
23 – Divided Slab	28 – Linear Cracking	33 – Pumping	38 – Corner Spalling
24 – Durability Cracking	29 – Large Patch/Utility Cut	34 – Punchout	39 – Joint Spalling
25 - Faulting	30 – Small Patch	35 – Railroad Crossing	

Figure 1. Asphalt and Concrete Distresses

*NOTE: The Heritage Isles Roadway Network Does Not Currently Have Any Concrete Roadways

PCI AND CONDITION CATEGORY DEFINITION

The PCI is on a 0 – 100 condition scale, with 0 considered failed and 100 considered excellent. PAVER™ calculates each PCI through the input of distress types, severity levels, and quantities. Figure 2 illustrates the factors that go into the PCI, while Table 1 outlines the five (5) condition categories of the PCI with correlating maintenance recommendations:

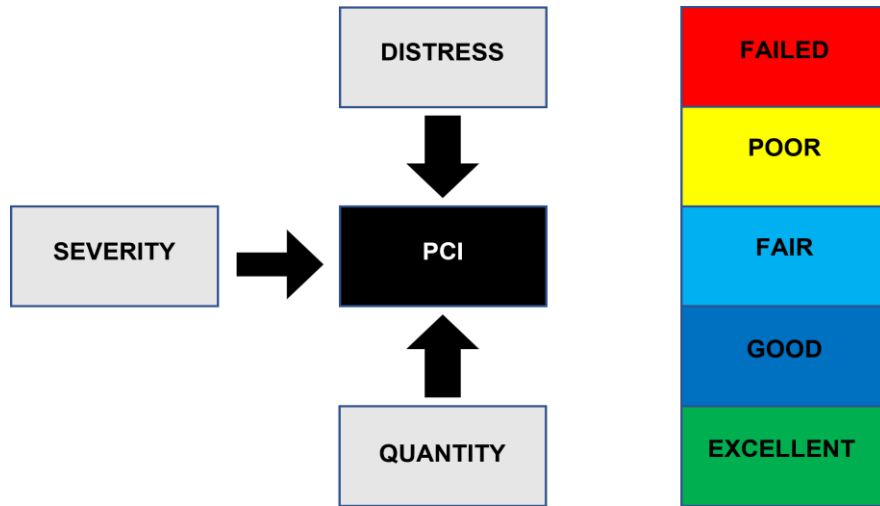


Figure. 2 Factors Determining PCI Value

CONDITION CATEGORY	MAINTENANCE ACTION AND DISTRESS	LOW PCI VALUE	HIGH PCI VALUE
EXCELLENT	REJUVENATOR/DO NOTHING - LITTLE TO NO LIGHT SEVERITY CLIMATE DISTRESS	90	100
GOOD	CRACK SEAL/MICROSURFACING - LIGHT SEVERITY CLIMATE DISTRESS, POSSIBLE LIGHT SEVERITY LOAD DISTRESS BEGINNING	70	89
FAIR	CAPE SEAL/1.5” MILL & OVERLAY - MEDIUM SEVERITY CLIMATE DISTRESS WITH LIGHT LOAD RELATED DISTRESS	55	69
POOR	1.5” – 2” MILL & OVERLAY WITH BASE REPAIRS - MEDIUM SEVERITY CLIMATE DISTRESS WITH MEDIUM SEVERITY LOAD DISTRESS	30	54
FAILED	FULL DEPTH RECLAMATION/RECONSTRUCTION - MEDIUM/HIGH SEVERITY CLIMATE DISTRESS WITH MEDIUM/HIGH SEVERITY LOAD DISTRESS	0	29

Table 1. Condition Category Values

ROADWAY CONDITION EXAMPLES

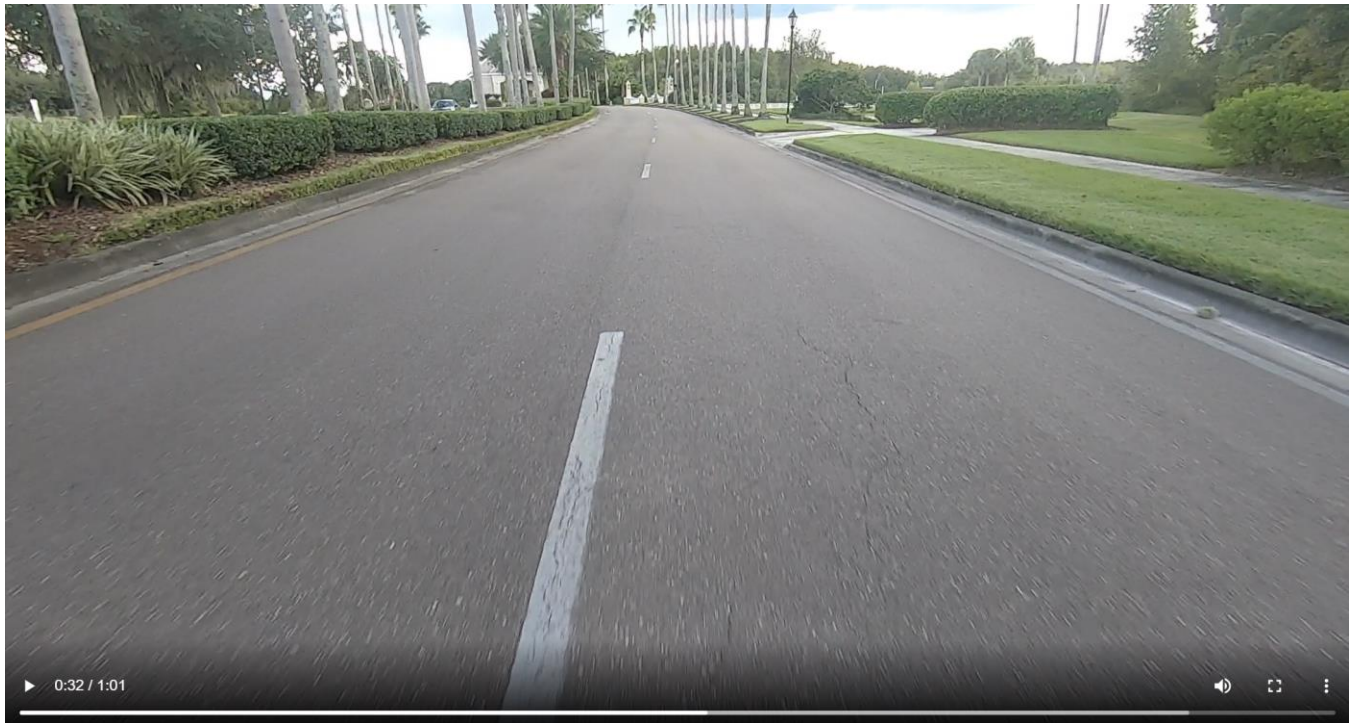
PMG captures 1080P High Definition (HD) video for each roadway section within each network. The following images serve as a visual guide of what pavements look within each of the five (5) condition categories.

EXCELLENT CONDITION



PLANTATION BAY DR | SECTION 07 | PCI 92

GOOD CONDITION



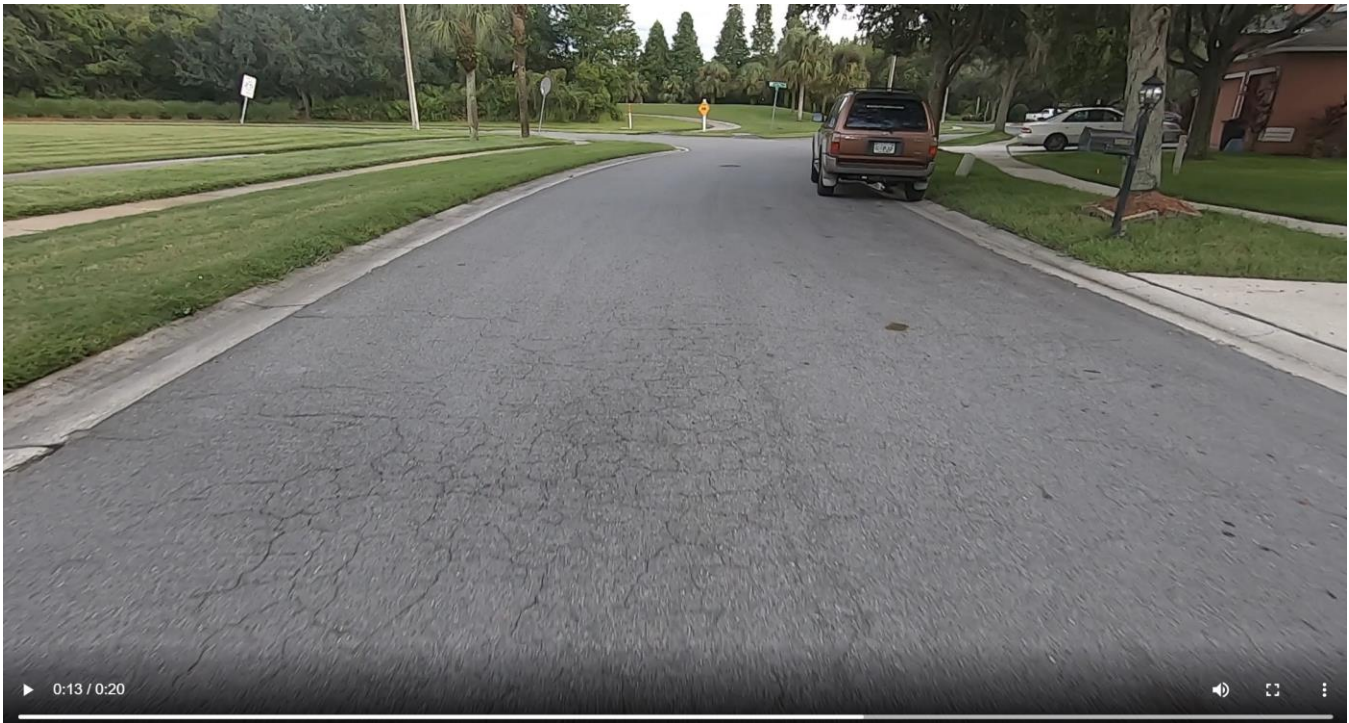
GRAND ISLE DR | SECTION 01SB | PCI

FAIR CONDITION



ISLEWORTH AVE | SECTION 03 | PCI 69

POOR CONDITION



PLANTATION BAY DR | SECTION 01 | PCI 45

FAILED CONDITION



THERE ARE NO ROADWAYS THAT ARE CURRENTLY IN A FAILED CONDITION STATE

NETWORK CONDITION RESULTS

After completing the 2021 pavement management project, PMG has determined that the average PCI for your roadway network is a 77 and within the GOOD condition category range. Table 2 displays the condition summary data by category across the network, while Figure 3 illustrates the condition by pavement area breakdown in graph form.

CONDITION CATEGORY	PAVEMENT AREA (SF)	PERCENT PAVEMENT AREA	NUMBER OF SECTIONS
FAILED	0	0%	0
POOR	5,020	1%	1
FAIR	127,820	14%	7
GOOD	714,376	77%	35
EXCELLENT	78,320	8%	4

Table 2. Condition Summary

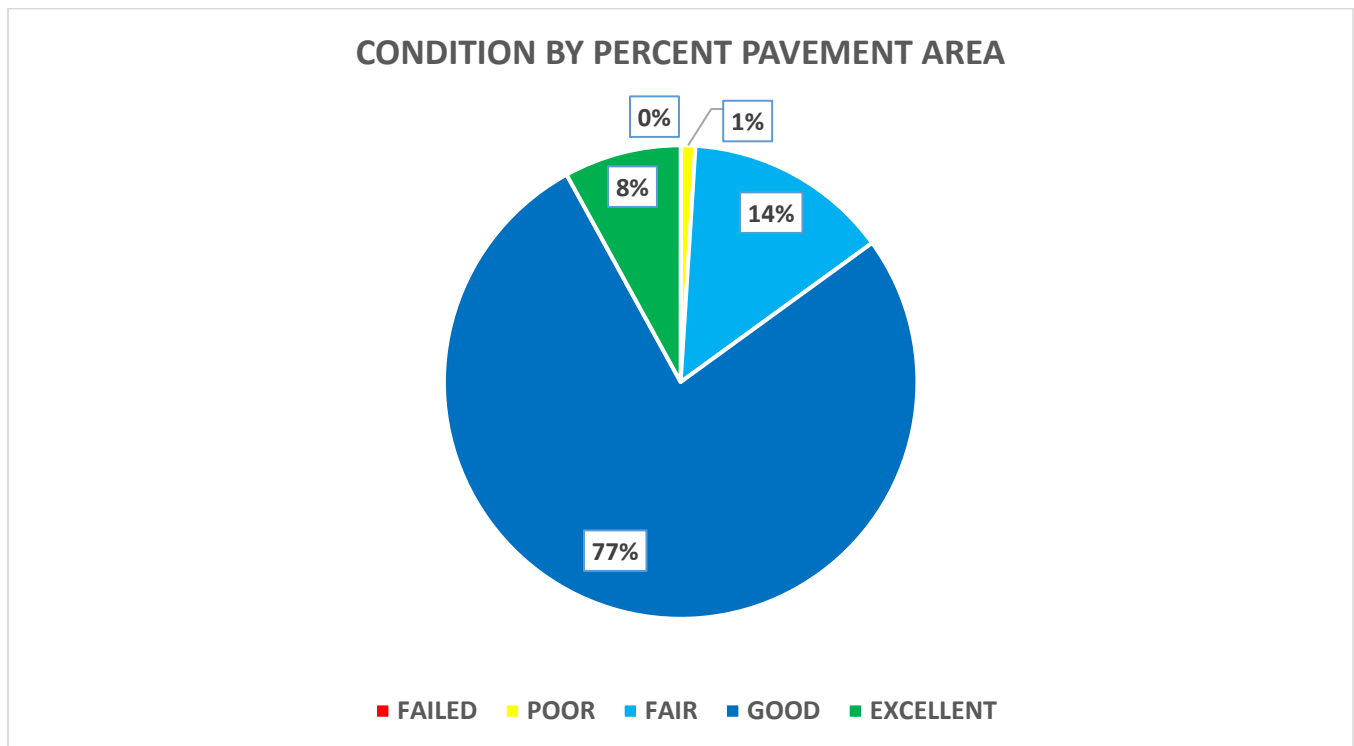


Figure 3. Roadway Conditions by Percent Pavement Area

CONDITION MAPPING

PMG maintains a GIS assignment within the PAVER™ software for all sections within the roadway network. This effort allows for pavement management GIS-based maps, such as the current roadway condition map outlined in Figure 4 below.

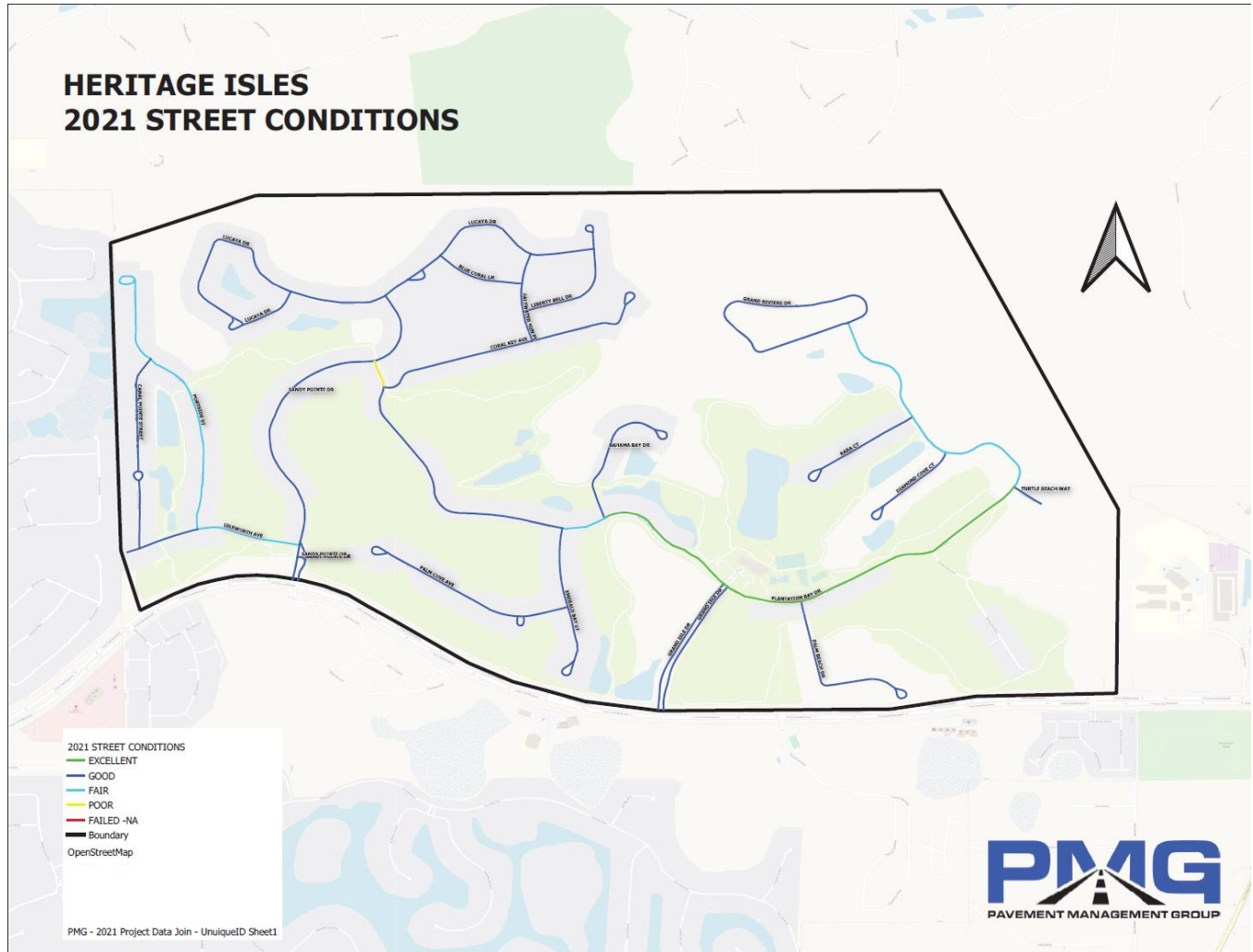


Figure 4. GIS-based Current Roadway Condition Map

CONCLUSION

PMG would like to thank you for the opportunity to service your pavement management needs. Our goal is to provide the highest level of services and support to our clients through objective and standardized data collection, state-of-the-art technology, and industry-recognized systems and processes. Should you require any additional information or support regarding your project, please do not hesitate to ask.

PAVEMENT MANAGEMENT GROUP

JAMES GOLDEN III

Founder/CEO

A handwritten signature in black ink, appearing to read "J. Golden III". The signature is written in a cursive style with a large initial "J" and a distinct "III" at the end.

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