



**TO:** Honorable Mayor & Members of the  
Fort Lauderdale City Commission

**FROM:** Lee R. Feldman, ICMA-CM, City Manager

**DATE:** December 3, 2013

**TITLE:** City Wide Pavement Management System for Road Resurfacing

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The purpose of this memorandum is to provide an update on the Annual Pavement Management System and a work plan to address the resurfacing needs for the roads within the City of Fort Lauderdale.

The City procured the services of a consultant to evaluate and document the condition of existing City roads using an industry standard MicroPAVER tool. The Pavement Management System report prepared by Atkins North America documents and prioritizes the condition of the roads based on a scoring system as noted below.

**BACKGROUND:**

MicroPAVER rates the condition of the roads based on the Pavement Condition Index (PCI). A newly constructed street is given a PCI of 100 and over time due to traffic conditions, age of the road and wear/tear, weather and soil conditions, utility work, the PCI declines. Road segments that are in the PCI range of 55 – 70 are in the critical PCI range. Roadway segments in this critical PCI range are at a very important point in the lifetime of this pavement segment and performing maintenance work in this range is integral in extending and maintaining its useful life. If maintenance is delayed and not performed in this range the pavement starts to deteriorate much more rapidly, please refer to **Exhibit 6**. Once the roadway falls below this critical PCI range, the PCI begins to drop at a much more rapid pace and there are costs associated with this delayed work. Based on prior experience and research data, the cost for delayed maintenance and rehabilitation work is about four (4) to five (5) times higher compared to timely maintenance.

Utilizing this MicroPAVER software and maintenance approach Citywide, a five (5) year work plan has been developed. This software uses the yearly paving budget and road maintenance and reconstruction costs to identify which roads this budgeted money should be spent on, which is shown on **Exhibit 5**. Segments within this critical range (PCI of 55 – 70) are improved and brought to a satisfactory range (PCI of 80 – 100) most cost effectively, while maximizing the life of the overall network's pavement. In this five-year work plan, shown on **Exhibit 5**, the critical PCI roadway segments are worked on first and the roads that are below this critical range are worked on in later

years once the critical roads have been maintained and brought up to acceptable PCI levels.

Utilizing the MicroPAVER software, an existing conditions Exhibit and three different work plan scenario Exhibits were created and the descriptions of each are below:

### **EXHIBIT DESCRIPTIONS:**

#### **1. Exhibit 1 – Existing Conditions**

**Exhibit 1** depicts the existing City roadway conditions and Pavement Condition Index (PCI). The seven different PCI ranges are color coded and shown from Failed to Good condition as determined by the inspection data and software.

#### **2. Exhibit 2 – 2014 Work Plan - \$2.2 Million Budget (Critical PCI Range 55-70)**

**Exhibit 2** depicts the existing City roadway conditions and outlines the roadway sections within the City that are in the critical PCI range of 55-70. The associated chart lists the roadway section to have a 1” asphalt overlay installed, up to the \$2.2 Million budget for paving in 2014 fiscal year, as recommended by the MicroPAVER software.

#### **3. Exhibit 3 – 2014 Work Plan – \$2.2 Million Budget Including Sustainable Practices (Critical PCI Range 55-70)**

**Exhibit 3** depicts the existing City roadway conditions and outlines the roadway sections within the City that are in the critical PCI range of 55-70. The associated work chart lists the roadway sections recommended to have a \$1.7 Million of 1” asphalt overlay installed, as recommended by the MicroPAVER software. Also, included in this work plan scenario is an additional \$500,000 sustainable paving practice, Microsurfacing. This Microsurfacing practice is a 1” asphalt aggregate sealant mix that extends the life of the roadway 7 – 10 years, at a much lower cost than conventional asphalt overlays, approximately a 25% cost savings. This Microsurfacing practice is recommended for residential roadway segments in the critical PCI range of 50 – 75 and is a new paving initiative to promote sustainability in infrastructure. This would be used as a pilot for future use on an annual basis.

#### **4. Exhibit 4 – 2014 Work Plan – Unlimited Budget (All Under 70 PCI)**

**Exhibit 4** depicts the existing City roadway conditions and outlines all the roadway sections that have a PCI Index under 70. The associated work chart lists the roadway sections recommended to have either a 1” asphalt overlay or 1” Microsurfacing. The total cost required to bring all roadways under the critical PCI of 70 to a good PCI in the range of 80 to 100 is \$12 Million.

### **Recommendations:**

Based on the information above, it is recommended that the City adopts the approach described in Item # 3 and outlined in **Exhibit 3**. The existing paving budget is \$2.4 Million for 2014 fiscal year and **Exhibit 3** identifies the roads that will be resurfaced

within the critical range (PCI of 55 -70) largest positive long term financial impact to the City.

The estimated duration to complete the scope of work outlined in **Exhibit 3** is approximately 4 – 6 months. Work orders will be prepared utilizing the Annual Contract For Asphaltic Concrete Pavement and a separate Commission Agenda Memorandum shall be prepared and presented to the Commission for approval. The total fiscal year 2014 budget for asphalt pavement work is \$2.2 million, with \$200 thousand budgeted for engineering fees and construction administration.

**Strategic Connections:**

This item advances the *Fast Forward Fort Lauderdale 2035 Vision Plan: We Are Connected*.

This item is a *Press Play Fort Lauderdale Strategic Plan initiative*, included within the **Infrastructure Cylinder of Excellence**, specifically advancing:

**Goal 1:** Be a pedestrian friendly, multi-modal City.

**Objective 2:** Improve transportation land use and planning to create a walkable and bikeable community.

Attachment: Exhibit 1 – Existing Conditions

Exhibit 2 – 2014 Work Plan - \$2.2 Million Budget (Critical PCI Range 55 - 70)

Exhibit 3 – 2014 Work Plan – \$2.2 Million Budget Including Sustainable Practices (Critical PCI Range 55 – 70)

Exhibit 4 – 2014 Work Plan – Unlimited Budget (All under 70 PCI)

Exhibit 5 – Five-Year Work Plan

Exhibit 6 – Critical PCI Range Exhibit

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Prepared By: Alex Scheffer, P.E., Senior Project Manager

Department Director: Hardeep Anand, P.E., Public Works