LaBelle • Marvin

Pavement Technology Specialists

PAVEMENTS ARE OUR BUSINESS!

LaBelle Marvin, Inc., is the civil engineering firm located in Southern California that specializes in the design, testing, analysis, and inspection of all pavement related projects with over 40 years of experience. LaBelle Marvin, Inc., (LMI) provides pavement data gathering services both in the field and in the laboratory by the utilization of our Ground Penetrating Radar (GPR), Falling Weight Deflectometer (FWD), coring services, and our certified asphalt concrete materials laboratory.

NEW!

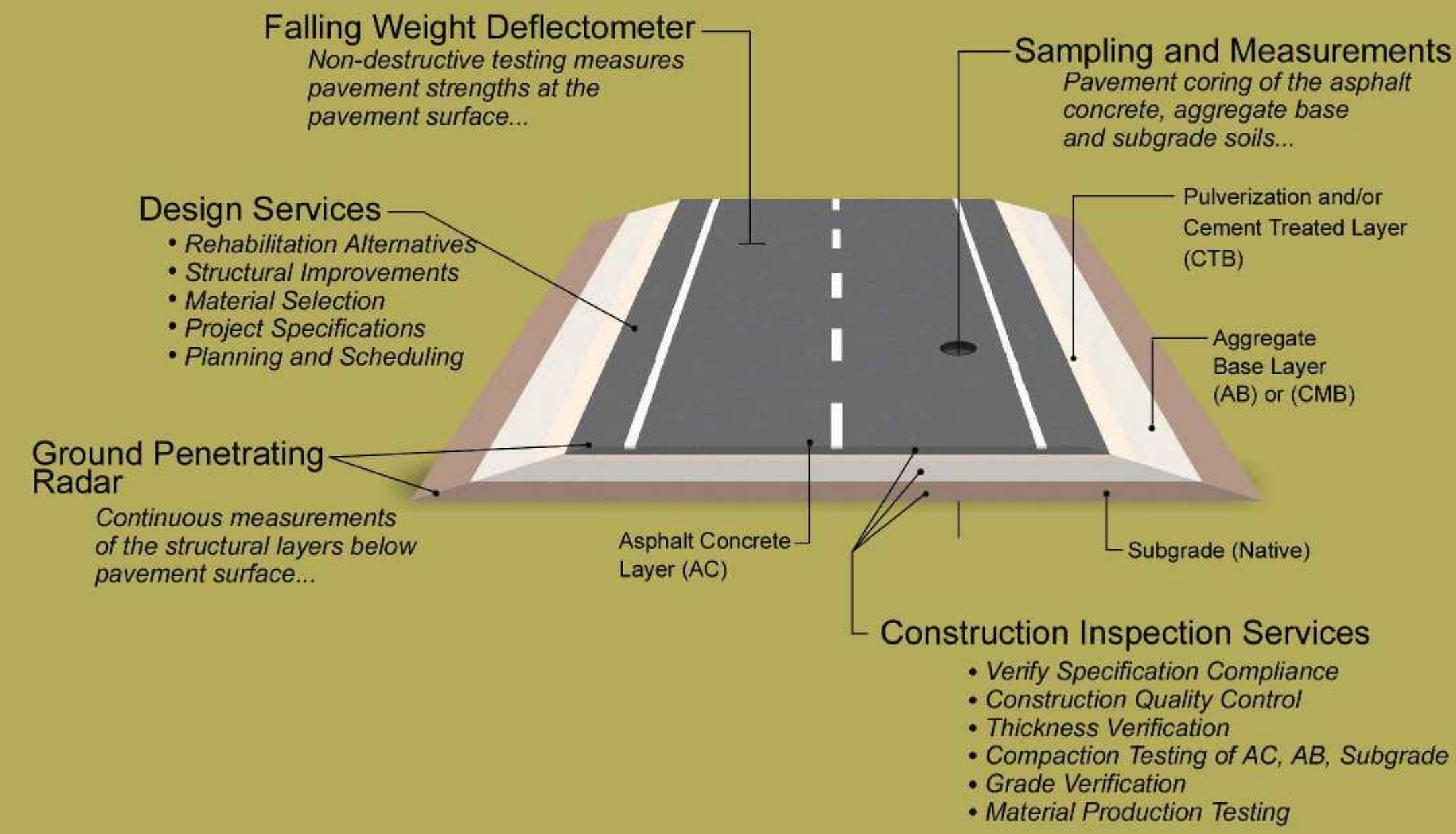
GPR Testing

As of Spring of 2008 LMI offers the latest in Ground Penetrating Radar Technology.

Real-time data acquisition of a roadway's structure with the added benefit of economically locating buried utilities, hidden railroad ties, and air voids beneath the pavement surface.

What we do...

LaBelle Marvin offers the latest in Pavement Engineering Technology.



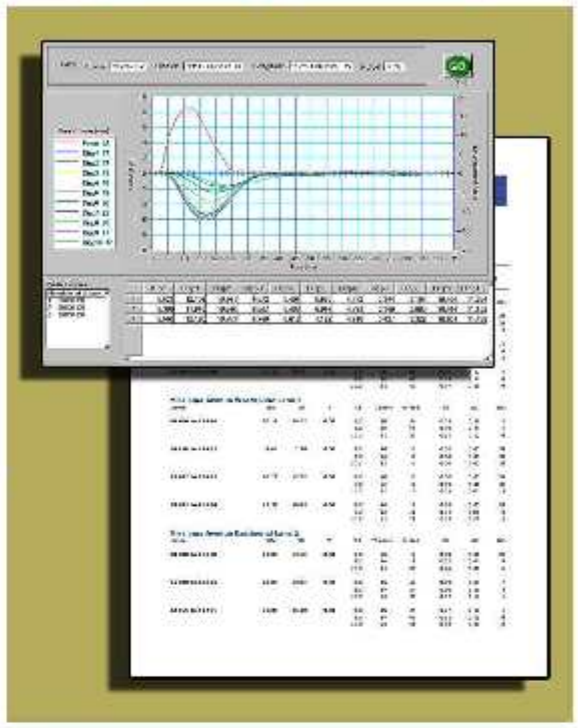
Our highly distinguished firm offers innovative techniques utilized to design, test, and analyze all pavement structures.

GPR and FWD Testing

Falling Weight Deflectometer (FWD)

The LaBelle Marvin, Falling Weight Deflectometer, measures dynamic forces transferred to the pavement relative to typical truck and bus use. Deflection based strength measurements are utilized for roadway rehabilitation, pavement life projections, acceptance of completed construction projects, and measurement of impacts from traffic detours.

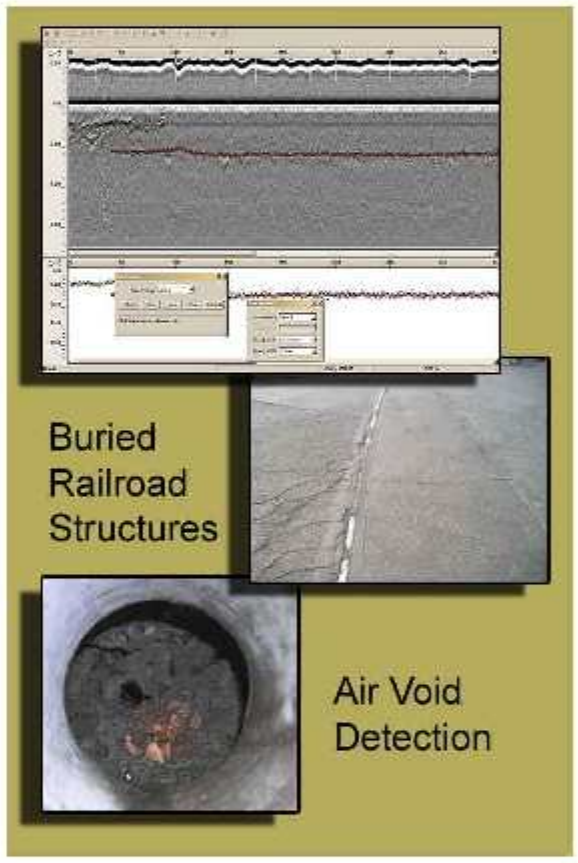
Pavement Strength Testing
CA Test Method 356



Ground Penetrating Radar (GPR)

LaBelle Marvin, is capable of measuring an entire roadway Faster and Safer using Ground Penetrating Radar (GPR). Each pavement layer is measured and documented, providing real time, thickness information. Data is utilized for quality assurance of new construction and structural evaluation of existing pavements. Optional surveys can be performed for the presence of buried railroad ties, hidden utility covers, pavement voids, overlaid Portland Cement Concrete, and shallow utility lines.

Geophysical Road Survey



Buried Railroad Structures

Air Void Detection

Pavement Sampling

LaBelle Marvin, provides the sampling of an existing roadway by the means of our coring and boring services. The sampling enables our engineers to measure a roadway's structural layer and analyze materials used. Samples are analyzed in our in-house laboratory for the design of rehabilitation methods. Typically data gathered by coring and boring are used in conjunction with "strength testing" by the Falling Weight Deflectometer & "ground truthing" by Ground Penetrating Radar.

Engineering Services

LaBelle Marvin provides proactive solutions to manage, budget, verify, and design all pavement structures that are expected on today's roadway projects. LaBelle Marvin insures all construction alternatives, maintenance strategies, and design criteria's are explored and benefits defined. These elements are increasingly critical as traffic volumes increase, budgets are limited, and pavement life is often required to extend beyond the original design period.

Pavement Assessment Consulting

Visual Evaluations

A Visual Pavement Evaluation, best suited at a "network level", is research driven and provides an overall perspective to the complexity of each project.

Material Investigations

Pavement Designs, often warrant the combination of visual reviews with forensic testing. These "Project level designs" utilize higher precision equipment, such as non-destructive or in-place strength testing, pavement core sampling, and laboratory testing, as needed.

Rehabilitation Forecasting

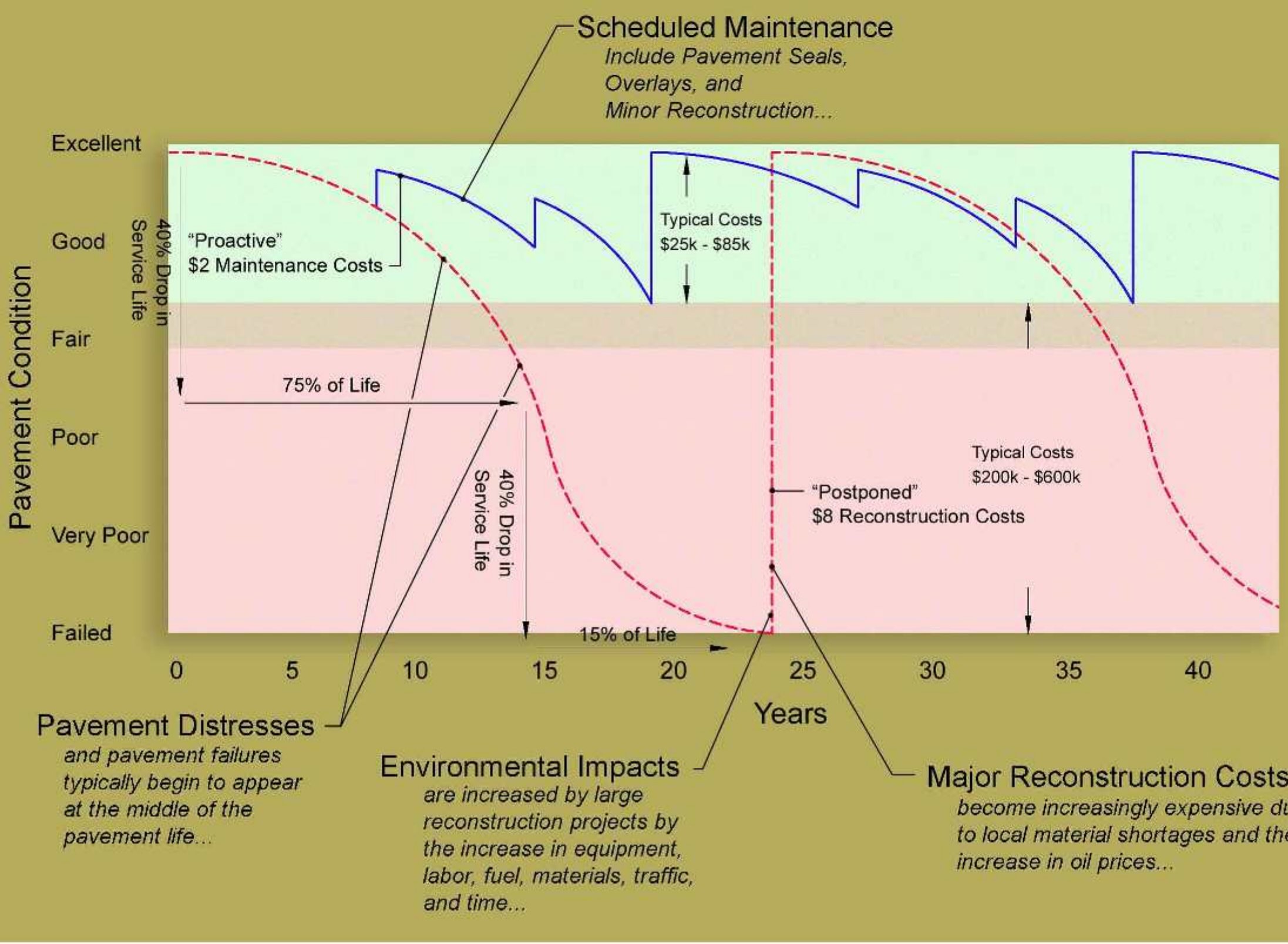
Management Plans

Pavement Management Plans are proactive tools assisting our clients to anticipate and reduce unforeseen costs, assist in funding, provide scheduled maintenance strategies, and budget for design alternatives.

Cost Projections

Projected Cost Estimates incorporate labor, inspection and material costs; provide construction scheduling and reconstruction prioritization, and assists in selection of qualified contractors.

Pavement Condition Life Cycle



Construction Inspection

Construction Inspection provides the greatest opportunity to enhance project compliance with project plans and specifications. Obtaining inspection services during construction enables the engineer and inspector to operatively analyze the changing variables associated with construction activities.

Material testing is performed through the stages of construction from the initial material selection to quality assurance during construction. Material variation and construction compliance are monitored, tested and controlled to enhance the overall performance of the pavement design.

- Compliance Testing
- QA QC
- Laydown Inspection
- Grade Verification
- Material Plant Inspection
- Soil Stabilization
- Pavement Recycling
- Permeability Testing

Soils and Asphalt Laboratory

The Materials Testing Laboratory was founded in 1969 and sets the standard for asphalt concrete design, testing, and analysis. Our experienced staff has been working with local refineries, rock quarries, material plants, local contractors, and local and state agencies for over 40 years. This enables the staff to define or modify testing methods to meet future requirements with confidence. The in-house laboratory is overseen by our engineering staff ensuring that all testing is performed timely and accurately exceeding established standards.

Our staff actively participates within technical organizations of the Asphalt Pavement Association, AAPT, American Society of Civil Engineers, and the Standard Specifications for Public Works "Green Book Committee" of the Southern California American Public Works Association and has participated in the Caltrans Round Robin Testing Program for the past 20 years. The State funded program verifies the standard of accuracy required by the State is met by highly distinguished firms.

Certified Test Methods:

105, 106, 125A, 125B, 125C, 125O, 201, 202, 206, 207, 208, 216, 217, 226, 227, 231, 304, 308, 309, 366, 367, 370, 371, 375A, and 382,

Expert Witness

Forensic Investigations often are the result of construction or performance disputes. LaBelle Marvin provides expert witness during settlement proceedings involved with testimony, mediation and arbitration, deposition, and trial.

Leader of the Year Award APWA So. Cal 2007
OC Engineering Council Distinguished Engineer 2002
Engineer of the Year ASCE 2001
Engineer of Merit ASCE 1991
Concrete Industry Award of Excellence 1987, 1990, 1991

Testing

Asphalt Concrete
- *Mix Designs*
- *Density Testing*
- *Stability Tests*
- *Binder Testing*
- *Open Graded Asphalt*

Soils and Aggregate Base
- *Maximum Density*
- *Optimum Moisture*
- *R-Value*
- *CBR*
- *Stabilized Soils*

Inspection

Construction Inspection
- *QC/QA*
- *Grade Verification*
- *Compaction Testing*

Slurry Seal
- *Design and Testing*

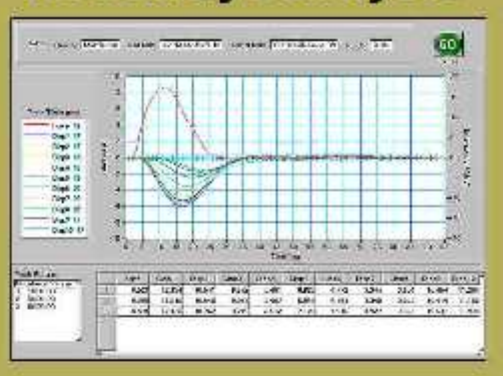
Material Production
- *Plant Inspection*
- *Compliance Testing*

Design

Typical Designs
- *Structural Improvements*
- *Maintenance Strategies*
- *Specifications*
- *Budget Estimates*
- *Open Graded Asphalt*

Clients
- *Local and State Agencies*
- *Private Businesses*
- *Management Companies*
- *Airports - FAA*
- *Home Owner Associations*

Roadway Analysis



Non-Destructive Testing
- *Falling Weight Deflectometer*
- *Ground Penetrating Radar*
- *Skid Resistance Testing*
- *Profilograph*

Exploratory Testing
- *Coring and Boring*

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