MicroPAVER
TECHNOLOGY THAT WORKS ...... FOR YOU

39TH ANNUAL ROCKY MOUNTAIN ASPHALT
CONFERENCE & EQUIPMENT SHOW
FEB 22, 2012
TED A. BORSTAD, P.E.
BORSTAD CONSULTING SERVICES, LLC
NEW DIMENSIONS IN PAVEMENT MAINTENANCE MANAGEMENT

PAVER™

6.5
PAVEMENT MANAGEMENT

CLIENTS
• CITIES
• COUNTIES
• UNIVERSITIES
• MILITARY BASES
• COMMERCIAL

SERVICES
• TRAINING
• INSPECTIONS
• PLANNING
• DATABASE EVALUATION
• COMPLETE IMPLEMENTATION

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OVERVIEW

• What is MicroPAVER
• Why Would I Want to Use It?
• Is it Hard to Use?
• How do I get Started?
• How Does it Work?
PAVEMENT MANAGEMENT SYSTEM

“A systematic method to collect, store, and retrieve decision-making information to make maximum use of limited maintenance dollars.”
WHY WOULD I WANT TO USE MICROPAAVER,
PREVENTIVE
INVESTMENT VALUE

• 1 Mile = $1 million at 36 ft wide at $5/SF
• 50 Miles = $50 Million
• 100 Miles = $100 Million
• 300 Miles = $300 Million

Your Pavement Value = $millions
BE COST EFFECTIVE

EXCELLENT

VERY GOOD

GOOD

FAIR

POOR

FAILED

TIME

40% Drop in Quality

75% of Life

Small % of Life

40% Drop in Quality

$1 Here

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BE COST EFFECTIVE

EXCELLENT

VERY GOOD

GOOD

FAIR

POOR

FAILED

TIME

40% Drop in Quality

75% of Life

40% Drop in Quality

Small % of Life

$1 Here

$4-$5 Here

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BE COST EFFECTIVE

“Green is Good”

40% Drop in Quality
75% of Life

40% Drop in Quality
Small % of Life

$1 Here

$4-$5 Here

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WHICH WOULD RECONSTRUCT?  PREVENTIVE MAINTENANCE?
IS IT HARD TO USE?

• SURE, BUT
IS IT HARD TO USE?

- SURE, BUT
- CAN YOU USE A COMPUTER?
IS IT HARD TO USE?

- SURE, BUT
- CAN YOU USE A COMPUTER?
- HAVE YOU SEEN ASPHALT PAVEMENT BEFORE?
IS IT HARD TO USE?

• SURE, BUT

• CAN YOU USE A COMPUTER?
• HAVE YOU SEEN ASPHALT PAVEMENT BEFORE?
• YOU LEARNED EXCEL, WORD
IS IT HARD TO USE?

• SURE, BUT

• CAN YOU USE A COMPUTER?

• HAVE YOU SEEN ASPHALT PAVEMENT BEFORE?

• YOU LEARNED EXCEL, WORD

• YOU MAY HAVE LEARNED FACEBOOK
IS IT HARD TO USE?

• SURE, BUT

• CAN YOU USE A COMPUTER?

• HAVE YOU SEEN ASPHALT PAVEMENT BEFORE?

• YOU LEARNED EXCEL, WORD

• YOU MAY HAVE LEARNED FACEBOOK

• YOU LEARNED HOW TO BUDGET
IS IT HARD TO USE?

- SURE, BUT

- CAN YOU USE A COMPUTER?

- HAVE YOU SEEN ASPHALT PAVEMENT BEFORE?

- YOU LEARNED EXCEL, WORD, FACEBOOK

- YOU LEARNED HOW TO BUDGET

- SO YOU CAN LEARN MICROPACER
HOW DO I GET STARTED?

- BUY A SUBSCRIPTION
- SELF TRAIN
- TRAINING CLASS
- HIRE IMPLEMENTATION
- ETC.
$795 First Year

$550 Renewal
MicroPAVER

- Network Setup
- Inspections
- Conditions
- Planning
NETWORK LEVEL
&
PROJECT LEVEL
EVER HAVE A BAD DAY?
NETWORK LEVEL

- Inventory
- Inspections
- Condition
- Prediction Models
- Budget Evaluation

MANAGEMENT
CITY COUNCIL
COUNTY COMMISSIONERS
PROJECT LEVEL

- Annual Projects
- Look at Type Distresses
- Coordinate with Other Projects
- Execute the Project

ENGINEERING STREET MAINTENANCE IN-HOUSE OR CONTRACTOR
IMPLEMENTATION STEPS
1) Define the **Network**
IMPLEMENTATION STEPS

1) Define the Network
2) Determine the Present Condition
IMPLEMENTATION STEPS

1) Define the Network
2) Determine the Present Condition
3) Predict the Network’s Future Condition
IMPLEMENTATION STEPS

1) Define the Network
2) Determine the Present Condition
3) Predict the Network’s Future Condition
4) Establish a Network Level Maintenance Strategy and Budget
IMPLEMENTATION STEPS

1) Define the Network
2) Determine the Present Condition
3) Predict the Network’s Future Condition
4) Establish a Network Level Maintenance Strategy and Budget
5) Execute Project Level Maintenance (Design)
SET UP THE NETWORK
ELEMENTS

Network
| Branch
| Section
| Sample Unit
BRANCH (STREET)
BRANCH USES

USES
ROADWAY
PARKING
STORAGE
ETC.
SECTION (BLOCK, ETC.)

21ST  19TH  17TH  15TH  13TH
21ST  19TH  17TH  15TH  13TH
21ST  19TH  17TH  15TH  13TH
21ST  19TH  17TH  15TH  13TH
21ST  19TH  17TH  15TH  13TH
21ST  19TH  17TH  15TH  13TH

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SAMPLE UNIT

• 1500 TO 3500 SQ FT
• 100’ of Roadway
• Inspect a % of Total Sample Units (10% to 50%)
SAMPLE UNIT

- 1500 TO 3500 SQ FT
- 100’ of Roadway
- Inspect a % of Total Sample Units (10% to 50%)
DETERMINE THE CONDITION

- Select the Sample Units

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DETERMINE THE CONDITION

- Select the Sample Units

Inspect the Sample Units

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20 Distress Types

Load Related

Climate/Durability

Other
DISTRESSSES, 1 TO 9

1. Alligator Cracking
2. Bleeding
3. Block Cracking
4. Bumps & Sags
5. Corrugation
6. Depression
7. Edge Cracking
8. Joint Reflection
9. Lane/Shoulder Dropoff
DISTRESSSES, 10 TO 20

10  Long & Transv Cracking
11  Patching
12  Polished Aggregate
13  Potholes
14  Railroad
15  Rutting
16  Shoving
17  Slippage
18  Swell
19  Raveling
20  Weathering
**CONDITION**

**Distress Severity**

**Distress Type**

**Distress Quantity**

<table>
<thead>
<tr>
<th>PCI Type</th>
<th>Description</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = Very Good</td>
<td>85 to 100</td>
<td></td>
</tr>
<tr>
<td>B = Above Average</td>
<td>70 to 85</td>
<td></td>
</tr>
<tr>
<td>C = Average</td>
<td>55 to 70</td>
<td></td>
</tr>
<tr>
<td>D = Below Average</td>
<td>40 to 55</td>
<td></td>
</tr>
<tr>
<td>F = Poor</td>
<td>0 to 40</td>
<td></td>
</tr>
</tbody>
</table>

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EVALUATE THE CONDITION
YEARNLY CONDITION

Annual Condition Plot

Weighted Avg Condition

ACTUAL DETERIORATION
CONDITION BY RANK

- Arterial: 75.0
- Collector: 50.0
- Local: 50.0

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RESULTS

PIE CHART

BAR CHART

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DON’T BE THAT GUY

DIED

From not forwarding that text message to 10 people
GIS
LOCAL
Crack Filling
Patching Potholes
PREVENTIVE - STOP GAP

GLOBAL
Fog Seal, Chip Seal
Slurry Seal
EXTENDS THE LIFE

MAJOR M&R
Mill and Overlay
~
Overlay
~
Reconstruction

MAINTENANCE TYPES
• It's what you learn after you know it all that counts.

— John Wooden, legendary basketball coach
BUDGET

• 5-Year Plan

1. Unlimited Funds – (Not Likely)
2. Limited Funds – Level Budget
3. Limited Funds – Irregular Budget
4. Stabilize the Condition
80% - 20% FUNDING

- 80% OF THE BUDGET IS SPENT ON PAVEMENTS IN RELATIVELY GOOD CONDITION
80% - 20% FUNDING

- 80% OF THE BUDGET IS SPENT ON PAVEMENTS IN RELATIVELY GOOD CONDITION

- 20% OF THE BUDGET IS SPENT ON PAVEMENTS IN POOR CONDITION

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PAVEMENT REPAIR
YOU DECIDE

BEFORE MICROP AVER

AFTER MICROP AVER

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SUMMARY

• What is MicroPAVER
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• Is it Hard to Use?
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FOR MORE INFO

PAVER™

Distribution/support

US and International users
Colorado State University PAVER Center
Fort Collins, CO 80523
- paver@colostate.edu
- 855.255.8753 (toll free)

Department of Defense users
- paversupport@usace.army.mil
- 217.417.3308 (PAVER™ Team)
THANK YOU

Ted A. Borstad, P.E.

Borstad Consulting Services LLC
4730 S. College Ave, Suite 101
Fort Collins, CO 80525

970-227-6480
TBorstad@aol.com