PAVEMENT MANAGEMENT FOR RURAL & URBAN COMMUNITIES

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Paul Couts – Carroll County
Nick Minich – City of La Porte
OVERVIEW

• Pavement Management – Why?
• Methods utilized
• Rural & Urban Communities
  • Carroll County
  • City of Laporte
• Process to Achieve Goals
• Results
• Benefits
WHY PAVEMENT MANAGEMENT

A NECESSITY FOR COMMUNITIES MOVING FORWARD:

• Funding Requirement
• Cost-Effective Decisions
  • Not “Worst First”
• Improve Road Condition
• Increase Roadway Network life
• Reduce Maintenance Costs
• Justify Future $

CARROLL COUNTY EXAMPLE

1 Mile Road Reconstruction
Cost = $250,000 (pug mix + C&S)
Effective Life = 20 yrs

VS.

Chip & Seal @ $22,000/mile
Can do 11.4 miles
Extended Pavement Life = 4 yrs
Effective Life = 45.6 yrs
BACKGROUND

INITIAL DEVELOPMENT

RATING METHOD

• PASER
• PCI
• Others

MANAGEMENT

• Excel
• GIS
• 3rd Party Software
THE PROJECTS: TWO APPROACHES

CARROLL COUNTY
- Rural county
- Chip & seal roads
- 793 miles of roads

CITY OF LA PORTE
- Urbanized area
- HMA streets
- 113 miles of streets
CARROLL COUNTY DYNAMICS:

**EXISTING**
- 793 miles of road
- HMA (67 miles)
- Chip & Seal (494 miles)
- Gravel (232 miles)
- Rural
- Low volume

**DRIVING FORCES**
- Roadway condition
- Economics/funding
- Political
- Public

**CURRENT PLAN**
- 72 miles/year
- Cost ~ $1.35M
- Word of mouth
- Drive, drive, drive
CARROLL COUNTY GOALS:

PRIORITIZE IMPROVEMENTS
• 1st: major roads – maintain
• 2nd: secondary roads – improve

MANAGEMENT PLAN
• Yearly monitoring
• Rate 1/3 of roads each year
• Determine road life cycles
• Funding (community crossings)
CITY OF LA PORTE GOALS:

Existing roadway network
- 113 centerline miles of streets
- HMA streets
- 2007 Pavement Inventory (not-maintained)
- No pre-existing asset management plan
- Pre-existing selection process
Project Goals

- Identify baseline condition
- Develop plan for improving roads
- Identify funding sources
- Create plan for action
- Software to maintain
- Additional asset management functions
- Funding
PAVEMENT MANAGEMENT GOALS:

LTAP REQUIREMENTS:
- Pavement asset inventory
- Proposed treatments
- Objectives & measures
- 5-year summary

Pavement Asset Management Plan

This Pavement Asset Management Plan satisfies the HB1001 State funding requirements. This plan must include the complete pavement inventory of the local agency.

1. Pavement Asset Inventory to include:
   - Unique Designation
   - Roadway – Name and Suffix
   - From – Name and Suffix
   - To – Name and Suffix
   - Length - Miles
   - Width - Feet
   - Surface Type – asphalt, concrete, gravel, etc.
   - Rating
   - Year Rated
   - Functional Classification

2. 5-Year Summary to include:
   - Rating
   - Treatment Used
   - Estimated Cost per Mile
   - Estimated Miles
   - Estimated Cost

3. Objectives and Measures
   - Performance goals & Expected Level of Service
   - Define the rating system used (PASER, PCI, etc.)
   - Describe the process used to develop a work plan.
   - Describe the monitoring program and plan for making updates and adjustments.
   - Describe drainage and ROW conditions
FIRST STEPS

- Discuss goals
- Rating method (PASER)
- Treatments
- management method (Excel)
DATA COLLECTION:

• SRMS™ or GIS
• Rate roads (PASER)
• Geometric data
• Create GIS based dataset
CARROLL COUNTY: HOW DID WE GET THERE

DEVELOP THE PLAN:

- Process (excel)
- Improvement strategies
- Strategy costs
- Priority fields
- Prioritize improvements
### CARROLL COUNTY: THE PAYOFF!

**COMPLETED INVENTORY:**
30+ COLUMNS OF DATA

#### RATINGS
- Chip & Seal PASER = 3.2:5
- Asphalt PASER = 5.9:10
WHAT CAN THE DATA DO?:
- Breakdown condition/costs
- Schedule improvements
- Filter/sort by cost/rating etc.
- Create maps (GIS)

SO, WHAT ARE THE BENEFITS?
THE BENEFITS!

- Budgeting
- Preliminary costs
- Elected Officials
- Public
Roadsoft®

- Roadsoft is a roadway asset management system for collecting, storing, and analyzing data associated with transportation infrastructure. Built on an optimum combination of database engine and GIS mapping tools, Roadsoft provides a quick, smooth user experience and almost unlimited data handling capabilities.

FIRST STEPS:

- Discuss goals
- Rating method (PASER)
- Treatments
- Management method (Roadsoft)
CITY OF LA PORTE

ROADSOFT®

- GIS interface
- Laptop data collector
- Strategy/optimization
- Reporting
- Additional asset tools
CITY OF LA PORTE

DATA COLLECTION

- LDC/manual entry
- PASER ratings
- Geometric data
- Other data
DATA PROCESSING

- Manual entry
- Supplemental information

RESULTS

### Latest Surface Rating Mileage Summary

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*APR=Average Paser Rating calculated by weighting the mileage with the paser value
PLAN DEVELOPMENT

• Treatments
• Strategy & optimization
• Proposed improvement
• # of years
• Set budgets

FROM THIS DATA WE DEVELOP AN IMPROVEMENT PLAN
PLAN DEVELOPMENT:

- Export
- LTAP pavement inventory
- Project maps
- Rating reports
### 2016 PROJECT DEVELOPMENT:

- Identify improvements
- Identify roads
- Project maps

#### CITY OF LA PORTE

#### 2016 Pavement Management Plan

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CITY OF LA PORTE

THE BENEFITS!

- Budgeting
- Preliminary costs
- Elected officials
- Public
FINAL THOUGHTS

• 5-Year Improvement Plan
  – Sets priorities
  – Financial plan
• Improves pavement condition
• Right decision at the right time
• Increase system life
• Educational tool
• Identify funding needs
• Political/Community support
• Educational tool

QUESTIONS?