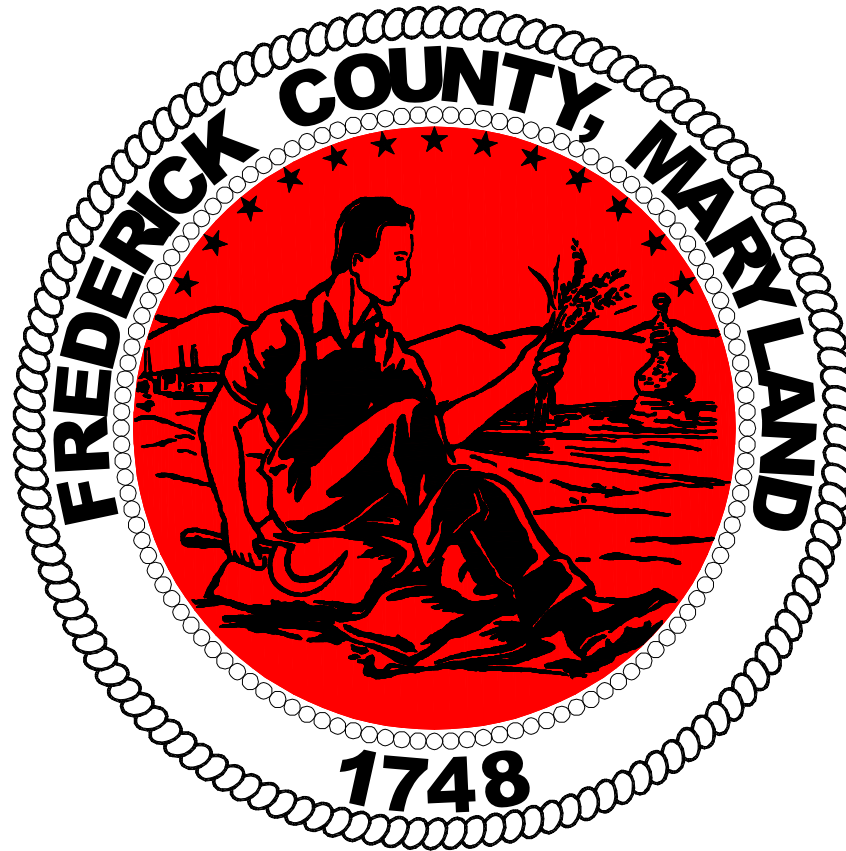


Frederick County's Pavement Management Program



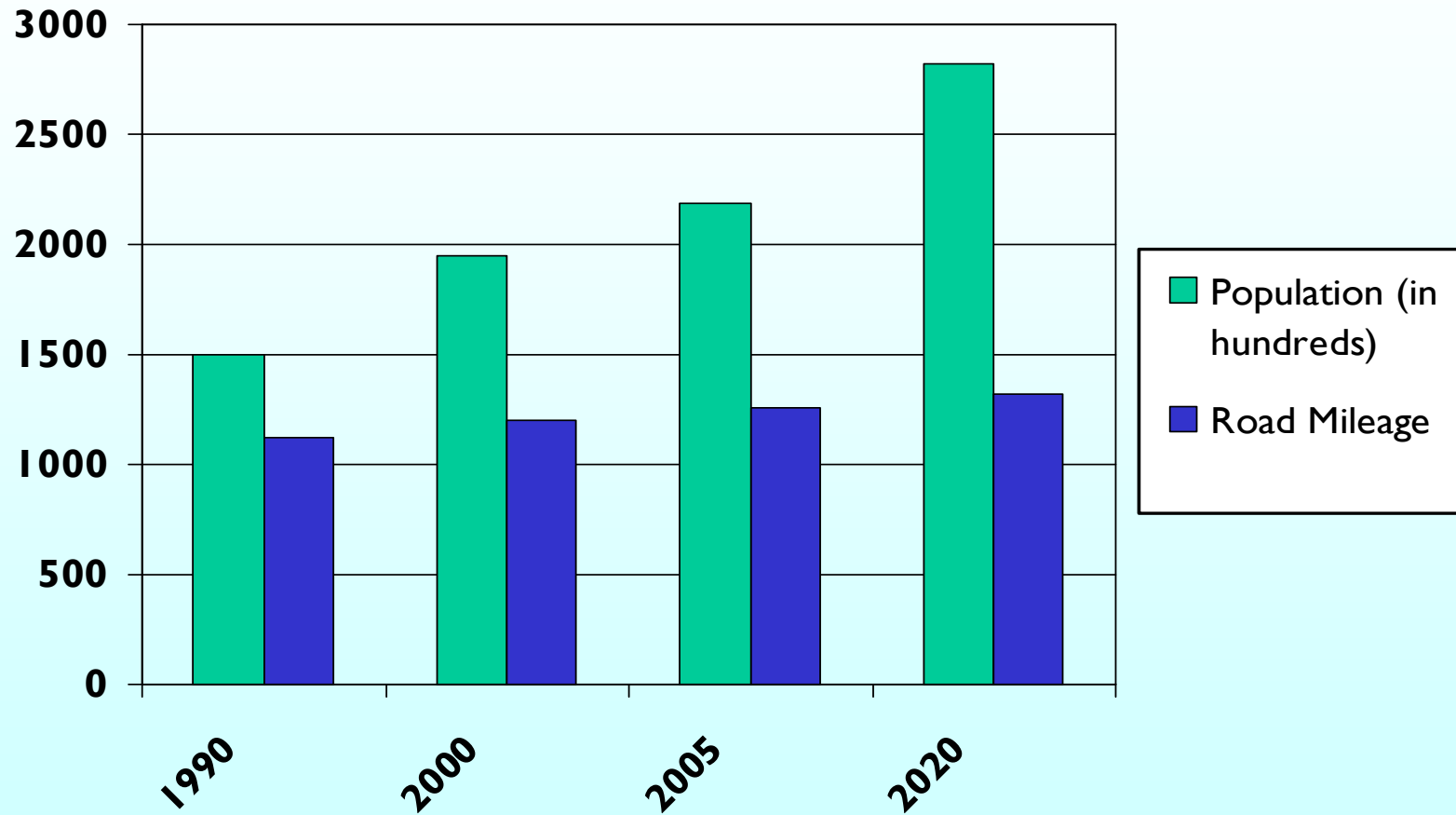
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Frederick County Maryland

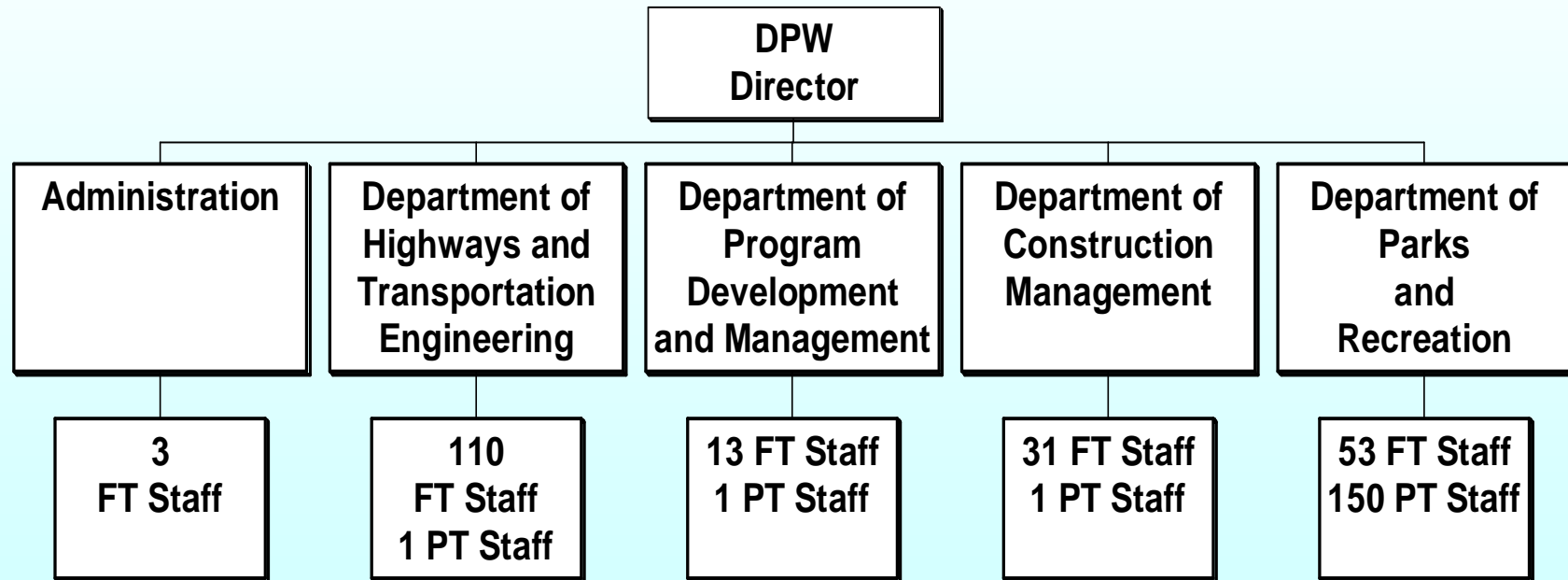




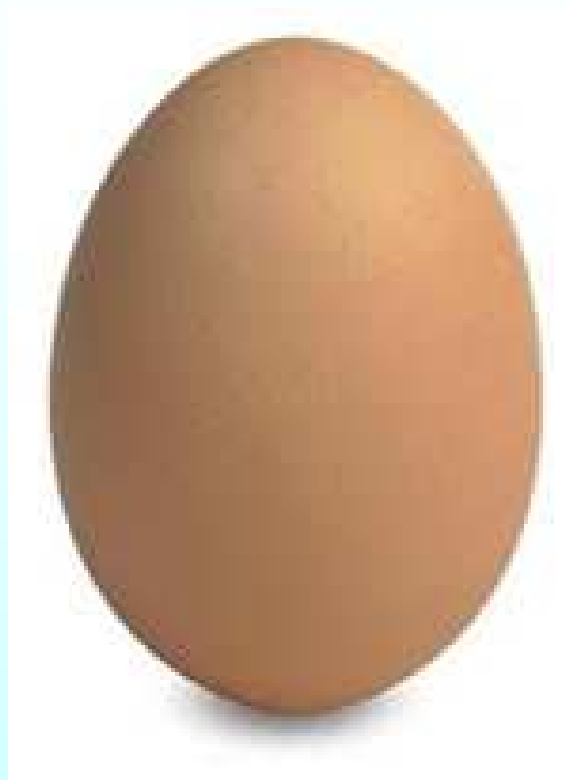
Growth



DPW Organizational Chart



1980's



Conceiving The Idea

1980's

- Existing Program In Capital Budget
 - Widening And Overlay
 - Overlay
 - Stabilization
- Emphasis – Widening And Overlaying Existing Roads
- Program Management – One Individual
- Road Selection And Treatment
 - Personal Experience
 - Personal Preference
 - No Formal Process

1980's

- Goal
 - Make Network Look Good
 - Cosmetic
- Engineering Involvement
 - None
- Bid Documents
 - Minimal
 - Pay Items Lump Sum/Road
- Inspection of Construction
 - Minimal At Best

1980's

PMP Development

- Engineering Staff Started To Investigate PMP Concept
- Engineering Staff Saw The Need And Benefit Of A PMP For County

1990's



Hatching The Plan

1990's

Program Development

- Engineer/Ops Staff Worked Together On Review Of County's Paving Road Maintenance Efforts
- Became Acquainted With RSMS
- Experimented With Road Condition Rating System
- Development Of Prioritization Method For Paving Projects
- Continued Getting Educated On PMP

1990's

Cultural Change

- Major Organizational Change Resulted In Bonding Engineering With Operations
- Enabled Joint Management By Engineering And Operations Of Existing Program
- Management Had To Be Very Sensitive To Impacts Of Change On Operations Group
- Started Process To Gain Buy In By Operations Staff

1990's

Program Changes

- Eliminated Widening And Overlay Program
- Began Crack Sealing Program
- Decided To Use In-House Staff To Begin PMP
- Decided To Use RSMS As Our PMP Software
- Brought Contract Documents Into Compliance With SHA Specifications
- Began Engineering Review And Oversight
- Required Full Time Inspection Of All Paving Contracts

1990's

Selling Of PMP

- Staff Targeted Upper Management And Elected Officials
- Emphasized Deteriorating Condition Of Road Network
- Emphasized Increasing Backlog Of Paving Needs
- Emphasized Under Funding Of Paving Program

1990's

Selling Of PMP

- Introduced PMP Concept And Potential Benefits To County
- Staff Continued To “Sell” Concept To Both Engineering And Operations Staff
- Continuously Explained Benefits Of PM To Both Engineering And Operations Staff
- Made PMP Development An Engineering Priority

1990's

Selling of PMP

- Continued To Sell Individual Aspects (i.e. Crack Sealing, Road Rating, etc.) To Ops Staff
- Provided Training On Roadway Patching To Ops Staff

2000's



Something To Crow About

2000's

Cultural Change

- Achieved Buy In By Engineering Staff
- Achieved Buy In By Operations Staff
- Achieved Buy In By Upper Management
- Achieved Buy In By Elected Officials

2000's

Program Development

- Fully Implemented PMP For County
- Eliminated Overlay Line Item In Capital Budget
- Added Pavement Management Program Line In Capital Budget
- Added Contracts For
 - Cold In Place Recycling (CIR)
 - Full Depth Reclamation (FDR)
 - Full Depth Patching
 - Seal Coating
- Changed PMP To Use A Network Optimization Approach

2000's

Program Changes

- Increase Fund Expenditures For Engineering And Geotechnical Services
- Hired Consultants To:
 - Rate Both Our Paved Roads And T & C Roads On Bi-Annual Basis
 - Expand Geotechnical Investigations
 - Develop Pavement Designs For Overlays, FDR And CIR Contracts
- Received Substantial Increase In Funding Levels For Program

2000's

Selling Of Program

- Provide Regular Updates To Elected Officials
- Introduced And Sold Concept To Upper Management In Budget And Finance
- Respond Promptly To Questions And Complaints From Citizens

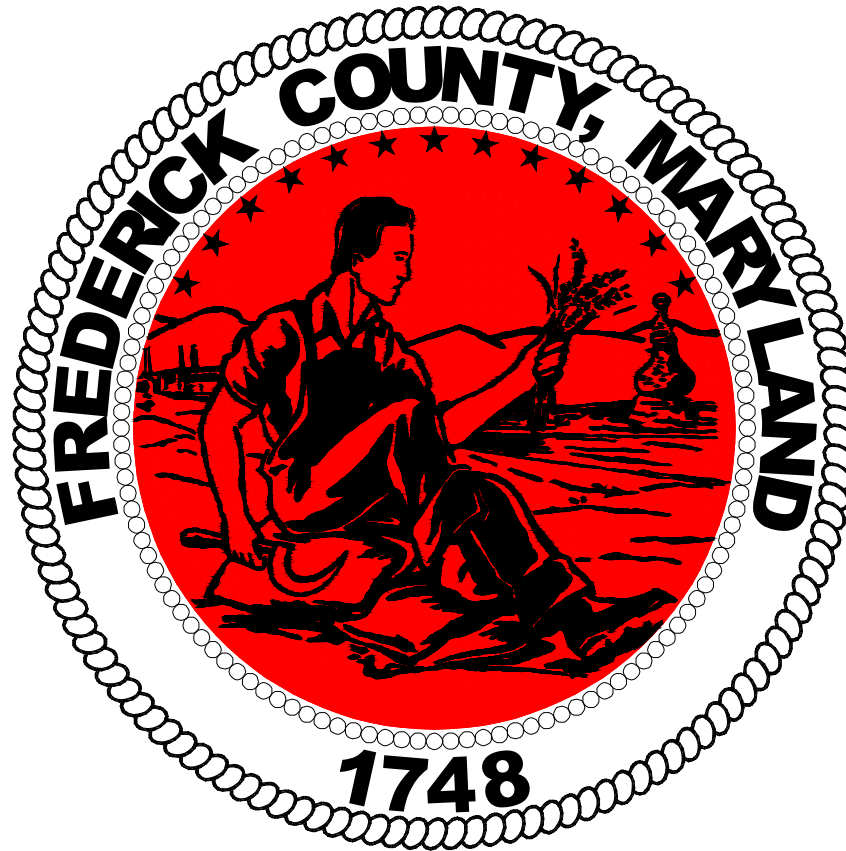
Critical Issues For Program Success

- Used What We Have
- Built On Success
- Gained Staff Buy In
- Addressed Complaints And Questions Quickly
- Partnered With Budget And Finance Staff

Critical Issues For Program Success

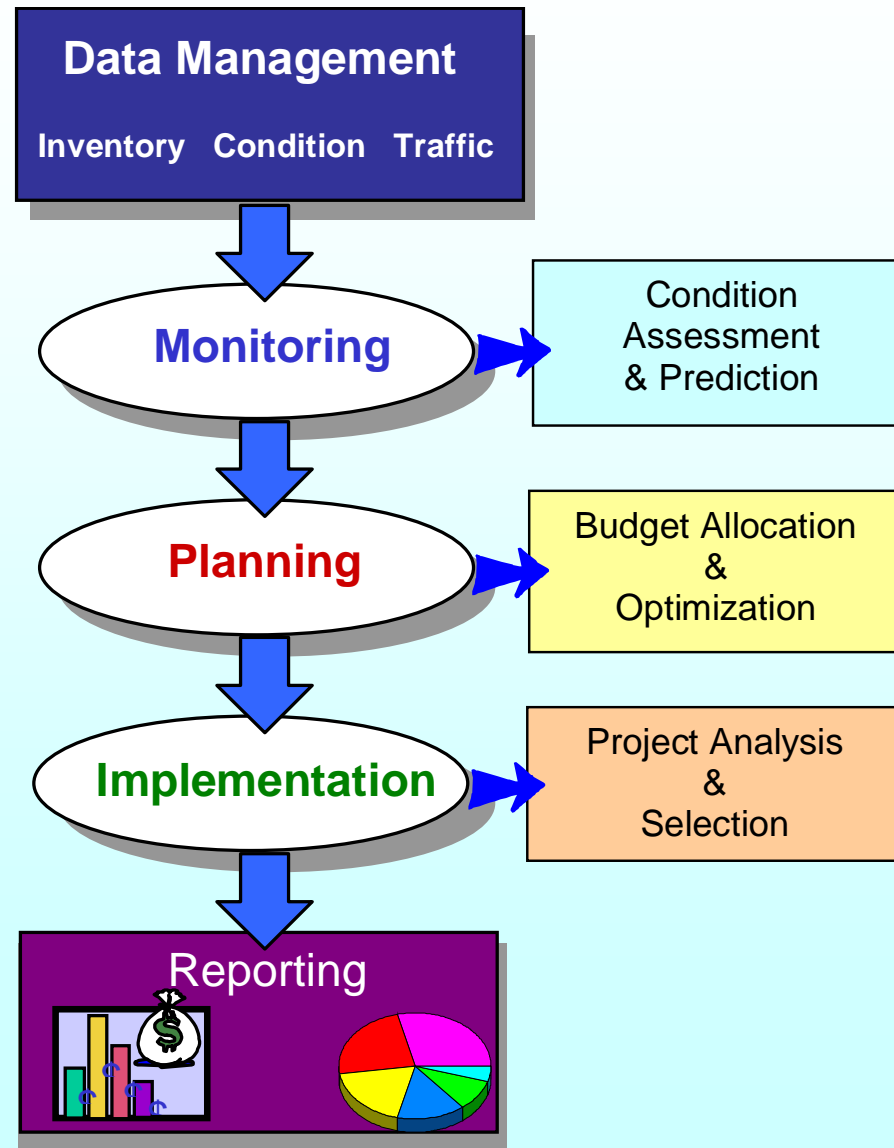
- Presented Information In Understandable Terms
- Insisted On Honesty And Accuracy
- Perseverance And Patience

Frederick County's Pavement Management Program



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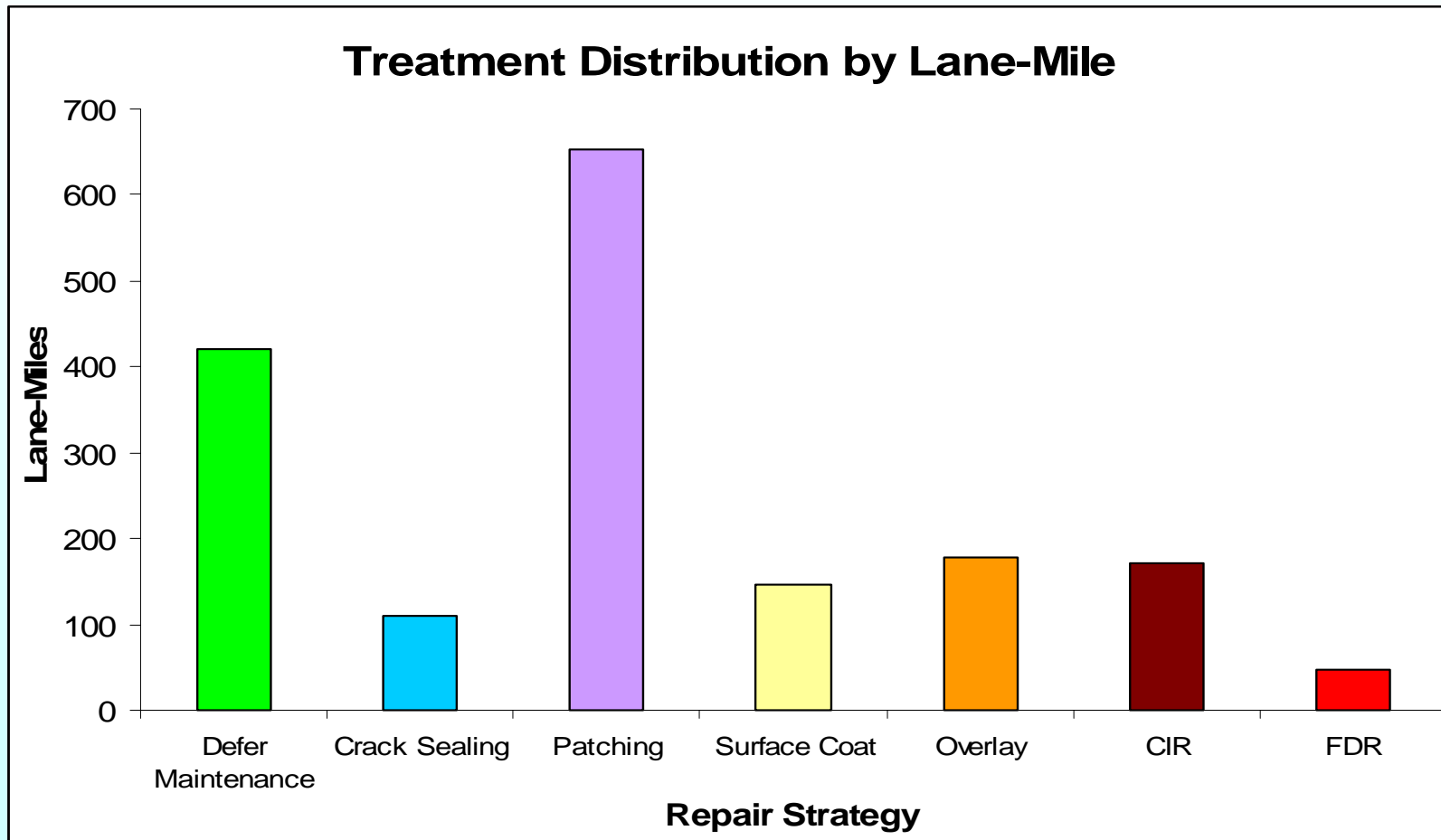
Pavement Management Process



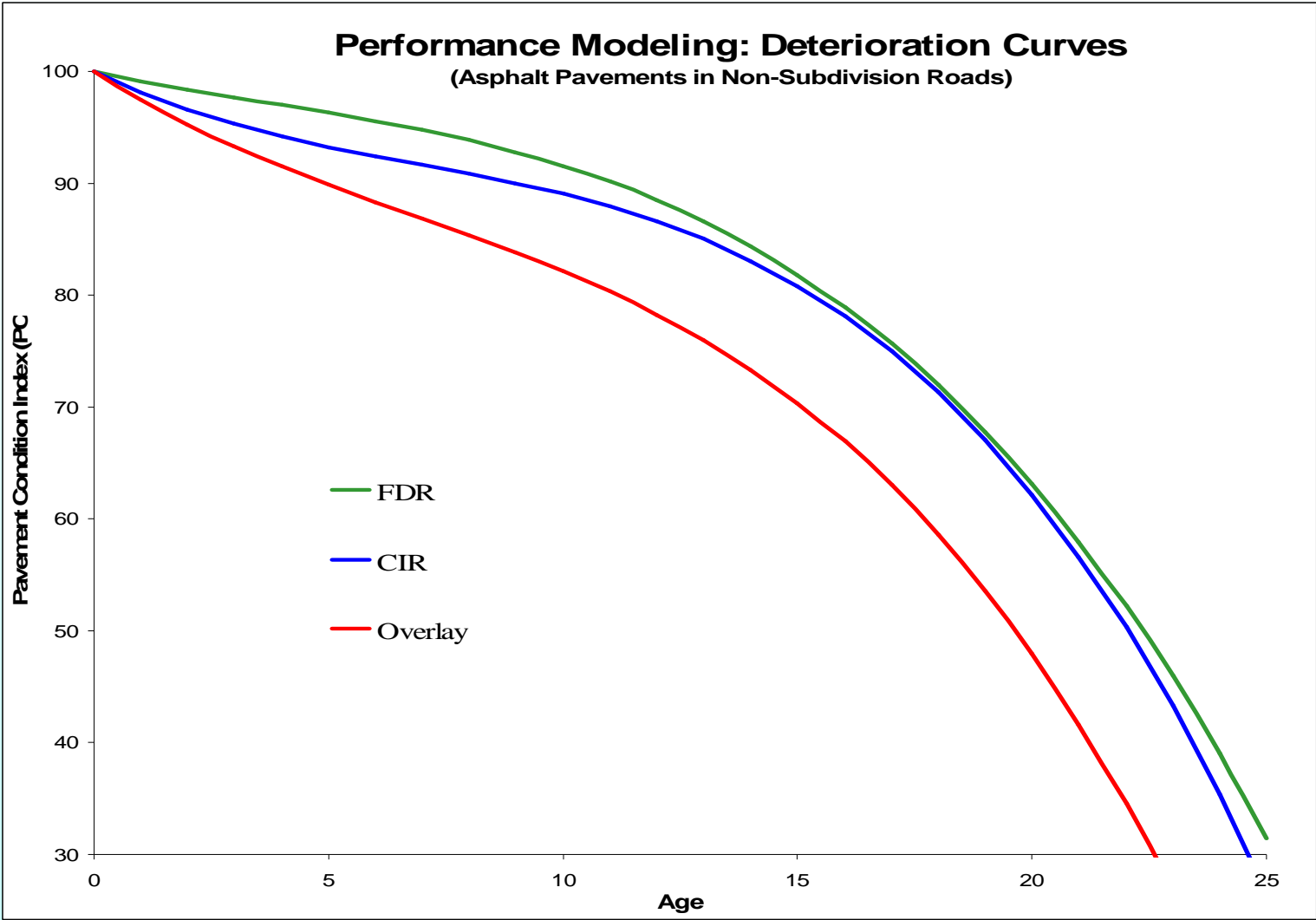
Pavement Management Process

Rehabilitation	1	Full-Depth Reclamation (FDR)
	2	Cold-In Place Recycling (CIR)
	3	Overlay
Maintenance	4	Surface Coat
	5	Patching
	6	Crack Sealing
Do Nothing	7	Defer Maintenance

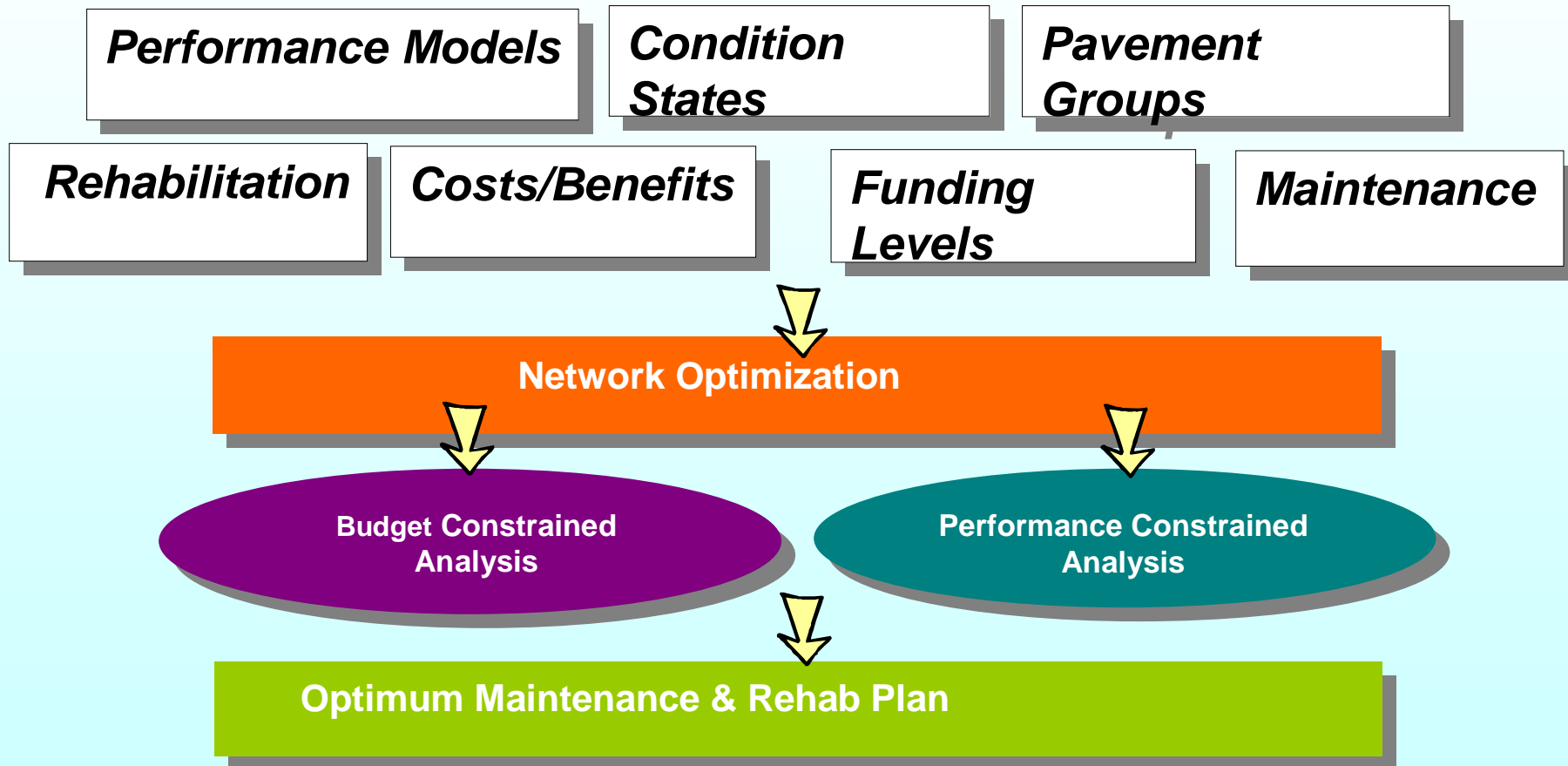
Pavement Management Process



Pavement Performance Modeling



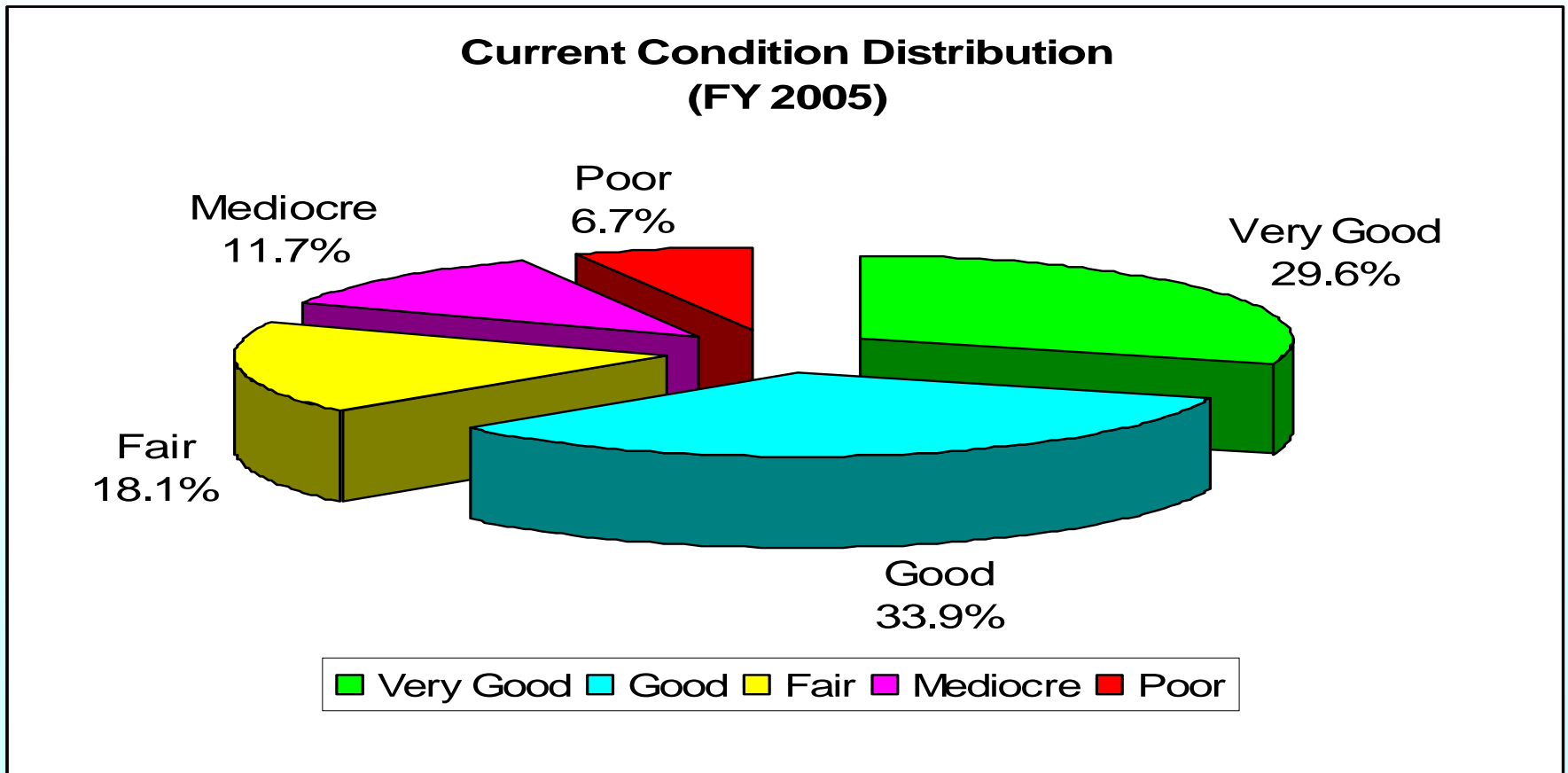
Budget Optimization



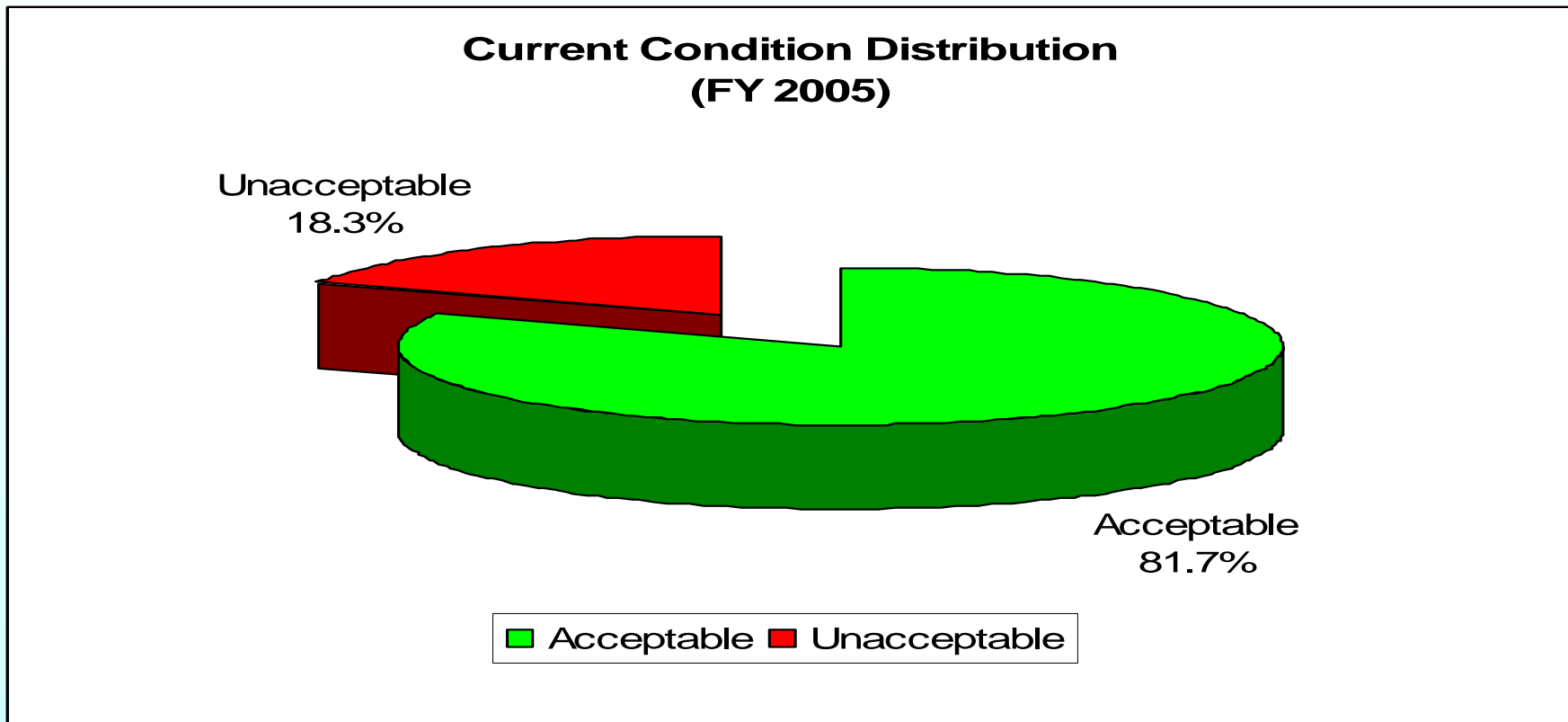
Condition Assessment and Goals

Condition	PCI (scale from 0 to 100)
Very Good	95 – 100
Good	80 – 94
Fair	70 – 79
Mediocre	55 – 69
Poor	0 – 54

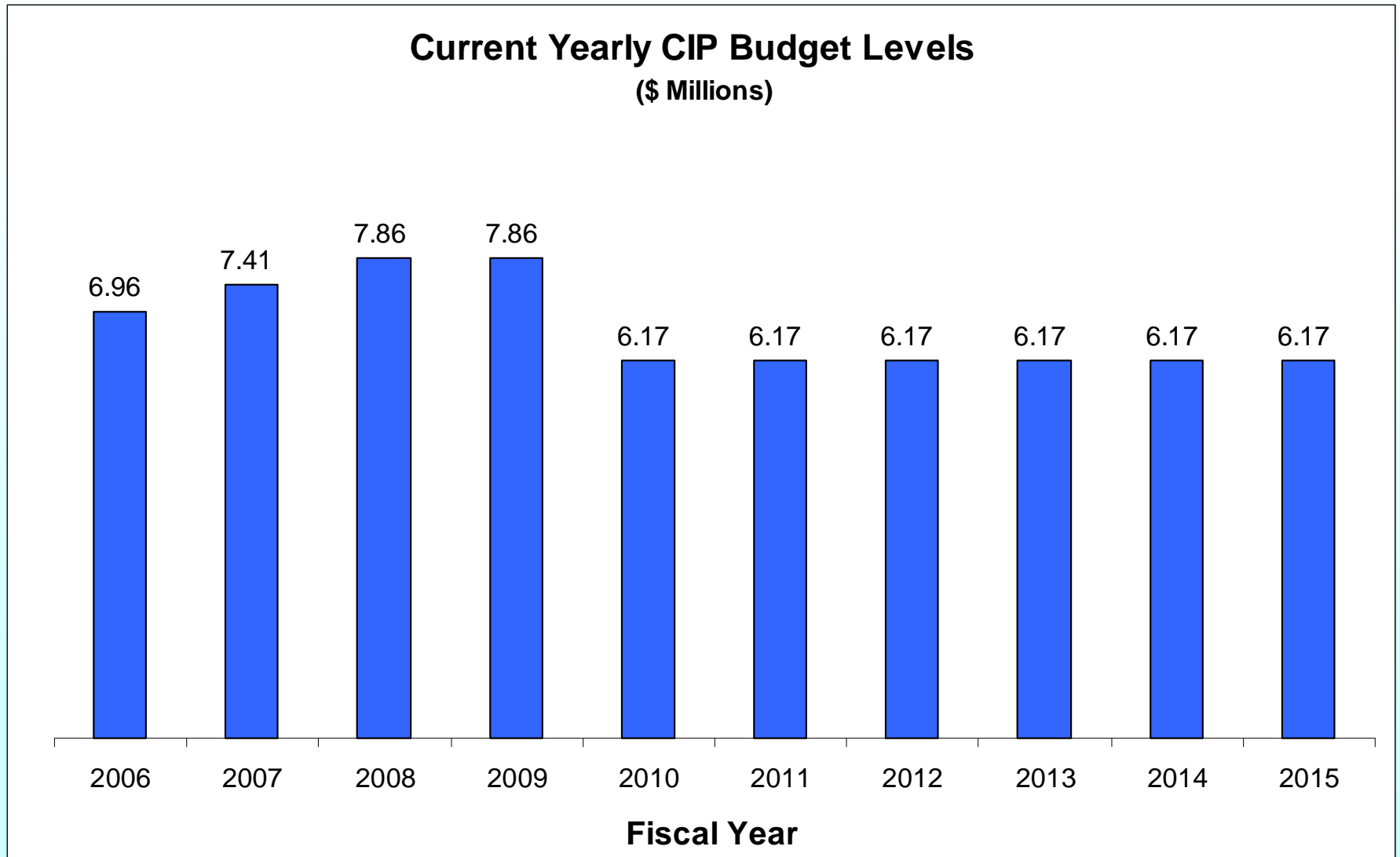
Network Condition and Health



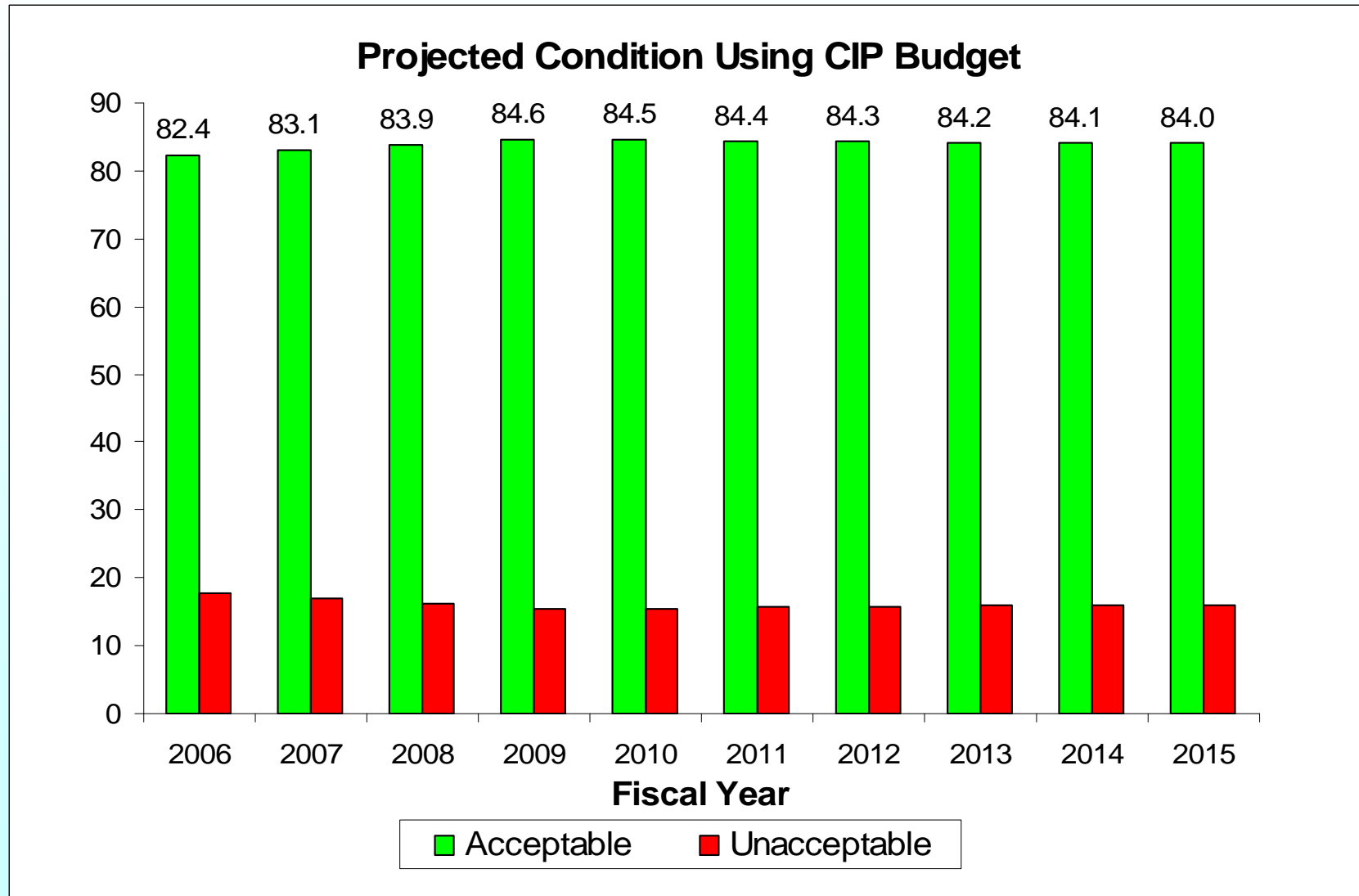
Network Condition and Health



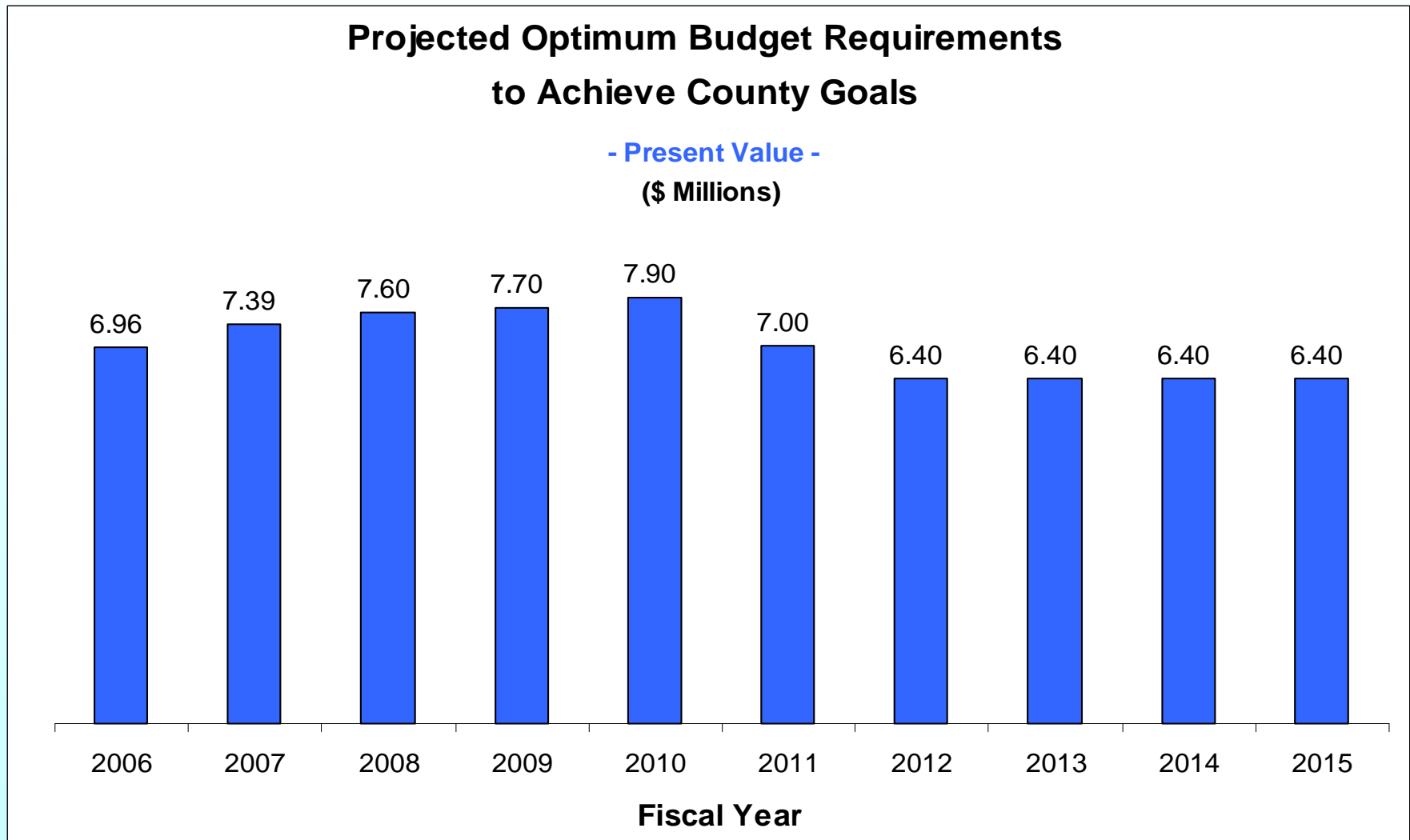
Goals and Funding Needs



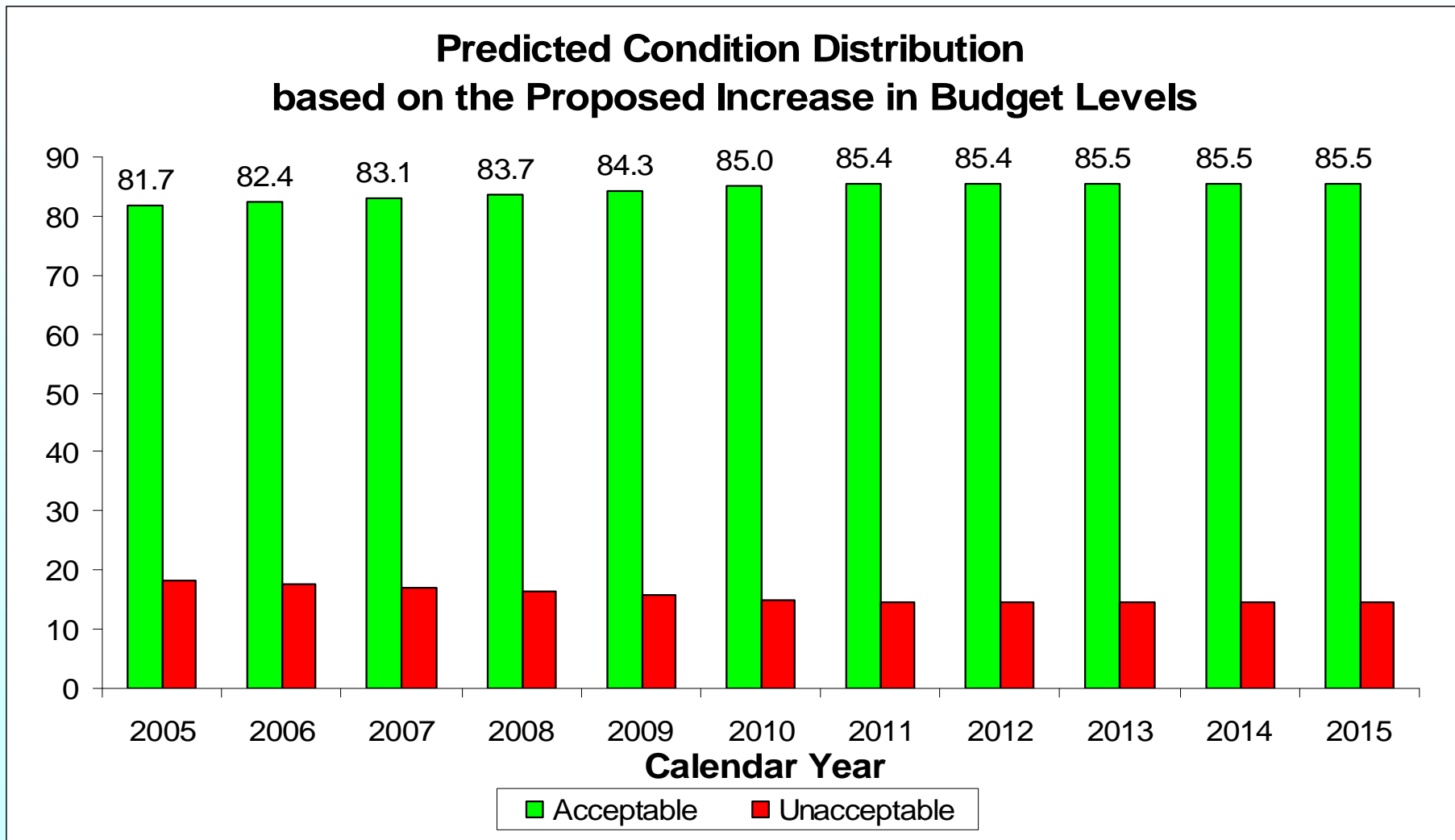
Goals and Funding Needs



Goals and Funding Needs



Goals and Funding Needs

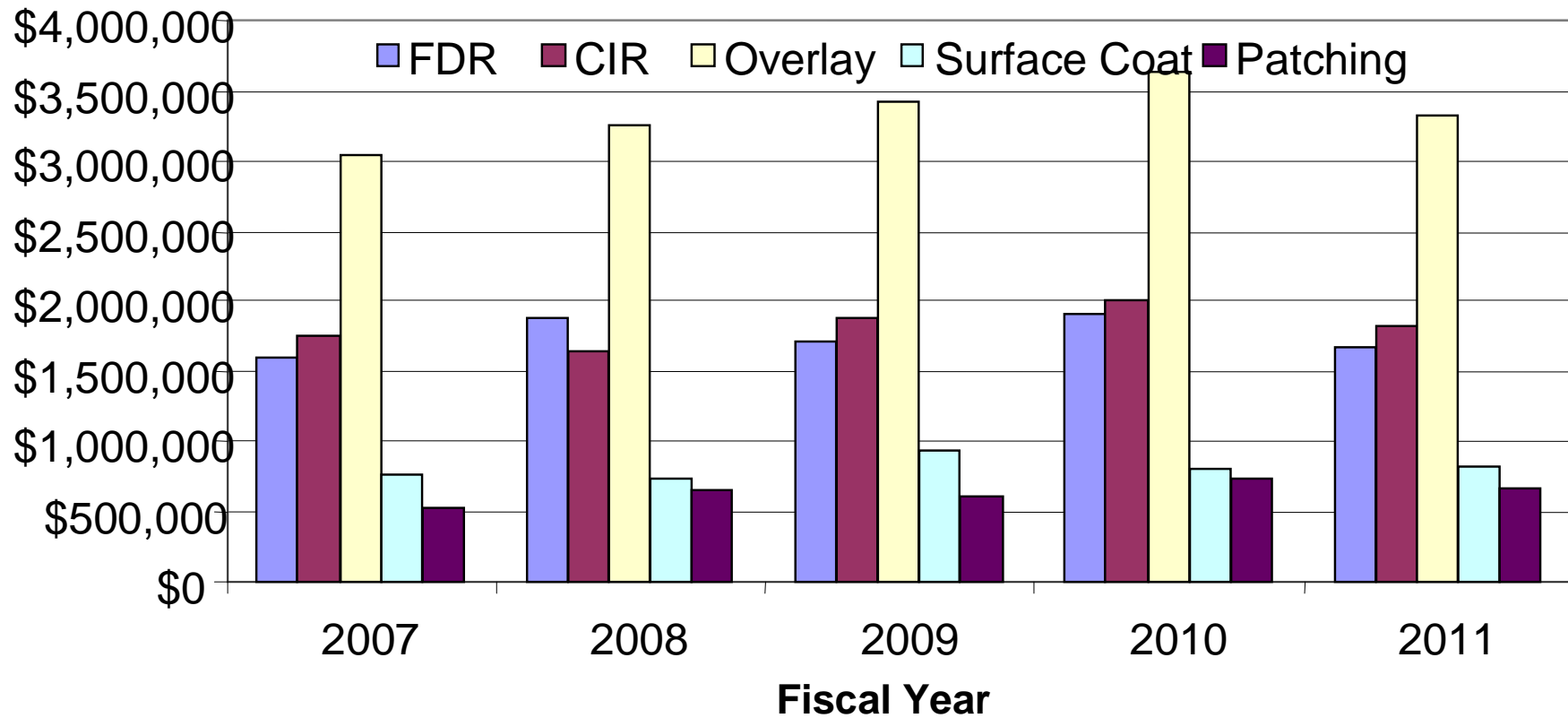


Goals and Funding Needs

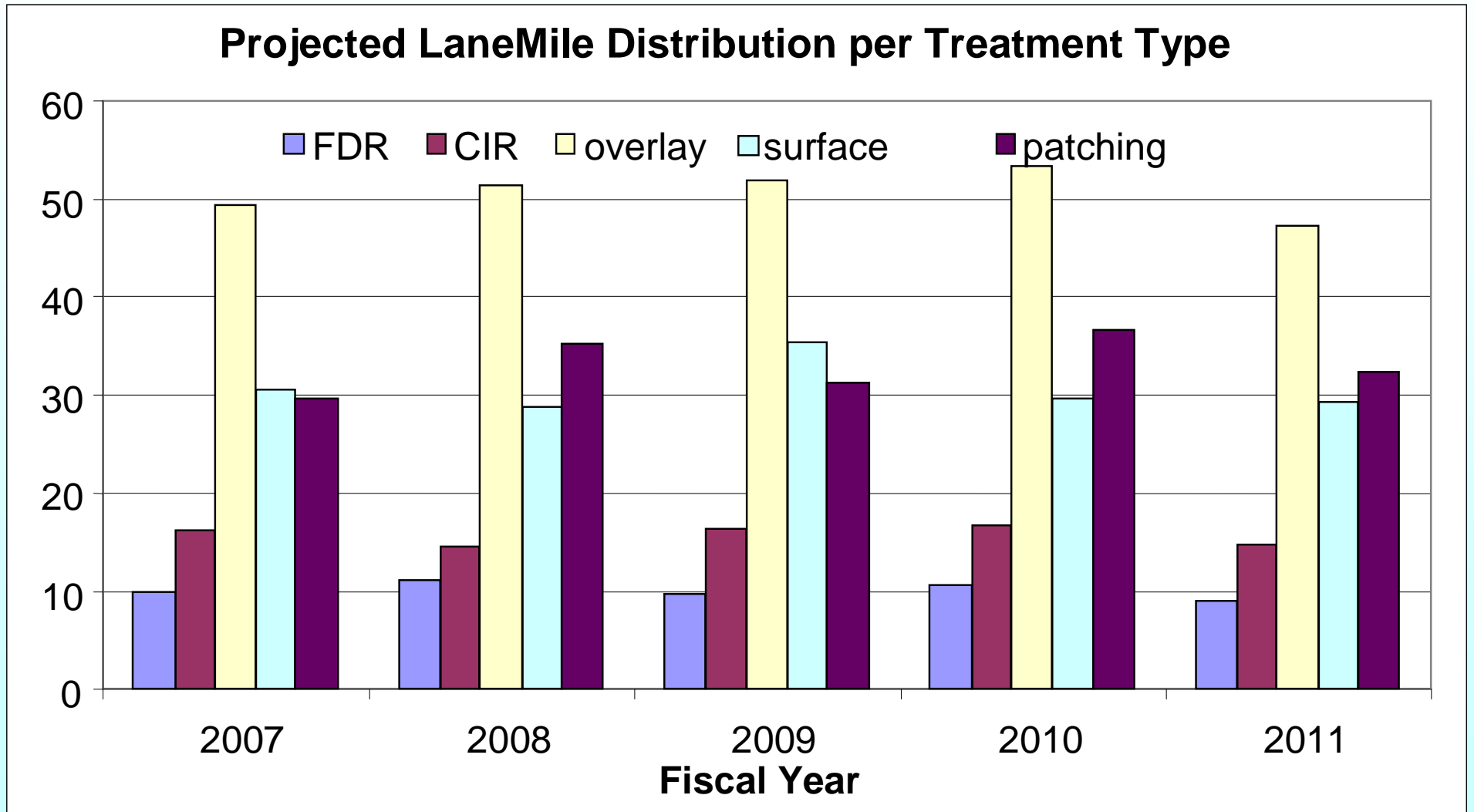


Five-Year Planning Outlook

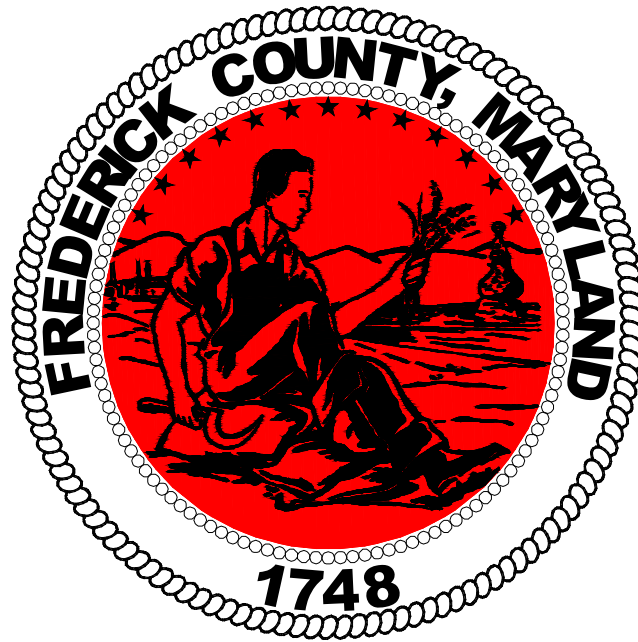
Projected Budget Distribution per Treatment Type



Five-Year Planning Outlook



Frederick County's Pavement Management Program



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Questions?