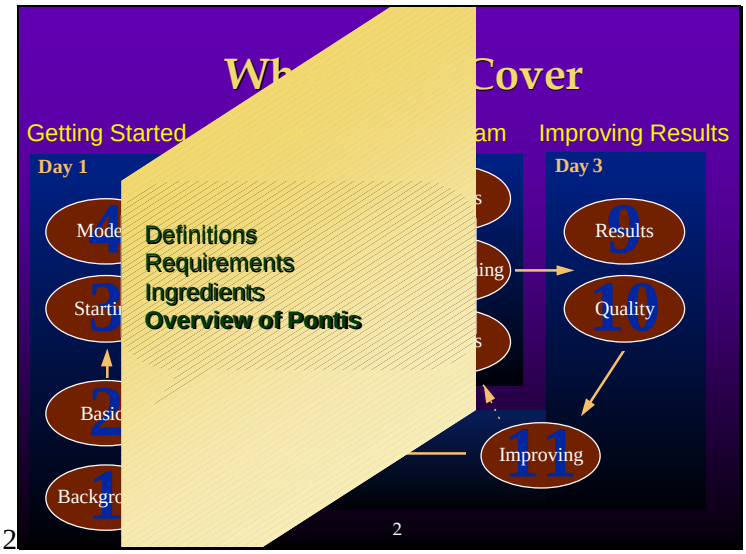
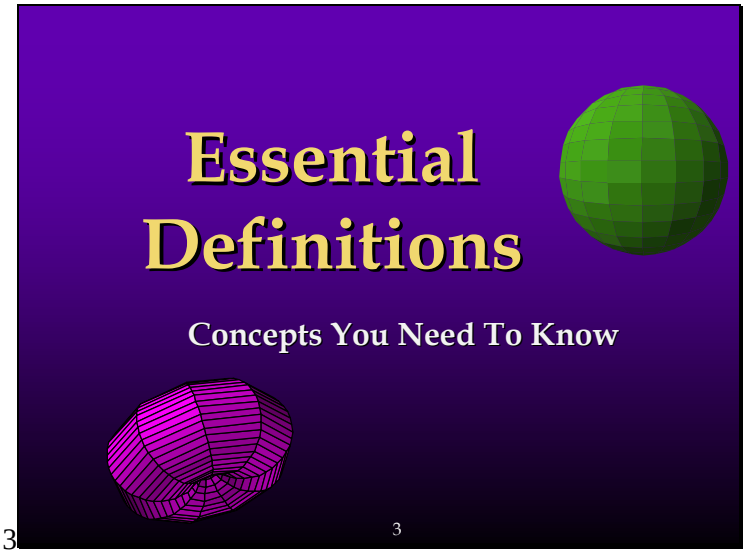
1


Bridge Management Systems
Main Ingredients
1

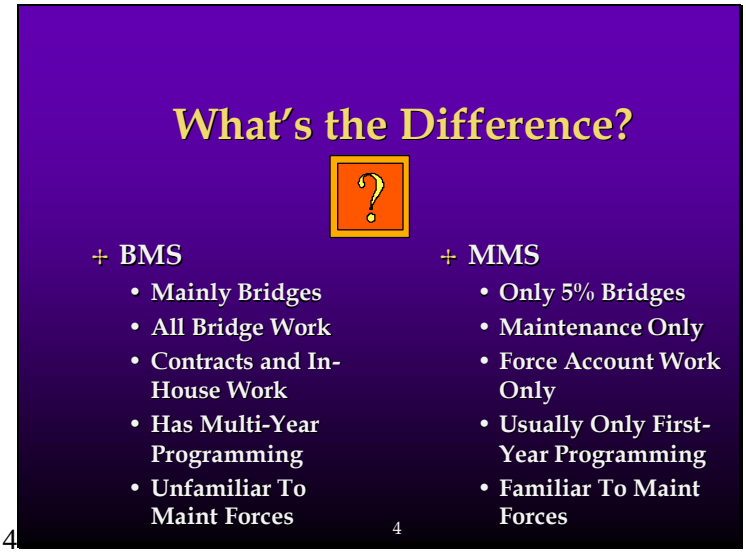
2


Getting Started
Day 1
Improving Results
Day 3
Definitions
Requirements
Ingredients
Overview of Pontis
Results
Quality
Improving
2

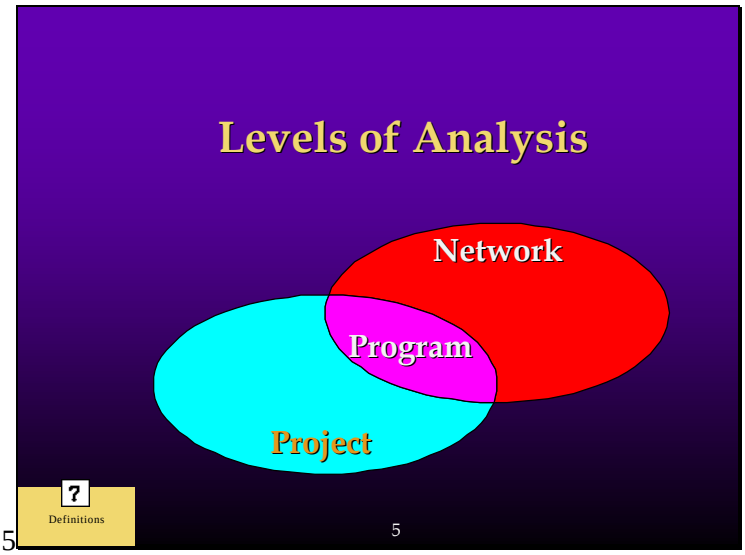
3


Essential Definitions
Concepts You Need To Know
3

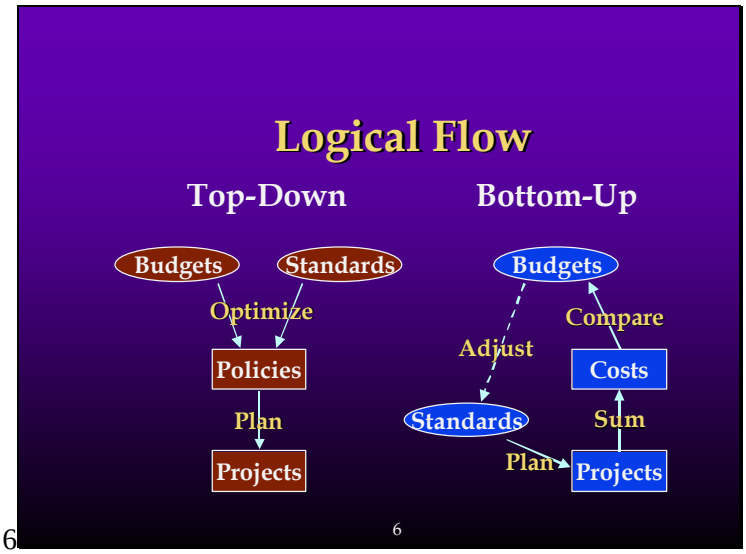
4


What's the Difference?
+ BMS
• Mainly Bridges
• All Bridge Work
• Contracts and In-House Work
• Has Multi-Year Programming
• Unfamiliar To Maint Forces
+ MMS
• Only 5% Bridges
• Maintenance Only
• Force Account Work Only
• Usually Only First-Year Programming
• Familiar To Maint Forces
4

5


Levels of Analysis
Network
Program
Project
Definitions
5

6


Logical Flow
Top-Down
Bottom-Up
Budgets
Standards
Optimize
Policies
Plan
Projects
Budgets
Compare
Adjust
Costs
Standards
Sum
Plan
Projects
6

7

Action Categories

+ Preservation
  - Response to Deterioration
+ Improvement
  - Response to Road User Demands
+ Replacement
  - Response to Both

7

8

Optimization

Costs

Deterioration

Balance a Large Number of Factors Quickly

Policies

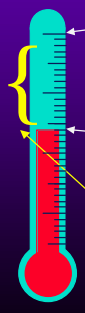
Effects

Jellybeans

8

9

Needs, Work, and Backlog



+ Needs - Projects which would be cost-effective if funding were available
+ Programmed Work - Projects for which funding is expected to be available
+ Backlog - Needs which must be deferred due to limited funding

9

10

User Costs and Agency Costs

+ User Costs
  - Travel Time
  - Vehicle Operating Costs
  - Accident Costs
  - Environmental Costs
+ Agency Costs
  - Maintenance and Repairs
  - Rehabilitation
  - Replacement

10

11

Direct and Indirect Costs

+ Direct Costs

  Variable costs which depend on quantities
  - Direct Labor
  - Materials
+ Indirect Costs

  Fixed costs insensitive to quantities
  - Engineering
  - Land and Demolition
  - Mobilization and traffic control

11

12

Basic Requirements

What must a BMS be able to do?

12

13

Provide Essential Planning Information

+ Economics and policy
+ All feasible alternatives
+ Predicted outcomes

✓ Quickly and reliably
✓ Reasonable data needs

Judgment

13

14

Provide Focused Views

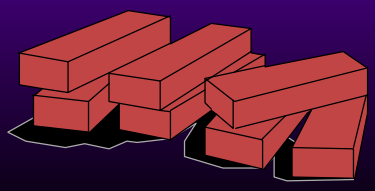
+ Concentrate on Matters of Interest
+ Automatically Handle Issues Which Are Not of Current Interest
+ Support Proactive Decision Making

14

15

Main Ingredients

- Procedures
- Analytics
- Data



15

16

Main Ingredients - Procedures

- Inspections
- Action Recording
- Quality Control
- Policy-Making
- Budgeting
- Planning
- Programming

16

17

Main Ingredients - Analytics

- Optimization
- Prioritization
- Simulation
- Updating
- Support Models
- What-If Tools

17

18

Main Ingredients - Data

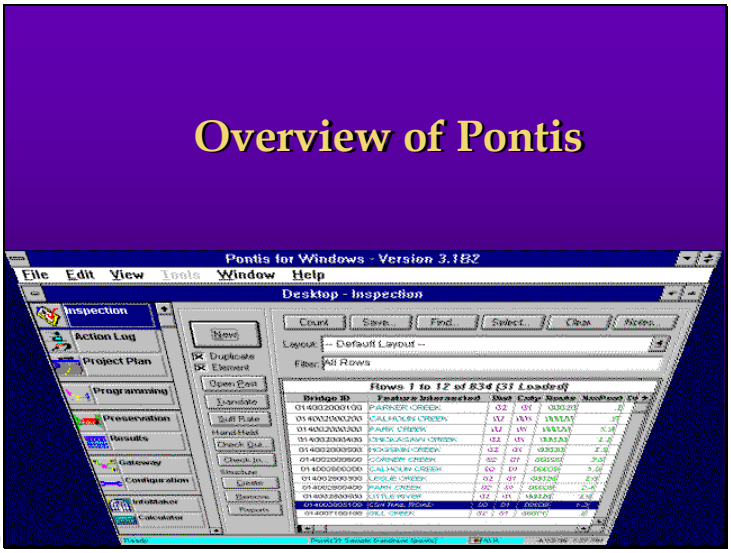
- Physical Inventory
- Inspections
- Traffic and Accidents
- Actions Planned and Taken
- Cost Models
- Deterioration Models
- Definitions
- Policies

18

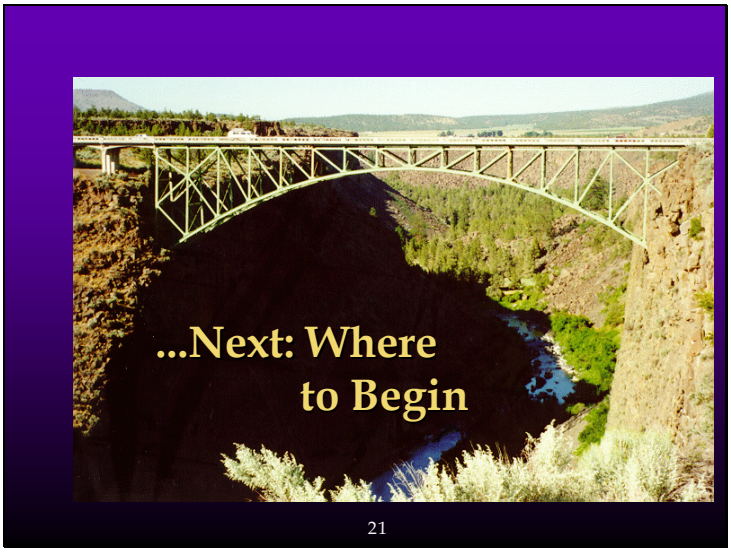
19


Stand-up Break!

20


Overview of Pontis
Pontis for Windows - Version 3.182
File Edit View Tools Window Help
Desktop - Inspection
Inspection
Action Log
Project Plan
Programming
Preservation
Results
Gateway
Configuration
InfoMaker
Calculator
New
Duplicate
Element
Open Past
Translate
Set Rate
Hand Held
Check Out
Check In
Smuche
Cards
Remove
Reports
Count
Save
Find
Select
Clear
Reset
Layout: -- Default Layout --
Filter: All Rows
Rows 1 to 12 of 834 (31 Loaded)
Bridge ID
Feature Intersected

21


...Next: Where
to Begin