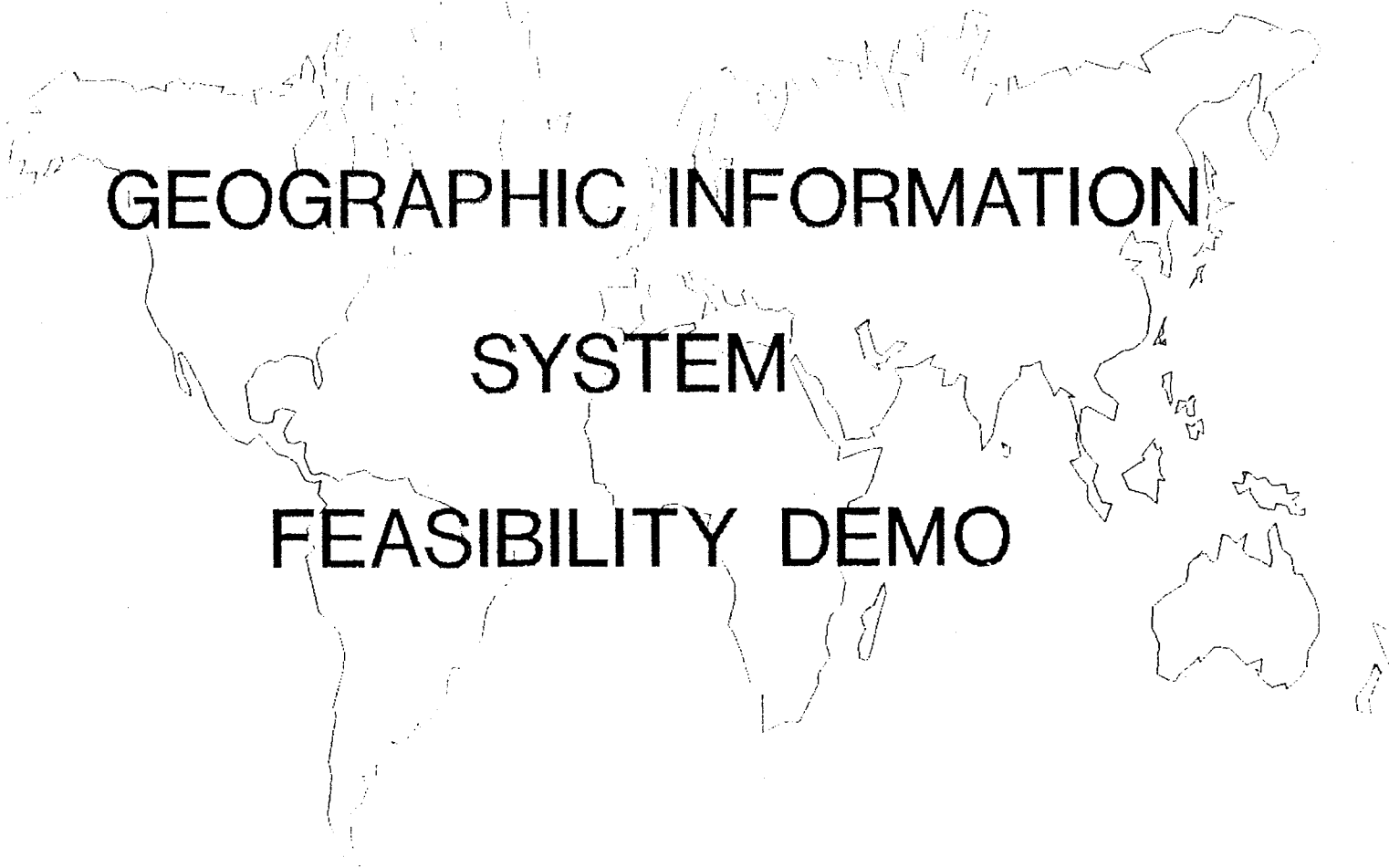
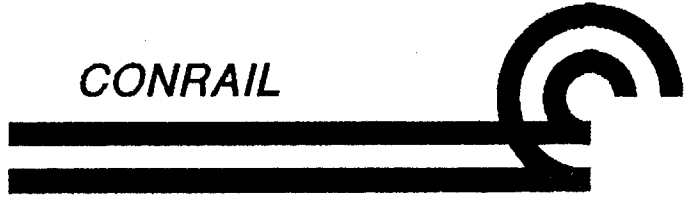


*CONRAIL*

A simple black outline map of the world is centered on the page, showing the continents of North America, South America, Africa, Europe, Asia, and Australia.

**GEOGRAPHIC INFORMATION  
SYSTEM  
FEASIBILITY DEMO**

# INTRODUCTION

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Existing Information Resides As

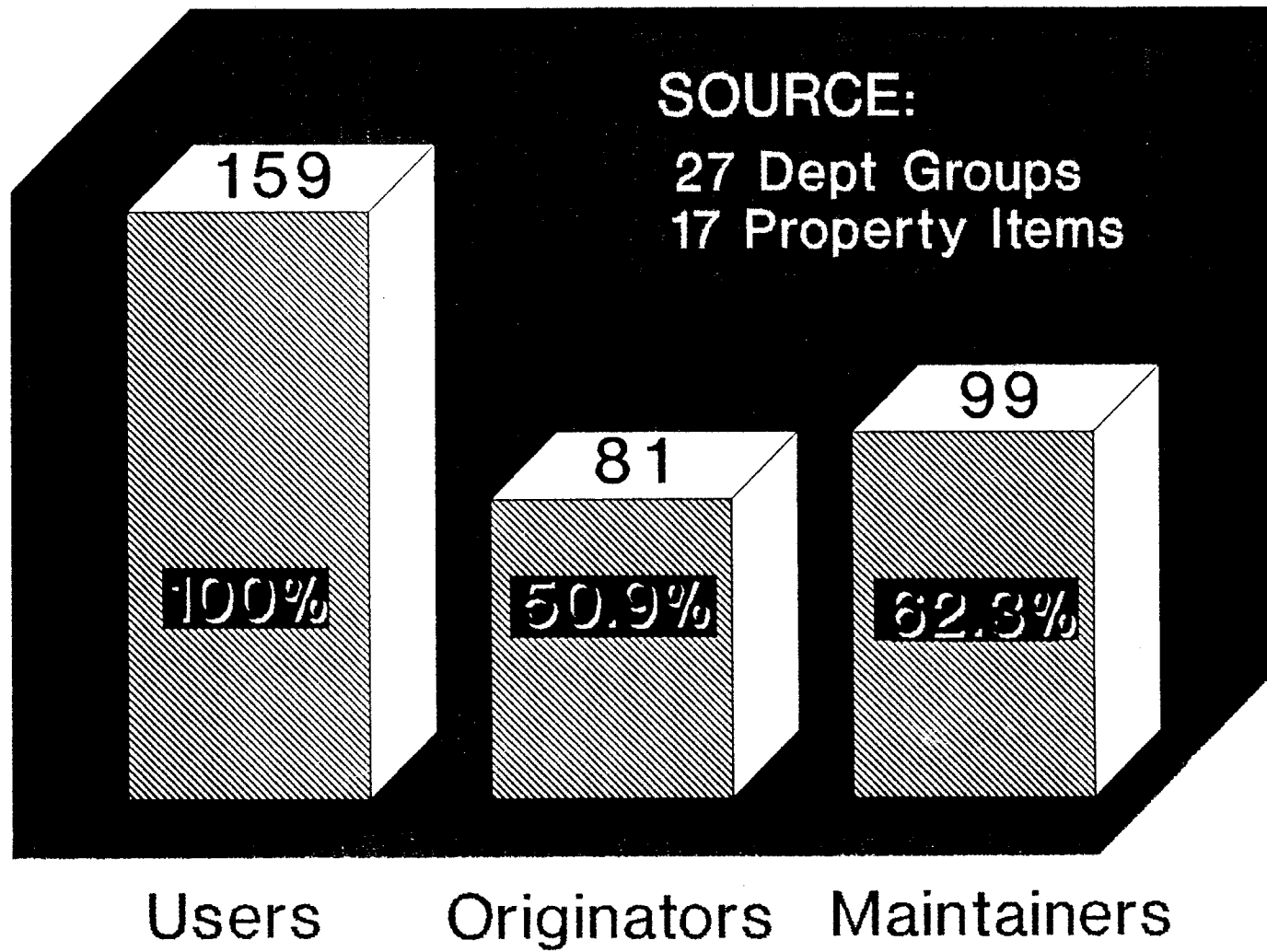
- Databases
- Graphic Programs
- Non-Computerized Information

# THE PROBLEM

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- Information is Scattered
- Information is Duplicated
- Databases are Incompatible
- Databases are Project Specific

# THE PROBLEM



# OBJECTIVE

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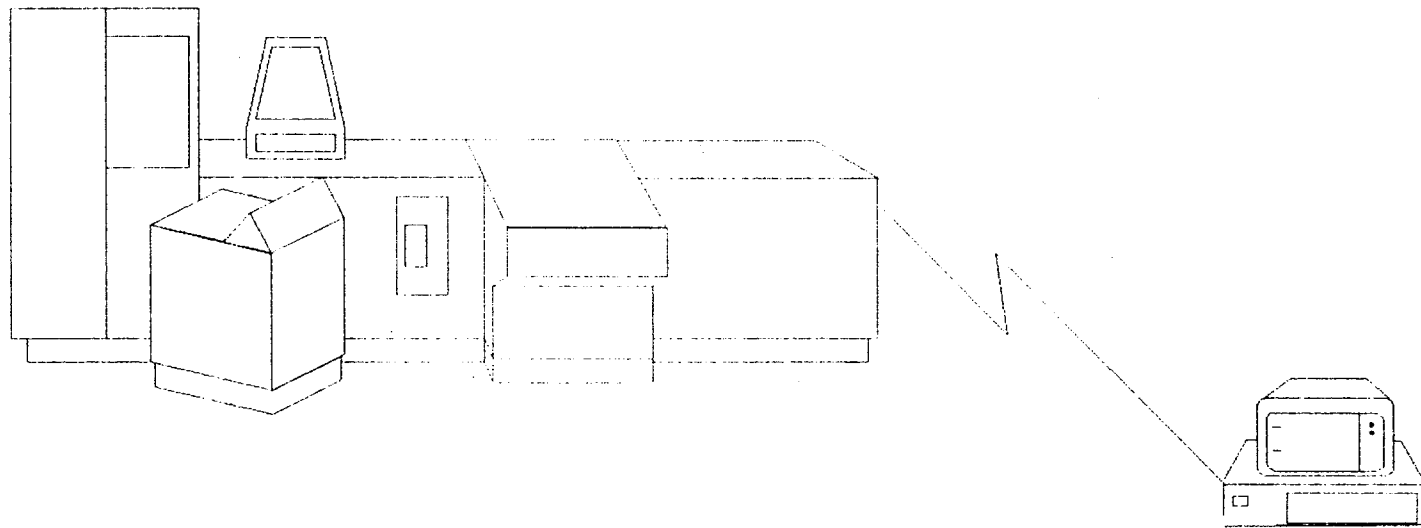
Create Integrated Database Structure  
To Provide

- Single Source
- Standardization
- Maintainability
- Improved Data Management
- Graphical Display of Data

# PROPOSAL

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## BUILD A GEOGRAPHIC INFORMATION SYSTEM



# REQUIREMENTS

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- Establish Common Data References
- Restructure Responsibilities  
(Data Creation/Maintenance)
- Access External Information
- Work in User Friendly Environment

# BENEFITS

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- Reduced Manual Handling of Data
- Improved Decision Making
  - Improved Quality of Data
  - Timely Access of Information
  - Increased Analytical Capabilities



# WHAT'S NEXT

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## INITIATE PILOT PROJECT

- Define Requirements
- Select GIS Vendor
- Allocate Resources
- Develop and Implement Project

# DEMONSTRATION



# DATA IN HARRISBURG DEMO

<u>FACILITY</u>	<u>TRACK</u>	<u>TRACK HISTORY</u>
Buildings	Location	Rail Type, When Laid
Bridges	Elevation	When Rail Ground
Turnouts	Curves	When Track Surfaced
Road Crossings	Speeds	When Ties Renewed
Property Lines	Tonnage	When Track Undercut
FOC Cables	Cars In/Out	When Ballast Cleaned
Customers	Ownership	
Agreements	Rationalization	

# OUTLINE

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AREA: Harrisburg

SOURCES: Census Bureau TIGER File  
Conrail Physical Property

DEMO: Input Methods  
Retrieval & Analysis

# SETUP

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- Loaded TIGER  
Dauphin & Cumberland Counties
- Loaded Selected CONRAIL Data  
(Pittsburgh ML, MP 105.0 - 108.0)
  - Data Files
  - Air Photos
  - Graphic Files
  - Maps
- Linked CONRAIL Data to TIGER

# Presentation Content

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- Hardware Configuration
- Workstation Usage
- Input Methods
- Data Editing/Maintenance
- Information Retrieval Techniques

# Hardware Configuration

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- 27 Inch Graphic Workstation
- 19 Inch Graphic Workstation
- 14 Inch Micro-Station PC
- Networked

# Workstation Usage

- Graphic User Interface
- Multi Purpose
  - Graphic
  - Tabular/Text
  - Computer Aided Design



# INPUT METHODS

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- Scanning
  - Val Maps
  - Air Photos
- Digitizing
- Data Base Files
- Global Positioning (Not Demonstrated)

# EDITING/MAINTENANCE

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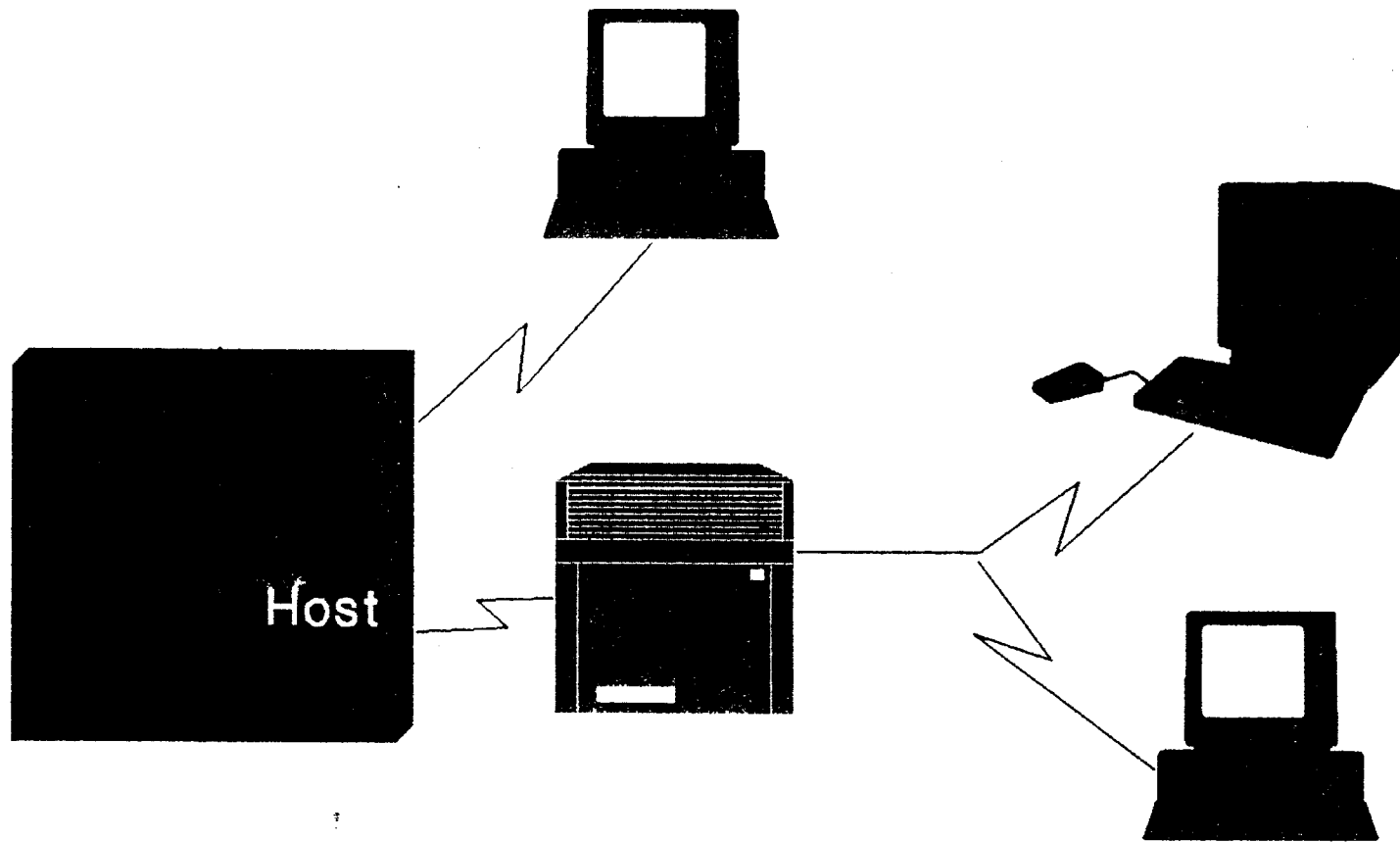
- Graphic
  - Track Layout
  - Shapes and Sizes
- Non-Graphic
  - Industrial Site
  - Fiber Optics

# INFORMATION RETRIEVAL

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- Informational Queries  
(Basic)
- Data Analysis  
(Complex)

# SYSTEM CONCEPT



# ACTION PLAN

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- Establish a Corporate Task Force
- Examine All CONRAIL Data
- Define Course of Action
- Select a GIS Vendor
- Develop Pilot Project
- Implement GIS at CONRAIL

## PILOT PROJECT COST ESTIMATE (\$000) \*

<u>Category</u>	<u>1990</u>	<u>1991</u>	<u>Total</u>
Hardware	190	50	240
Software	50	22	72
Purchased Data	60	0	60
Consultants	30	70	100
	330	142	472

\* External

## IMPLEMENTATION COST ESTIMATE (\$000) \*

<u>Category</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>Total</u>
Hardware	1,170	120	1,100	2,390
Software	150	50	50	250
Purchased Data	20	10	10	40
	1,340	180	1,160	2,680

\* External

# RECOMMENDATION

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CONRAIL EMBRACE AND  
MOVE FORWARD ON A  
GIS PILOT PROJECT



GIS Demonstration Sponsored By:  
CONRAIL's GIS TASK FORCE  
In Cooperation With  
INTERGRAPH CORPORATION

Conrail Task Force Represented By:

Asset Development  
Engineering  
Industrial Engineering  
Information Systems  
Property Accounting  
Resource Development