Spatial Asset Management

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Introduction

Electric, gas and water distribution utilities have assets that are widely dispersed over large distances. This brings challenges for asset management because knowing "where" assets are located is vitally important.

Traditionally, asset, work order, and maintenance management systems have been text-based with spatial limitations.

This presentation looks at how geospatial information and technology can benefit and improve asset management through a case study of BC Hydro.

Current State at BC Hydro:

- **Many text based systems are in use.**

Desktop Applications:
- Underground Maintenance System
- Overhead Maintenance System
- Wood Pole Inspection and Maintenance System
- DM Planning Tool

Spreadsheets:
- Reclosers
- Air-Break Switches
- Regulators
- Capacitors

Web-Based Applications:
- Equipment Failure System
- Steady State Reporting
- Pole Administration System
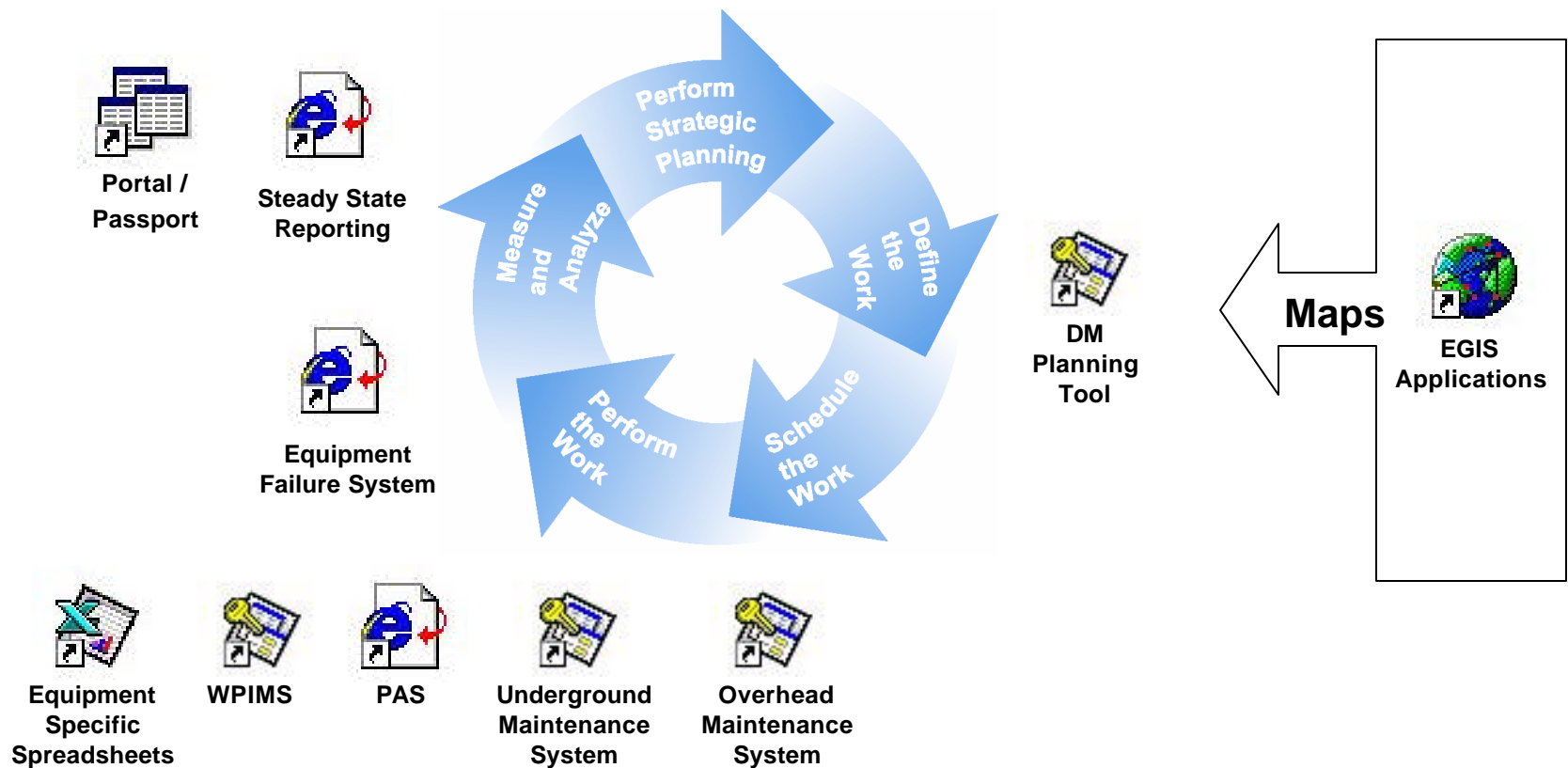
Enterprise Applications
- Portal / Passport

The GIS is the foundation for all maintenance activities - it provides location information for assets in the field.

Current State at BC Hydro:

- **Each system supports a phase of the Maintenance cycle**
- **No system integration between the Maintenance phases**

Portal / Passport

Steady State Reporting

Equipment Failure System

Perform Strategic Planning

Measure and Analyze

Define the Work

Perform the Work

Schedule the Work

DM Planning Tool

Maps

EGIS Applications

Equipment Specific Spreadsheets

WPIMS

PAS

Underground Maintenance System

Overhead Maintenance System

Current State at BC Hydro:

- **Regional systems**
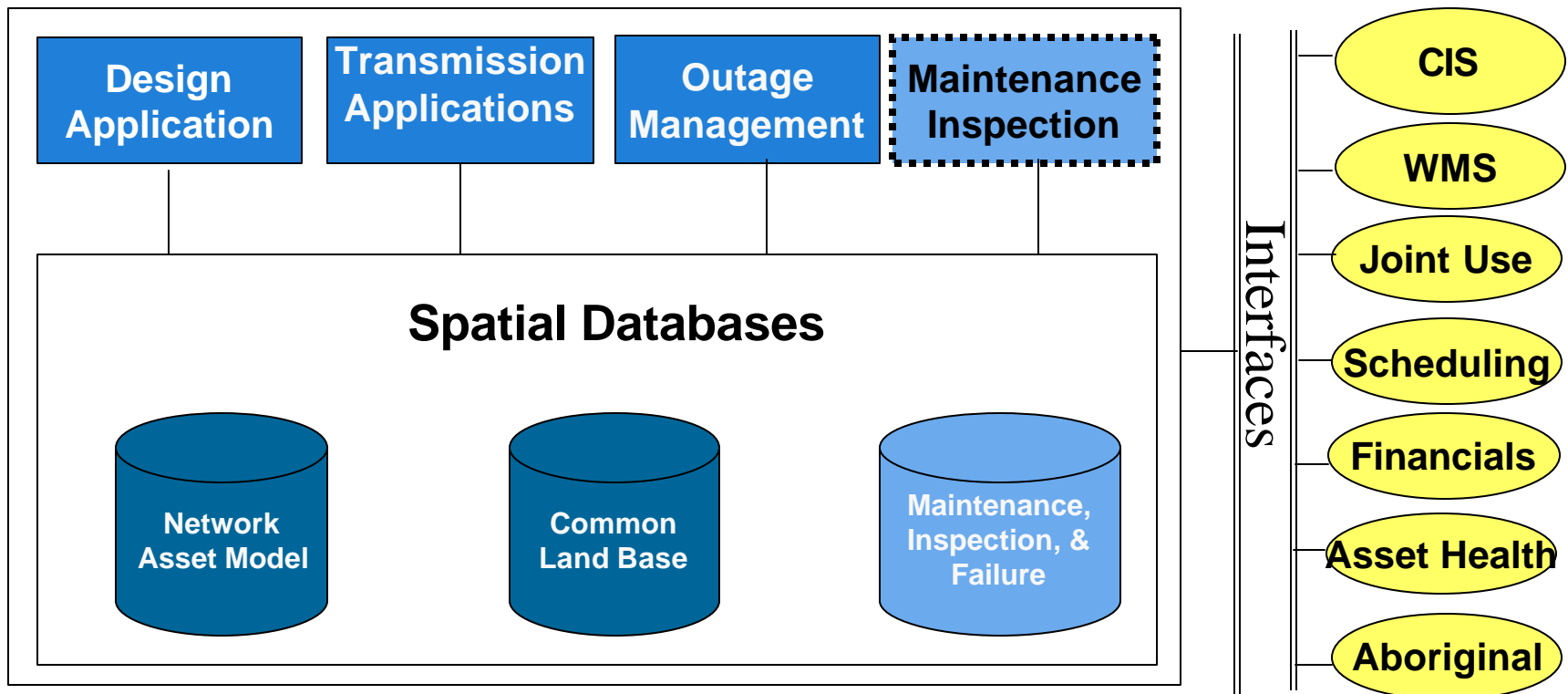- **There is no system integration throughout the province**
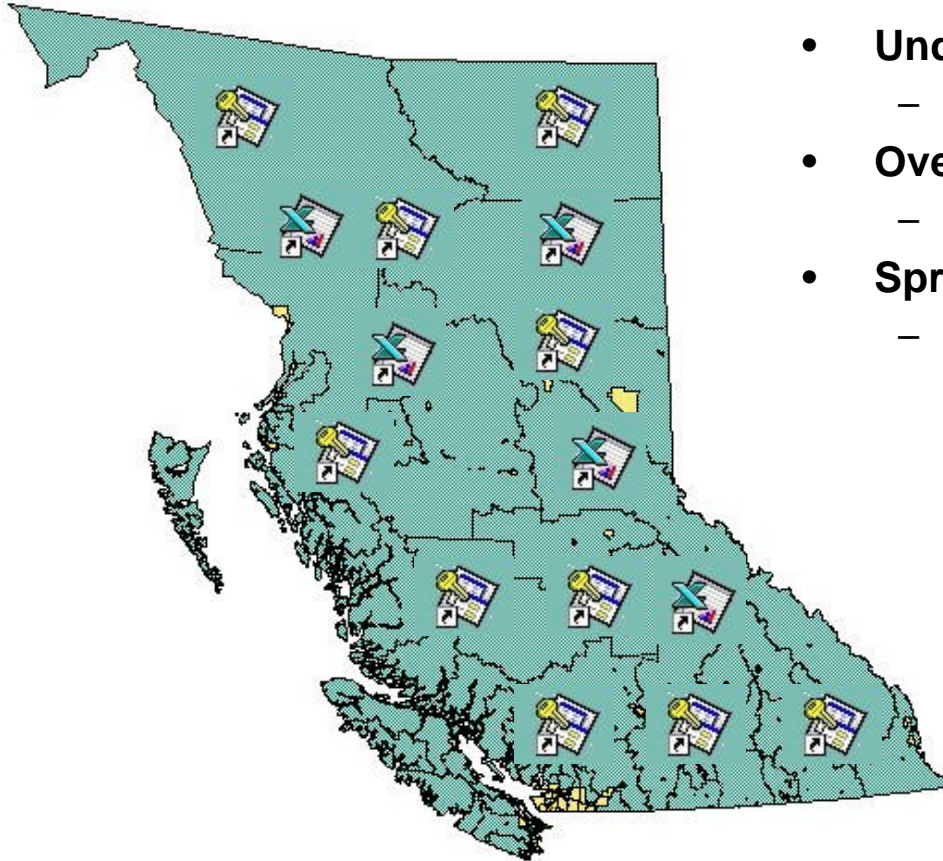
- **Underground Maintenance System**
  - 10 regional, standalone installations
- **Overhead Maintenance System**
  - 10 regional, standalone installations
- **Spreadsheets**
  - at least 5 different, equipment-specific formats

Spatial Asset Management:

- SAM is integrated with other GIS applications; leveraging existing data, technology, and interfaces

Design Application	Transmission Applications	Outage Management	Maintenance Inspection

Spatial Databases

- Network Asset Model
- Common Land Base
- Maintenance, Inspection, & Failure

Interfaces

- CIS
- WMS
- Joint Use
- Scheduling
- Financials
- Asset Health
- Aboriginal

SAM: Application Components

Reports and Queries

- report on the data collected to analyze performance and support strategic planning.

OFFICE COMPONENT

Perform Strategic Planning

Define the Work

Measure and Analyze

Schedule the Work

Perform the Work
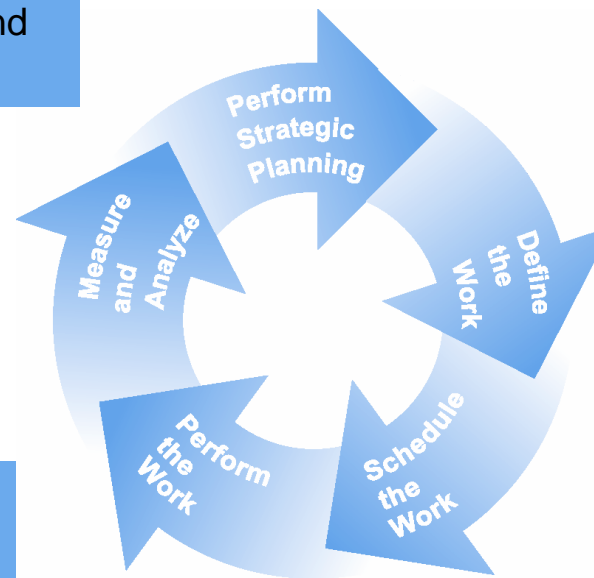
Templates

- define maintenance activities based on policies and best practices

Jobs

- create actual work tasks based on templates, and schedule and assign them.

FIELD COMPONENT

- collect data directly from maintenance workers in the field.
- receives jobs from office for completion, and returns data to office once job is done.

Data Exchange

SAM: Business Benefits

- **SAM is designed to provide the following business benefits:**
    - **Improved efficiency and analysis of maintenance costs**
        - Example: allows users to view design jobs from DAD when planning and scheduling maintenance work
    - **More focused spending**
        - Provides the ability to focus on issues that affect reliability and safety when required; supports "doing the right work at the right place and at the right time".
    - **Consistent application of standards and best practices**
        - All parts of the province are working to the same level, and enables more rigorous work planning.
    - **Enhanced due diligence**
        - Provides enhanced evidence of when equipment was inspected, and improved performance measures.

- **These benefits result in reduced upward pressure on maintenance costs**

Demo