

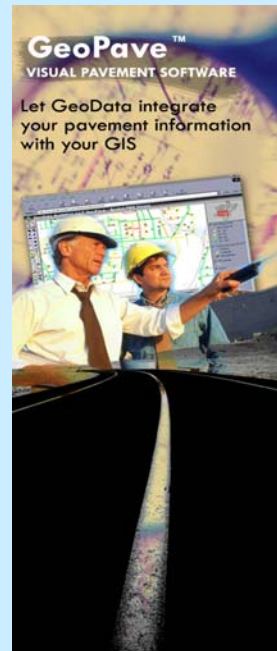
StreetSaver

Southern California User Conference
GIS / PMS Linkage and Reports

Seth Clark
GeoData Analytics LLC



GeoData Analytics LLC



Presentation Overview

- **Advantages of adding Maps to your pavement management system (PMS)**
- **How to add maps to your PMS**
- **PMS / GIS linkage methods**
- **Software to produce PMS based maps**
- **Software demonstration**

GeoData Analytics LLC

GIS (Geographic Information Systems) and Pavement Data

- **Streets (and pavement segments) have a spatial component**
- **Street maps are familiar**
- **StreetSaver produces only text reports**
- **StreetSaver and a GIS application can produce map based reports.**

GeoData Analytics LLC

The goals of a PMS/GIS linkage project

- **Provide map based PMS information to pavement managers and funding providers**
- **Display information in real time**
- **Enhance the City's GIS system**
- **Use industry standard software tools**

GeoData Analytics LLC

GIS linkage

- **If a picture's worth a thousand words ...**
Just think what a map can do.
- **Adds the spatial component**
What streets are nearby?
- **Provides information in a non-technical format**
that the public and funding provider can
understand
How much time do you get to make a presentation?

GeoData Analytics LLC

Integration Requirements

- **A PMS database**
with pavement segment location descriptions
- **A GIS street centerline file**
- **The PMS database must be linked to the Streets**
- **GIS software to dynamically access the PMS Data**

GeoData Analytics LLC

Implementation Issues Overview

- **Street centerline basemap issues**
- **PMS database - Segment limit definitions**
- **Segment geo-coding**
- **Link segments to spatial database**
- **QC/QA of results**
- **Installation and training**

GeoData Analytics LLC

Basemap options

- **Existing agency basemap**
- **Tiger conversion**
- **Thomas Bros. Maps**
- **CAD conversion**
- **Digitization of new street centerlines**
- **County maps**
- **GPS survey**

GeoData Analytics LLC

Two linkage methodologies for PMS segmentation

- **Hard Coded links attached to the actual spatial feature**
- **Events on a Linear Referenced Route Structure**
- **Either method can be used**

GeoData Analytics LLC

Hard coded PMS link to centerline

- **PMS link is coded directly onto the spatial feature.**
- **This approach is more appropriate for the coding of attributes of static spatial features (e.g., street names, streets address, CFCC, etc.)**
- **The link modifies the base spatial database and could require features to be split**
- **Editing of PMS link requires GIS software**

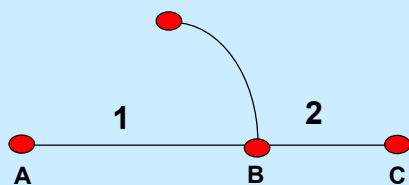
GeoData Analytics LLC

Linear referencing for PMS linkage

- Maintenance of the linkage is separated from street updates.
- Flexibility of Segment definitions
 - Not limited to intersection to intersection segment limits
 - Can define bidirectional PMS management segments
- Routes can be used for other applications
- PMS segment events are table based and can be edited and maintained outside of the GIS

GeoData Analytics LLC

Linking GIS and Pavement Management Segments



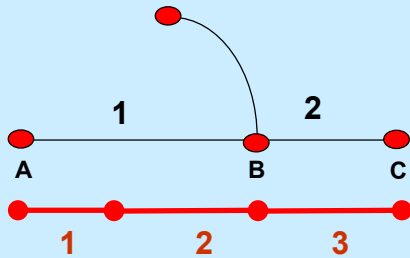
In the hard coded case there is a one-to-one relationship between GIS base-map segments and pavement segments

GIS	From	To
1	A St	B St
2	B St	C St

PMS	From	To
1	A St	B St
2	B St	C St

GeoData Analytics LLC

Linking GIS and Pavement Management Segments



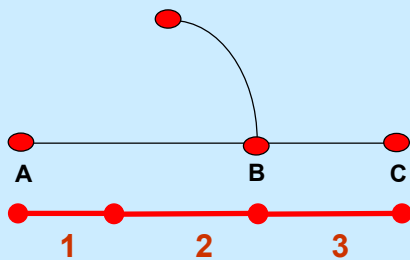
In practice, pavement segments frequently don't match GIS base-map segments

GIS	From	To
1	A St	B St
2	B St	C St

PMS	From	To
1	A St	500ft
2	500 ft	B St
3	B St	C St

GeoData Analytics LLC

Linking GIS and Pavement Management Segments



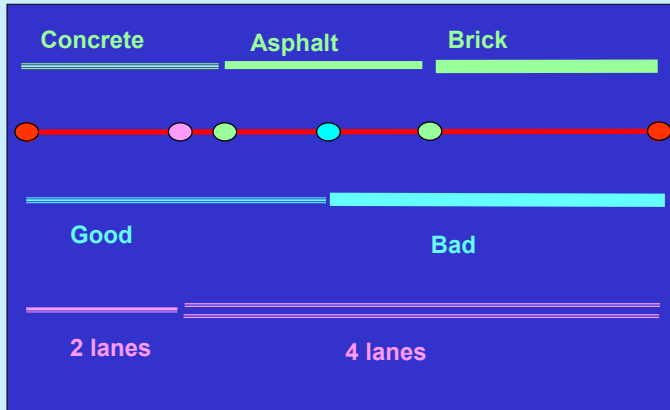
Linear Referencing allows you to model relationships between GIS base-map and pavement segments without splitting the GIS base-map

Route 731

PMS	From	To
1	A St	500ft
2	500 ft	B St
3	B St	C St

GeoData Analytics LLC

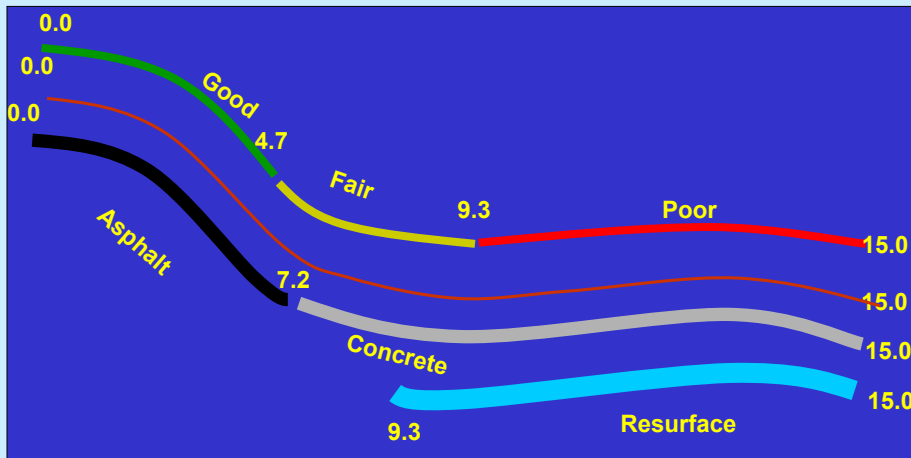
Linking GIS and Pavement Management Segments



Street Centerline
 Multiple data sets can be modeled using LRS without splitting the underlying GIS base-map

GeoData Analytics LLC

Linking GIS and Pavement Management Segments



GeoData Analytics LLC

Application Software

- **Extracts and displays information a Pavement Manager requires**
- **Dynamic GIS link to your MTC-PMS system**
- **Easy to use menu selections**
- **ArcGIS application or**
- **Web browser delivered application**

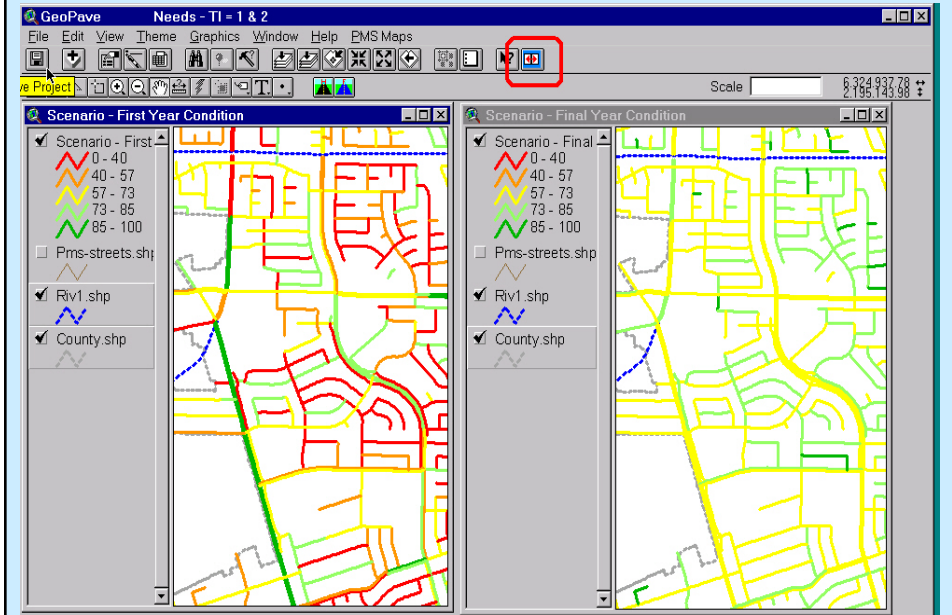
GeoData Analytics LLC

Application Software Features

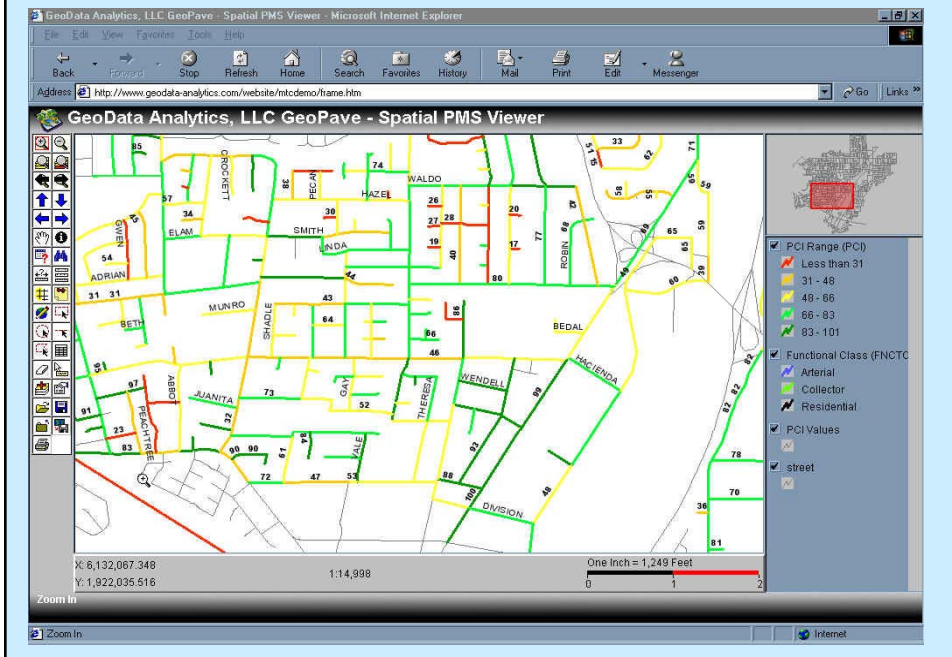
- **Scenario Selection**
- **Current and Future Condition**
- **Pavement History**
- **Maintenance & Rehabilitation Workplans**
- **Revised Workplans**

GeoData Analytics LLC

GeoPave software for GIS mapping/analysis of PMS data.



GeoPave software for GIS mapping/analysis of PMS data.



Seth Clark
GeoData Analytics LLC
Phone: 510-234-9485
Info @ [geodatainfo.com](mailto:info@geodatainfo.com)