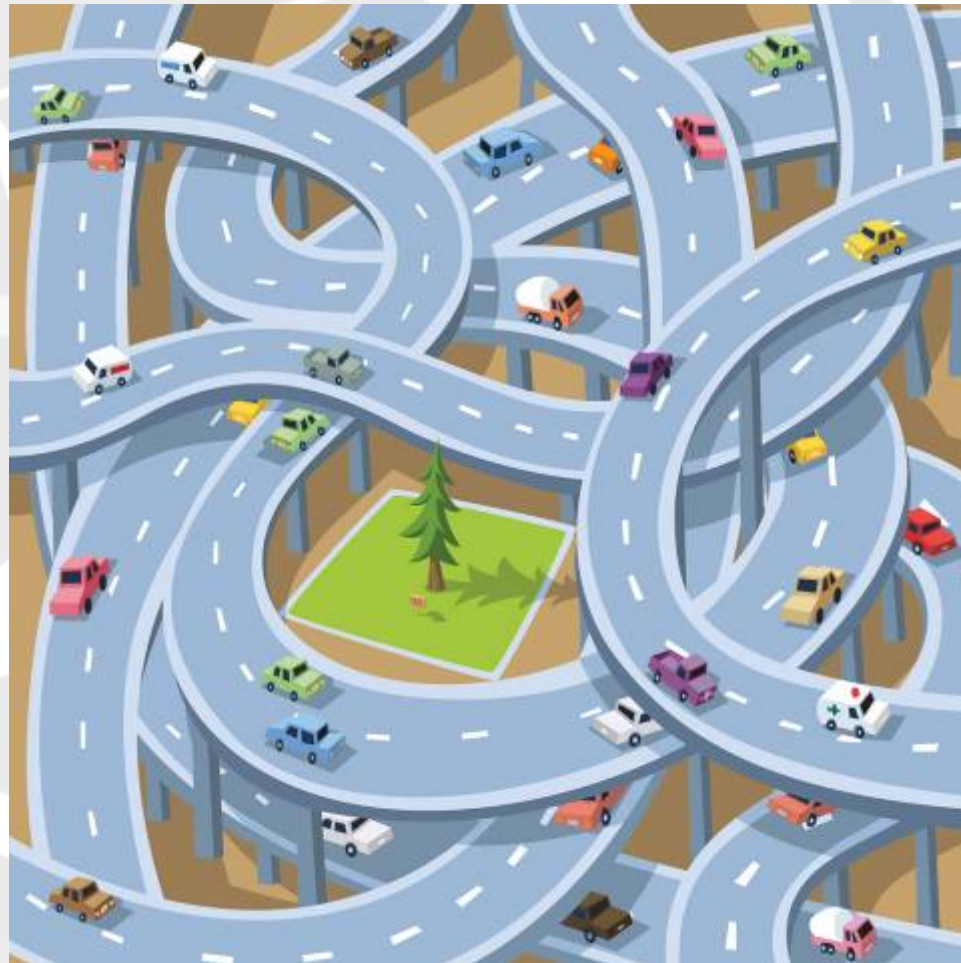# TxDOT's Compass Project

September 29, 2009

Agenda

I. **Project Background**

II. **Part 1 – Maintenance Management Study**

III. **Part 2 – Maintenance Management System Selection**

IV. **Part 3 – The Compass Project**

V. **Questions**

TxDOT

- **By several measures, largest state DOT**

- **193,000 lane miles of roadway**

- **49,000 bridges**

- **25 districts**

- **254 maintenance sections**

- **5,000 maintenance personnel**

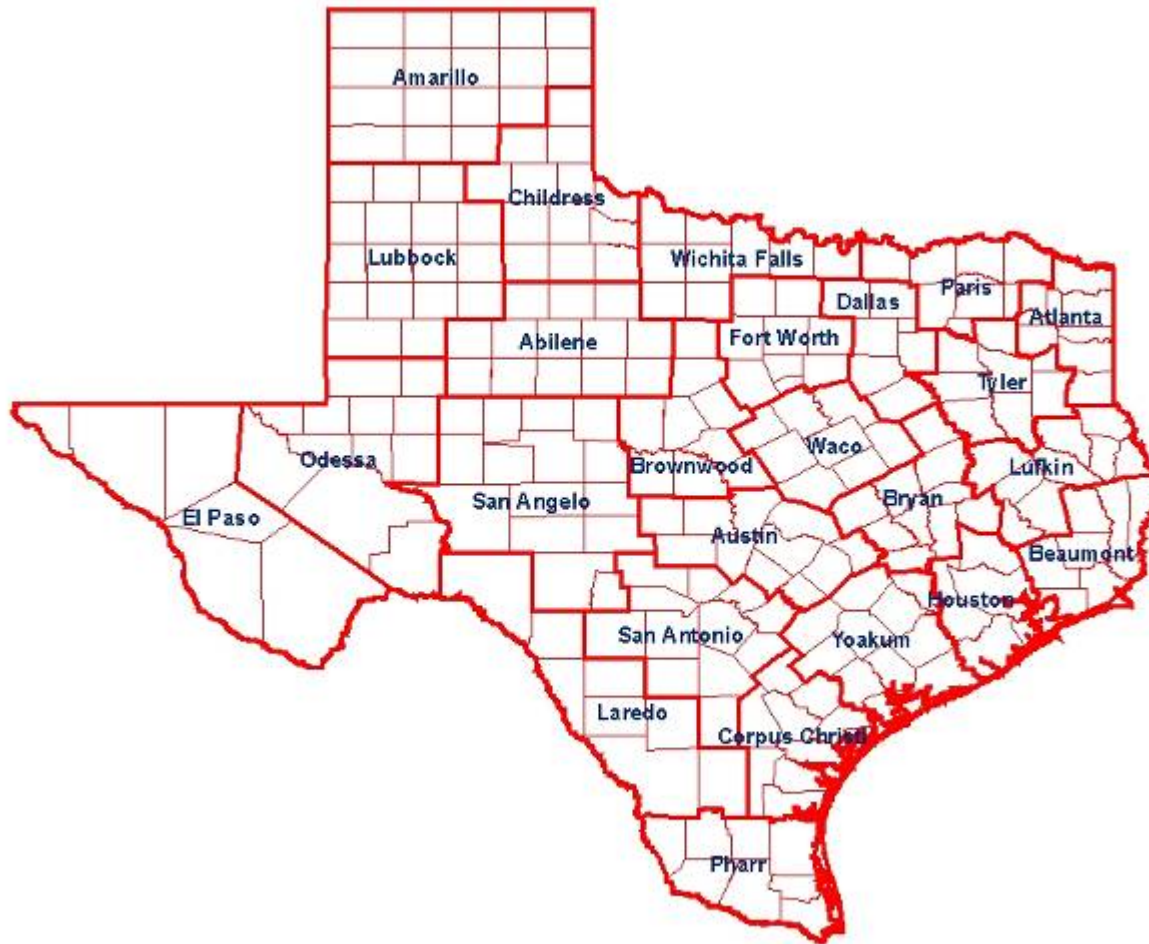- **Routine maintenance budget of $900 million/year**

Need for MMS

- **Current system developed in late 1980's**

- **Limited functionality**

- **Labor intensive, error prone**

- **Not user friendly**

- **Barrier to process improvements**

Maintenance Management Cycle

Planning

Budgeting

Scheduling

Performing

Reporting

Evaluating

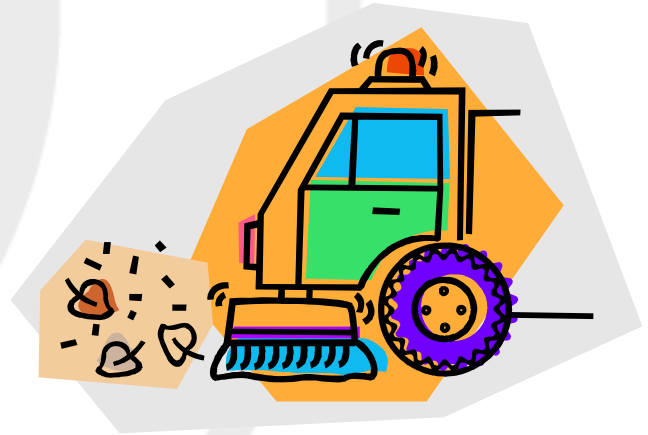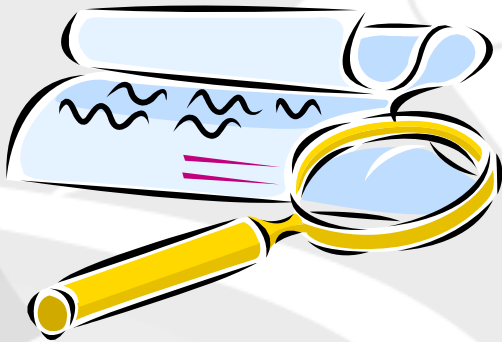Current MMIS
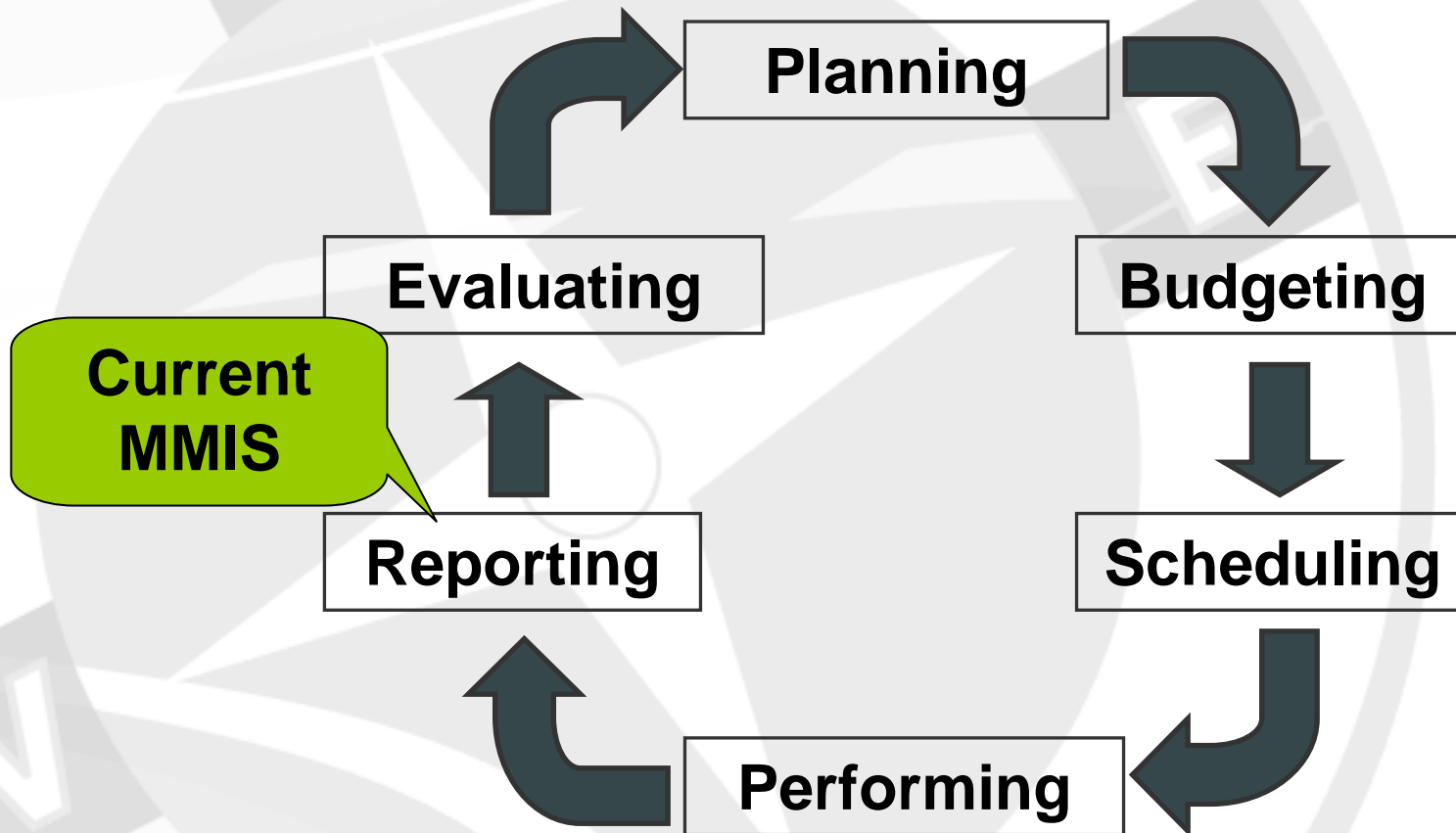
District Involvement Critical

Who is involved?

- **Compass Project Board**

- **Compass Project Team**

- **TxDOT Focus Groups**

- **TxDOT Stakeholders**

- **Dye Management Group, Inc.**

- **AgileAssets, Inc.**

Part 1 – Maintenance Management Study
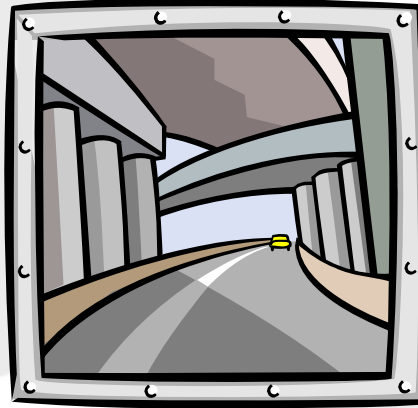
Part 1 Scope

- **A review of current maintenance management processes**

- **A feasibility assessment for implementing a new software solution**

- **An identification of functional and technical requirements for a upgraded Maintenance Management System (MMS)**

- **A review of alternative technical solutions**

Part 1 Tasks

- **Reviewed maintenance operations at all levels**

  - **Maintenance Section, District, Division**

- **Documented as-is management processes**

- **Developed requirements for a new MMS**

- **Reviewed MMS alternatives**

  - **Do nothing**

  - **Update existing system**

  - **Develop new system in house**

  - **Purchase a COTS system**

Study Recommendations

- **Business process improvements**

- **Key issues**

- **Tangible benefits**

- **Intangible benefits**

- **Cost benefit analysis**

- **Recommended COTS Solution**

- **Final report submitted by Dye Management Group, Inc.**

Implementing a COTS Solution

- **Advantages**

  - **All requirements would be met**

  - **Burden of system support on Vendor rather than TxDOT**

  - **Less development time**

  - **Technology consistent with TxDOT Core Technology Architecture**

  - **Longest useful life**

  - **Easiest upgrade process**

Implementing a COTS Solution

- **Disadvantages**
  - **Significant training required**
  - **Adding customized capabilities would increase the system maintenance costs**
  - **Less responsive to user requests for changes**
  - **Rework of integration points will be necessary as legacy systems are replaced**

Part 2 – MMS Selection

Part 2 Scope

- **Change business processes to improve efficiency, accountability, and transparency**

- **Implement a new MMS**

- **Develop interfaces with legacy applications**
  - ◆ **24 interfaces defined to date**

- **Modify legacy applications to support MMS requirements**

- **Train and support users**

- **Roll out system statewide**

Business Process Improvements

- **Developed focus groups based on Maintenance Management Study recommendations**

- **Refined software requirements**

- **Made decisions on future processes**
  - ◆ **Work location referencing**
  - ◆ **Reporting work performed by contractors**
  - ◆ **Equipment usage reporting**
  - ◆ **Maintenance activities**

- **Assist with selection of software vendor**

- **Assist with business process changes**

- **Assist with project management**

- **Dye Management Group, Inc. came on board December, 2007**

Selecting a Support Consultant

- **Advantages**
  - ◆ **IT project management experience**
  - ◆ **DOT experience**
  - ◆ **Good understanding of industry best practices**
- **Contract**
  - ◆ **Deliverables based, some time and materials**
  - ◆ **Executed early in the process so time will have to be extended to fit software vendor's schedule**

Selecting a Software Vendor

- **Requirements finalized by focus groups, purchasing department and Maintenance Division**

- **RFO posted November, 2007**

- **Detailed script and data developed for vendor demonstrations**

- **Contract executed December, 2008 with AgileAssets, Inc.**

Selecting a Software Vendor

- **Evaluation lessons learned**
  - ◆ **Set realistic deadlines**
  - ◆ **Make sure evaluators are familiar with requirements**
  - ◆ **Include technical and business evaluators**
  - ◆ **Ensure reference checking is included in evaluation process**

Selecting a Software Vendor

- **Contract**

  - **Deliverables based**

  - **Milestone deadlines included with liquidated damage clause**

  - **1st year maintenance agreement included**

Part 3 – The Compass Project

Project Goals

- **Support need-based quantifiable plans and budgets**

- **Increase accountability for organizational and staff performance**

- **Provide tools to plan and schedule work**

- **Reduce paperwork and administrative staff effort for data input, error correction, and reporting**

- **Provide current, up-to-date information from one source**

Performance Measures

- **Improve condition of roadway assets per dollar expended**

- **Reduce effort of maintenance section office administrative staff**

- **Reduce effort of maintenance section supervisors, assistant supervisors, and crew chiefs by recording data one time and gaining multiple uses of that data – scheduling and daily activity reporting**

- **Increase reimbursements from damage claims/FEMA**

Project Approach

- **Phase 1: Software Reconciliation**
  - **Project Planning**
  - **Setup User Familiarization Area**
  - **Application Configuration**
  - **Data Conversion**
  - **Business Process Reconciliation**
  - **Project Team Training**

- **10-month duration**

Project Approach

- **Phase 2: Software Implementation**

  - **Testing, Training, Production Environment Setup**

  - **Software Configuration and Customization**

  - **Conversion Development and Testing**

  - **Interface Development and Testing**

  - **Report Customization**

  - **System Testing**
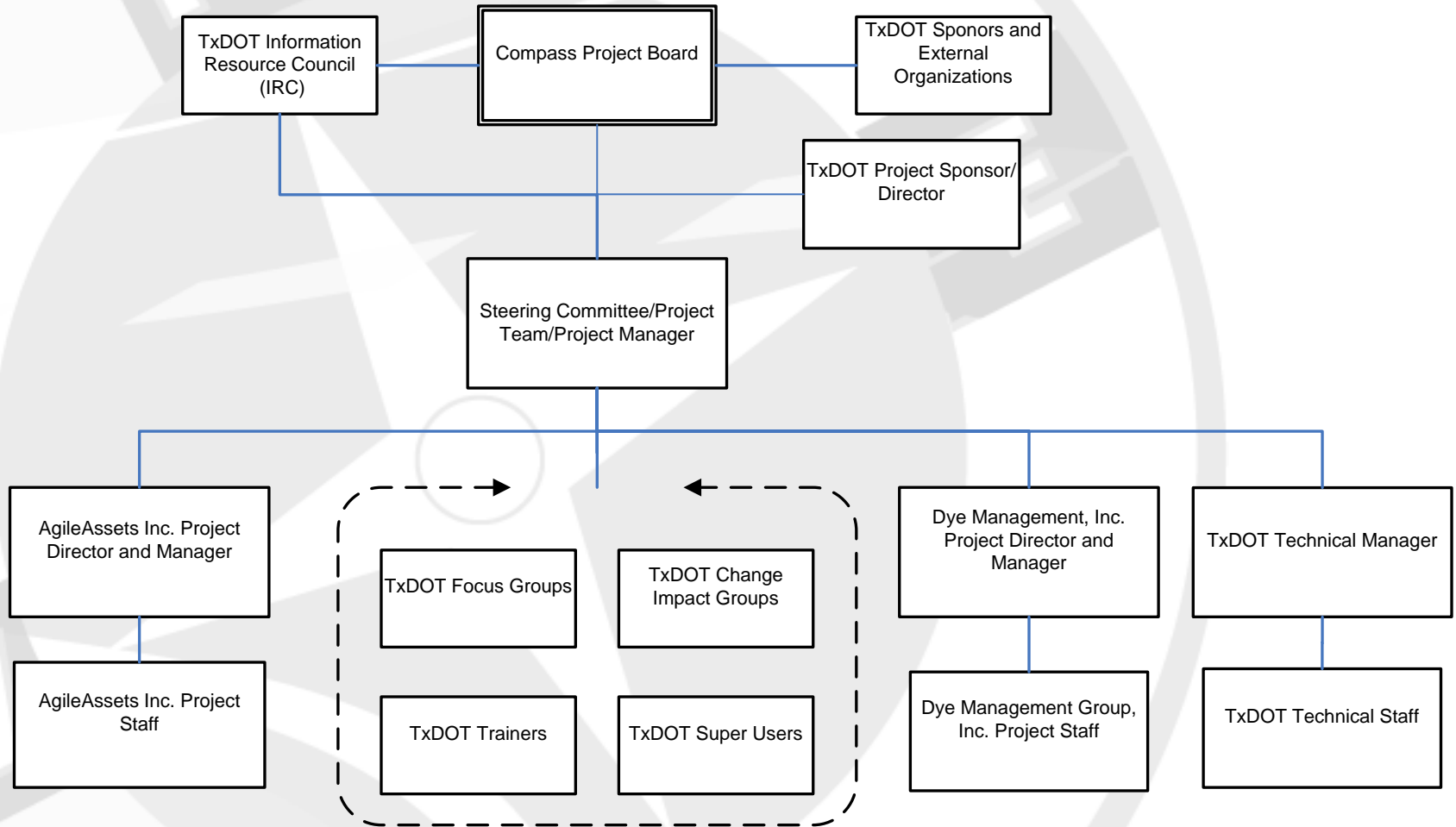
Project Approach

- **Phase 2: Software Implementation – cont'd**
  - ◆ **Support Documentation**
  - ◆ **End User Training**
    - IT Staff
    - Trainers
    - End Users
  - ◆ **Pilot District**
    - 60 days
  - ◆ **District Rollout**

- **26-month Duration**

Project Approach

- **Phase 3: Production Support**
  - ◆ **6-month Onsite Support**
  - ◆ **Ongoing Support through Maintenance Agreement**

Project Organization

Phase 1 Activities

- **TxDOT, Dye Management Group, Inc. and AgileAssets Inc. developed and approved detailed work plan**

  - **Tied to contract deliverables and dates**

- **Focus Groups are finalizing recommendations**

- **Districts are identifying Super Users**

- **User Familiarization Area (UFA) is online**

Phase 1 Activities

- **Project Team is meeting with SME's and technical resources**

  - **Business rules**
  - **Interface requirements**
  - **Hardware needs**

- **Business Process Reconciliation Teams have met**

Business Process Reconciliation

- **Reviewed MMS screen and field requirements**

- **Identified future reporting needs**

- **Performing Team**

    - ◆ **Reviewed processes such as capturing Service Requests, Damage Claim reporting, DAR Completion, and Timesheet Reporting and Processing**

Business Process Reconciliation

- **Planning, Evaluation Team**

  - **Reviewed processes such as maintaining Asset Inventories, updating Performance Guidelines, One-Year Planning, Four-Year Planning, and Assessing Condition of Assets**

- **Budgeting, Scheduling Team**

  - **Reviewed processes such as developing budget requirements, allocating approved budgets, scheduling material purchases, scheduling work, and receiving service requests**

Business Process Reconciliation

- **Outcome of the meetings**

  - **Initial configuration of the MMS application**

  - **New and improved Maintenance Business Processes**

  - **Definition of needed reports**

  - **Understanding and capturing of any organizational impacts requiring change management**

Business Process Reconciliation

- **Outcome of the meetings – cont'd**

  - ◆ **"Gaps"**

    - ▪ Sections of the business process flow which need to be handled in the software, which have no current software alignment

  - ◆ **Performance Indicators for each of the business processes**

    - ▪ Measures or metrics used to help an organization define and evaluate how successful it is

Phase 2 Activities

- **Setup Testing, Training and Production Environments**

- **Code and test**

  - ◆ **Software Modifications**
  - ◆ **Conversions**
  - ◆ **Interfaces**
  - ◆ **Reports**

- **Train IT staff, trainers, end users**

- **Pilot District**

- **District rollout**

Interfaces

- **24 Interfaces Identified to date**

- **Major interfaces:**
  - **Salary and Labor Distribution**
  - **Equipment Operating System**
  - **Materials and Supplies Management System**
  - **Construction and Maintenance Contract System**
  - **Automated Purchasing System**
  - **Human Resources Online**

- **RFD, Inc. is developing the conceptual designs for each of the interfaces**

Training Plan

- **AgileAssets, Inc. and Dye Management Group, Inc. will be developing training materials**

- **AA will train TxDOT technical staff**

- **For end users, TxDOT is using the Train-The-Trainer approach**

  - **AA will train Super Users**

  - **Super Users will train end users in each district**

  - **Training program will be staggered in alignment with the district rollout**

Communication Tools

- **Compass Project SharePoint Site**

- **Quarterly Statewide Video Teleconferences**

- **Monthly Status Reports**

- **Progress Reports from Support Consultant and Software Vendor**

- **Weekly status meetings**

Challenges

- **Resource limitations**

- **Managing expectations**

- **Accepting change**

- **Maintaining momentum through implementation**

- **Managing scope**

  - **New statewide ERP project**

  - **Administrative directives**

  - **Department reorganization**

  - **Other IT projects**

Questions?