



MDOT

Mississippi
Department of Transportation

Deploying Systems Engineering Processes

by
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**Approaches for Integrating Systems
Engineering into Your Agency's Business
Practices.**

**Talking Technology and Transportation (T3) Webinar
August 2, 2007**



- **Developed Statewide ITS Architecture**
- **Developed Mississippi ITS Strategic Plan**
- **Created an ITS Section in the Traffic Engineering Division**
- **Hosted SE Workshops**
- **Hired Statewide ITS Integration Team**



The mention of these vendors does not constitute an endorsement of these vendors by the U.S. DOT

Task 1 – Program Management & Coordination

Task 2 – Update ITS Planning Documents

Task 3 – Conduct Needs Analysis

Task 4 – Develop Concept of Operations

Task 5 – Develop MDOT Amber Alert Rule

Task 6 – Define System Requirements

- High Level System Requirements
- Detailed System Requirements
- Software Functional Requirements

Task 7 – Design MDOT’s ATMS (Adv. Traffic Mgmt. Systems)

Task 8 – Provide TMC (Traffic Mgmt. Center) Overview

Task 9 – Develop ITS Business Plan

Task 10 – ITS Field Devices Design & Specifications



MDOT will use ITS technologies to improve the quality of life for State residents and visitors by providing more reliable, informative, safer, and flexible passenger and freight multi-modal transportation services.

Photo taken off the beach of Bay St. Louis in the St. Stanislaus area of Katrina's Wrath

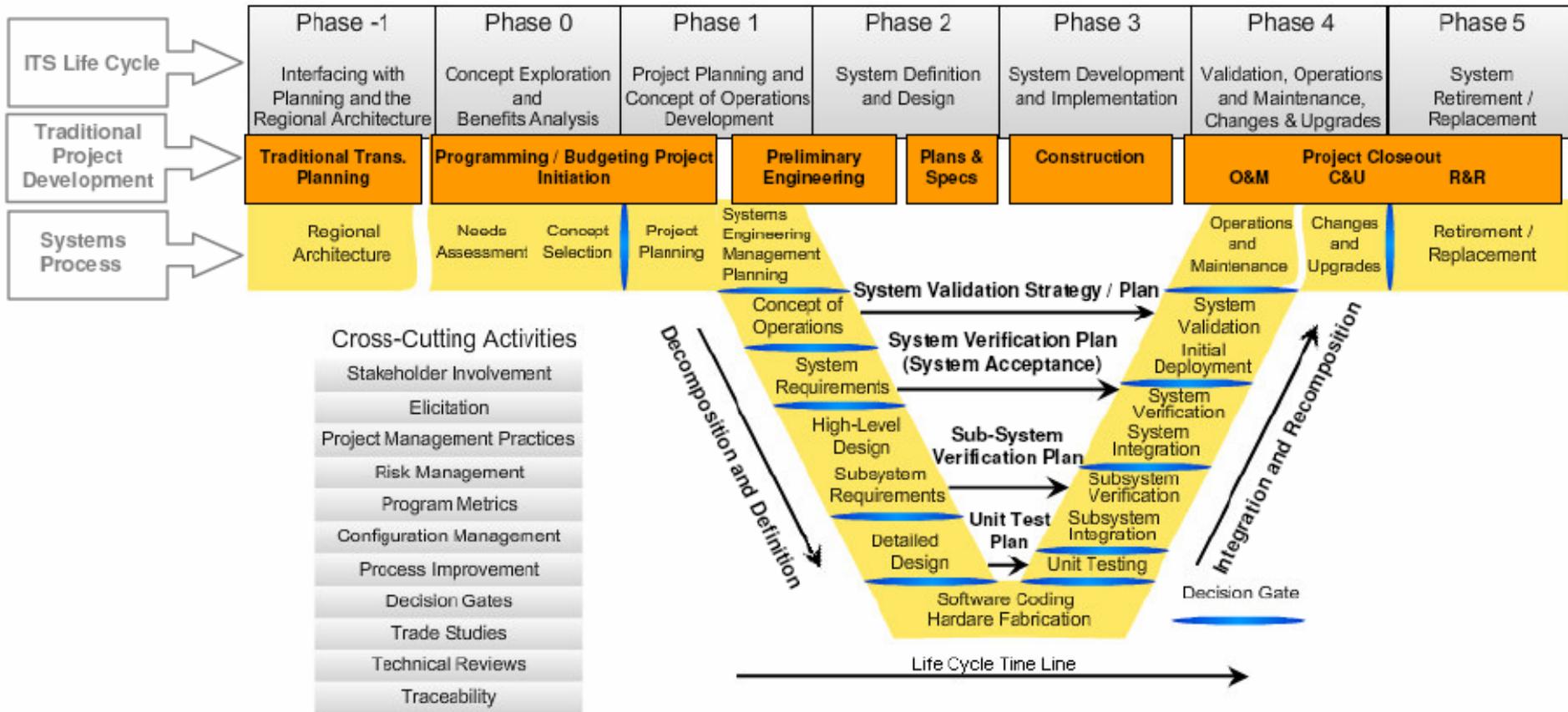
- **Low number of true ITS projects or Construction Projects with large ITS Systems.**
- **Mississippi was recovering from Katrina.**
- **The SE Process has been evolving a great deal over the last few years and MDOT was aiming at a moving SE target.**
- **MDOT SE Processes are constantly being compared to CalTrans & FDOT.**

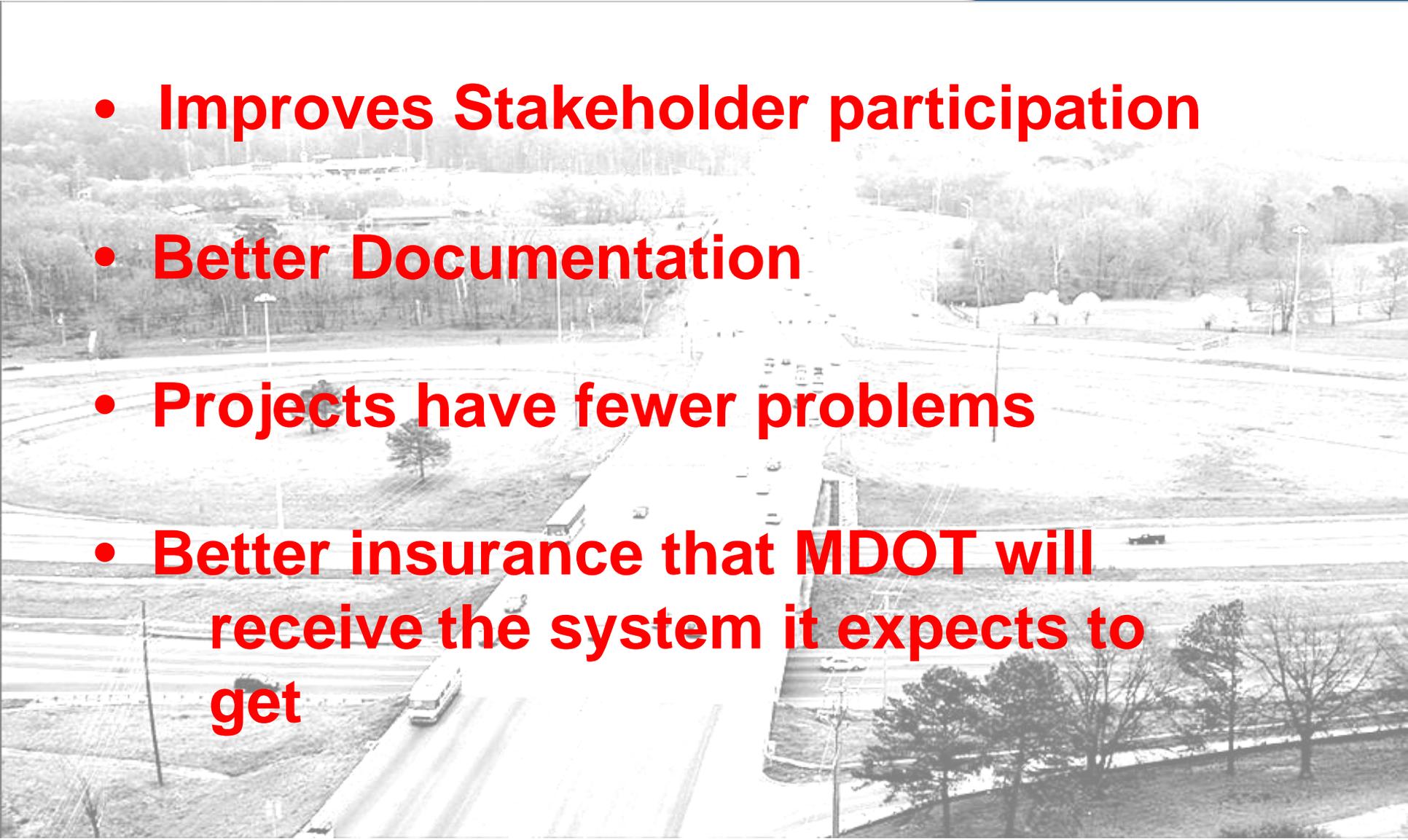
- **Perform Life Cycle Analysis**
- **Concept of Operations**
- **System Requirements**
- **Traceability Matrix**
- **System Qualifications (Test Requirements)**
- **Configuration/Change Management**
- **Risk Management**
- **SE Process Improvement**

- **Adopt a Defined Organizational Process for SE**
- **Improve SE Competency for ITS Staff**
- **Mainstream ITS Planning**
- **Mainstream ITS Projects Development**
- **Form an ITS and SE Working Group**
- **Establish a SE Document Library for the ITS Program**
- **Continue Formal & Informal Process Improvement Efforts**

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Systems Engineering Management Plan



- **Improves Stakeholder participation**
 - **Better Documentation**
 - **Projects have fewer problems**
 - **Better insurance that MDOT will receive the system it expects to get**
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Building the Foundation



- **Needs Analysis**
- **Communications Study**
- **Business Plan**
- **Concept of Operations**
- **System/Software Requirements**
 - High Level
 - Detailed
- **Stakeholder Agreements**
 - Cities
 - Other State Agencies
 - Law Enforcement



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