MAF/TIGER Enhancements Program
Objective Two:

# MAF/TIGER Redesign

December 2004

What is TIGER?

Topologically Integrated Geocoding and Referencing System

A street center-line "digital map" (geographic data base) of the entire United States, Puerto Rico, and the associated Island Areas

TIGER Content

- **Street center-lines and their names**

- **Lakes, streams, and their names**

- **Railroads**

- **Geographic entity boundaries, names, and codes (for governmental units, census tracts, census blocks, etc.)**

- **Housing unit locations (selected areas)**

- **Key geographic locations (for airports, schools, etc.)**

- **ZIP Codes and address ranges (for streets with city-style addresses)**

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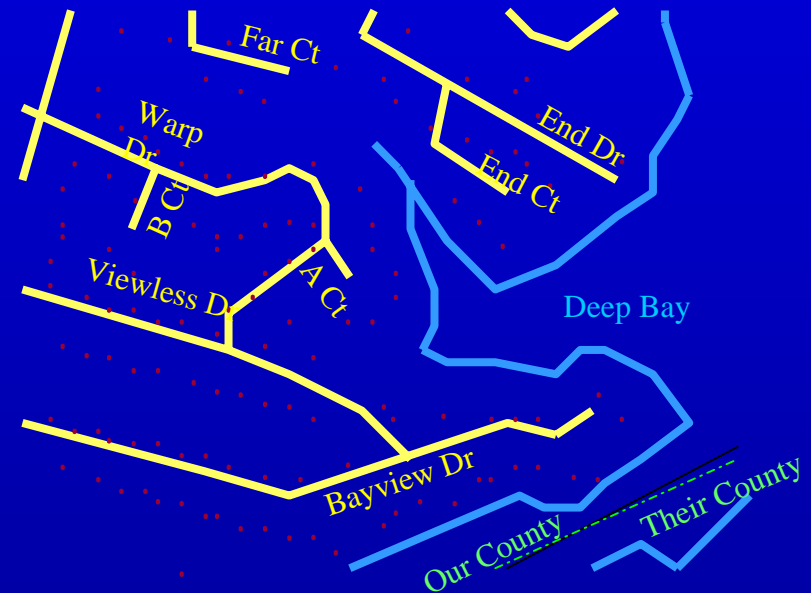
What is the MAF?
Master Address File

Title 13 requires that all addresses/locations be kept confidential

An accurate and up to date inventory of all known living quarters in the United States, Puerto Rico, and associated Island Areas

The content of the MAF is:

- Mailing address, if one exists

- Descriptive address, when no

   city-style address exists

- Census geographic location

- Source and history data

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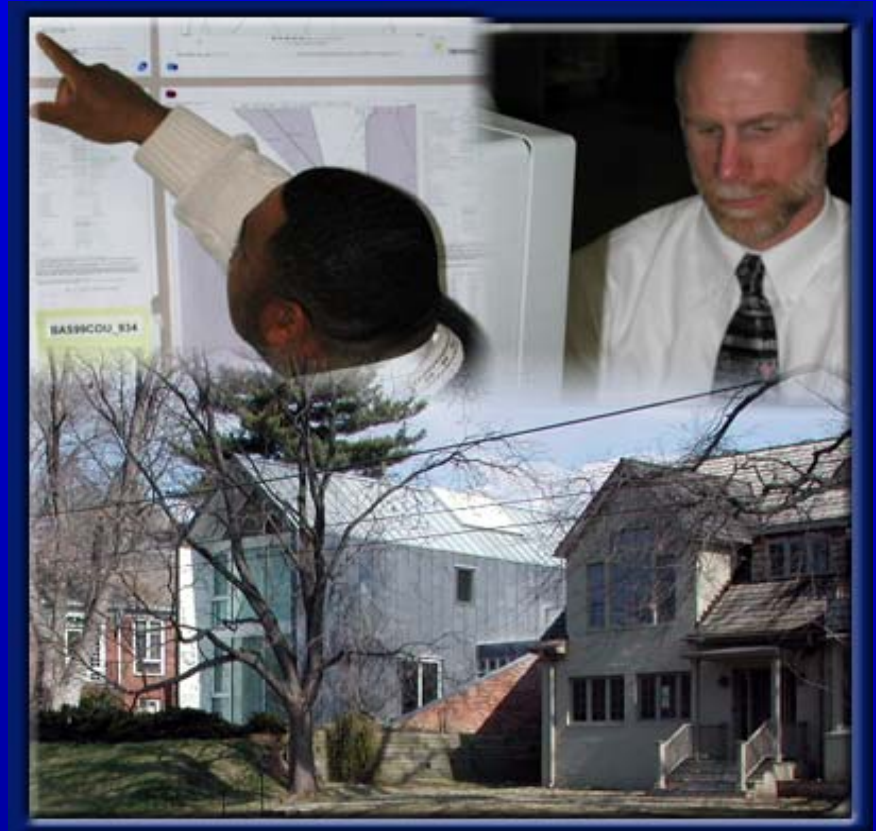
MAF/TIGER: Mission Critical Corporate Resource

- System provides storage, processing, products and services that support agency's statistical programs.
  - ➢ Geocoding
  - ➢ Maps
  - ➢ Residential Address Lists
- Continually updated with new address and geographic information.
- Wide public use of geographic information.

MAF/TIGER Redesign:
Objective 2 of MAF/TIGER Enhancements Program

The MAF/TIGER Redesign will:

- Replace the existing home-grown databases with a commercial relational database.
- Replace the application software that utilizes these databases.
- Integrate MAF and TIGER into a seamless national database.

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MAF/TIGER - Old vs. New

Existing System

- Home-Grown Database
- MAF & TIGER Separate
- COTS Use is Limited
- Extensive Developer Training Required
- County Partitions

New System

- Oracle
- MAF & TIGER Integrated
- COTS Use is Expanded
- Can Recruit Developers with Appropriate Skills
- Seamless National Database

MAF/TIGER - Old vs. New

Existing System

- Single-User Update
- Closed, Proprietary Development Environment
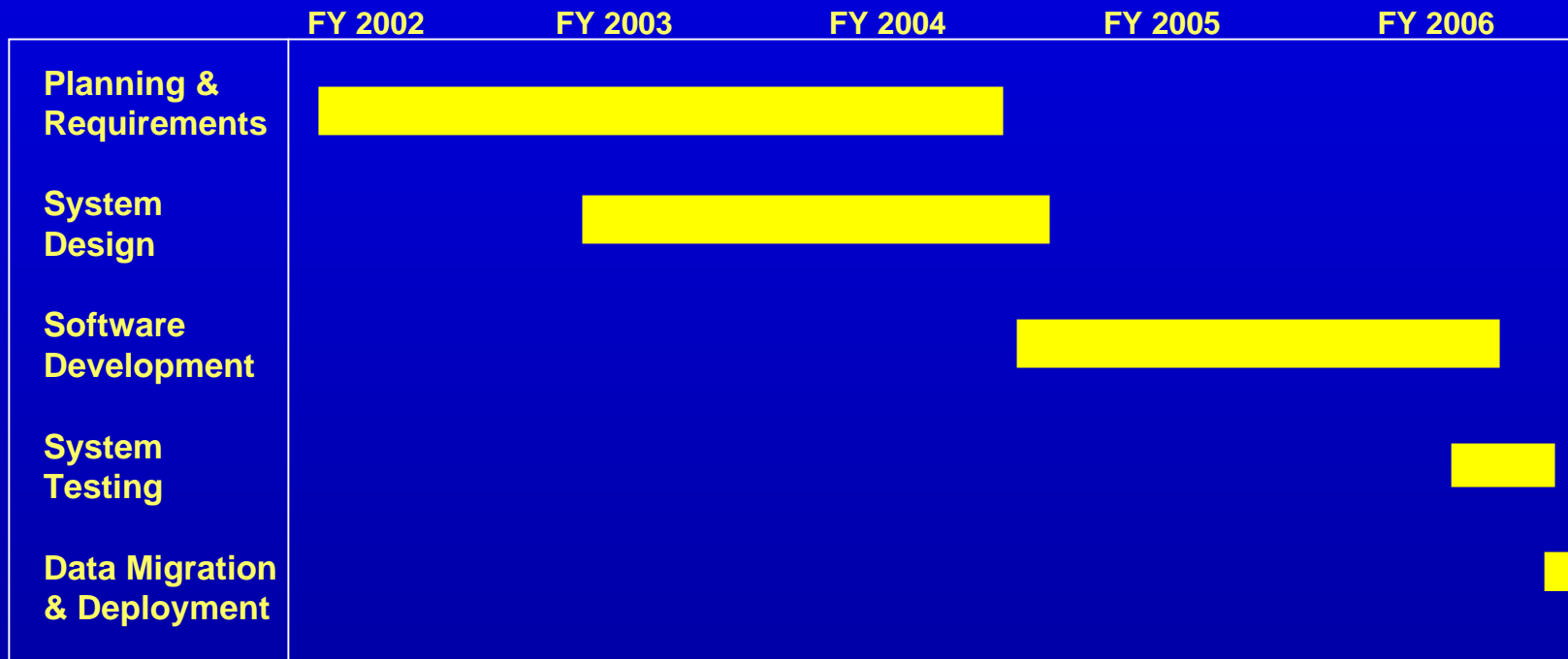- Client/Server
- Ad Hoc Software Development

New System

- Concurrent Read/Write
- Open, Interoperable Formats and Tools
- Web-Based
- CMM Level 2

Advantages of the New System

- Facilitates data exchange with local partners
- Improves data accessibility and currency, using standard GIS tools.
- Greater flexibility and efficiency in responding to new or changed requirements.
- Use of commercial database and current technology facilitates recruitment/training.
- Seamless national database improves ability to respond to customer needs for product delivery mechanisms or partitioning.
- More efficient data exchange with 2010 Census handheld computers.

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MAF/TIGER Redesign
High Level Project Plan

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Planning & Requirements	████████████████████				
System Design		████████████████			
Software Development				████████████████████	
System Testing					████
Data Migration & Deployment					█

Issues and Risks

- COTS Software – Functionality, Extensibility, Interoperability, Upgradeability.

- Hardware Resources – Existing hardware aging; Old and new systems must run simultaneously.

- Human Resources – Maintaining existing system while building new one.

- Coordination of Architecture Design with 2010 Census Efforts.

Relationship to Other MTEP Objectives

- Developmental work and testing will proceed in the background while program applications (including those needed for other MTEP objectives) use the existing databases.

- Once critical applications are developed and tested to work on the new database, a migration process will begin, with the goal of causing the least disruption and downtime to existing processes.

- Both the existing TIGER database and the new one are capable of storing corrected coordinate information and attributes obtained from Objective One of MTEP.

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Major COTS Tools Selected

Function	Tool
Database	Oracle
Spatial Storage	Oracle Spatial Topology Data Model
Requirements	DOORS
Configuration Management	Serena Version Manager (formerly PVCS)
Document Management	Oracle Portal
System Architecture	Metis, Oracle Portal
Database Modeling	Oracle Designer
Development Environment	JDeveloper
Extraction/Transform/Load	Oracle Replication, Warehouse Builder

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Completed Products/Activities

- Project Management Plan
- Software Development Plan
- Risk Management Plan
- Software Quality Assurance Plan
- Training Program Plan
- System Functional Requirements
- System Security and Privacy Requirements
- System Data Content Requirements
- System Hardware and Performance Requirements
- Change Control Board Chartered

Completed Products/Activities

- Logical Database Design
- COTS Tool Selection for Database, Requirements, Architecture, CASE tools
- Market Research for Interactive Update, Geocoding, Address Standardizer
- Physical Database Design
- High-Level System Architecture
- Configuration Management Plan
- Project Communication Plan
- Project Test Plan

Upcoming Activities FY 05 and FY 06

- Software Specifications

- Collection & Implementation of Business Rules

- Data Migration Software Prototype

- Research/Selection of COTS Tools for Mapping, Workflow Control, etc.

- Develop/Test Application Software

- Procure/Install/Test Hardware

Upcoming Activities FY 05 and FY 06

- Unit, System, Integration Testing
- Migrate Data
- Training for New System
- System Deployment
- Data Migration Plan
- System Deployment Plan
- Technology Standards Profile