Evolving Transit Technology – Facilitating Seamless Data Integration through GIS Server Implementation

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MARTA OVERVIEW
MARTA Provides The Community With Bus, Rail And Paratransit Services For The Atlanta Metro Area

- 9th Largest Transit System In North America
- 4,600+ Employees; 450,000 Daily Passengers
- 556 Peak Buses On 129 Routes & 200 Paratransit Vans
- 38 Rail Stations & 338 Rail Cars
- Provides Over 90% Of Transit Service In The Region
- First 100% Smart Card System In North America
OBJECTIVE
Seamless Data Integration To Facilitate Regional Trip Itinerary Planning System
SERVER POTENTIAL

- Server GIS - facilitating data transition across the organization
- Improved deployment of Geospatial analytical tools
- Improved data management
- Access to non-GIS users
TECHNOLOGICAL INNOVATIONS IN TRANSIT OPERATIONS

- Route Planning and Analysis
- Automatic Vehicle Location Systems
- Paratransit Analysis and Routing
- Bus Stop Management and Facility Inventory
- Rail System Facility Management
- Optimal Routing Through Demographic Analysis
- Transportation Modeling and Data Structures
- Ridership Analysis
THE PAST - HISTORIC

- Data Access – Limited Departmental involvement
- Disparate Datasets
- Shared Drives via Internal Network
- Emails
- Hard Drives - Imagery Data
- Electronic Media
- Poor Data Quality
- Data Loss
THE FUTURE - EVOLUTION

- Data Access/Integration – Seamless
- GIS Functionality Direct Access via Internal/External Network
- Efficient Data Management
- Seamless Data Collection And Reconciliation
- Comprehensive Analysis
- Custom Web Based Applications
- Mobile Systems Support
- Increased Productivity
MARTA’s EVOLUTION

1990’s

SHARE DRIVE

WORKGROUP

ENTERPRISE

WEB APPLICATION

2007 - 2008

THE FUTURE

1990’s

EMAIL FILES
IMPLEMENTATION STRATEGY

Design and Implement an Integrated GIS System Architecture
CENTRALIZED SYSTEM

- Systematic Process
- System Administration
- Functionality
- Data Sharing, Integration and Interoperability
- License Consolidation on Central Server
- Data Management Structure
- Security
- Geoprocessing Model Sharing
- Network Load
ARCHITECTURE

- Service Oriented Architecture
- System Accessibility
- Unified Data Structure
- Scalable Architecture
- Web-based Services
CONCEPTUAL ARCHITECTURE - LOCAL

ENTERPRISE GIS

GIS SERVER

ENTERPRISE GIS ACCESS

DBMS

DBMS
FUTURE DEVELOPMENTS

- Unified Framework Architecture
- Accommodating Data growth
- Integration of Disparate Systems
- Facilitating Access
- Data interoperability