IMPLEMENTING GOVERNMENT-WIDE ENTERPRISE GIS; THE FEDERATED MODEL

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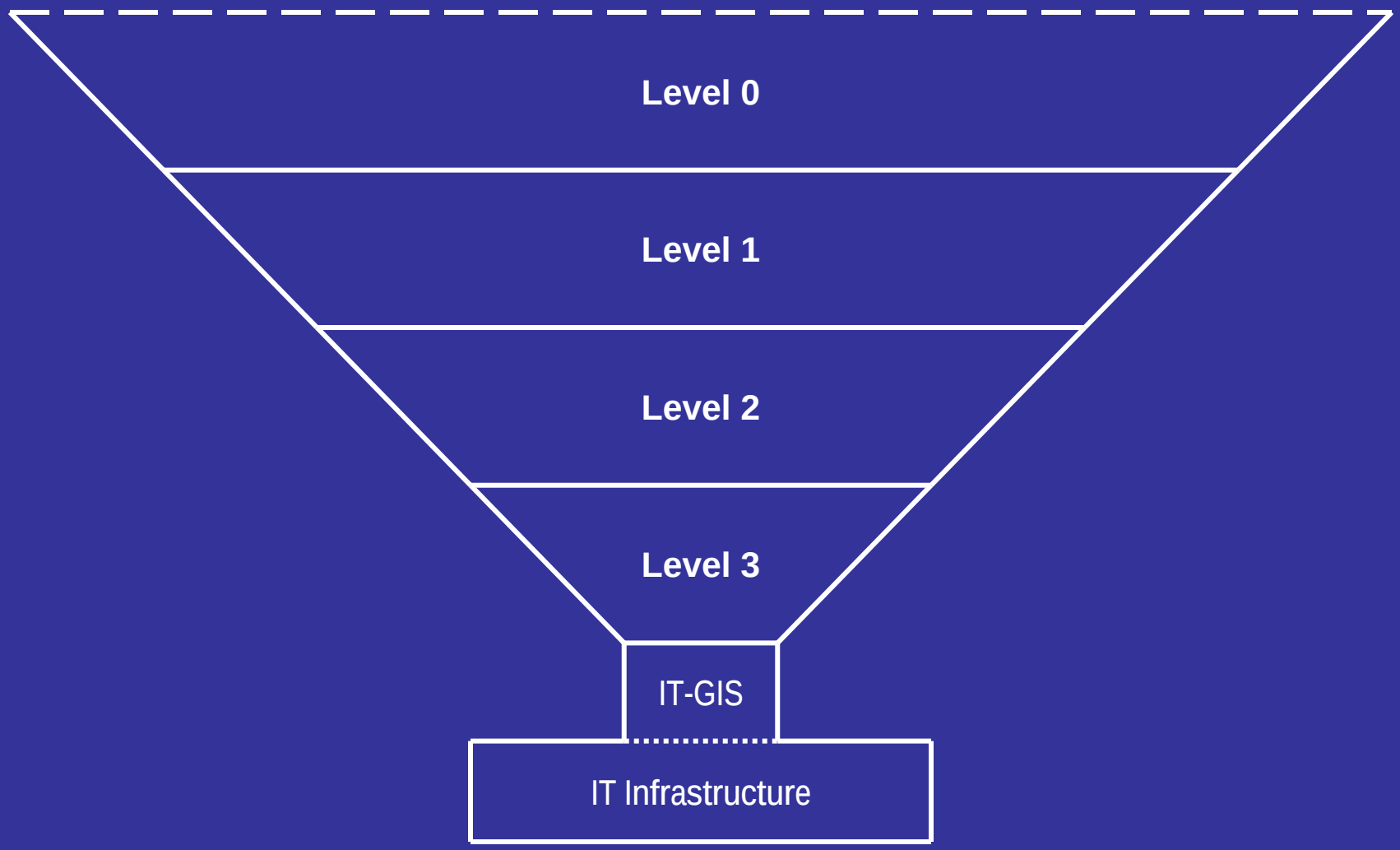
ENTERPRISE GIS USER MODEL



Taken from Mitchell and Kent, 2007

Level 0 – Non-GIS Users

Description

Non-user, lacking access to or knowledge of GIS.

These users have immediate information needs that only GIS can provide.

Technology

“Canned” GIS services must be provided to these users, for example, a map, report, data, or table.

Basic training of these users can advance them to Level 1 Users.

Level 1 – Occasional Users

Description

Professionals with work that occasionally requires information provided only by GIS.

Technology

Thin client, web services and server applications that perform specific, well-defined, repetitive tasks.

Thick-clients can be used with basic GIS training.

Level 2 – Regular GIS Users

Description

Professionals with work that regularly calls for information provided only by GIS.

These users need training in the use of GIS software to make maps, but, seldom use sophisticated analytical GIS features.

Technology

Thick-client applications, as well as, thin-client web and GIS server applications.

Level 3 – Advanced GIS Users

Description

Professionals that who regularly perform spatial analysis and/or produce GIS data, as part of their job.

These are “power-users” with advanced training in GIS, including developing programs to do advanced mapping or other tasks.

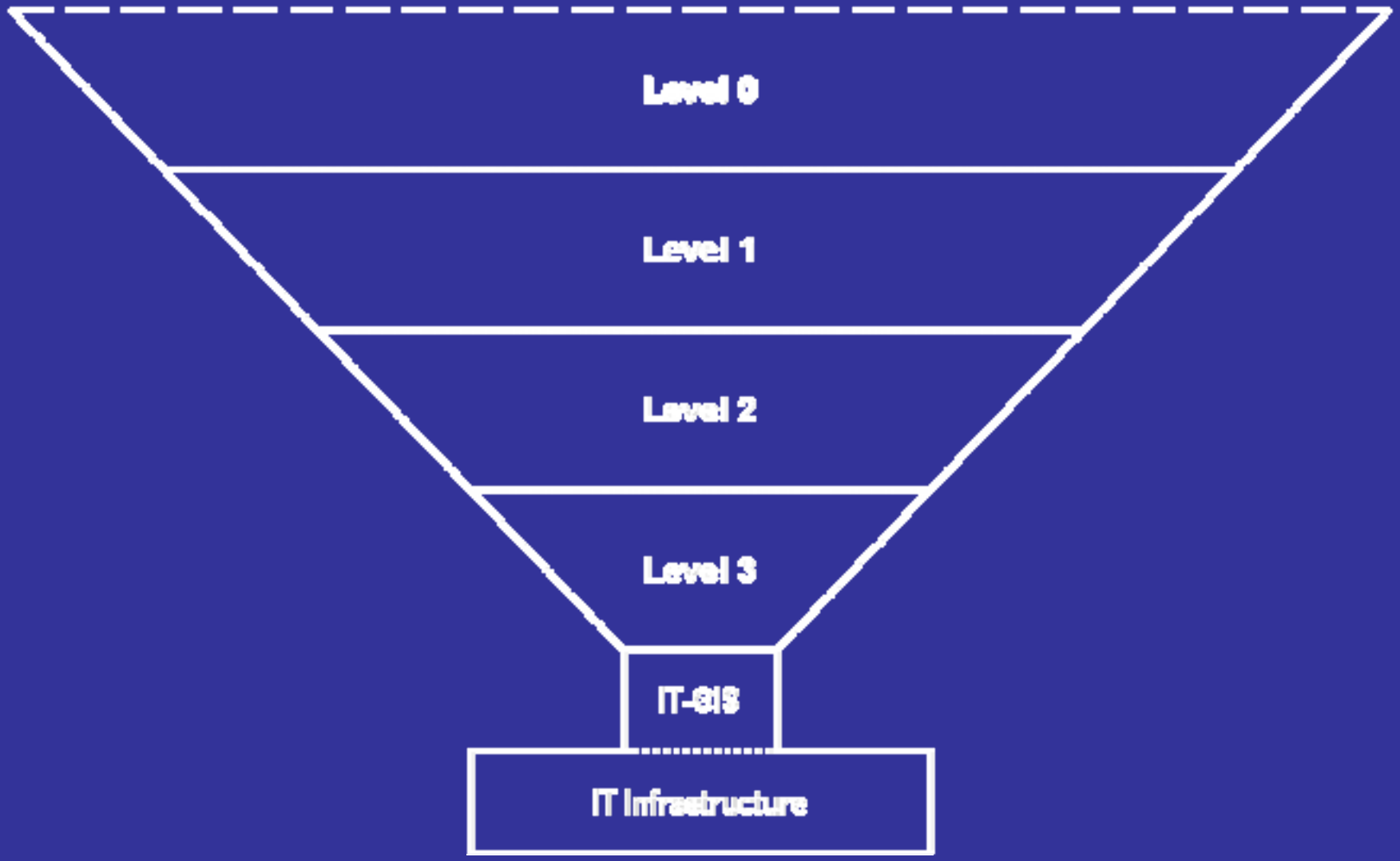
Technology

Thick client applications that run locally on the desktop and provide advanced, sophisticated GIS functionality.

IT-GIS

Description	Technology
Professionals possessing advanced experience; and IT skills, knowledge of geographic concepts of mapping and cartography.	All levels and forms of GIS technology, in order to develop and maintain the GIS environment for the agency.
They have experience applying GIS within the context of a relevant professional discipline.	This includes all aspects of training, tech support, application programming, and web development.

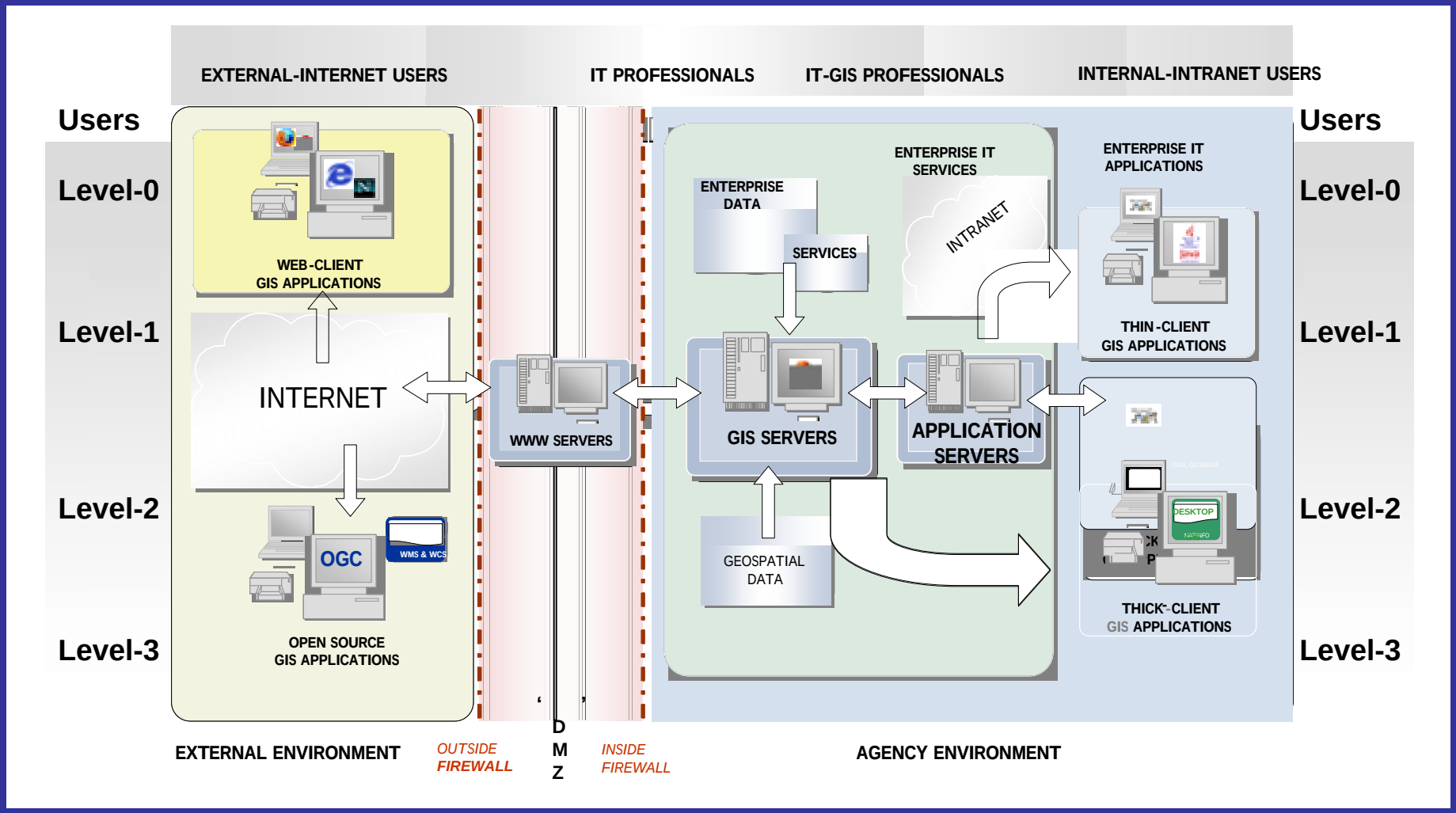
ENTERPRISE GIS USER MODEL
in review



Important Features of the User Model

- Information can be delivered to the entire continuum of users across the enterprise, as well as outside the agency.
- Training and experience will advance users up the continuum.
- The entire user-base is supported by a small professional, IT-GIS staff that is integrated into the enterprise IT infrastructure.
- Users at any level can benefit by the technology applied to serve lower user classes.
- The IT-GIS staff is part of, and supported by, the agency's existing IT infrastructure.

Enterprise GIS Architecture



Adapted from Mitchell and Kent, 2007

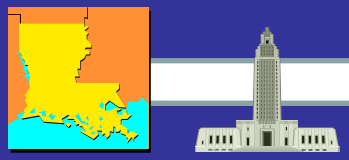
The “AAAAA” Data Standard

Factor	Contribution to Data Quality
Accurate	The data adequately represents the state of the world in space and time. Locations have sufficient precision for their scale of use and data are current.
Authoritative	The source of the data provides sufficient quality control to ensure its quality.
Actionable	The data are well documented with metadata, require little further assessment or manipulation, and can be put to immediate use.
Accessible	The data are discoverable and available through direct download or Service Oriented Architecture (SOA). Data can be searched directly, selected, and accessed without intervention by its provider.
Affordable	The data can be accessed with little or no cost to the user.

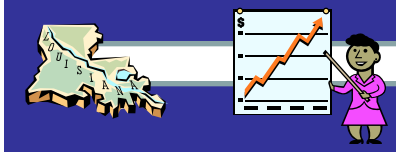
LIFE CYCLE OF GOVERNMENT DATA

Data Collection	Data Management	Data Analysis	Decisions	Data Distribution

State Government Agency



State Mandated Data

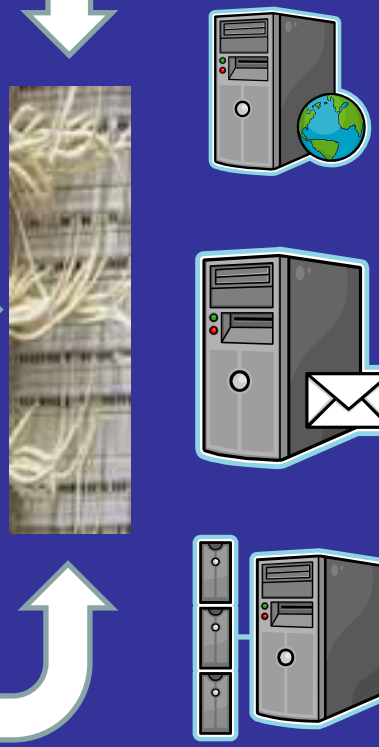


Operational/Business Date

Federally Mandated Data

Business Units

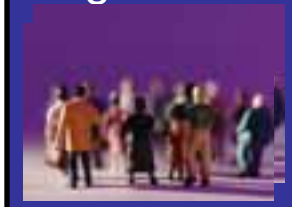
IT Infrastructure
Enterprise Databases



Business Units

Governor & Legislature

Other State Agencies



Genera
l Public

The World

How Do We Build And Distribute The Base Map?
By Moving Data From Local Sources to the Enterprise Base Map

Commercial Data Producers

Local Data Producers

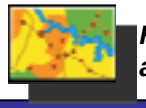
Louisiana Geographic Bureau

Collaboration Between Local and State Government

DOTD Base Map Database

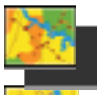
Data Collation, Quality Control, and Distribution

Desktop GIS Users



Hardcopy Maps, Web Maps, and Data Analysis

Web Services for Easy, Transparent Access



On-Demand, Up to Date Printed Maps

One Base Map Providing Universal Access to All

Services (routing, geocoding, and Location-Based Services)

Map for non-GIS Users in Georeferenced PDF Format

Data Services – Direct Access to the LA Base Map Data

State Government

Local Government

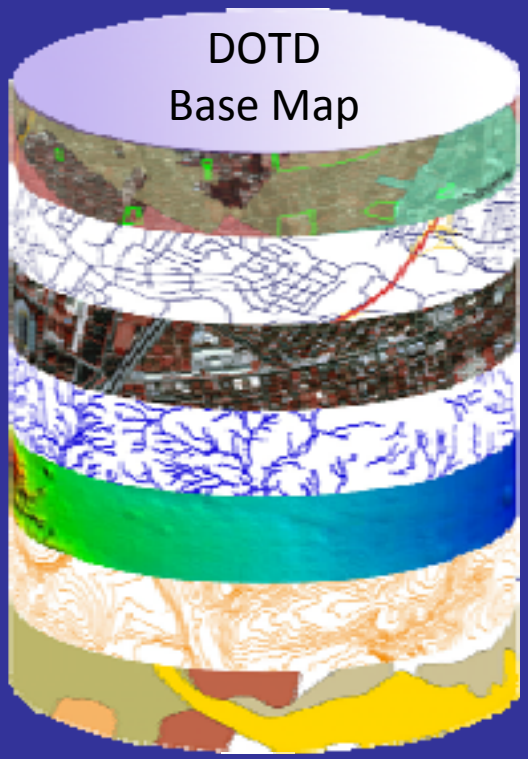
Federal Government

General Public

Commercial Businesses

Providing Actionable Information to All Data Users

Statewide Enterprise Digital Map Base
Accurate, Authoritative, Actionable , Accessible , and Affordable Information



FRAMEWORK DATA

- Topography
- Hydrography
- Transportation
- Boundaries
- Land Cover / Land Use
- Manmade Structures
- Public Land Survey

ESSENTIAL FUNCTIONS OF GOVERNMENT

- ***Transportation and Infrastructure***
- ***Agriculture Natural Resources Environmental Quality***
- ***Public Safety And Homeland Security***
- ***Education Health Human Services***

Streamlining – Shortening the Distance Between Data Collection and Decision Makers

How Are The Statewide Enterprise Digital Map Base Layers Used by State Government?

Transportation and Infrastructure

- Construction
- Economic Development
  - Access to Highways
  - Access to Rail
  - Access to Ports
  - Access to Air
- Emergency Response
- Emergency Recovery
- Flood Control
- Location of:
  - Clients
  - Facilities & Services
  - Vendors
- Mapping
- Operations
- Permits
  - Establishing
  - Managing
  - Enforcement
- Planning
  - Ports & Waterways
  - Railroads
  - Roads
  - School Attendance
  - Transit
- Public Relations/Information
- Safety
- Finding Travel Route from Point to Point
- 311

Agriculture Natural Resources Environmental Quality

- Access to Markets
- Economic Development
- Emergency Response
- Emergency Recovery
- Environmental Assessment
  - Impacts
  - Mitigation
- Location of:
  - Clients
  - Facilities & Services
  - Vendors
- Mapping
- Operations
- Permits
  - Establishing
  - Managing
  - Enforcement
- Planning
- Public Relations/Information
- Safety
- Finding Travel Route from Point to Point

Public Safety And Homeland Security

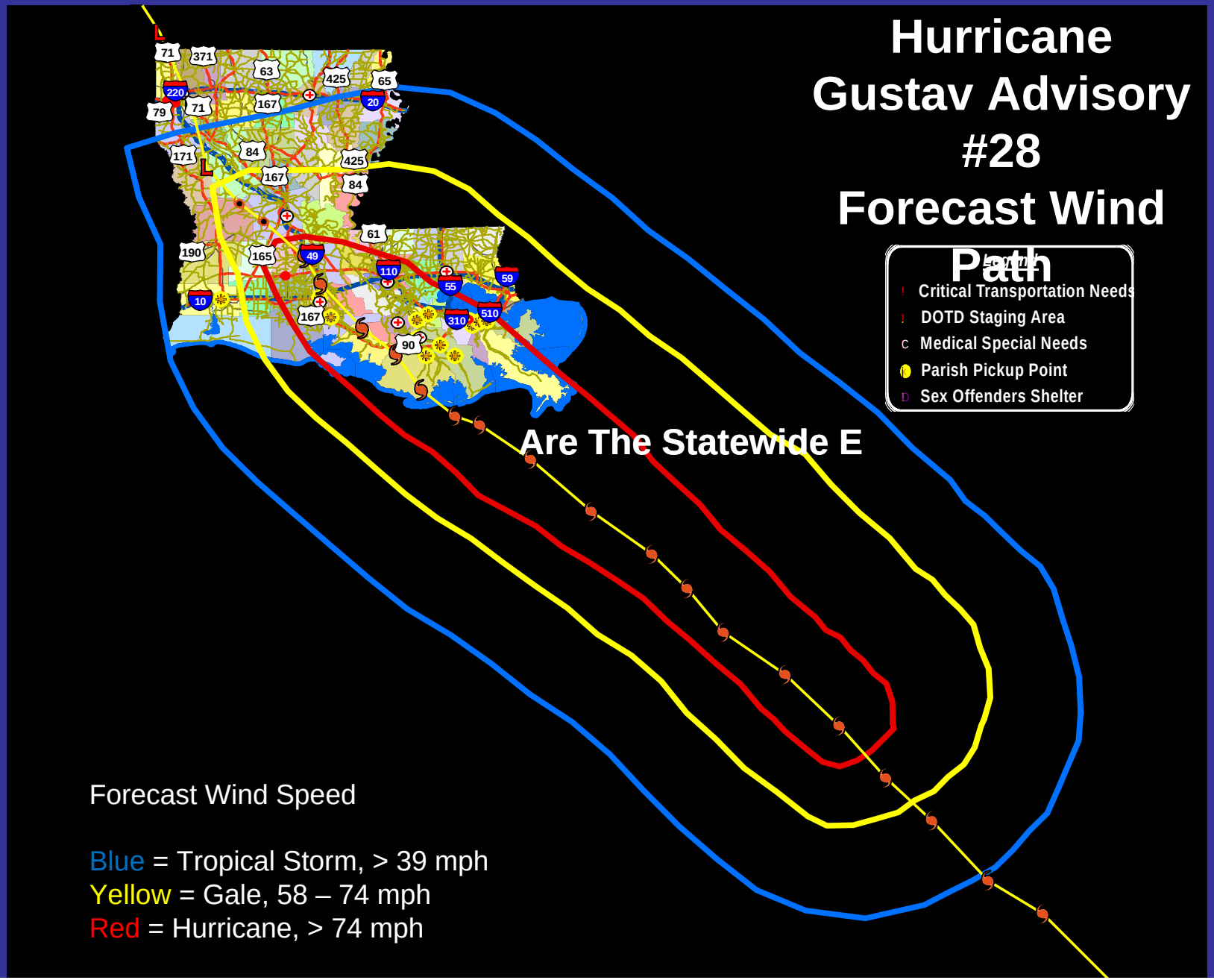
- Emergency Response
- Emergency Recovery
- Location of:
  - Clients
  - Facilities & Services
  - Vendors
- Mapping
- Operations
- Permits
  - Establishing
  - Managing
  - Enforcement
- Planning
  - Hazard Mitigation
  - Risk Assessment
  - Roads
- Public Relations/Information
- Safety
- Finding Travel Route from Point to Point
- 911

Education Health Human Services

- Emergency Response
- Emergency Recovery
- Fraud Detection
- Location of:
  - Clients
  - Facilities & Services
  - Vendors
- Mapping
- Operations
- Permits
  - Establishing
  - Managing
  - Enforcement
- Planning
  - Placement of Facilities
  - Risk Assessment
  - Roads
- Public Relations/Information
- Public Right to Know
- Safety
- Finding Travel Route from Point to Point

Streamlining – Creating a Common Operating Environment Where Agencies Can Cooperate and Interact

Government-wide Federated Enterprise GIS in Action – Hurricane Response Case Study



Using The Base Map for Emergency Response
A Federation of Agency-level Enterprise GIS