# Freight Traveler Information Clearinghouse

## Mississippi Valley Freight Coalition

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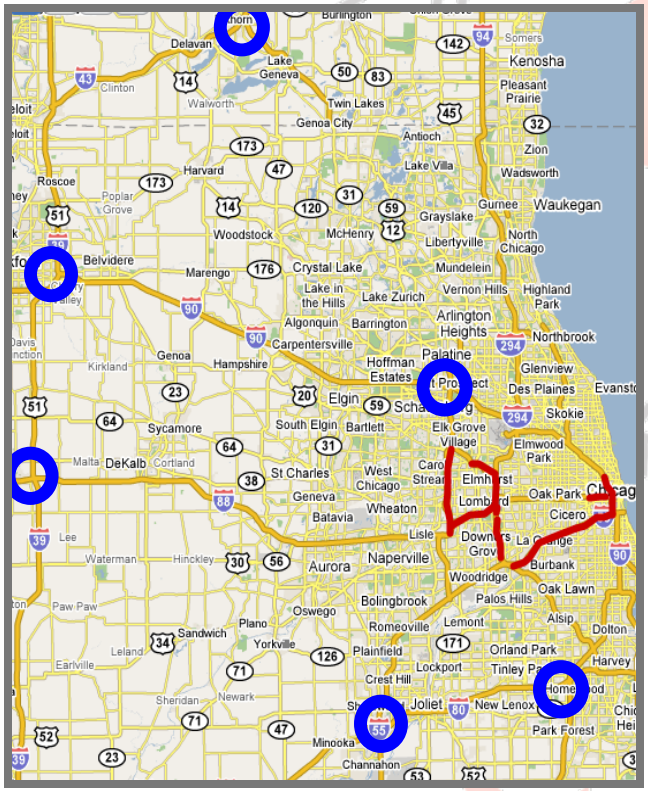
# Background

- This project emerged by combining four proposals:



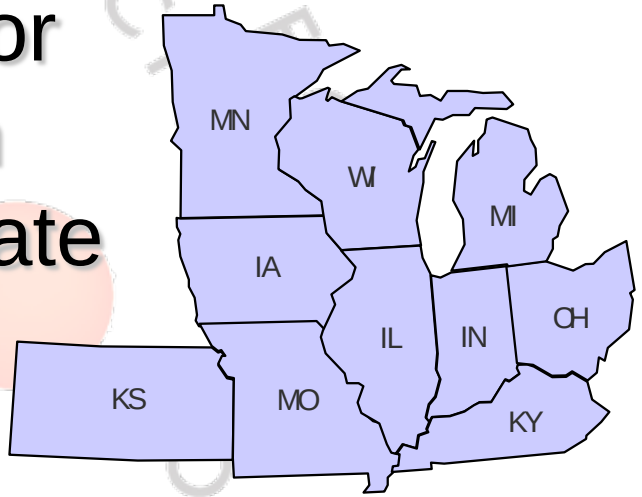

- Identification of advanced traveler decision points
- Combine state static closure information
- Real time traveler information needs of the trucking industry
- Identification of alternative routes

# Information Needs

- Traffic conditions
  - Congestion, Major incidents, other delays
- Construction, Lane Closures, & Detours
- Weather-related road conditions
- Atmospheric weather

# Objectives

- Design basic architecture for reliable traveler information clearinghouse for the 10-state Mississippi Valley Region

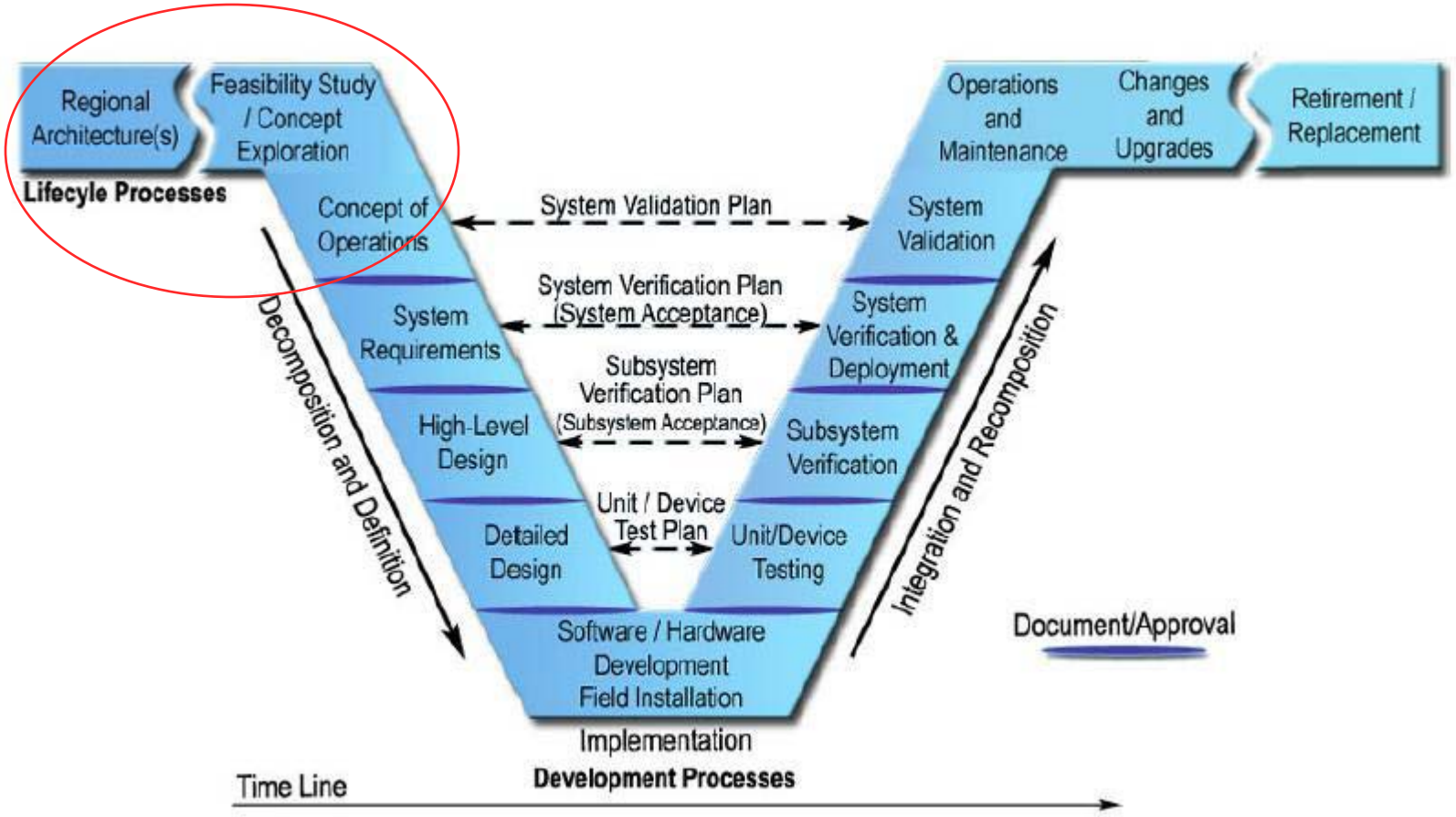



- This study focuses on data needs, and does not address structural issues for gathering, storing, & disseminating data.

# Systems Engineering

- *An interdisciplinary approach and means to enable the realization of successful systems.*
- *It focuses on defining customer needs and required functionality early in the development cycle.*
- *Documenting requirements,*
- *Design synthesis*
- *System validation and completion.*

# Systems Engineering




**Systems Engineering "V" Diagram**

# Key Tasks

- Background & current practice
  - Literature review, current agency activity, current information available
- Review of organizations and existing information architectures
- Survey motor carriers and agencies
- Determine user needs, decision points
- Draft system / functional requirements

# Literature Review

- Literature Review Findings
  - Two prior relevant studies
    - Regan and Golob (1998) [CA]
    - Maze, Kroeger & Berndt (2005) [MN]
- Results demonstrate industry desire for specialized information
- Age of prior studies indicate need for planned MVFC member survey

# Current Practice

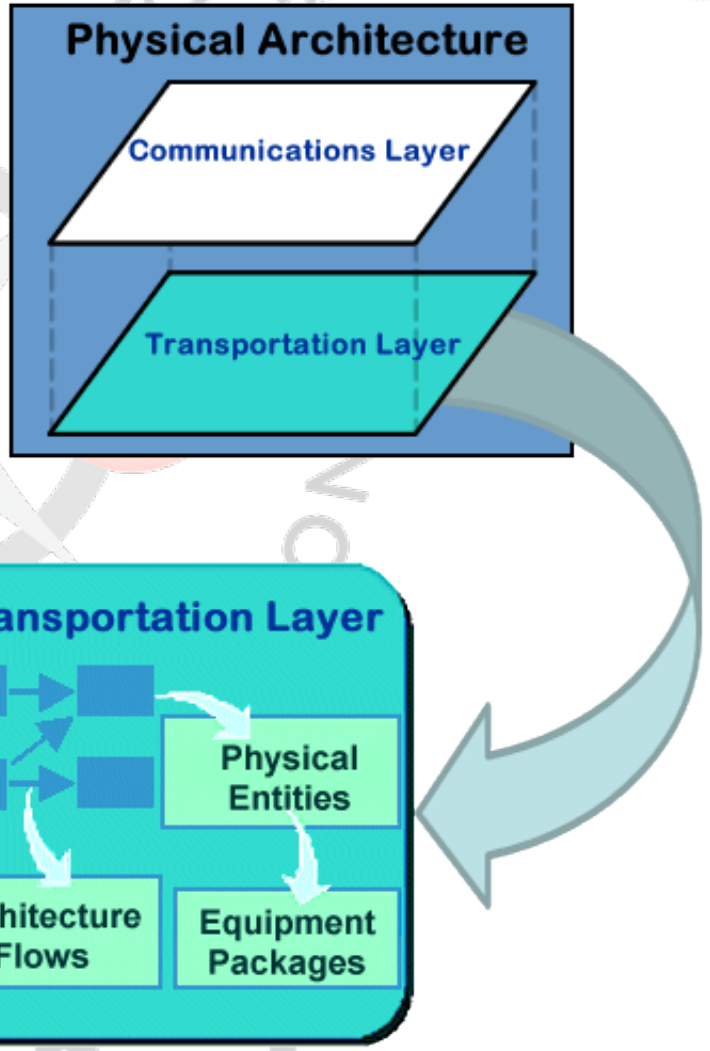
- Several existing methods for information dissemination were examined:
  - State 511 programs
  - Multi-State Corridor Coalitions
    - Lake Michigan Interstate Gateway Alliance
    - North/West Passage
  - DOT Road Closure Websites
  - National ITS Architecture
  - European ITS Architecture

# ITS Architecture

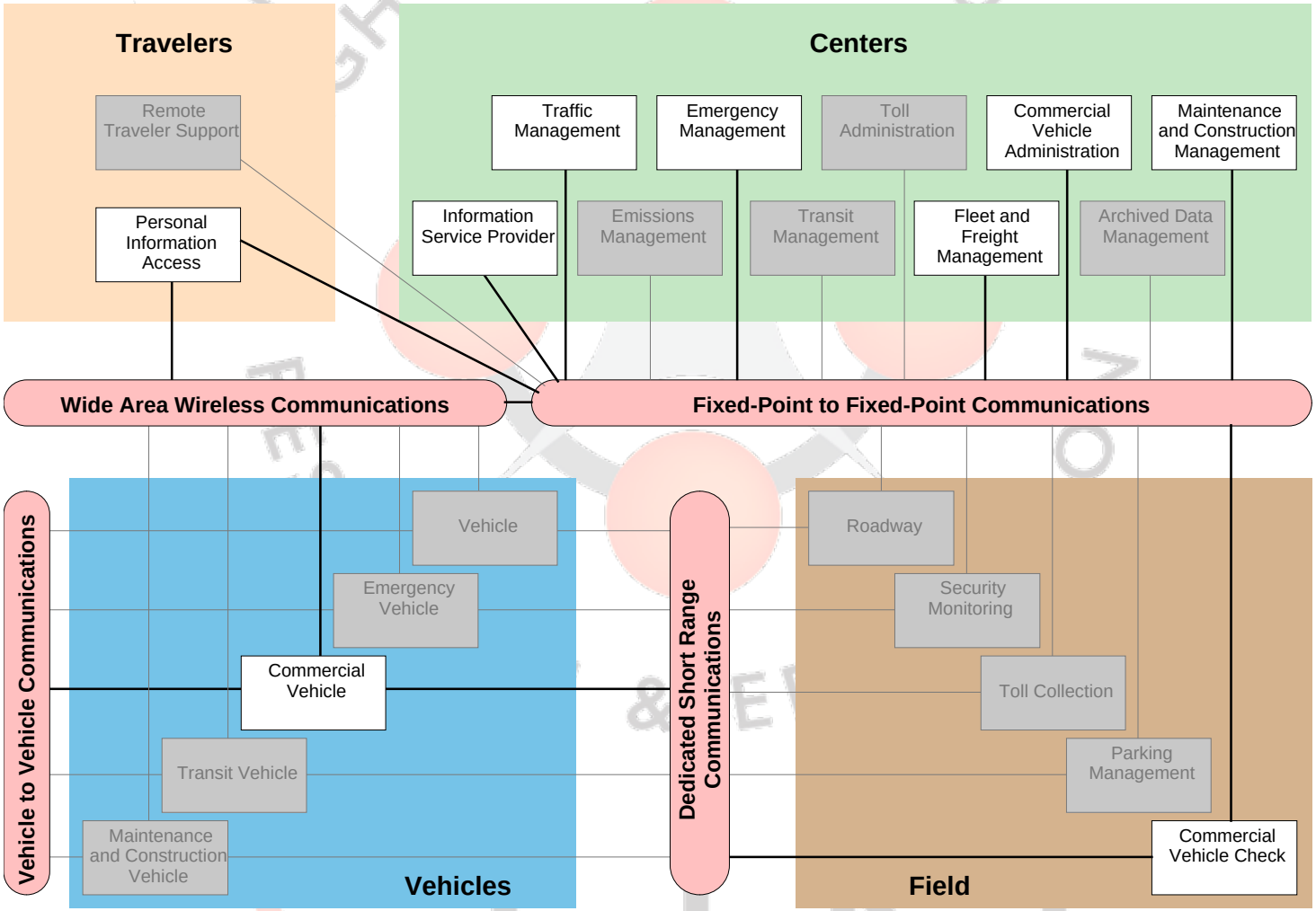
- Defines
  - Systems functional operation
  - Interconnection of information exchanges to accomplish transportation services.

# Physical Architecture

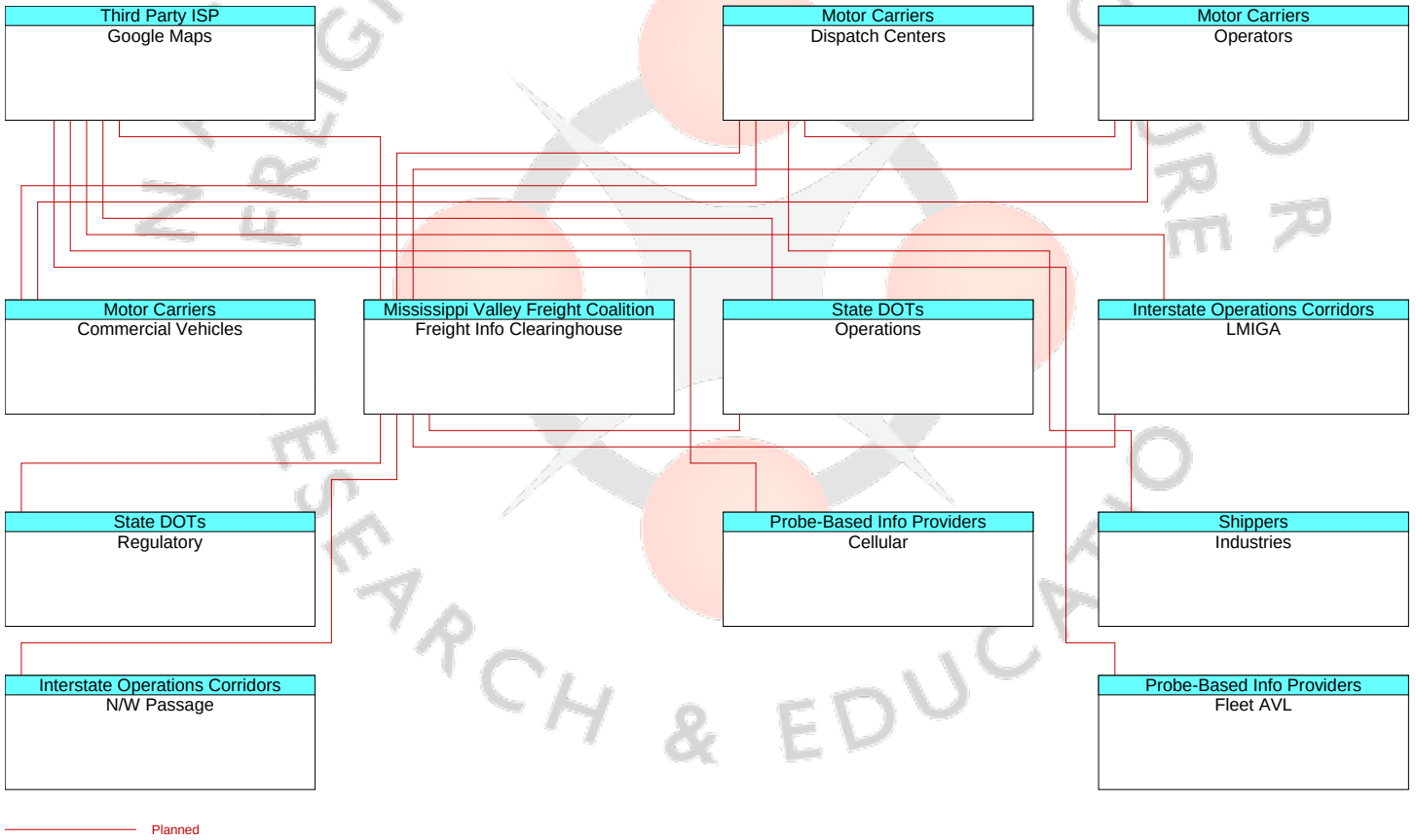
- Transportation layer
- Communication layer



# High Level Physical Architecture



# Interconnect Diagram

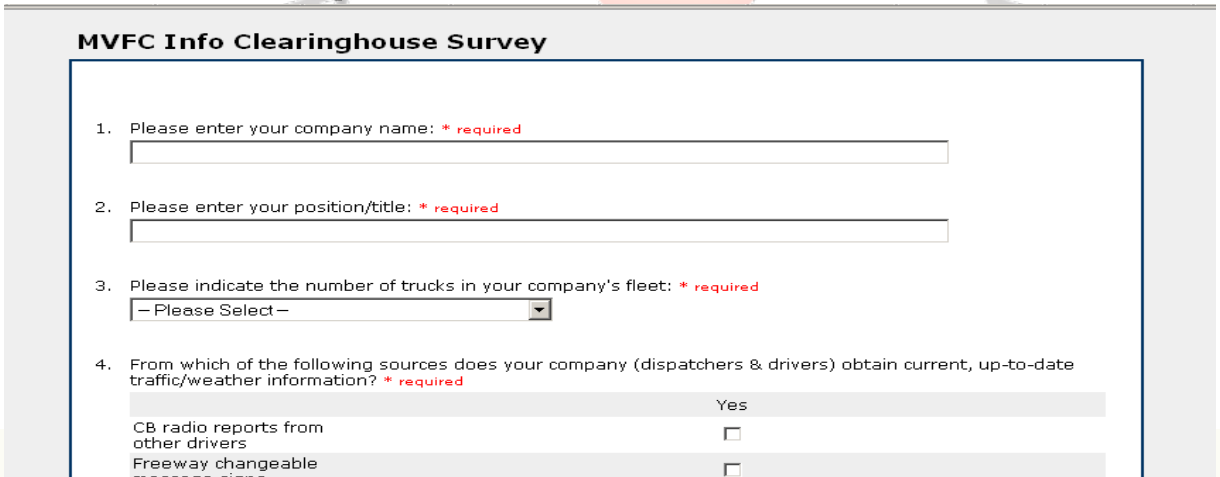


# Stakeholders

- Mississippi Valley Freight Coalition
- Shippers
- State DOTs
- Motor Carriers
- Interstate Operations Corridors
- Probe-Based Information Providers
- Third Party ISP

# Surveys

- 2 different groups
  - Motor carrier representatives (web-based survey)
  - DOT/Planners/Regulators (telephone-based survey)
- Similar questions for each



**MVFC Info Clearinghouse Survey**

1. Please enter your company name: * required

2. Please enter your position/title: * required

3. Please indicate the number of trucks in your company's fleet: * required
   – Please Select –

4. From which of the following sources does your company (dispatchers & drivers) obtain current, up-to-date traffic/weather information? * required

| | Yes |
|---|---|
| CB radio reports from other drivers | ☐ |
| Freeway changeable | ☐ |

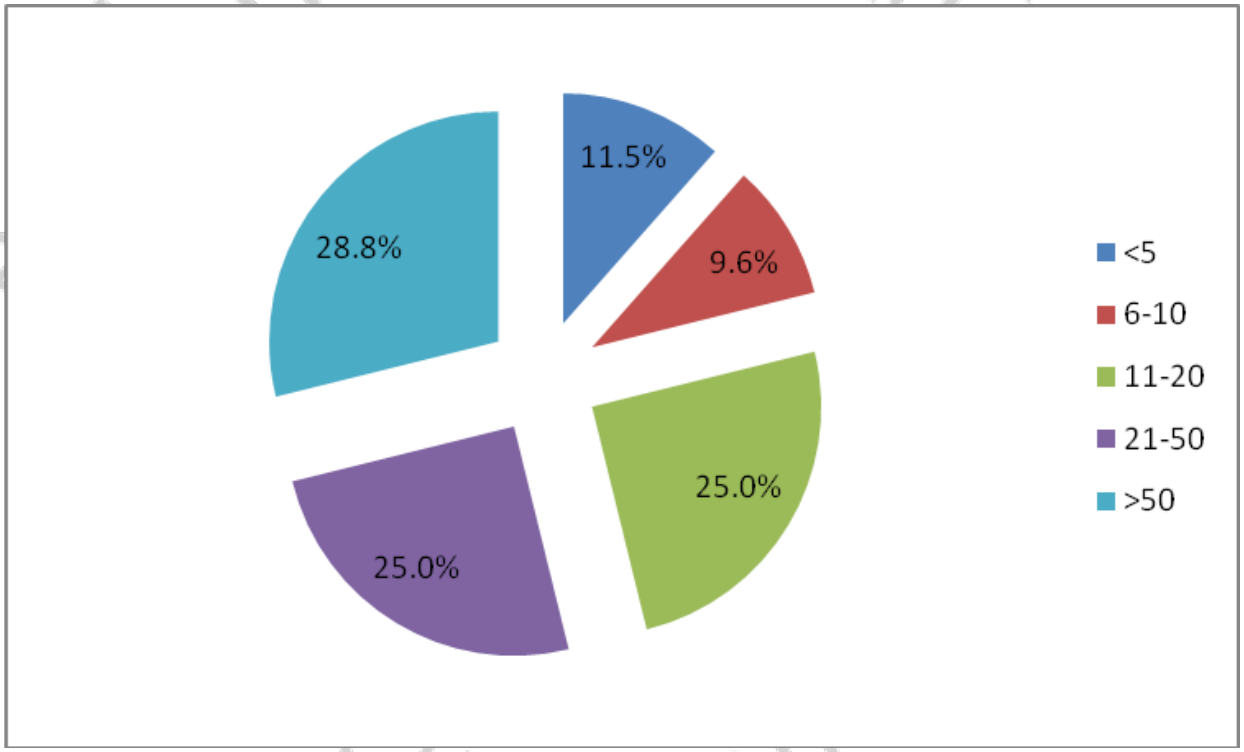
# Survey Findings

- Motor Carrier Representatives Survey and Interviews
  - First 3 questions were demographic

**Respondent Occupations and Counts**

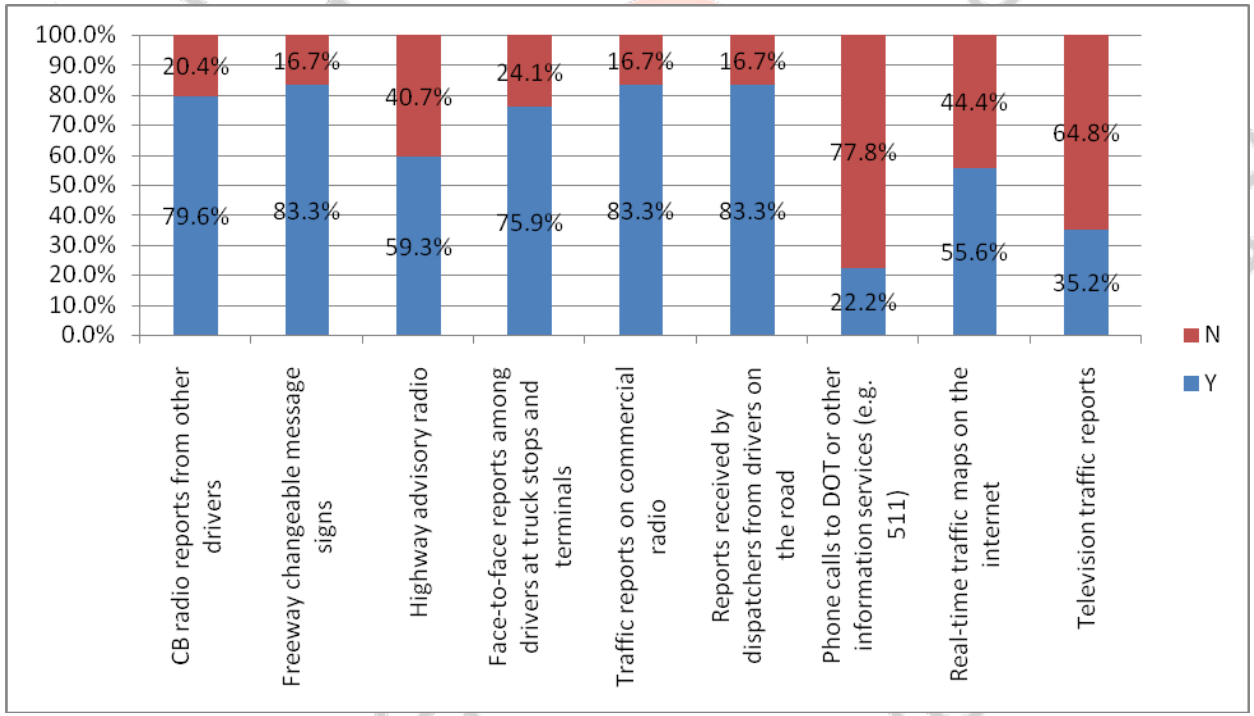
| Response totals | |
|---|---|
| Compliance Manager | 1 |
| Dispatcher | 1 |
| Driver | 5 |
| General Manager | 3 |
| Office Manager | 1 |
| Operations/Ops Manager (incl. Traffic, Transp. & Logistics) | 12 |
| Owner | 6 |
| President/CEO | 14 |
| Publisher | 1 |
| Safety/Risk Management Director | 4 |
| Vice President | 6 |

# Survey Findings contd.




**Size of Truck Fleet**

# Survey Findings contd.

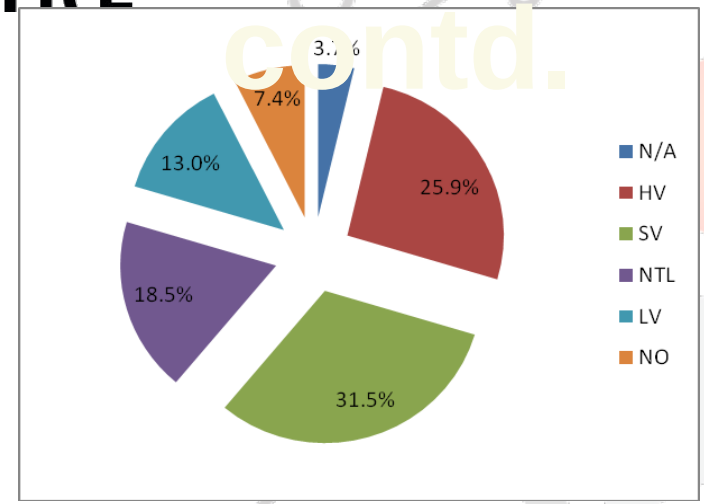



**Current Usage of Information Delivery Methods**

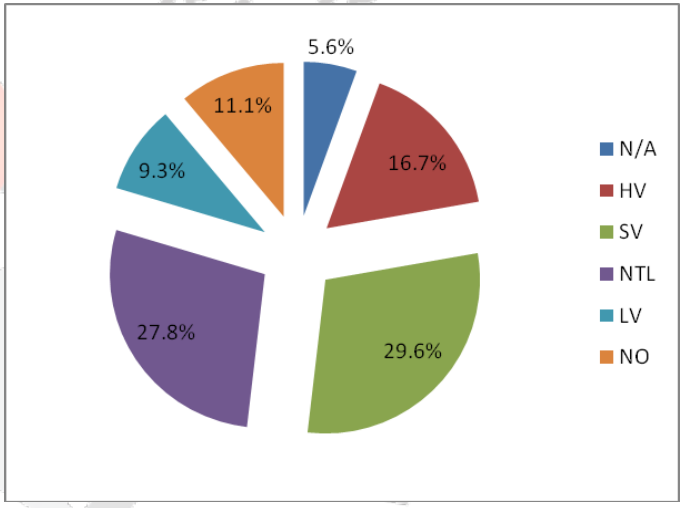
# Survey contd.

- Respondents were asked to evaluate nine different sources of traffic information for their value in planning or optimizing travel/delivery routes.
  - These sources were:
    - CB radio reports from other drivers
    - Freeway changeable message signs
    - Highway advisory radio
    - Face-to-face reports among drivers at truck stops and terminals
    - Traffic reports on commercial radio
    - Reports received by dispatchers from drivers on the road
    - Phone calls to DOT or 5-1-1 systems
    - Real-time traffic maps on the internet
    - Television traffic reports

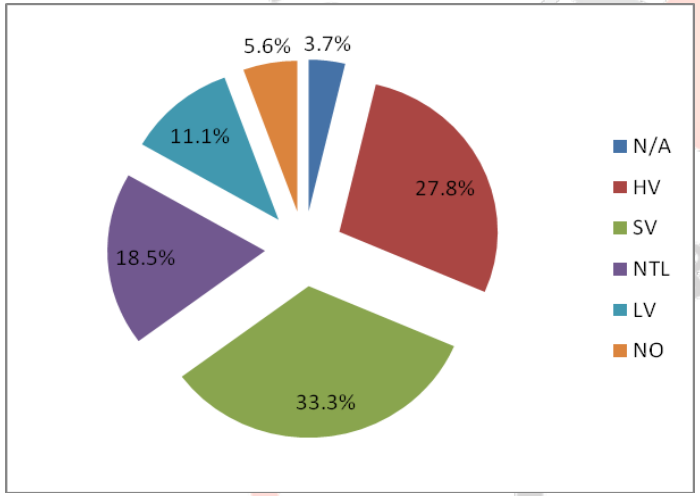
# Survey Findings contd.



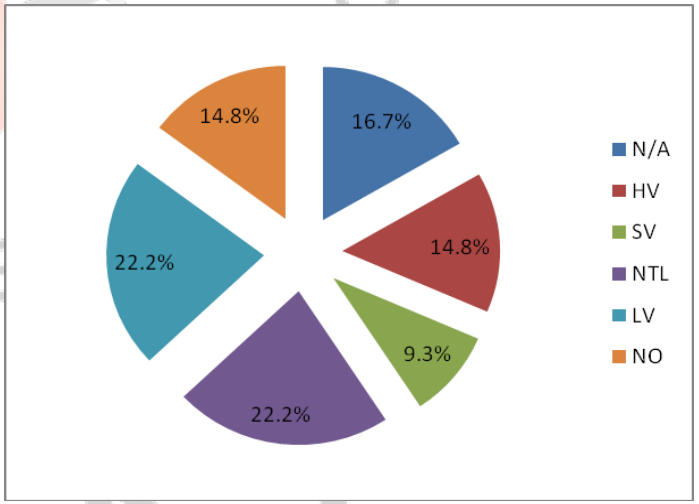

**Freeway Changeable Message Signs**




**Face-to-Face Reports among Drivers at Truck Stops and Terminals**




**Traffic Reports on Commercial Radio**

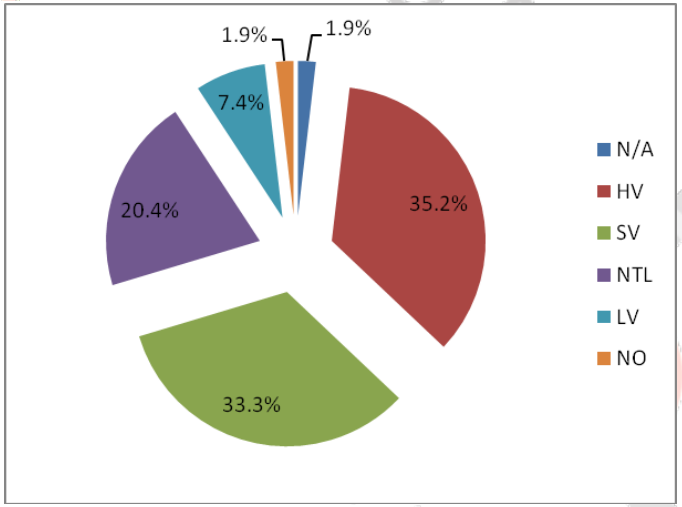



**Phone Calls to DOT or Other Information Services (e.g. 5-1-1)**

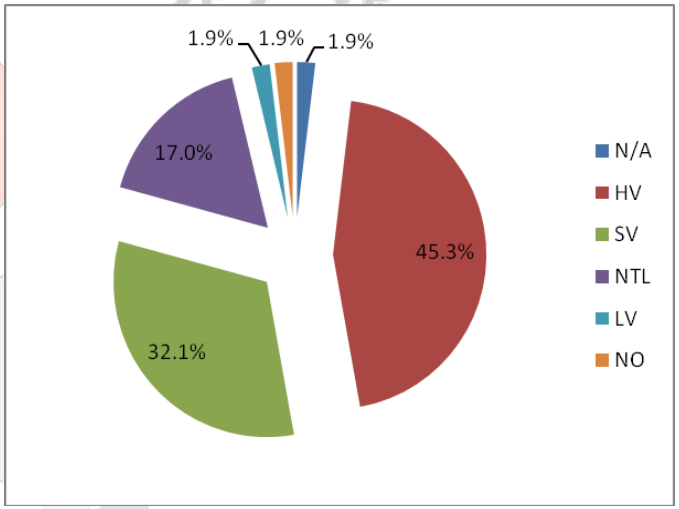
# Survey contd.

- Respondents were also asked to evaluate five different types of real-time information for their overall value in optimizing or modifying routes.
  - These sources were:
    - Atmospheric weather information
    - Weather-related road condition information
    - Congestion information
    - Incidents, crashes, and other delays
    - Construction, lane closures, and detours

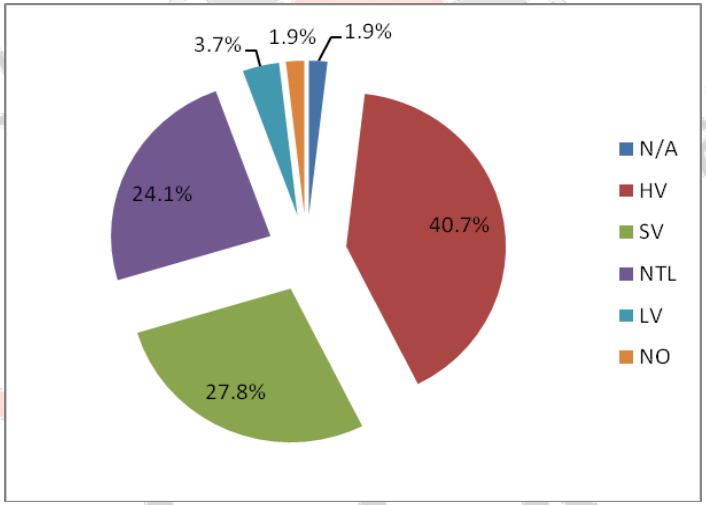
# Survey Findings contd.




**Weather-Related Road-Condition Information**



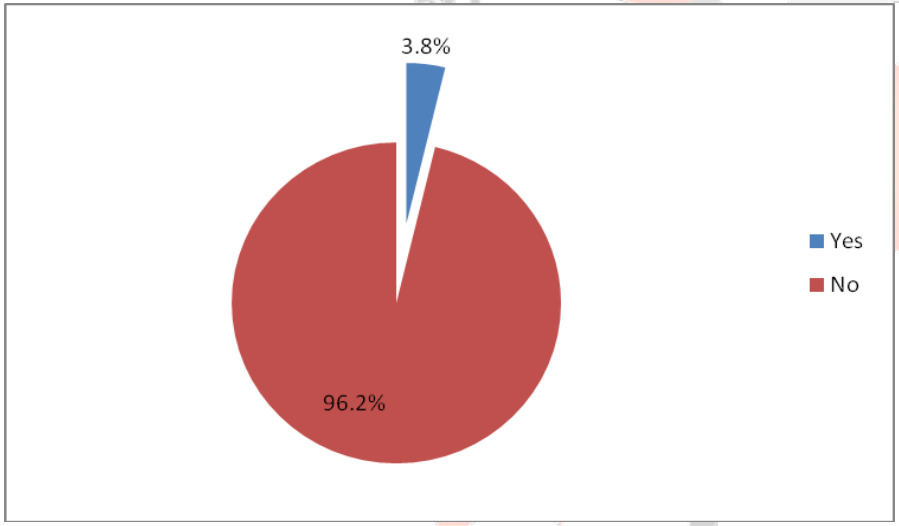

**Construction, Lane Closures, & Detours**



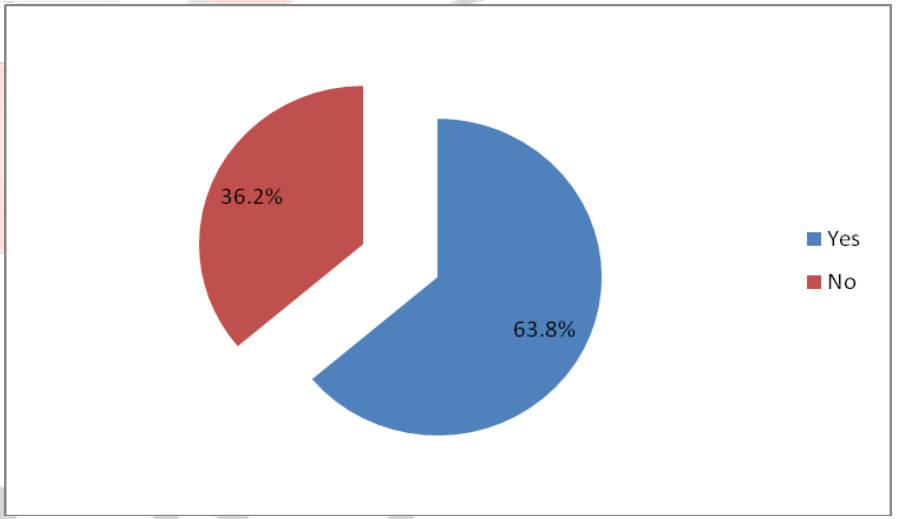

**Incidents, Crashes, & Other Delays**

# Survey Findings contd.

- Respondents were asked about preferred delivery methods for information.
- They were also if their company currently shared/sold real-time information, and if they would be willing to share information with a clearinghouse, if one existed.




**Companies Currently Sharing or Selling Real-Time Information**




**Companies Willing to Share or Sell Real-Time Information**

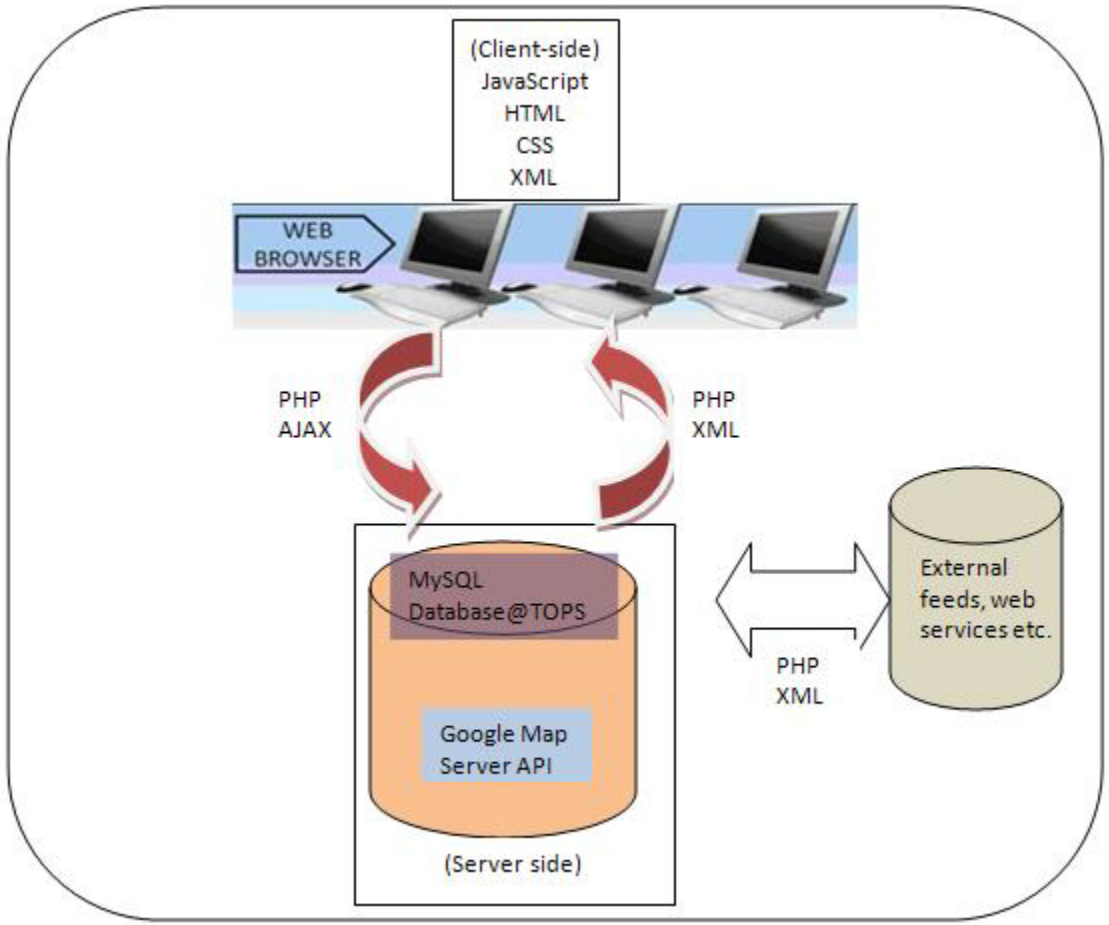
# Web based Mock-up

- Technologies studied

  (Mainly open source technologies)

  - Google Maps API(Javascript & Flash), KML
  - Php (Server side), XML, JS/CSS, Ajax
  - MySQL Database
  - Web Services

# Mock-up Architecture




URL:http://www.mississippivalleyfreight.org/clearinghouse/

# Thank You

Questions or comments?