

# Leveraging Cloud Based GIS to Handle Traffic Spikes in ITS Applications

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## New Mexico Roads Legend

### Road Conditions:

- Road Closure
- Severe Driving Conditions
- Difficult Driving Conditions
- Fair Driving Conditions
- Seasonal Closure
- Crash
- Alert
- Special Events
- Other States 511

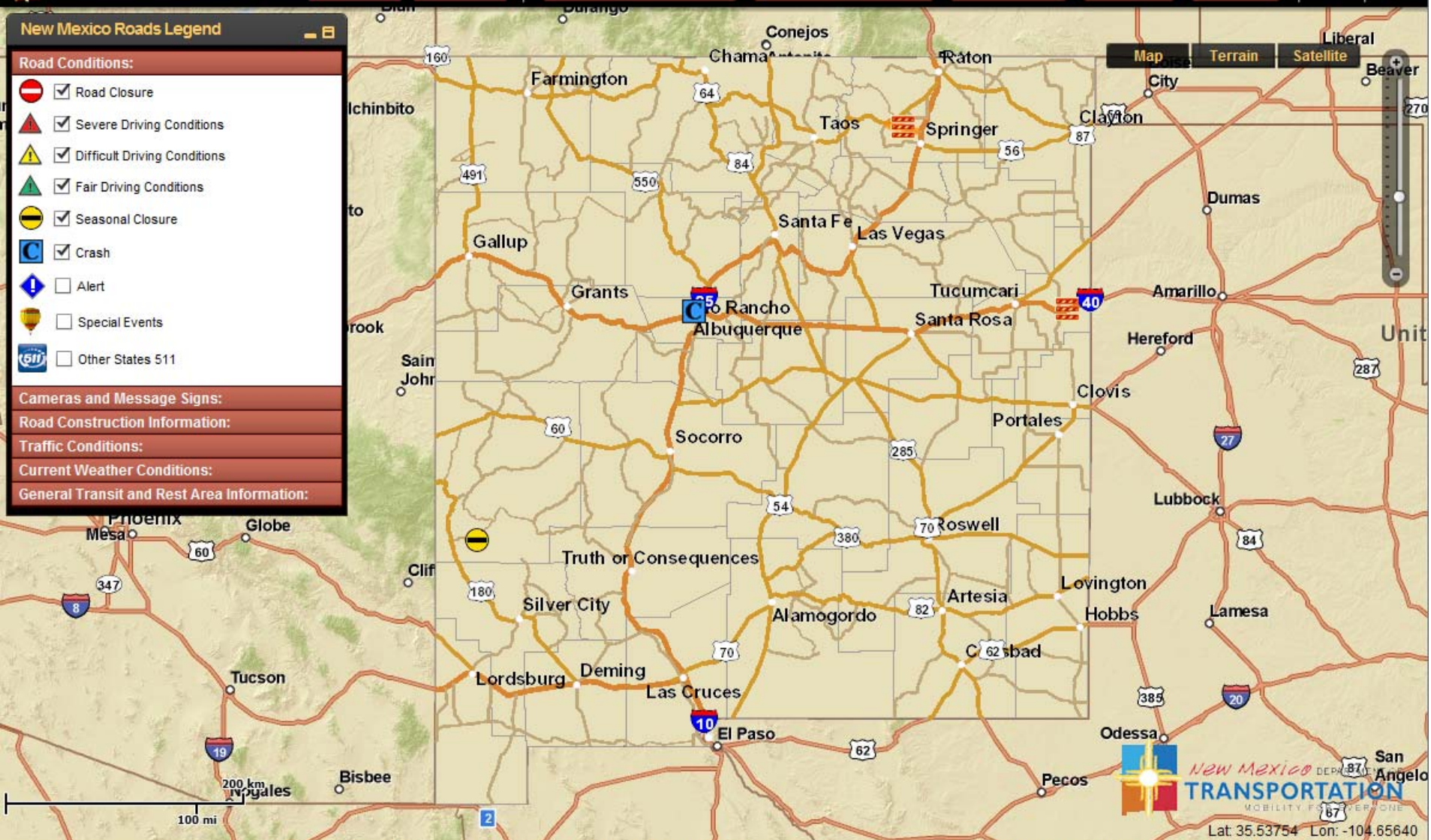
### Cameras and Message Signs:

### Road Construction Information:

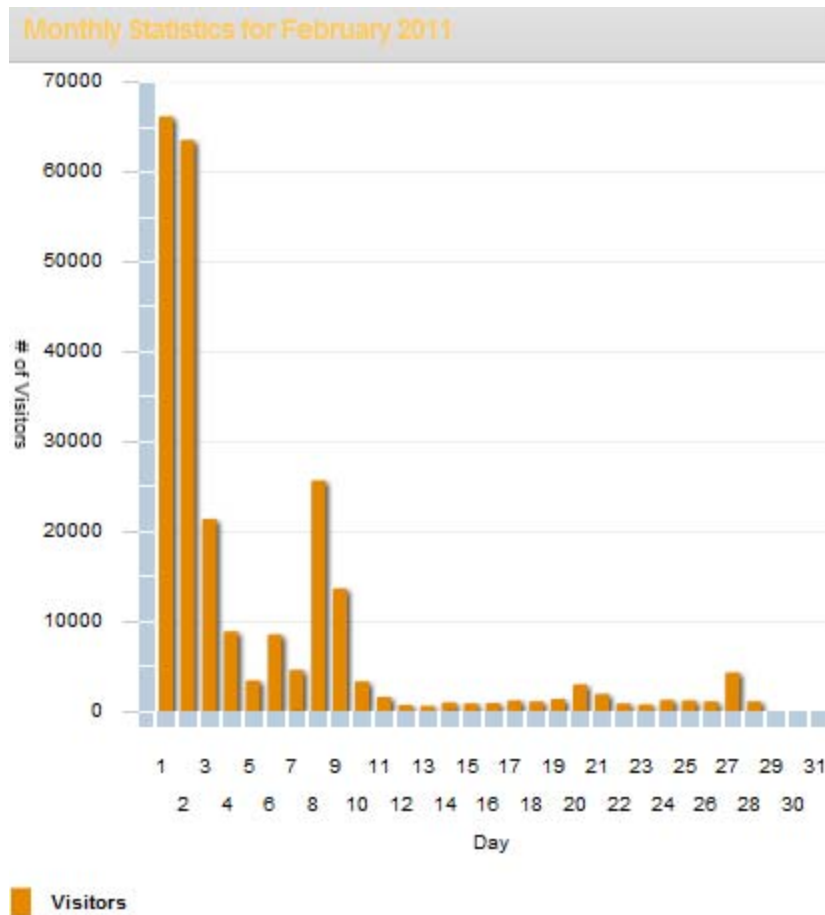
### Traffic Conditions:

### Current Weather Conditions:

### General Transit and Rest Area Information:



- Application use can spike by  $> 2$  orders of magnitude during weather events.
- It is not economical to provision for maximum capacity only to have those resources idle most of the time.
- Traveler Information applications fail regularly during these peak events when they are needed the most.

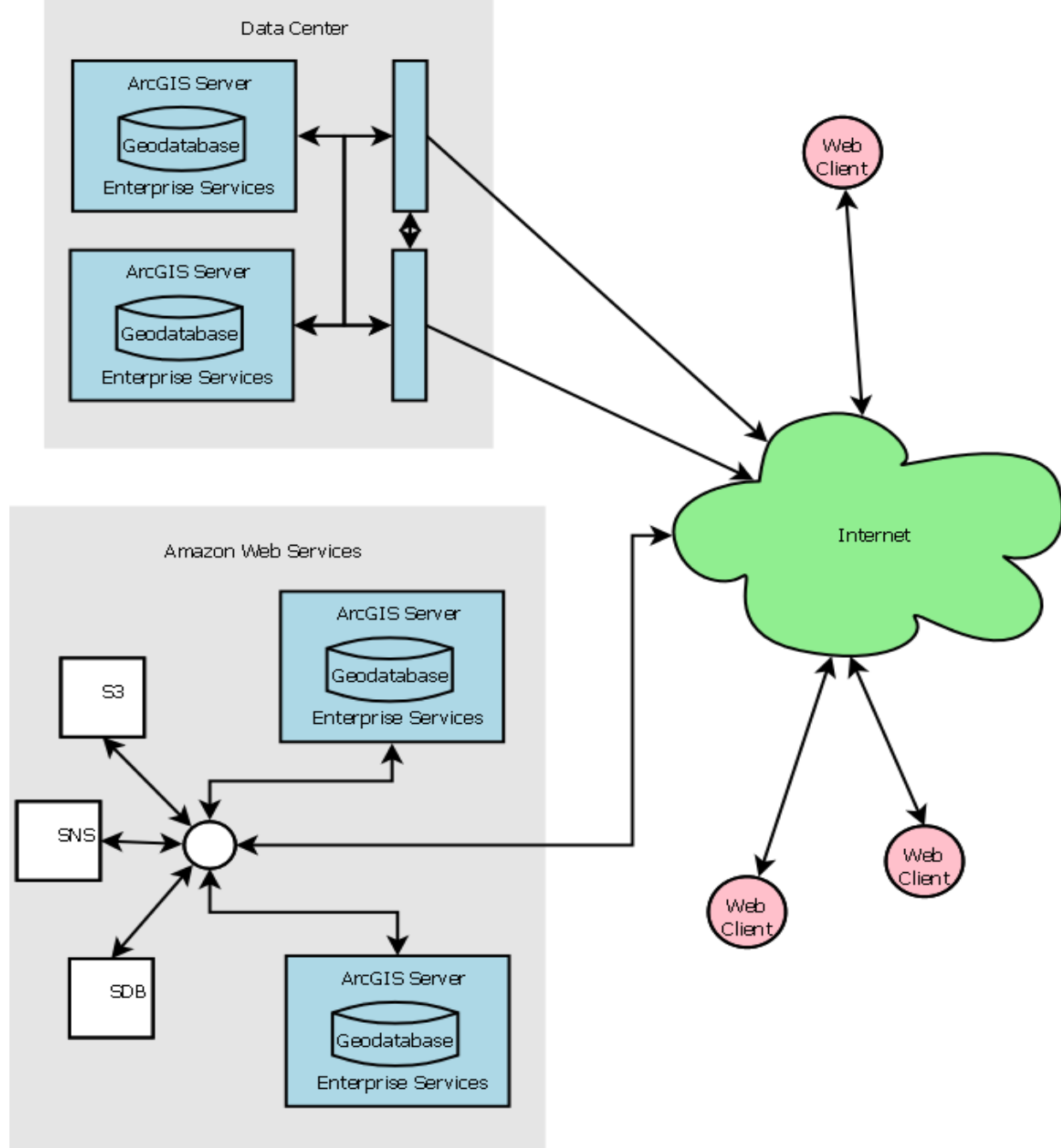


# Pay for what you use cloud services are a good solution

- nmroads.com uses Amazon Web Services
  - Dynamically during usage spikes to minimize cost
  - For failover to insure high availability
- Amazon Simple Storage Service (S3)
  - Serves map tiles by extending ESRI web API's (bandwidth)
  - Could use Amazon Cloud Front for even better performance
- Amazon Elastic Compute Cloud (EC2)
  - Custom enterprise Java services
  - ESRI ArcGIS Server (SDE Geodatabase Replication)
- Amazon Simple Notification Service (SNS)
  - Messaging for enterprise Java services
- Amazon SimpleDB (SDB)
  - For non SDE database needs

# ArcGIS Server on Amazon EC2

- There are variables / options
  - Enterprise license agreements
  - renewable term licensing options
- Work with ESRI



Questions?