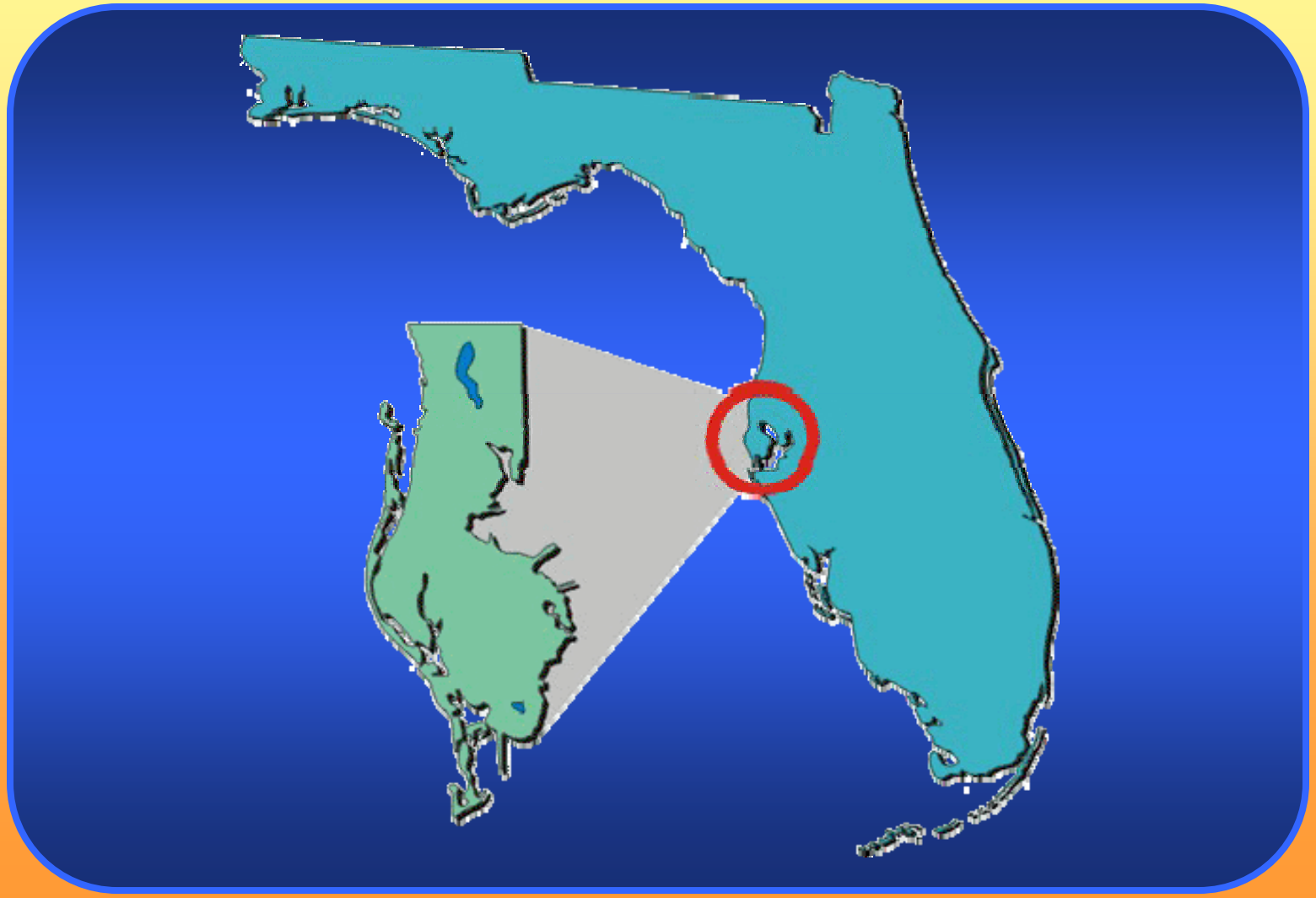
Jim Pennington
Director of I.T.

Who or What is Sunstar EMS?

Sunstar is the trade name for Pinellas County all-paramedic ambulance and emergency response service.

We are the sole ambulance provider for Pinellas County, Florida.

Where is Pinellas County?



Demographic Information

- Population is 921,482.
- Only 280 square miles
- 3,291 persons/sq mile
- 115 bridges
- Over 587 miles of coastline
- 35 miles of beaches

EMS System Design

The EMS System is operated as a 'Public Utility Model' (PUM) under a performance contract between Paramedics Plus and the Pinellas County EMS Authority.

Paramedics Plus, LLC took over operation of Sunstar EMS in October 2004.

About Paramedics Plus

- LLC from Tyler, Texas
- Part of East Texas Medical Center Hospital
- Tyler, Pasadena & Waco, TX
- PUM: Oklahoma City, OK
- Tulsa, OK
- PUM: Pinellas County, FL

Sunstar Information

- We transported over 118,000 patients last year.
- Fleet of 65 ALS units
- Critical care unit
- Approx. 500 medics & EMTs
- Third largest multi-jurisdictional EMS agency in the country

Contract Requirements

Performance Based Contract:
"Making an Effort"
does not count

Response Time: 10 Min
Compliance: 92%

$7 fine for every minute late

Issues Facing Paramedics Plus

- Paramedics Plus needed to hire medics and EMTs (and fast).
- Users needed to master a new CAD system.
- Operational reports needed to be built ASAP.
- Entering the ‘busy season’ with little knowledge of the new system

Paramedics Plus Needed Help

- We hired a consultant to assist with improving emergency response times and recover lost unit hours.
- We needed to implement new processes to monitor and track system performance.
- We needed to proactively monitor the system.
- We needed temporal and spatial recommendations on unit deployment and monitoring.

MEASURING & SUSTAINING IMPROVEMENTS

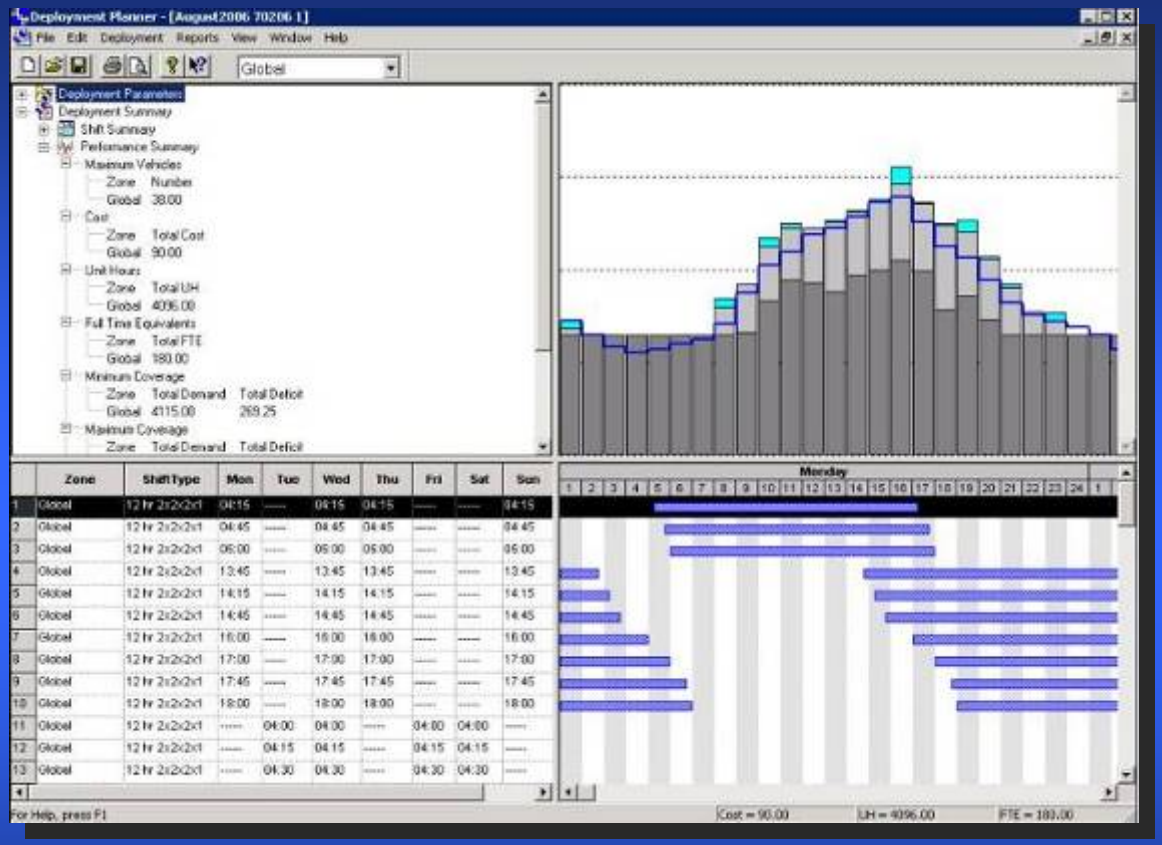
- **Web-based Crystal Reports page for real time performance review**
- **Access Reporting system to record unit out of service**
- **Measuring systems to track employee attrition, safety related incidents and fleet critical failures**

Temporal & Spatial Deployment

- **Deployment of ISERA Shift Builder**

Creates employee schedules to best match the 9-1-1 call volume demand. The information comes from historic call information.

1ST IMPROVEMENT ACTION



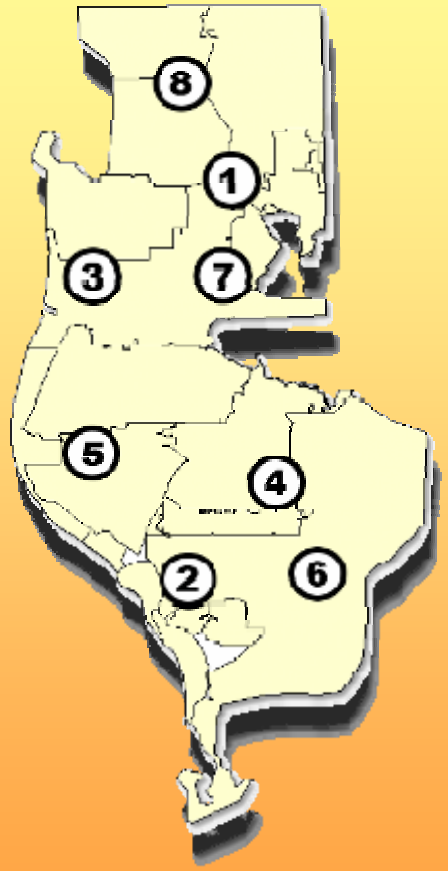
NEW EMPLOYEE WORK SCHEDULE TO MEET PATIENT DEMAND

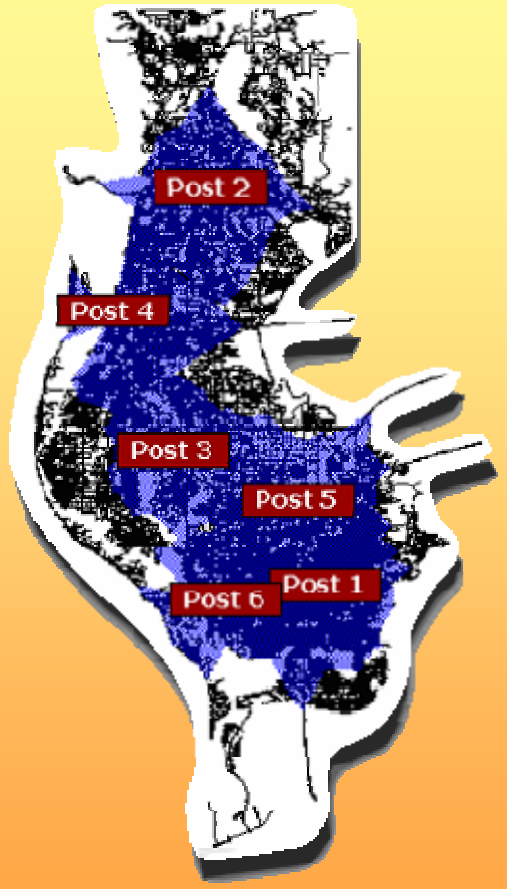
MARVLIS Suite

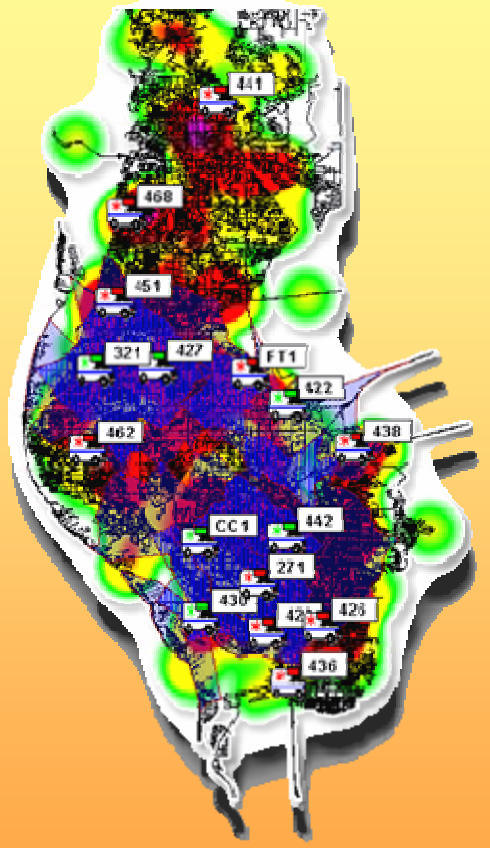
We implemented the new MARVLIS Suite to assist with matching the temporal demand with the spatial demand.

(Mobile Area Routing and Vehicle Location Information System)

2nd IMPROVEMENT ACTION





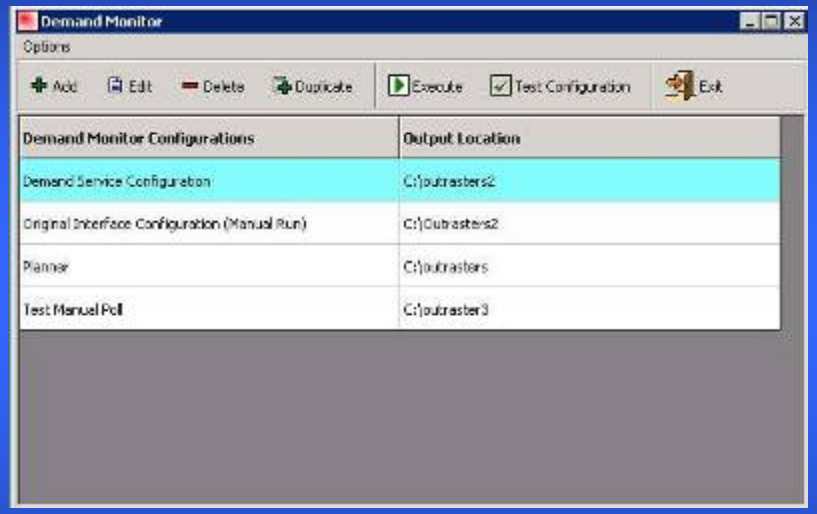


USING MARVLIS (Mobile Area Routing and Vehicle Location Information)

Demand Monitor

- This application generates graphical demand patterns which show the historic location of heavy call volume for specific times of day and days of week.

- Using this information the dispatcher can get a jump on the next emergency call by positioning units in those locations with high historic demand or to route units through those areas during post moves.



AMBULANCE POST PLAN

MARVLIS determines areas of highest demand.

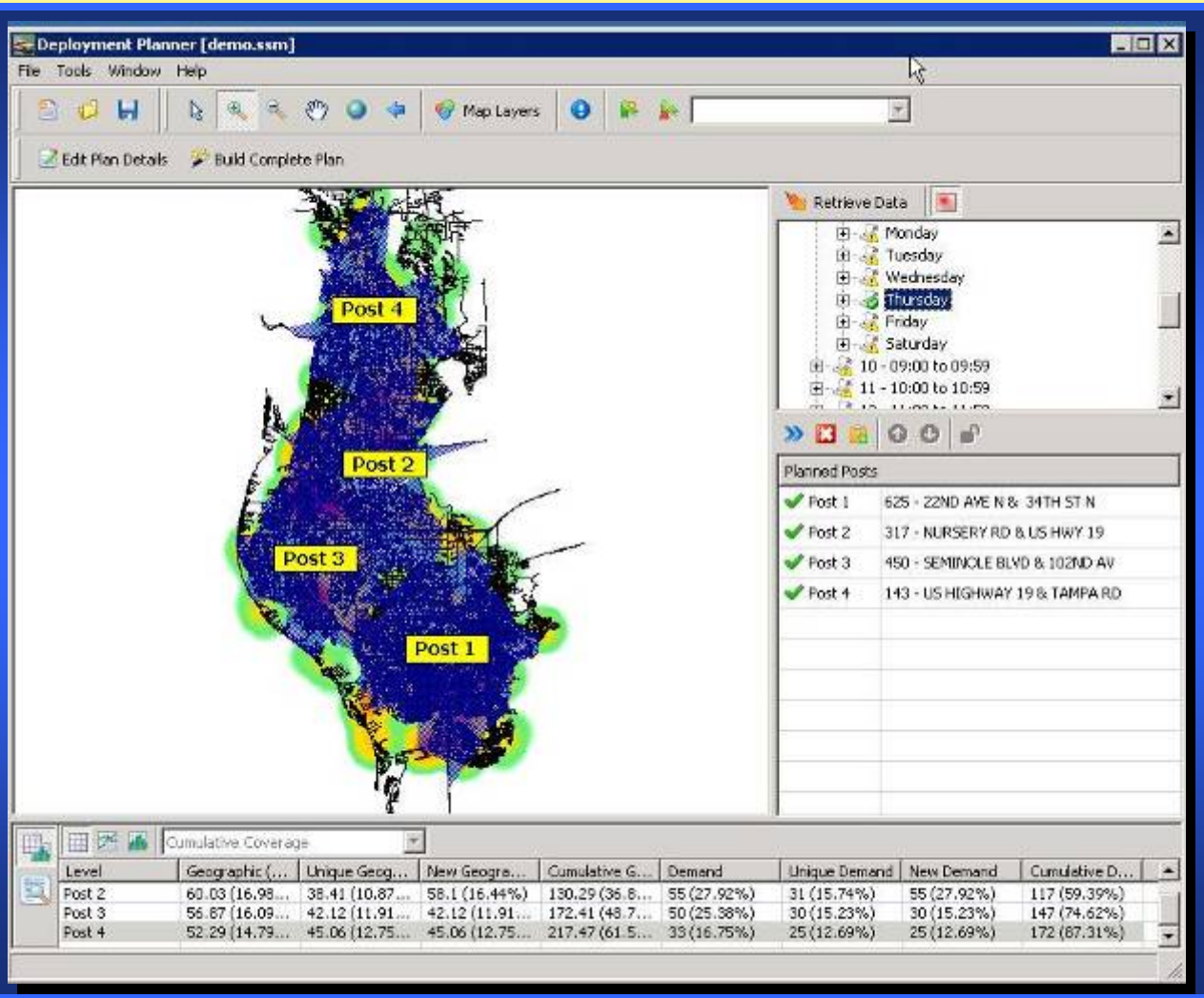
Recommends placement for up to 20 ambulances to meet call demand

Deployment Planner

- **This application takes your current posts and their LAT/LONG and analyzes them against the location of emergency calls you had for the past 20 weeks.**

- **The application dynamically builds your post plan for every hour of the day and day of the week (168 times).**

Demo of Deployment Planner

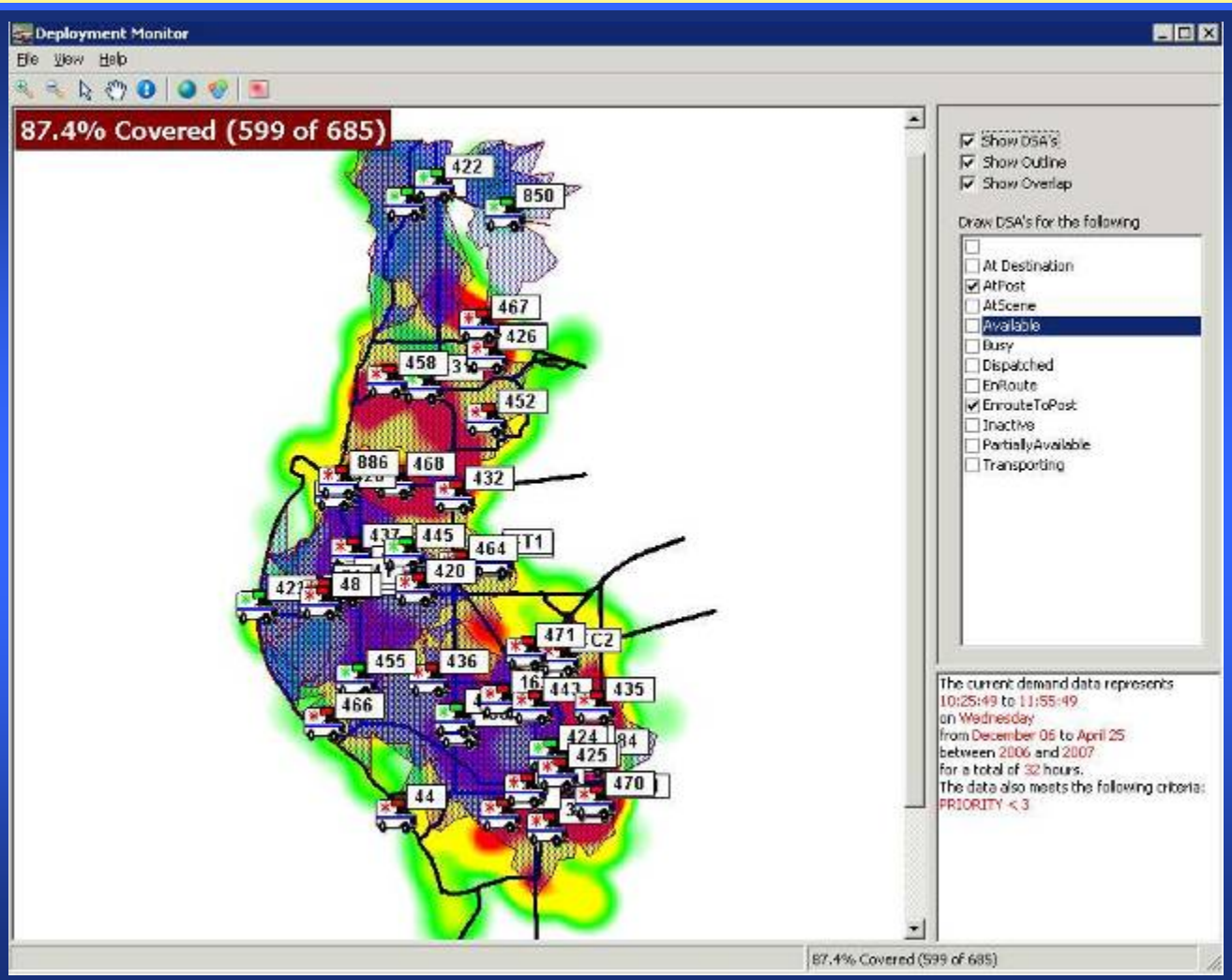


MARVLIS Demand Monitor

- **This application displays the demand pattern on the maps to show the location of heavy emergency call volume for specific times of day and days of week.**

- **Dispatcher knows where the demand is going to occur and can position units in that location or to route units through those locations.**

Demo of Deployment Monitor



Other GIS Tools We Use

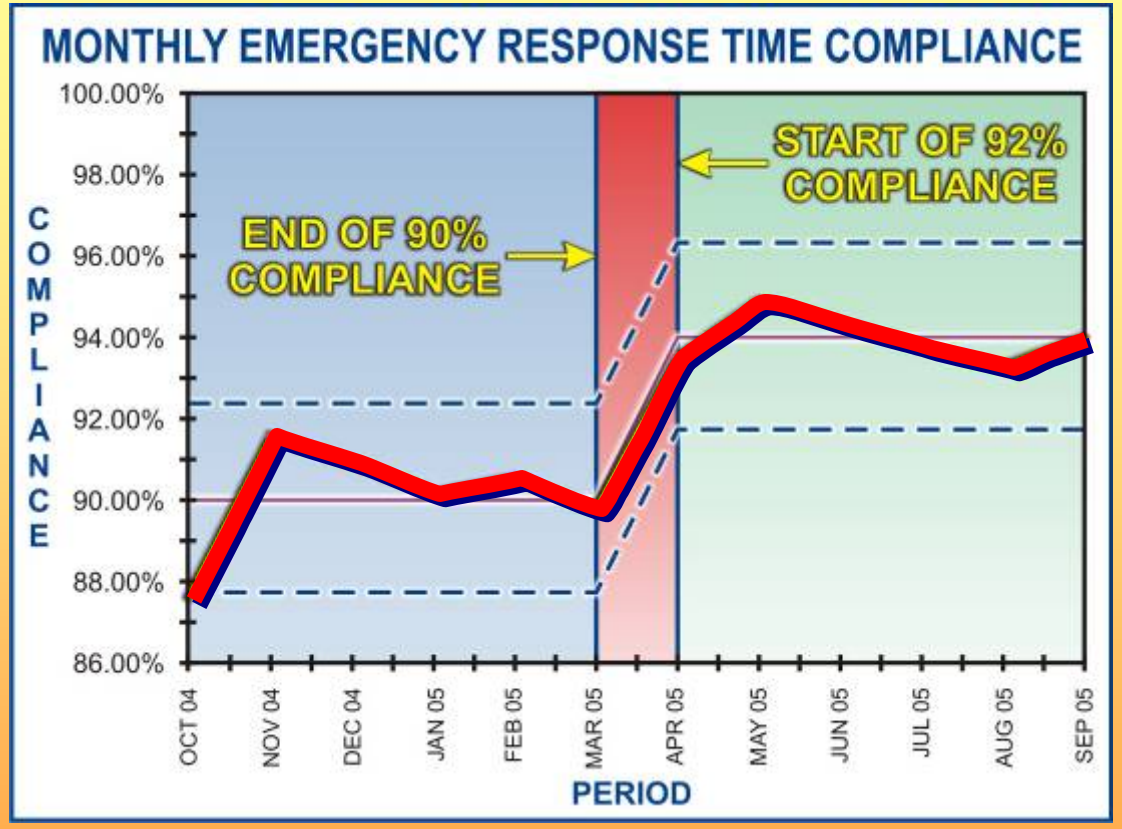
We use Google's & Yahoo's Mapping APIs to pass data from our CAD system to plot XY of the following...

- Route the ambulance took to the 9-1-1 call (speed, time)
- Route the ambulance took to the hospital
- Current ambulance locations
- Loaded transport mileage verification

MEASURING & SUSTAINING IMPROVEMENTS

MEASURING & SUSTAINING IMPROVEMENTS

RESULTS ON SUNSTAR



COMPLIANCE WENT FROM 90% TO 93%
IN LIEU OF A 2% INCREASE IN TRANSPORTS
2005 thru 2006 - 118,334 transports
averaging 324 transports per day

93%

UP

90%
COMPLIANCE

RESULTS

- Over one minute faster than before
- Arrive on scene within 10 minutes to over 2500 more patient emergencies in a year than before

DIVIDENDS FROM RESULTS

PENALITIES DOWN

Sunstar incurred fewer response time penalties by performing over 90% saving $630,000

HEAD COUNT UP

Monies saved in penalties allowed us to hire 233 paramedics & EMTs in an 18 month period.

ATTRITION DOWN

Attrition rate for full time paramedics and EMTs went down 3.19 % from 2005 to 2006.

COMMISSION ON ACCREDITATION OF AMBULANCE SERVICES
CAAS
ACCREDITED
ACCREDITED CENTER OF EXCELLENCE
ACE
NAED
sunstar
PARAMEDICS
SUNSTAR PARAMEDICS