Planning For The Pandemic

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Planning For The Pandemic

Pandemic Event

- Increasing Risk
- Center for Disease Control and Prevention
- Strategic Response Plans
- Role of Traffic Engineer

Planning For The Pandemic

Traffic Control Plan

- Planning Process
- Simulation/Animation
- Planning Parameters
- Actual Measurements

Simulated Pandemic Event

- Kaiser Permanente Flu Shot Clinic
  - Combined regional flu shot clinics into one large flu shot clinic
- Colo. Dept. of Public Health Funding

Simulated Pandemic Event

- KP Rock Creek Medical Campus
- US 287
- Northwest Parkway
- Exempla Circle

Simulated Pandemic Event

Traffic Control Plan Objectives

- Minimize impacts on Hospital
- Minimize impacts on operation of
  - US 287
  - Northwest Parkway

Traffic Demand Projections

Parameters

- Two Saturday Events
  - October 21st, 2006
  - November 4, 2006
- 15,000 – 20,000 flu shots
- 1.75 persons per vehicles
- Service rate: 2 min/veh.

Traffic Control Plan

Planning Process

- KP staff
- Police Dept.
- CDOT
- Consultants

Traffic Control Plan

Significant Issues/Constraints

- Close Exempla Circle
- Separate Entering and Exiting Traffic
- Handling of Pediatric Members
- Control of US 287 Intersection
- Traffic Control Stations

Traffic Control Plan

Analysis Tools

- Synchro/SimTraffic

Traffic Control Plan

Analysis Process

- Existing Traffic Data
- Trip Distribution 80%/20%
- Peak-Hour Volume – 2,000 per hour
- 5 flu shot stations
- 5 traffic signals/40 sec. cycle length
- 10 mph speed on internal links

Testing of Traffic Control Plans

Use of SimTraffic

- Testing of traffic flow reasonableness
- Determination of queue length
- Adjustment to Plans

Traffic Control Plan

Elements

- VMS Boards (4)
- Tow Truck for Disabled Vehicles
- On-Call Snow Plow
- Office Employees
- Police Officer Override of Traffic Signals
- Use of US 287 Shoulder
- Traffic Control Station
- Special Signing
- Traffic Cones

Traffic Data Collection During Events

Traffic Counts

- 6 AM to 2:00 PM
- # of vehicles
- # of flu shots

Planning vs. Reality

	Predicted	Actual
Total Flu Shots (2 days)	20,000	24,000
Total Vehicles	11,500	11,210
Persons/Vehicle	1.75	2.15
Distribution	80% South 20% North	77% South 23% North
Peak Arriving Vehicles	2,000 per hour	1,350 per hour
Service Rate	2 min/vehicle	3 min/vehicle
Maximum NB Queue Length		
Maximum SB Queue Length		

Summary and Conclusions

Use of Simulation / Animation Tools

- Can be used to develop reasonable simulations of pandemic events
- Can predict vehicle queues and interaction between intersections
- Requires assumptions on
  - Vehicle occupancy
  - Arrival rates
  - Service times
- Planning for Pandemic Events can use some of the parameters measured during these events

Summary and Conclusions

Planning for a Pandemic Event Requires

- Close coordination among
  - Medical staff
  - Public safety personnel
  - Public works/highway staff
  - Traffic engineers
- Traffic Control Plans use typical event management elements
  - VMS
  - Police officers
  - Signing, cones and traffic control devices
  - Traffic control personnel
- Advance Planning and Simulation Tools demonstrated the ability to
  - Safely inoculate a large number of people
  - In relative short time periods
  - Without undue traffic congestion or patient inconvenience