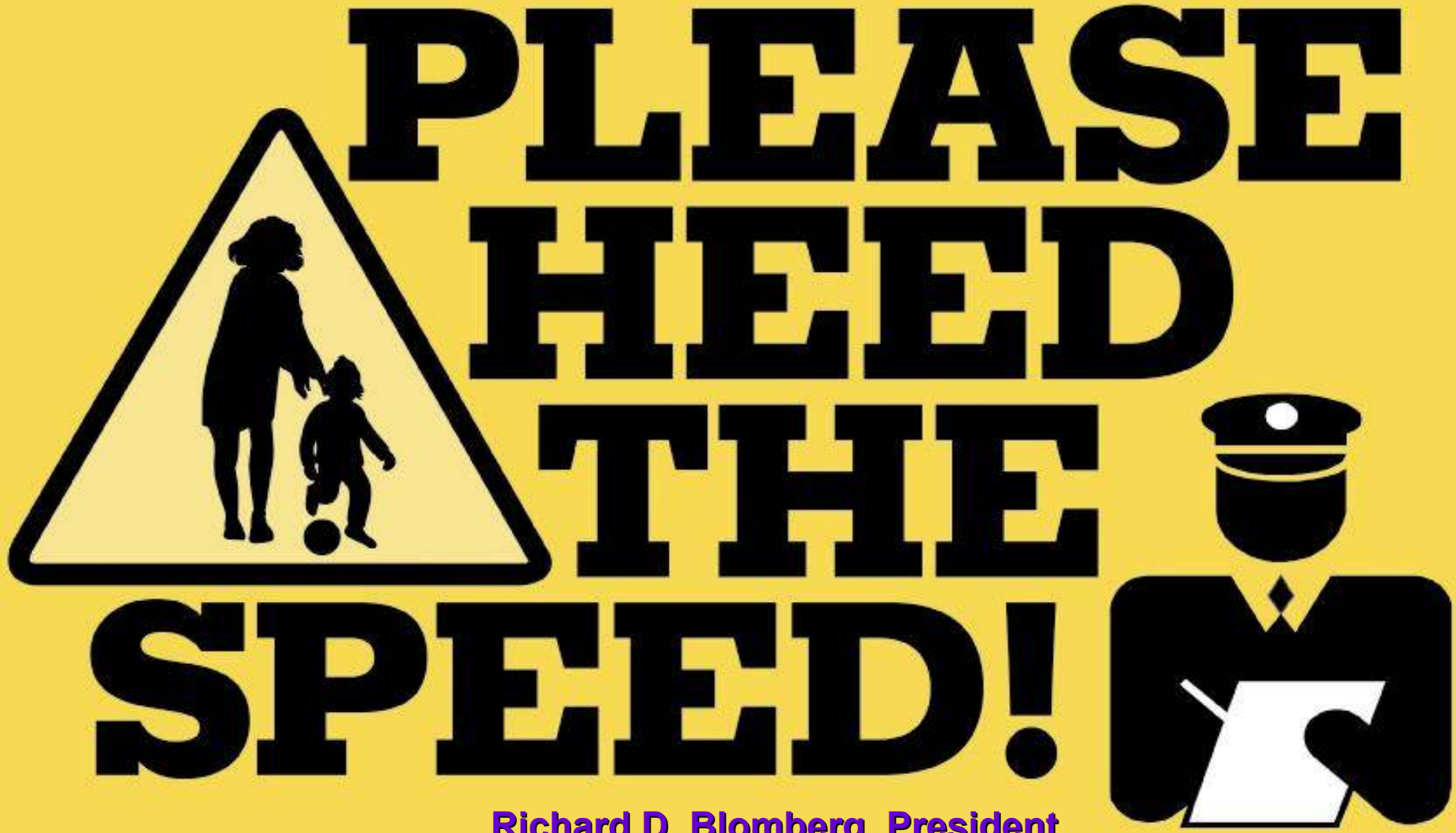
Education, Enforcement and Traffic Calming



DVRPC
Regional Safety Task Force
October 30, 2007

Richard D, Blomberg, President
Dunlap and Associates, Inc.
Stamford, CT

The Problem

- 4,600+ pedestrian fatalities
- 71,000 pedestrian injuries
- Speeding associated with 1 in 3 highway fatalities
- Higher speeds cause more severe pedestrian injury
- Traditional traffic calming not applicable to all streets

Motivations

- Desire to improve pedestrian safety
- Neighborhoods clamoring for speed reduction
  - With engineering treatments
  - Demanding engineering treatments
- Emergency services objecting to some engineering treatments on selected streets
- Need to have techniques that can be implemented quickly
  - Interim response
  - Rapid reaction

Research Approach

- Pilot study (completed)
  - Develop techniques
  - Prove concept
- Field study (ongoing)
  - Determine crash reduction potential of the program
  - Assess the relationship between speed and crash incidence

Pilot Study

- Phoenix and Peoria, AZ
  - 6 neighborhoods
  - 10 test segments
- Objectives
  - Examine methods to “calm” streets where traditional calming can’t be used
  - Enhance engineering calming
- Program name = *Heed the Speed*

Key Components of Pilot Program

- Community based with strong local involvement
- Reactive to community demands
- Focused on “local” drivers
- Traditional and innovative countermeasures
- Education and Enforcement in coordination with Engineering enhancement

Test Situations

- Existing physical calming
  - Reduce speed between speed humps
- No existing calming but calming planned
  - Enhance effectiveness of installed speed tables
- No existing or planned calming
  - Education, enforcement and innovative markings without engineering

Education

- Street signs, Lawn signs
- Printed Materials
  - Homeowners
  - Parents
  - Car dealers
  - “Ticket”
  - High schoolers
- Media
  - Live copy Radio
  - Neighborhood newspaper articles
  - Earned Media (TV, radio, newspapers)

Speed Is Lethal Flyer

SPEED IS LETHAL!

If you hit a pedestrian

- At 20 mph, 5% will die
- At 30 mph, 45% will die
- At 40 mph, 85% will die
- At 50 mph almost all will die

You need time and space to stop

- At 20 mph it takes you 47 feet to stop your car
- At 30 mph, the distance almost doubles (88 feet)
- At 40 mph, it almost doubles again (149 feet)

For a speeding ticket, you'll get

- A fine of over $100
- An insurance increase of hundreds of dollars
- 3 points on your license

Slow down and make your neighborhood safer

City of Phoenix

City of Peoria

Sources: *Arizona Driver License Manual*; Transportation Research Board Special Report No. 254: *Managing Speed.*

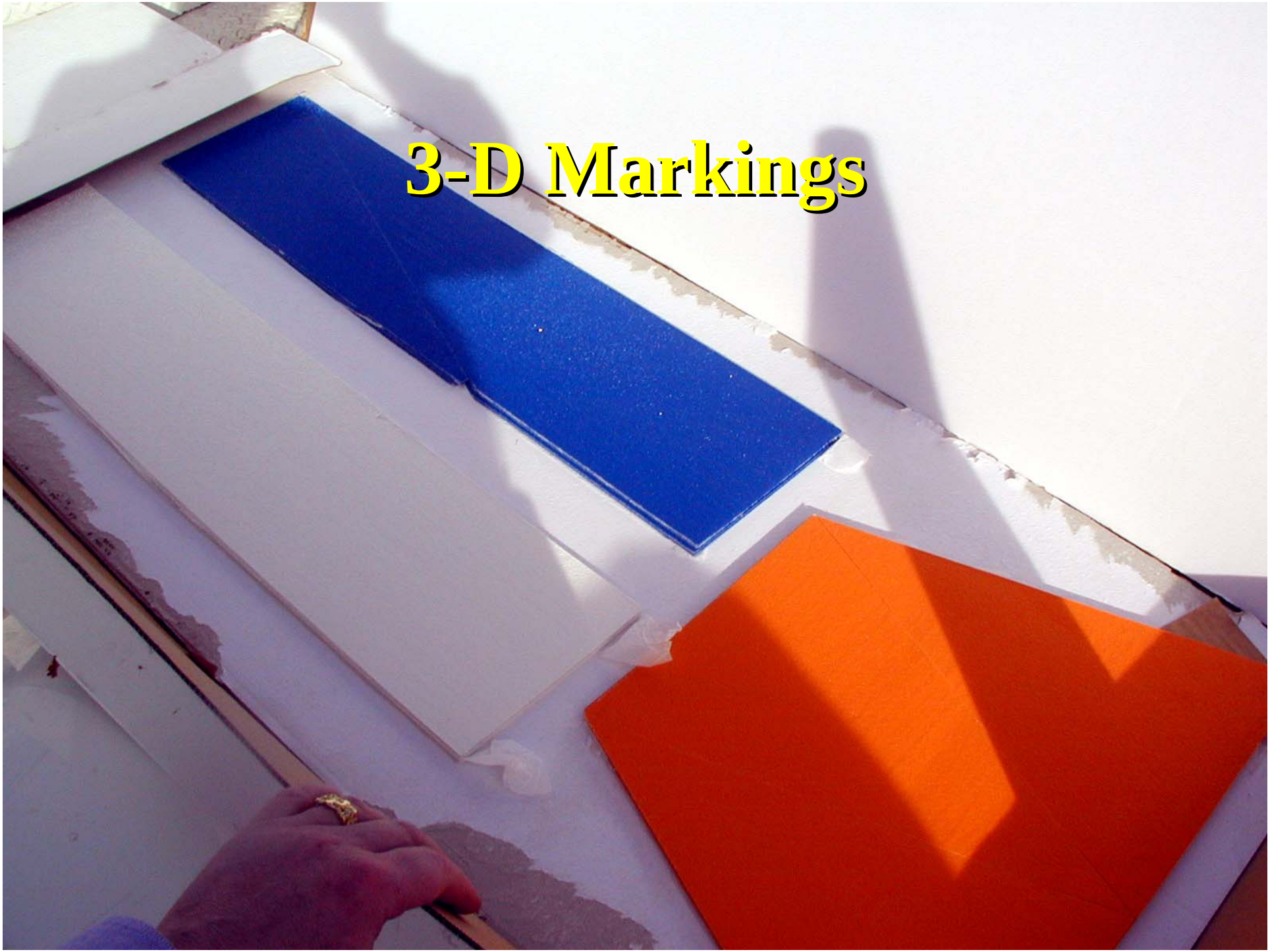
Special Enforcement

- Police patrols – warnings and tickets
  - Regular
  - Overtime
  - Training for traffic stops
- Neighborhood watches
- Radar speed trailers

Engineering Enhancements

- Traditional
  - Humps
  - Speed Tables (with and without visual treatment)
  - Entry signs
- Innovative
  - 3-D Markings
    - Thermoplastic “illusions”
    - Used alone and on speed tables
  - Tyregrip®
    - Surface texture (binder and aggregate)
    - Intended for skid resistance but used to mimic a speed table

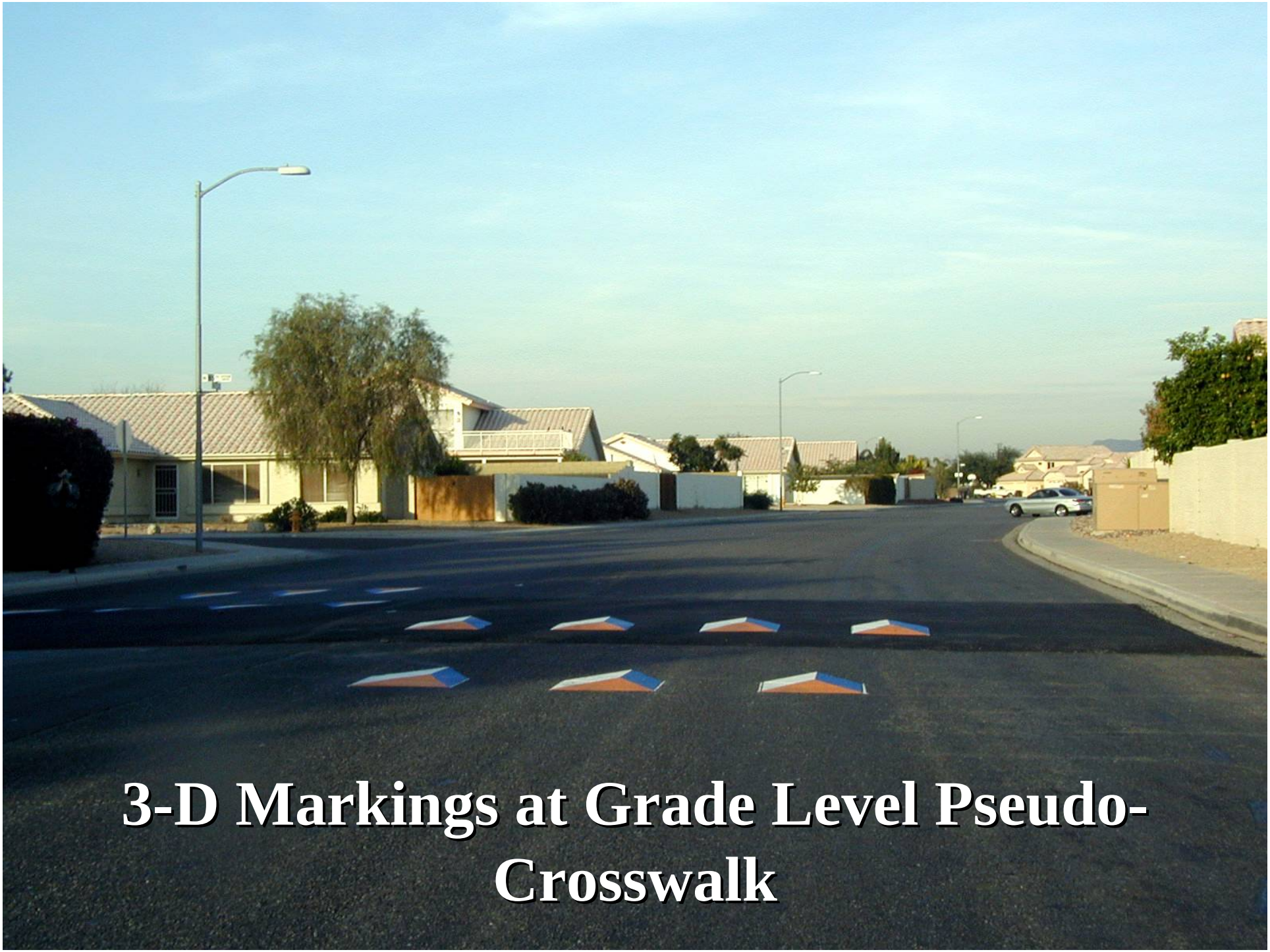
Existing Speed Hump with Regular Markings


3-D Markings

Pattern Laid Out

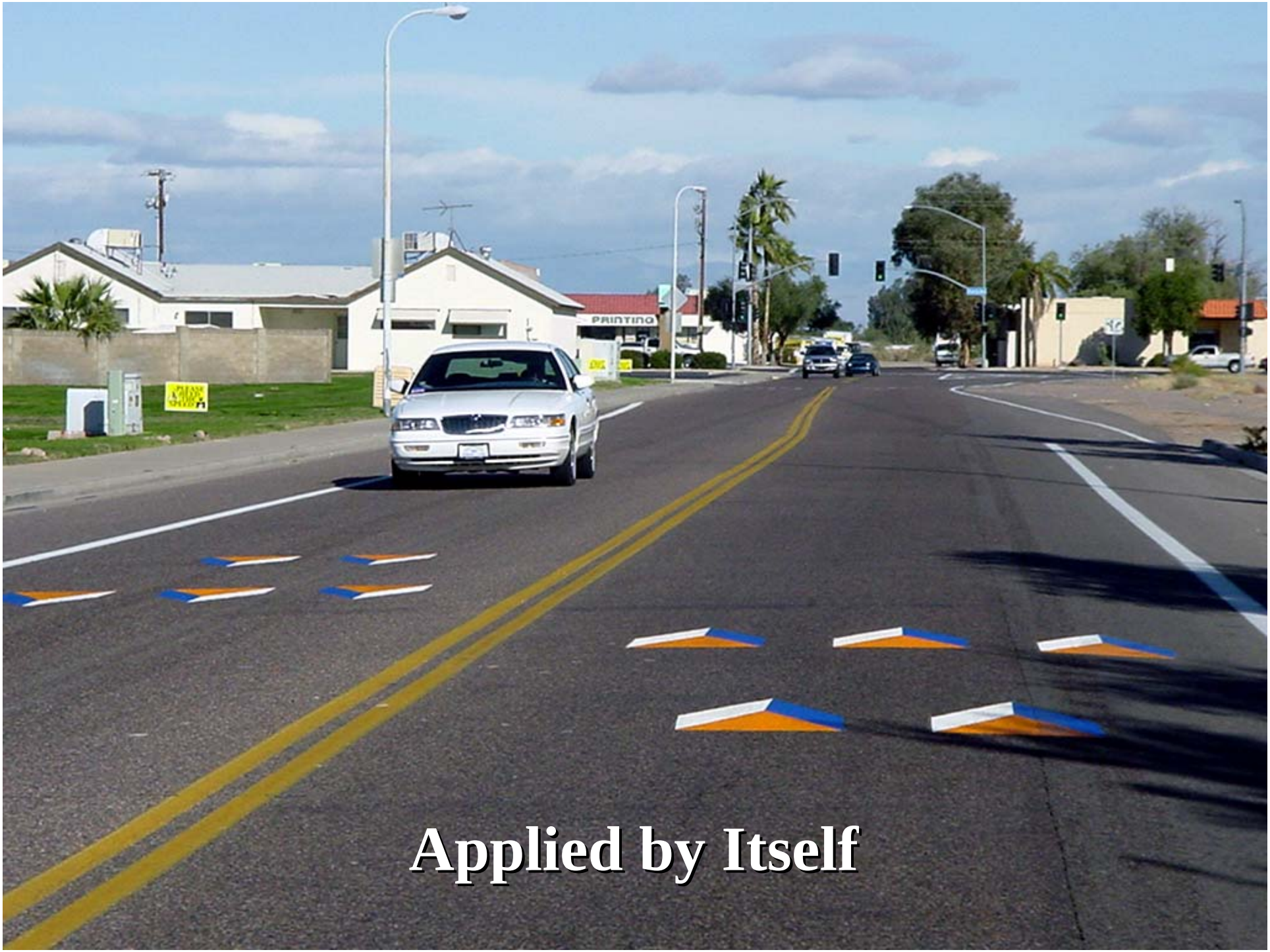

Then Heated to Adhere


Result Can be Compelling



3-D Markings at Grade Level Pseudo-Crosswalk


Applied on Top of Speed Table



Applied by Itself


Tyregrip®


Looks Like Speed Table

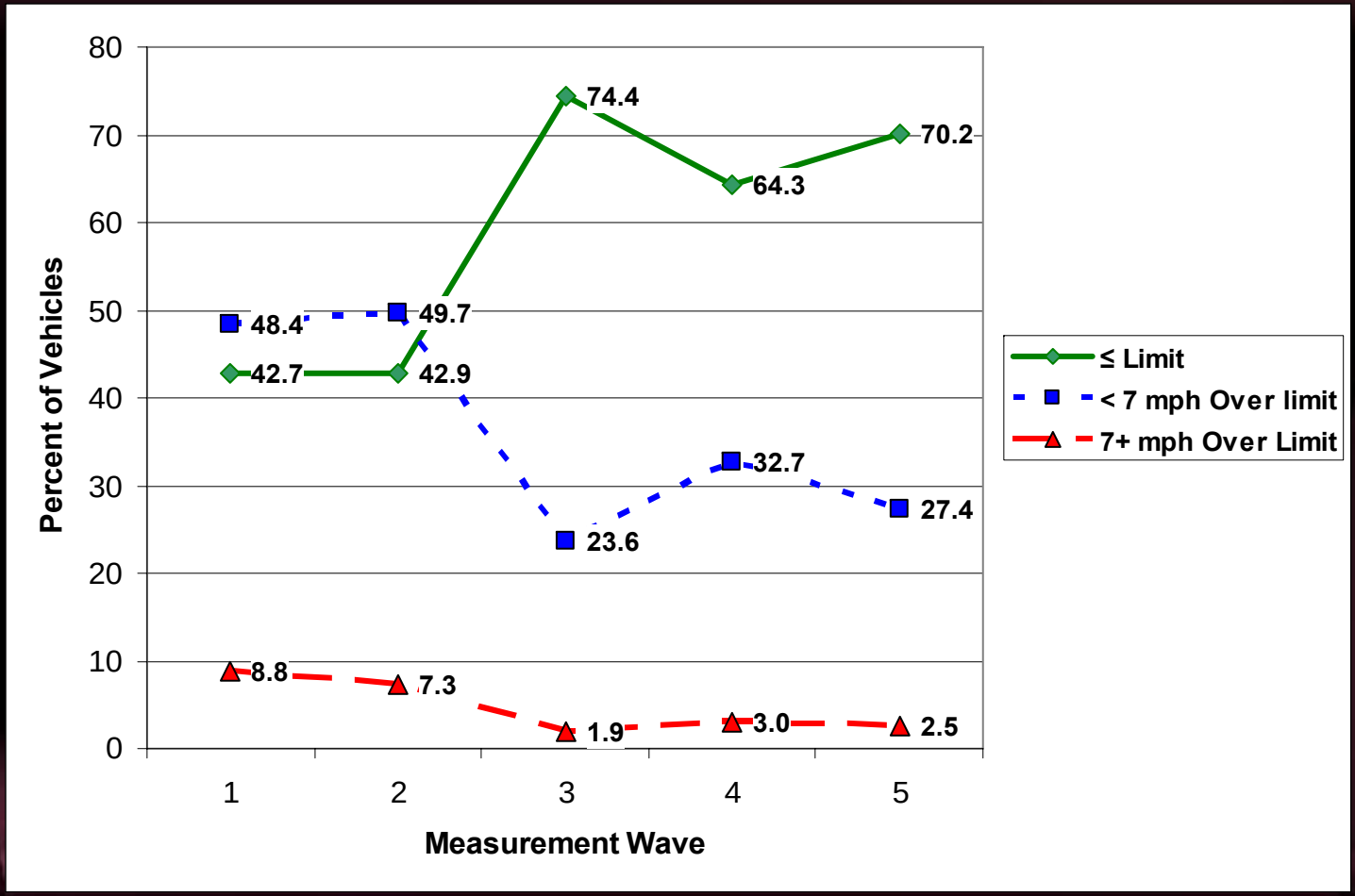
Pilot Study Data Collection

- Speed
  - Automated traffic counters
    - True speed
    - Vehicle class
- Exposure, Knowledge, Attitudes
  - Mailed surveys
  - Focus groups
- Process Measures
  - Patrol hours
  - Motorist stop form

Pilot Study Results

- Significant speed reductions
  - All road segments except one that started with humps and very low speeds
  - Speed reduction between humps on road with longstanding calming
- Significant drop in:
  - Average speed
  - Average speed above limit
  - Average speed of speeders
  - Number going more than 7 mph over
- Mean reductions from 0.5 to over 3.5 mph

Example of Change Pattern



Pilot Study Results (Continued)

- >1/2 drivers stopped for speeding lived in or near the neighborhood
- Flagrant speeding warranted tickets
- Pre/post mail survey showed significant awareness of *Heed the Speed*
- Extent of educational activity depended on amount of involvement of the locals

Arizona Test Conclusions

- Speeds were reduced by *Heed the Speed*
- Fitting the treatment to the neighborhood was important:
  - Involvement of citizens
  - Willingness of police to patrol
  - Suitability for engineering and visual treatments
- Low cost and easy – *already being used in Peoria!*
- Engineering calming can be enhanced
- Some meaningful calming can be achieved without engineering

The Ongoing Field Test in Philadelphia

Expanding the Pilot Study

- Larger scale study in Philadelphia
- Add crash analysis
  - Pedestrian and vehicle
  - Multiple vehicle
  - Single vehicle
- More analysis of countermeasure process
- Effectiveness of individual countermeasures
- Persistence of any speed reductions

Key Players

- Department of Streets
- Police Department
- *Street Smarts*
- PennDOT
- ?

Focusing on 6 Police Districts

- **Largely residential**
- **High pedestrian crashes**
- **Speeding violations**
- **Citizen complaints**
- **Department of Streets interest**
- **Police commanders' interest**

Enforcement = Speed Trackers

Publicity

- Materials from the pilot test
- New materials as needed
- Involvement of *Street Smarts*
- Earned media
- Tie-in of 3-D markings to publicity

Data To Be Collected

- Crashes: police crash reports
- Injury severity: police and hospital reports
- Vehicle speeds: automated traffic counters
- Exposure, knowledge, attitudes: survey
- Extent of walking/quality of life: survey, focus groups
- Process: focus groups, implementation records

State-of-the-Art Speed Measurement

Radar

Pneumatic Tube

Analyses

- Site specific – Did *Heed the Speed* result in a pedestrian crash reduction?
- Intended audience specific – Did those going at the highest speeds respond? Did neighborhood residents respond more than outsiders?
- Countermeasure specific – What effectiveness can be attributed to each component (to the extent possible)?
- Process specific – Was any observed effect a consequence of the way in which a countermeasure was applied?

Status

- Already done
  - Baseline speed data have been collected
  - Baseline awareness survey
  - Speed Trackers are installed
  - Officer training is scheduled
- Pending
  - Officer training
  - Kickoff press conference
  - Initial publicity
  - Increased enforcement

Contact

Richard Blomberg
Dunlap and Associates
110 Lenox Avenue
Stamford, CT 06906
203-323-8464
rdblomberg@aol.com

www.dunlapandassociatesinc.com