



Highway Safety **Safety Audit**

NATIONAL ROAD SAFETY AUDIT PEER EXCHANGE Charleston, South Carolina May 22, 2007

"ROAD SAFETY AUDIT"

GARY MODI, PE

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION



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HISTORY:

- IN APRIL, 1997 PILOT PROJECTS ESTABLISHED IN DISTRICTS **6-0** & **10-0**
- AS A RESULT OF THE PILOT PROJECT SUCCESS, SAFETY AUDIT INITIATIVE EXPANDED TO ALL DISTRICTS
- BHSTE CONDUCTED SAFETY AUDIT TRAINING FOR THE DISTRICTS IN 1999
- THERE HAVE BEEN OVER **40** ROAD SAFETY AUDITS COMPLETED TO DATE



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BASIC QUESTION:

⊕ "STRICT ADHERENCE TO STANDARDS AND GUIDELINES MAY NOT ALWAYS BE ENOUGH"

⊕ "THERE MAY BE A NEED FOR FORMALIZING A PROCEDURE FOR SAFETY EVALUATIONS TO ENSURE CONSISTENCY, SO THAT SAFETY IS BUILT INTO TRANSPORTATION FACILITIES FROM THE START"



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WHY?



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WHY?



**-Economic loss for a death in a crash is
\$3,278,600 based on PENNDOT estimates
(in 2005 dollars)**



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Responsible Components of a Crash



Vehicle 5-7%



Driver 85-90%

Roadway 5-7%





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BASIC QUESTION:

⊕ UTILIZES EXPERTISE FROM:

- ☐ PEDESTRIAN / BICYCLE COORDINATOR
- ☐ HUMAN FACTORS EXPERT
- ☐ MOTOR CARRIER SAFETY
- ☐ EXPERTS FROM OTHER DISTRICTS & AGENCIES



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BASIC QUESTION:

WHEN ?

- **OPERATES THROUGH ENTIRE PROJECT DEVELOPMENT**
- **FORMAL REVIEWS ARE CONDUCTED AT VARIOUS STAGES**



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KEY ELEMENTS IN PROCESS:

- EXPERIENCED AND INTERDISCIPLINARY TEAM
- INDEPENDENT REVIEWS
- COMPREHENSIVE CHECKLISTS
- HUMAN FACTOR CONCERNS
- MULTIMODAL NEEDS
- CONSTANTLY IMPROVING



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SEVEN STAGES OF RSA:

STAGE 1 -FEASIBILITY

STAGE 2 -PRELIMINARY DESIGN

STAGE 3 -FINAL DESIGN

STAGE 4 -PRE-OPENING

STAGE 5 -IN-SERVICE or EXISTING ROADWAYS

STAGE 5a -EMERGENCY PREPAREDNESS

STAGE 5b -HIGH CRASH LOCATIONS



STAGE 5: IN-SERVICE or EXISTING

- **ADEQUACY OF ROADWAY, ROADSIDE, & INTERSECTIONS:**
 - SIGNS
 - PAVEMENT MARKINGS
 - SIGHT DISTANCE
 - PAVEMENT DEFECTS
 - SKID RESISTANCE
 - DELINEATION
 - LIGHTING
 - CLEAR ZONE
 - SHOULDERS
 - GLARE
- **LOCATIONS OF BUS STOPS**
- **BICYCLE INTERACTION**
- **ACCESS MANAGEMENT**



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Stage 5a
EMERGENCY
PREPAREDNESS

- **SNOW STORM**
- **ROAD CLOSURE**
- **UNUSUAL EVENTS**



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Stage 5b

HIGH CRASH LOCATIONS

- **PUBLIC INPUT**
- **LEGISLATIVE INPUT**
- **STAKEHOLDERS INPUT**
 1. **Local Police Agency Input**
 2. **EMS Input**
 3. **Fire Dept Input**



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HOW

- SET UP OPEN END CONTRACT - 5 YEARS, \$2.00 MILL
- TRAIN/PROVIDE INFORMATION TO CONSULTANT
- SET UP SPECIAL FUNDS FOR DISTRICT TO USE RSA CONTRACT
- MUST PROVIDE BENEFIT OF EACH RSA



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BENEFITS

- "THINKING SAFETY" EARLIER
- INTERDISCIPLINARY INPUT
- QUALITY FIELD REVIEWS
- FORCED COMMUNICATION
- PROVIDED ACCESS TO THE DESIGN THROUGH ALL PHASES OF PROJECT
 - Ensure ideas did not get lost
 - Changes to provide input
 - Better Understand Project
- PROVIDED SAFETY BEYOND WHAT STANDARDS COULD
 - Closely Scrutinized Changed
- INCORPORATED MANY ADDITIONAL IMPROVEMENTS



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BENEFITS

- INTEGRATED SUCCESSES INTO OTHER PROJECTS
- CREATED CONSISTENCY
 - Throughout Other Projects
 - Throughout Adjacent Networks
- TEAM EXPERIENCED HIGH LEVEL OF SELF-LEARNING
- DESIGNERS EXPERIENCED HIGHER LEVEL OF COMFORT
- CALLED UPON FOR EXPERT ADVICE
- "QUALITY THROUGH PREVENTION"



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Gary Modi, PE
Contact Phone No: 717-787-6853
Email: gmodi@state.pa.us

**Thank You !
Any Questions?**

