

Fifth Urban Street Symposium

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DOT's Face Tremendous Challenges



The “Rules” Of Business Are Changing

- Unprecedented flexibility
 - 10 Controlling Criteria
 - Intersection Control Evaluation (ICE)
 - Diverging Diamond Interchange
 - Part-Time Shoulder Use
 - Travel Demand Management Solutions
- Transportation Performance Management (TPM)



National Goals



- Safety
- Infrastructure condition
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability
- Reduced project delivery delays



Safety Performance Management Measures



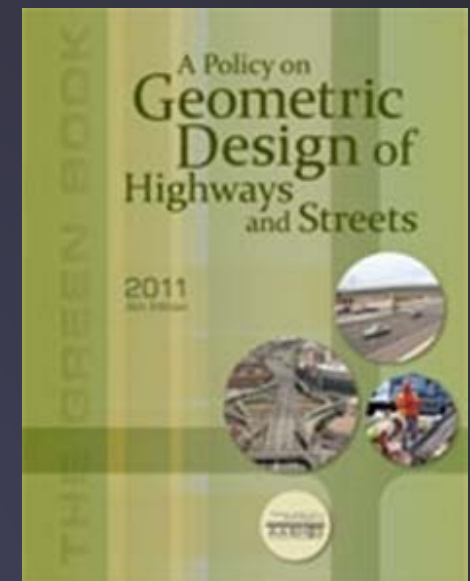
Safety Performance Management Measures for FHWA's Highway Safety Improvement Program (HSIP)

- 5 Performance Measures:
 - Number of Fatalities
 - Rate of Fatalities per 100 million VMT
 - Number of Serious Injuries
 - Rate of Serious Injuries per 100 million VMT
 - Number of Non-motorized Fatalities and Non-motorized Serious Injuries
- 5-Year Rolling Averages



Engineering Culture

- We learned from those who taught us how and why we follow the standards...
- There are valid reasons that tell us we now need to work differently:
 - Funding
 - Staff Resources
 - Aging infrastructure
 - Environmental considerations
 - Availability of reliable data and information
 - Technology



Where Are We Heading?

- Performance Based Standards
 - Performance Based Practical Design

**PBPD is a decision making approach
that helps agencies better manage
transportation investments
and **serve system-level needs**
and performance priorities
with limited resources.**

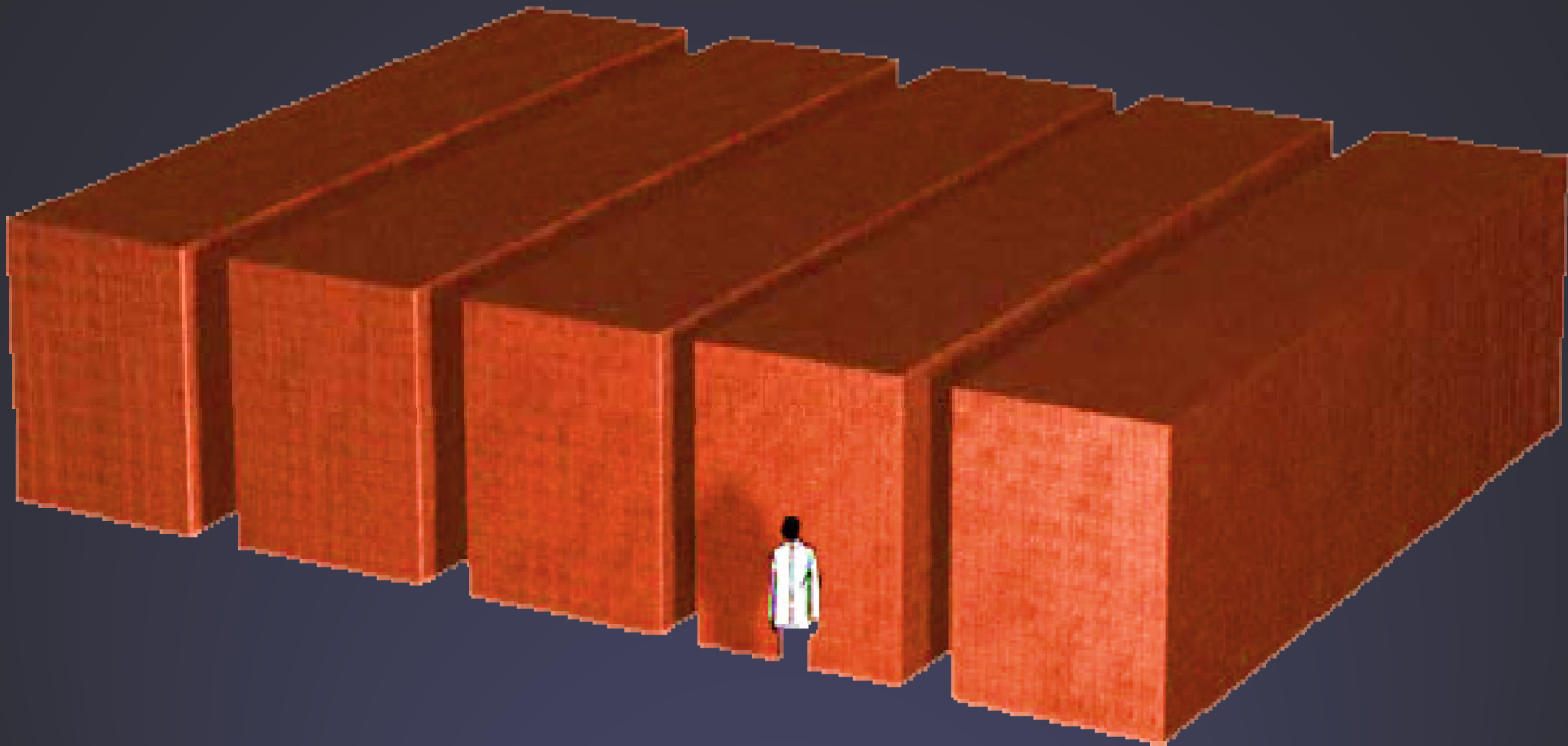
Two Important Questions to Ponder...

- Can we significantly improve:
 - mobility?
 - safety?

For all users?

Bad Communication

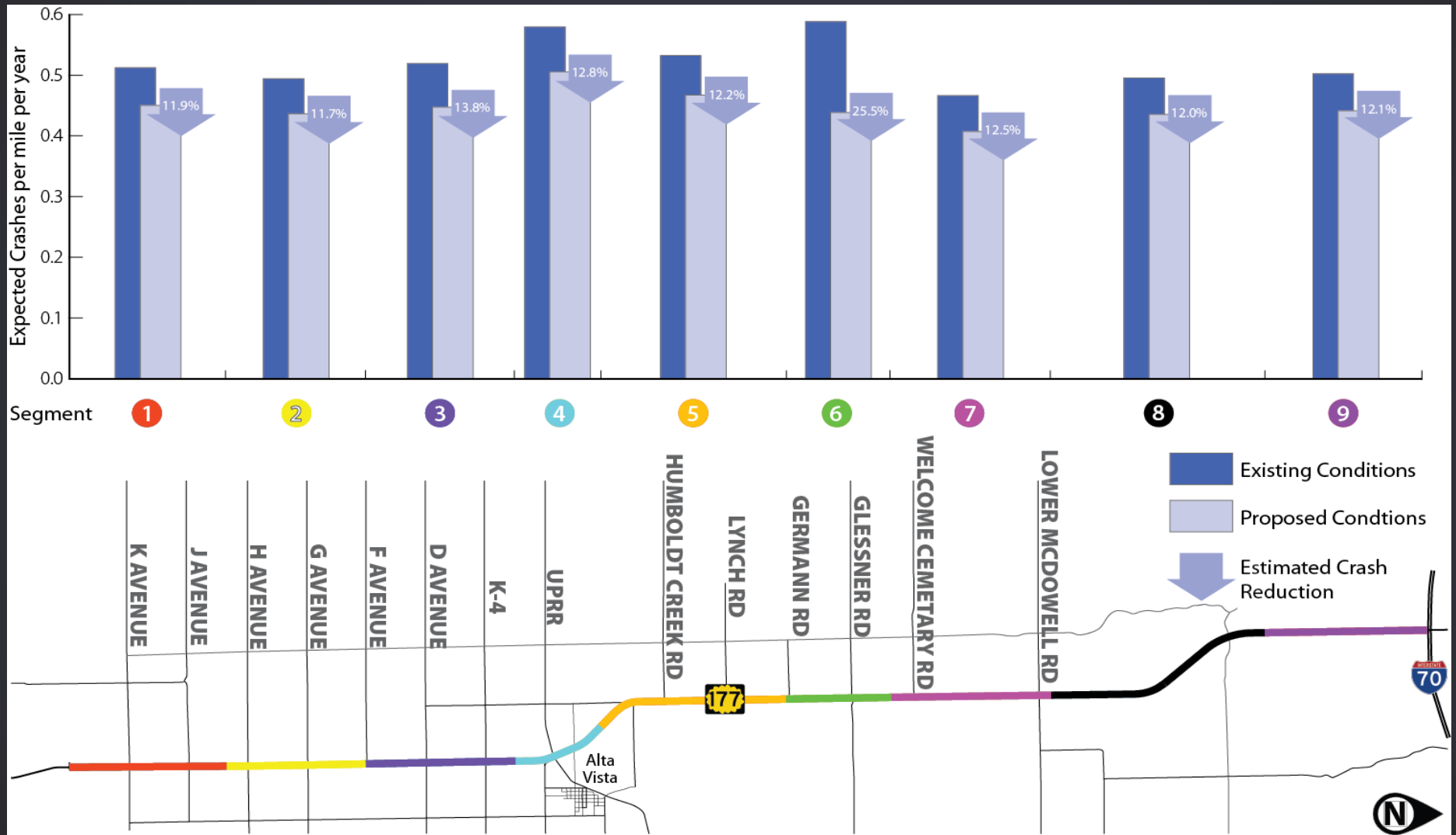
One Billion Pennies



Practical Design Savings

Item	Original Cost	Practical Cost	Savings
Pavement Design			
<i>Reduce driving lane from 12' to 11'</i>	\$3,600,000	\$3,300,000	\$300,000
<i>Minimize Underdrain Depth and locations</i>	\$120,000	\$60,000	\$60,000
Shoulder Design			
<i>Reducing shoulder Aggregate width 4' to 1'</i>	\$160,000	\$40,000	\$120,000
<i>Reduce to 3:1 Side Slopes and V-bottom ditches</i>	\$775,000	\$525,000	\$250,000
Utilities			
<i>Relocate 8" gas line to lower elevation</i>	\$3,000,000	\$500,000	\$2,500,000
<i>Move OH utilities inside Clear Zone:</i>			
<i>Reduce trees to be removed</i>	\$232,000	\$132,000	\$100,000
<i>Reduce area of mitigated wetlands</i>	\$500,000	\$400,000	\$100,000
<i>Reduce number of mitigated trees</i>	\$50,000	\$10,000	\$40,000
Structures			
<i>Modify instead of replace most large structures</i>	\$700,000	\$200,000	\$500,000
<i>Structure Removal</i>	\$120,000	\$20,000	\$100,000
<i>Minimizing Cover Depth at Crest Curves</i>			\$40,000
<i>Structure Backfill</i>	\$60,000	\$20,000	\$40,000
TOTAL PROJECT SAVINGS:	\$4,150,000		

Performance Based Practical Design Example



Communication...

- **Do people really understand LOS?**
 - **We need to figure out Travel-Time Reliability...**
- **Do people really understand what a “Complete Street” is all about?**
- **We must strive to inform our investment decisions using relevant, objective, credible data**

Last Thoughts...

- **Technology is happening faster than any of us can comprehend**
 - **V2V & V2I will change everything**
 - **Digital Windshield**
 - **Automated Trucking is likely first out of the gate**
- **You must continue your invaluable work, we must continue to strive to understand what we can control**