
Work Zone Operations Best Practices Guidebook

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Federal Highway Administration (FHWA)
United States Department of Transportation



American Association of State Highway and Transportation Officials
(AASHTO)

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Forward

This guidebook is the first release of a resource designed to give state and local transportation agencies, construction contractors, transportation planners, trainers, and others with interest in work zone operations access to information and points of contact about current best practices for achieving work zone mobility and safety. As new best practices emerge and are documented, they will be appended to the guidebook and cross-referenced as appropriate. Additionally, CD-ROM and web-based versions of the guidebook are under development and will make this same information available in an easily accessible electronic format. The interactive CD-ROM will provide added search and cross-referencing capabilities and facilitate widespread distribution and use of the guidebook.

In addition to the work zone best practices and cross-references, the guidebook includes three forms designed to make the guidebook more useful to current and future users. These are 1) a registration form, 2) a best practices submission form, and 3) a best practices review and comment form. Please complete the registration form so that you can be included in distributions of future editions of this document (paper or CD-ROM versions) and notified when updated information is available through web sites or other methods.

Copies of this document can be obtained through the Office of Transportation Operations, Federal Highway Administration.



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Office of Transportation Operations
Operations Core Business Unit
Federal Highway Administration

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Acknowledgments

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The review team was assisted by other Headquarters program offices and a representative from each of the FHWA region offices who accompanied the Review Team during the visits to their respective region. In addition, individuals from 115 transportation agencies, associations, organizations, and industries shared their experiences, knowledge, and information with the review team so that the best practices included in this guidebook could be properly documented.

The guidebook's origins date back to the June 1999 AASHTO Meeting of the Subcommittee on Traffic Engineering. At that meeting, Don Steinke, Director of FHWA's Office of Transportation Operations, and Sterling Davis, Engineer for Traffic and Safety at the Utah Department of Transportation and then Chairman of the AASHTO Subcommittee's Best Practices in Work Zones Task Force, agreed to collaborate on the development, publication, and distribution of a Work Zones Best Practices Guidebook that would give practitioners easy access to these best practices. Mike Crow of the Kansas Department of Transportation succeeded Sterling Davis as Task Force Chairperson and continued the collaboration.

The Guidebook was prepared collaboratively with FHWA's Work Zone Mobility and Safety Product Team serving as the primary focus point at the federal level and the AASHTO Best Practices in Work Zones Task Force providing views and comments from the state perspective.

Work Zone Best Practices Guidebook Registration

Please take a few moments to complete the following registration information and either fax or mail it to: Work Zone Operations, FHWA/HOTO-1, 400 Seventh Street, S.W., Washington, D.C. 20590, Fax: (202) 366-8712

Name:	
Title/Position:	
Organization/Agency:	
Address (include country if other than USA):	
Phone: ()	Fax: ()
Email Address:	
Primary Responsibility (especially note responsibilities related to work zone operations):	
Do you want to be notified of additions/changes to the guidebook? <input type="checkbox"/> yes <input type="checkbox"/> no	
Would you like to receive the CD-ROM guidebook when available? <input type="checkbox"/> yes <input type="checkbox"/> no	
Suggestions for improving the guidebook:	
Based on your initial impressions, do you feel that this guidebook will be useful to you in identifying practices that will improve work zone operations? Assign 1 to 4 stars.	
(Not useful) * ** *** **** (Very Useful)	

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Work Zone Best Practice Submission Form

Is your organization using innovative approaches that result in greater mobility and safety in work zones? Use the form below to describe what you do to improve work zone operations, whether in policy, planning, public outreach, or during construction and maintenance activities. Reproduce the form as necessary and submit to: Work Zone Operation, FHWA/HOTO-1, 400 Seventh Street, S.W., Washington, D.C. 20590 or fax to (202) 366-8712.

Location where practice or policy is employed (e.g., state, county, city):												
Short title of the best practice/policy:												
Brief description of the best practice/policy:												
Reason(s) for adopting the best practice/policy:												
Biggest benefit(s) being realized from this best practice/policy:												
Location and type(s) of projects where this practice/policy is most applicable/effective:												
Contact(s) (include name, office/agency, phone/fax, and e-mail address):												
Check all categories where this best practice/policy applies: <table><tr><td><input type="checkbox"/> Policy and Procedures</td><td><input type="checkbox"/> Contracting and Bidding Procedures</td></tr><tr><td><input type="checkbox"/> Public Relations, Education, and Outreach (General Public, Driver, and Elected Officials)</td><td><input type="checkbox"/> Specifications and Construction Materials, Methods, and Practices</td></tr><tr><td><input type="checkbox"/> Prediction Modeling and Impact Analysis: Congestion and Crashes</td><td><input type="checkbox"/> Traveler and Traffic Information (Project Related)</td></tr><tr><td><input type="checkbox"/> Planning and Programming</td><td><input type="checkbox"/> Enforcement</td></tr><tr><td><input type="checkbox"/> Project Development/Design</td><td><input type="checkbox"/> ITS and Innovation Technology</td></tr><tr><td></td><td><input type="checkbox"/> Evaluation and Feedback</td></tr></table>	<input type="checkbox"/> Policy and Procedures	<input type="checkbox"/> Contracting and Bidding Procedures	<input type="checkbox"/> Public Relations, Education, and Outreach (General Public, Driver, and Elected Officials)	<input type="checkbox"/> Specifications and Construction Materials, Methods, and Practices	<input type="checkbox"/> Prediction Modeling and Impact Analysis: Congestion and Crashes	<input type="checkbox"/> Traveler and Traffic Information (Project Related)	<input type="checkbox"/> Planning and Programming	<input type="checkbox"/> Enforcement	<input type="checkbox"/> Project Development/Design	<input type="checkbox"/> ITS and Innovation Technology		<input type="checkbox"/> Evaluation and Feedback
<input type="checkbox"/> Policy and Procedures	<input type="checkbox"/> Contracting and Bidding Procedures											
<input type="checkbox"/> Public Relations, Education, and Outreach (General Public, Driver, and Elected Officials)	<input type="checkbox"/> Specifications and Construction Materials, Methods, and Practices											
<input type="checkbox"/> Prediction Modeling and Impact Analysis: Congestion and Crashes	<input type="checkbox"/> Traveler and Traffic Information (Project Related)											
<input type="checkbox"/> Planning and Programming	<input type="checkbox"/> Enforcement											
<input type="checkbox"/> Project Development/Design	<input type="checkbox"/> ITS and Innovation Technology											
	<input type="checkbox"/> Evaluation and Feedback											

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Introduction

This Work Zone Best Practices Guidebook is a reference document that can be updated with new approaches, technologies, and practices as they become “state-of-the-practice” in Work Zone Mobility and Safety Management. These initial best practices are drawn from those observed during a work zone scanning tour of 26 states during 1998. Each best practice is described in detail, including the location where it was observed and points of contact for further information.



The best practices are *descriptive* not *prescriptive*. That is, they describe approaches used by transportation agencies, along with contact information. Each organization must determine which of these practices are best suited for its particular situation, considering all factors that affect work zone operations.

The best practices recorded in the 1998 FHWA report “*Meeting Customers’ Needs for Mobility and Safety During Construction*

and Maintenance Operations” were organized into eleven major groupings. The groupings collected similar practices so that readers could easily find all of the practices that deal with a particular topic. This guidebook leverages the collection of work zone operations best practices by providing an easily accessible compilation of the best practices, a series of cross-references that enable users to find best practices in several different ways, and a topical index that offers 41 topics and subtopics for more specific searches.

The guidebook is assembled in a three-ring binder so that updated or new best practices can be added easily. The reference numbers shown are consecutive numbers assigned to each best practice so that as new best practices are added, they can be added to the guidebook and the cross-reference listings.



Each of the eleven sections begins with an assessment of the state-of-the-art for work zone practice in each area and a brief description of how transportation agencies can achieve the state-of-the-art. Following this overview of the category, each of the work zone best practices is described in greater detail. The descriptions include:

- A Best Practice Reference Number Used in the Cross-Reference Section
- Location of the Best Practice/Policy
- The Best Practice Title Used in the *Meeting Customers’ Needs* Report

- Description of the Best Practice/Policy
- Reason(s) for Adopting the Best Practice/Policy
- Biggest Benefit(s) Being Realized from this Best Practice/Policy
- Location and Type(s) of Projects Where this Practice/Policy Is Most Applicable/Effective
- Contact(s)

The cross-reference section of the guidebook provides a variety of cross-references that allow practitioners to identify best practices based on where they were observed, project life cycle stage, type of organization, geographic or demographic characteristics, nature of the work zone activity, traffic conditions in the work zone, and the type of roadway involved.

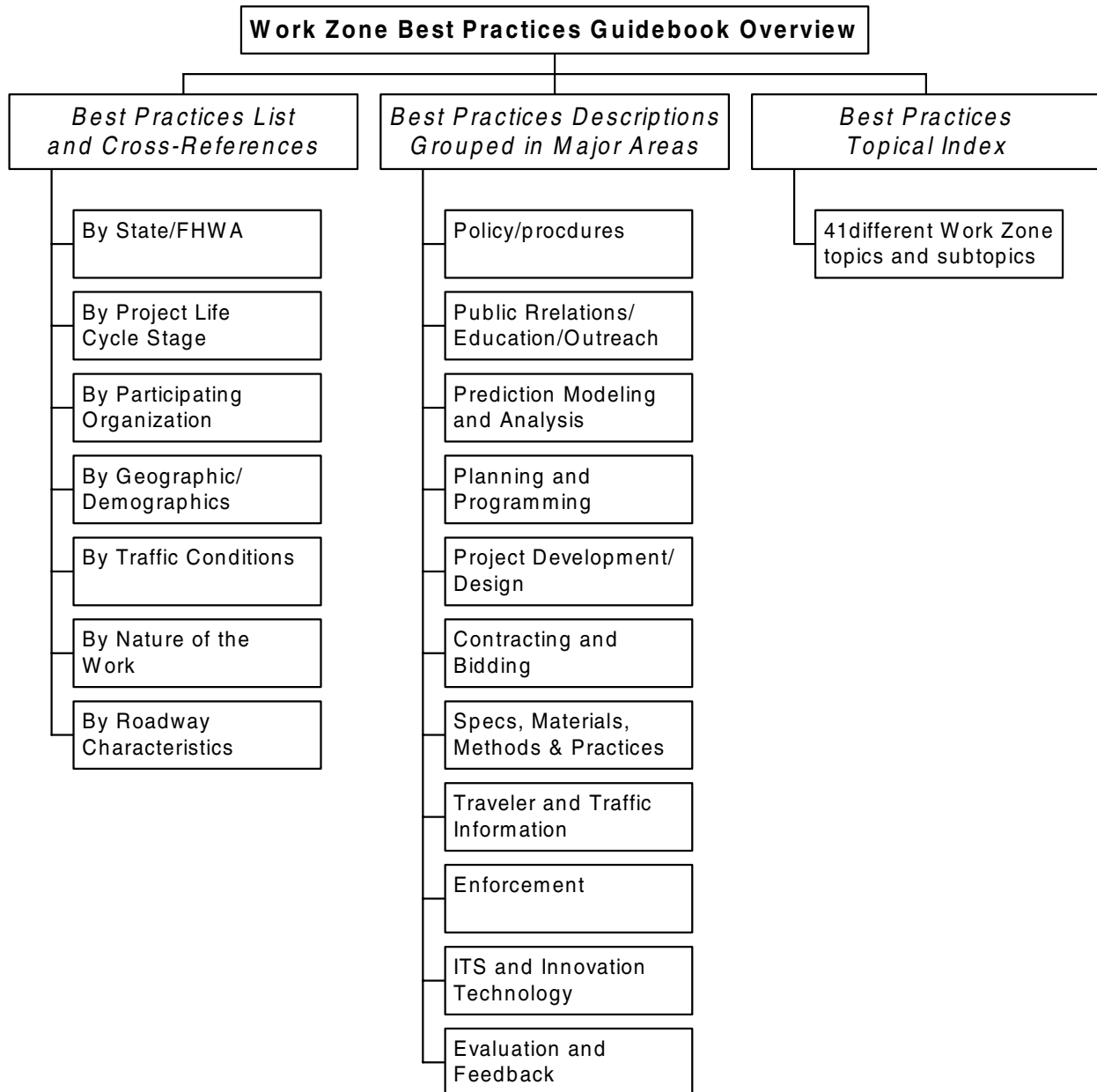
Useful Web Sites with Work Zone or Related Information

The following web sites have information specifically related to work zone operations or organizations and programs that address work zone issues. The Work Zone Safety Information Clearinghouse maintained by the Texas Transportation Institute is a particularly valuable source of current work zone information and contacts.

American Road and Transportation Builders Association	http://www.artba-hq.org
American Traffic Safety Services Association	http://www.atssa.com
American General Contractors	http://www.agc.org
American Association of State Highway and Transportation Officials	http://www.aashto.org
Federal Highway Administration	http://www.fhwa.dot.gov
FHWA Highway Rail/Grade Crossing	http://safety.fhwa.dot.gov/safetyprogs/hiway/hiwaygradexing.htm
FHWA MUTCD web site	http://mutcd.fhwa.dot.gov
FHWA Work Zone Safety Program	http://safety.fhwa.dot.gov/safetyprogs/hiway/wkzone.htm
Institute of Transportation Engineers	http://www.ite.org
Local Transportation Assistance Program	http://www.ltap.org
National Utilities Contractors Association	http://www.nuca.com
Work Zone Safety Information Clearinghouse	http://wzsafety.tamu.edu

A Roadmap for the Guidebook

The diagram below illustrates how the guidebook is organized. The first section provides several cross-references that list the best practice reference numbers associated with each of several groupings useful to work zone planners and crews. The second portion provides the best practices descriptions, organized into eleven major areas, with separate tabs for each area. The best practices appear in numerical order in this section, based on the assigned reference numbers. The final portion is a topical index where users can find the reference numbers of specific best practices that relate to fairly narrow topics and subtopics.



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List of Best Practices

Best Practices Area 1: Policy and Procedures

1. Road Closure Program
2. Design and Construction of City Water and Sewer Lines Within the Street Right Of Way is Done by the Street Transportation Department
3. Street Closure Program
4. Caltrans Traffic Management Plan
5. Traffic Management Plan on Major Urban Project:
6. “Design for Safety” partnership (Design-construction-maintenance) formed design projects that enhance worker safety and minimize worker delays
7. Long Life Pavement Rehabilitation Program for Urban Freeways
8. Purchase of Transit Vehicles to Reduce Volume of Automobiles Through Construction Work Zones
9. Work Zone Performance Measures for Minimizing Delay Period/Queue Length
10. Lane Closure Policy: On the Interstate, maintain the existing number of through travel lanes in the work area; in no case less than two lanes
11. Roundtable Discussions on Urban Freeway Reconstruction and Rehabilitation Project Issues
12. Mayor’s Transportation Management Task Force
13. Reduce Congestion in Work Zones – INDOT Strategic Goal
14. Work Zone Baselines, Benchmarks, and Performance Goals for Fatalities and Injuries
15. Business Plan Strategy – Reduction of Businesses/Motorist Impact Due to Work Zones
16. Twelve Minute Delay Rule
17. “Guide to Establishing Speed Limits in Highway Work Zones”
18. New Jersey DOT (NJDOT) Established a New Safety Office Entitled – “Office of Capital Project Safety” (OCPS)
19. Limited Length of Lane Closure Within a Project
20. Policy/Standards for Slow Moving Maintenance Operations
21. Lane Closure Policy/Map
22. Weekend Closures and Total Closures to Accelerate Work and Minimize Motorist Delay
23. Life Cycle Costing to Select Longer Lasting Materials and Products
24. “Compendium of Options” (Construction Traffic Maintenance Strategies)
25. Full-Time Work Zone Traffic Control Person in Metro District Offices
26. Public-Private Partnership Incentives for Early Completion
27. Ramp Closures During Reconstruction
28. The specification for 20 Minute Maximum Delay Period
29. Performance Goal for Work Zones to be Designed at the Posted Speed
30. Use of Commuter Incentives to Minimize Congestion in Work Zones
31. Minimum Geometric Standards for Work Zones
32. Business plan strategy to reduce work zone delays and crashes.
33. Policy – “Guidelines for Improving Safety in Freeway Construction Zones,” Work Zone Traffic Control Congestion and Delay,” Congestion Reduction Work Zones.

34. Multi-agency work zone Safety Committee (Trucking Assoc., State Police, PennDOT)
35. Removal of Traffic Control Pattern if not working multiple shifts
36. Work Zone Safety Program Established by TxDOT
37. Policy – Balanced Transportation Program and Projects Advertised on Time
38. Motor Carrier Initiative – *“Work Zone Accident Reduction/Prevention Project”*
39. One Season Construction Contracts
40. Lane Closure Coordinator for Interstate Highways in a State Highway District
41. Construction Work Zone Traffic Control Strategy
42. Work Zone Performance Goal – 20 Minute Maximum Delay Specification
43. Guidelines for Use of Flaggers and Police Details for Highway Work Zones
44. I-95 Corridor Coalition
45. Accelerated Construction Initiative included in Region 3’s FY 98 Work Plan
46. Region 4 Guidance – Uneven Pavement and Edge Drop-Off
47. Performance Plan Objective to Reduce the Public’s Exposure to Highway Construction Activities

Best Practices Area 2: Public Relations, Education, and Outreach (General Public, Driver, and Elected Officials)

48. Constructing Your Image – A Public Relations Handbook for Contractors
49. DOT Personnel Involved in Driver Education Programs
50. Public Information Campaign
51. Circuit Rider Van Program
52. Public Outreach Through Use of Neighborhood Liaisons
53. Media outreach program for construction and maintenance work zones
54. TRANSCOM Transmits to User Groups
55. Public Awareness Committee/Public Education and Outreach Program for Work Zone Safety
56. Work Zone Safety Campaign – *“Work Zone – Stay Alert”*
57. *“IMPACT”* – Public Information Program
58. Work Zone Safety Video for Truckers
59. Work Zone Safety Public Service (PSA) Announcement – *“At the Office”*
60. Develop Media Partnerships
61. Public Outreach Efforts to Increase Participation in Traffic Management Plan (TMP) Strategies
62. *“Wizard”* CB Radio transmissions providing work zone safety messages to truckers
63. Partnership with Motor Truck Association
64. Fixed sign Message *“XXX People Killed in this Work Zone”* displayed in advance of work zone
65. Work Zone Safety Materials distributed at rest areas, Welcome Stations and truck stops
66. Work Zone Safety Week
67. Joint Training With Contractor and VDOT Construction/Maintenance Work Zone Personnel
68. Work Zone Safety Round Tables
69. *“What’s Wrong With This Work Zone”* – Training Video
70. Driver’s Education: Learning Work Zone Safety

71. Dissemination of Work Zone Information
72. Region 4 Quality Management Workshop (QMW)
73. Regional Work Zone Conferences
74. Safety Regional Technical Specialty Team (RTST)
75. Promotion of A+B Bidding; Lane Rentals; Incentives/Disincentives; PR Campaign
76. Satellite Video Conference on Work Zone Safety
77. "You Show Us How" Contests
78. Maintenance Tour

Best Practices Area 3: Prediction Modeling and Impact Analysis – Congestion and Crashes

79. Lane Closure Analysis for Toll Roads
80. QUEWZ Software is Used to Predict Congestion and Associated User Costs
81. Modeling Projected Traffic Delay
82. Traffic Impact Report (TIR)
83. Traffic Impact Analysis
84. Tool – DELAY Enhanced 1.2 Software for Estimating User Delay Impacts and Costs for Freeway Capacity Restrictions

Best Practices Area 4: Planning and Programming

85. Corridor Management Approach for Maintenance and Construction Operations
86. Corridor Planning Used Versus Project Planning to Minimize Delays and Enhance Safety in Work Zones
87. Traffic Management Plans (TMP) (Chapter 81 in INDOT's Design Manual)
88. Corridor planning
89. Comprehensive Traffic Management Plan for the reconstruction of the I-55/I-20 interchange
90. High Impact Project Task Forces
91. Corridor Traffic Management Plans Versus Project Traffic Control Plans
92. Coordination of all State DOTs, local governments, utility constructions and maintenance work to minimize motorist delays in the Oklahoma City and Tulsa areas
93. Tool – Use of MENU TP Corridor Modeling for the Valley Concerning I-15 Construction Closure and Restriction Alternatives
94. I-81 Steering Committee

Best Practices Area 5: Project Development/Design

95. Traffic Management Workgroups
96. Involvement of Affected Communities and Businesses in the Project Development Process
97. Formal Constructability Review Process (CRP)
98. Constructability Reviews by Construction Industry Representatives During Project Design
99. Constructability Practices for Reducing Motorist and Business Exposure to the Work Zone
100. Utilizing Video to Enhance Public Involvement

101. Policy – Sequence, Coordinate and Schedule Projects to Minimize Motorist Delay and Interference to Effected Business/Residential Community
102. Road User Cost in Evaluating and Selecting Traffic Management Plans
103. Multi-Disciplinary Teams to Design, Evaluate, and Select Traffic Management Plans (TMP)
104. Comparisons of the estimated construction time required to maintain traffic through the work zone verses closing the highway and diverting traffic
105. Constructability Reviews on High Visibility Projects in Design Phase
106. Traffic Control Plan Checklist (Chapter 82-7 in INDOT’s Design Manual)
107. Comparison routinely made of the estimated construction time to maintain traffic through the work zone versus closing the highway and diverting traffic
108. Total road closure
109. North Carolina Contractor’s Association Participation in Constructability Reviews
110. “Coordination of Road Closure/Detours During Construction” – Design Procedures Manual
111. Community Advisory Councils
112. Contractor Participation in Constructability Reviews
113. CPM Scheduling to Set Contract Time
114. Value Engineering (VE) Studies are Conducted on Major Projects in the Early Phases of Design and Focus on Traffic Management
115. Emergency Response Team and Trucking Association Involved in the Design/Evaluation of the Traffic Control Plan
116. Contractor Hired by Design Consultant to do Constructability Review on James River Bridge
117. Value Engineering (all projects over \$2 million) to Minimize Construction Time and Road User Cost
118. Methods of Reducing Work Zone Congestion “Tool Box”

Best Practices Area 6: Contracting and Bidding Procedures

119. Alternative Contracting Practices
120. Flexible Start Times
121. Summertime Bridge Reconstruction Program
122. A+B, I/D and Lane Rental in Reducing Contract Time
123. A+B, and Incentive/Disincentive clauses
124. Time Based Bidding (A+B, I/D and Lane Rental)
125. Contractor Rating System
126. A+B with I/D for reducing contract time
127. A+B Contracts
128. A+B Bidding Clauses in North Carolina DOT Contracts
129. Pre-qualification to restrict the bidding capacity of contractors who were behind schedule on current DOT contracts or who consistently demonstrated their inability to complete DOT contracts on schedule
130. Construction Lane-mile Rentals
131. Lane Rental
132. Flexible start time provisions in contract: Pre-qualification to restrict the bidding capacity of contractors who were behind schedule on current DOT contracts or

- who consistently demonstrated their inability to complete DOT contracts on schedule
133. A+B Bidding (Time Based Bidding)
 134. Lane Rental Specification
 135. Contract Award of the I-5 Interstate Bridge Lift Span Repair Project Based on Performance and Cost
 136. Narrow Window for On-Site Construction
 137. Frequent Use of Innovative Contracting Procedures

Best Practices Area 7: Specifications and Construction Materials, Methods, and Practices

138. Disincentive Specification for Failure to Remove Lane Closures by the Prescribed Time Each Day
139. Reflectorized Suits for Nighttime Work
140. Incident Management in Work Zones
141. Quick Change Sign Post
142. Portable Concrete Barrier (K-rail) Connection
143. "Train" Method of Construction
144. "Rolling Roadblock" Method for Total Road Closure
145. Use of the Orlando Traffic Control Center/Surveillance and Motorist Information System (SMIS) During Construction Projects
146. All Lane Closures are Approved by the Authority
147. Standard Specification that Requires the Contractor to Correct Deficient Traffic Control at the Engineer's Request or be Subject to a \$500 Penalty
148. Emergency Traffic Patrol Motorist Assistance and Incident Management Program
149. 45 MPH Posted Speed When Flashing
150. High Visibility Worker Apparel
151. Project Monitoring with Incident Response
152. Employ a part-time retired bridge contractor to assist designers and to perform constructability reviews
153. Extended Warranty Specification for Bridge Painting Contracts advertised by the State Highway Administration (SHA)
154. Dispute Resolution Process Agreement for Changes to Traffic Control Plan Between CA/T and City of Boston
155. City of Boston Traffic Engineers Included on CA/T Traffic Engineering Staff
156. High Visibility Reflective Clothing Required for Night Work
157. Restricting the length of active work zones
158. 14-foot lane width pavements for all rehabilitation/reconstruction projects
159. Incident Management Special Provision in Construction Contracts
160. Diamond Grinding Finish Profile on PCC Pavements
161. A "Safety Program" Specification has been Recently Developed by the NJDOT and Accepted by the Construction Industry
162. NJDOT Nighttime Lighting Specification for Night Work
163. Nighttime Construction Operations
164. Incident Management Inter-Agency Teams
165. Portable Lighting Specified in Contracts Containing Critical Lane Closures and/or Merges

166. Closure of Entrance Ramps During Construction
167. Drone Radar on Changeable Message Signs Approach Work Zones to Get the Driver's Attention
168. Rumble Strips at the Beginning of Work Zones to Get the Driver's Attention
169. Certified Worksite Traffic Control Supervisors Required in Contracts
170. Incident Management in the Westside Corridor Work Zones
171. Monitoring of the Contractor's Critical Path Method (CPM) Schedule
172. Motorist Services
173. Highly visible reflectorized flagger vest (strong yellow green & orange)
174. Incident Management meetings on construction project
175. Contractor Furnished Service Patrols on the I-15 Project
176. 10 Year Warranty (maintenance provision) for I-15
177. Practice – Work Zone Incident Management Provisions in Construction Contracts
178. Flagger Certification Program
179. "Work Zone Safety Checklist" Form
180. Pocket Size "Guidelines For Temporary Traffic Control"
181. Constructability Reviews Focused on Minimizing Construction Contract Time and User Delays
182. Temporary High Mast Lighting

Best Practices Area 8: Traveler and Traffic Information (Project Related)

183. Construction Project Public Information/Public Relations Program (Newsletters)
184. Bid Item in the Construction Contract for Public Relations
185. Signing for Businesses Affected by the Construction of City Streets
186. District Work Zone Traffic Management Coordinator
187. Dissemination of Work Zone Project Information by Public Information Offices
188. Georgia NAVIGATOR (www.georgia-navigator.com)
189. Public Relation Campaigns and the Use of Public Relation Firms
190. Public Relations Campaign for Illinois State Toll Highway Authority (ISTHA) Construction and Maintenance Projects in the Chicago Metro Area
191. Provide Real-Time Traffic Information to the Public
192. Media Partnership to Inform Public of Traffic Effected by Construction and Maintenance Operations
193. Hoosier Helper
194. Media to Minimize Work Zone Delays and Inform Public of Work Zone Delays
195. Joint Approval Form (CA/T and City of Boston) for Traffic Advisories and Alerts
196. Web Sight for Traffic Information, Advisories, and Alerts
197. Travel's Information Kiosks in Rest Areas – Work Zones
198. Use of INFORM to Advise Motorists of Work Zone Delays
199. Paving The Way
200. Fax on Demand Traffic Information
201. Media Partnership to Reduce the Volume of Traffic Through the Work Zone

202. Contractor Involvement in Public Information Meetings and Lane Closure Notifications
203. Use CB Radio to warn truckers to slow down in advance of work areas
204. Work Zone Advisory Brochure
205. Place Mats with Work Zone safety information given to restaurants and truck stops along Interstate routes
206. Extensive Media Campaign for I-15 Project – Real-Time Traffic Information to Public via 800 Telephone Lines, Website, Faxes, Mailings, and Public Meetings
207. Dissemination of Information on Current Work Zones Through the Trucking Associations
208. Weekend Closure of I-405 for Resurfacing
209. Traffic Safety Information Center

Best Practices Area 9: Enforcement

210. Construction Zone Enhanced Enforcement Program (COZEEP) and Maintenance Zone Enhanced Enforcement Program (MAZEEP)
211. Use of Active Law Enforcement Services to Control Speed in Work Zones
212. Full-time State Police Liaison Officer Assigned to State Highway Administration
213. Evaluation of Project ADVANCE (Aggressive Driving Video and Non-Contact Enforcement) to Monitor Undesirable Driving Behavior
214. Dedicated (Full Time) New Jersey State Police (NJSP) Construction Unit Assigned to New Jersey Department of Transportation (NJDOT) Construction Projects
215. Drone Radar in Work Zones
216. State Police Hired by the Contractor
217. Periodic meetings with State Police to discuss work zone issues
218. State Police Hired by the Contractor on the I-15 Project

Best Practices Area 10: ITS and Innovation Technology

219. Highway Closure and Restriction System
220. Mobile Surveillance/Ramp Metering Via Wireless Communication Systems (This is a field operational test)
221. Automated Data Acquisition and Processing of Traffic Information in Real-time (ADAPTIR)
222. Development of an Automated Machine for Cone Placement and Retrieval
223. Indiana Lane Merge
224. Advanced Traveler Information System (ATIS) or Indiana Expert System
225. Portable ITS Technology in Work Zones
226. Condition-Responsive Work Zone Traffic Control (CRWZTC) System
227. Evaluation of ADDCO's Advanced Portable CCTV System
228. Remotely Operated Autoflagger (Slow/Stop Sign)
229. Portable Traffic Management System – Smart Work Zone
230. "Orion" (Traffic map/video in parking garages)
231. "Trilogy" (In vehicle guidance)
232. Portable ITS Technology in work zone
233. Use of 42" Flexible Cones (a.k.a. "Grabber Cones")
234. Evaluation of Portable Traffic Management System

Best Practices Area 11: Evaluation and Feedback

235. Research Project: “Effective Countermeasures to Reduce Accidents in Work Zones”
236. Traffic/Through Construction Workgroup
237. City Organized Consultant and Contractor Quality Improvement Team to Recommend Ways to Build Projects Quicker, Better, Cheaper, and Safer – Peer Review by Other Cities
238. Baseline of Accidents in the Work Zone
239. Involvement of the Colorado Contractor’s Association in Annual Work Zone Traffic Control Reviews
240. Maintenance of Traffic (MOT) Committee
241. Analysis of Truck Drivers’ Opinions on Safety and Traffic Control on Highway Work Zones
242. Total Quality Management Utility Relocation Team
243. Evaluation of Traffic Management Plans (TMS) (successes and failure) After the Project is Complete
244. Maintenance of Traffic (MOT) Task Force
245. Work Zone Safety Award Program for County Maintenance Employees
246. Work Zone Safety Award Program for Mn/DOT Contractors and Mn/DOT Employees
247. Work Zone Safety Committee
248. Analysis of Work Zone Crash Data
249. Statewide work zone inspection Program
250. Annual Customer Survey on Effectiveness of Traffic Through Work Zones
251. Customer Survey for Work Zones
252. Work Zone Quality Assurance Review
253. Crash Testing of Work Zone Devices
254. Research Project on Lighting Configurations of Work Zone Devices and Equipment
255. Human Factors Project on Motorist Reaction to Work Zones
256. Achievement – No Work Zone Fatalities in 1996 and No Work Zone Fatalities Involving Commercial Vehicles in the Past 5 Years
257. Project specific customer surveys on I-15 project to evaluate the effectiveness of minimizing delays and enhancing the safety of work zones
258. Study of “Effectiveness of Unmanned Radar – A Speed Control Technique in Freeway Work Zones”
259. Research Study – Effectiveness of Changeable Message Signs (CMS) in Controlling Vehicle Speeds in Work Zones-Phase II
260. Work Zone Safety Task Force
261. Analysis of Work Zone Crash Data
262. Study – Road Construction Safety Audit Procedure (University of Wyoming)

Best Practices by State and Federal Highway Administration

Arizona	1, 2, 3, 95, 96, 183, 184, 185, 219, 235, 236, 237
California	4, 5, 6, 7, 85, 97, 138, 139, 140, 141, 142, 186, 210, 220, 221, 222, 238
Colorado	8, 48, 98, 239
Florida	9, 10, 79, 99, 119, 120, 143, 144, 145, 187, 211, 240
Georgia	121, 188
Iowa	50, 150, 151
Illinois	11, 12, 100, 101, 146, 147, 148, 189, 190, 191, 192, 241, 242
Indiana	13, 14, 49, 80, 86, 87, 102, 103, 104, 105, 106, 122, 149, 193, 194, 223, 224, 225, 243
Massachusetts	16, 52, 81, 107, 154, 155, 195, 196, 215
Maryland	15, 152, 153, 212, 213, 226, 227, 244
Michigan	88, 108, 123
Minnesota	17, 51, 156, 228, 229, 230, 231, 245, 246, 247
Missouri	90, 125, 126, 160, 232
Mississippi	53, 89, 124, 157, 158, 159, 197
North Carolina	19, 20, 55, 56, 57, 58, 59, 109, 110, 128, 164, 165
New Jersey	18, 82, 161, 162, 214
New York	54, 127, 163, 198, 248, 249
Ohio	21, 22, 23, 24, 25, 91, 111, 129, 132, 166, 167, 168, 169, 199, 200, 201, 202, 233, 250
Oklahoma	26, 27, 92, 112, 113, 130, 131, 133, 216
Oregon	28, 29, 30, 31, 60, 61, 134, 135, 136, 170, 171
Pennsylvania	32, 33, 34, 35, 62, 63, 64, 65, 83, 172, 173, 174, 203, 204, 205, 217, 234, 251, 252
Texas	36, 114, 253, 254, 255
Utah	37, 38, 39, 84, 93, 115, 137, 175, 176, 177, 206, 207, 218, 256, 257
Virginia	40, 66, 67, 68, 69, 94, 116, 117, 178, 179, 180, 181, 258, 259
Washington	41, 70, 118, 182, 208, 260
Wyoming	42, 71, 261, 262
FHWA	43, 44, 45, 46, 47, 72, 73, 74, 75, 76, 77, 78, 209

Best Practices by Project Life Cycle Stage

Planning	13(IN), 27(OK), 28(OR), 30(OR), 32(PA), 80(IN), 84(UT), 93(UT)
Project Definition	81(MA), 82(NJ), 83(PA), 88(MI), 90(MO), 99(FL), 137(UT)
Concept Plan Development	23(OH), 41(WA), 86(IN), 111(OH)
Interagency Coordination	44(FHWA), 85(CA), 92(OK)
Preliminary Design	96(AZ), 99(FL), 109(NC), 114(TX)
Design Criteria/Parameters	21(OH), 31(OR), 42(WY)
Design	16(MA), 24(OH), 29(OR), 240(FL)
PS&E Development	29(OR), 104(IN), 105(IN), 110(NC)
Traffic Control/Management Plans	4(CA), 5(CA), 17(MN), 22(OH), 87(IN), 89(MS), 91(OH), 103(IN)
Final Design	97(CA), 98(CO), 101(IL), 112(OK), 152(MD), 181(VA)
Pre-Construction	75(FHWA), 113(OK), 135(OR), 194(IN)
Construction	64(PA), 143(FL)
Inspection/Material Testing	249(NY), 253(TX)
Traffic Control	25(OH), 35(PA), 95(AZ), 106(IN), 147(IL), 154(MA), 166(OH), 168(OH), 180(VA)
Enforcement	210(CA), 211(FL), 213(MD), 214(NJ), 215(MA), 216(OK), 217(PA), 218(UT)
Incident Management	140(CA), 148(IL), 151(IA), 159(MS), 164(NC), 170(OR), 172(PA), 174(PA), 175(UT)
Traveler Information	54(NY), 71(WY), 187(FL), 188(GA), 191(IL), 192(IL), 197(MS), 206(UT), 219(AZ), 224(IN)
Public Information and Outreach	52(MA), 53(MI), 55(NC), 57(NC), 61(OR), 100(IL), 183(AZ)
Post-Construction	125(MO), 198(NY), 243(IN), 250(OH), 251(PA), 257(UT), 261(WY)

Best Practices by Participating Organization

Contractor	48(CO)
City Agency	2(AZ), 12(IL), 101(IL), 111(OH), 166(OH), 192(IL), 201(OH), 202(OH), 237(AZ), 250(OH)
County Agency	1(AZ), 96(AZ), 121(GA), 184(AZ)
State Agency	4(CA), 40(VA), 105(IN), 134(OR), 182(WA), 214(NJ), 231(MN), 240(FL), 248(NY), 255(TX)
Federal Agency	43(FHWA), 46(FHWA), 47(FHWA), 72(FHWA), 74(FHWA), 75(FHWA), 76(FHWA), 77(FHWA), 78(FHWA), 209(FHWA)

Best Practices by Geographic/Demographic Characteristics

Urban Areas	4(CA), 54(NY), 83(PA), 85(CA), 100(IL), 103(IN), 148(IL), 175(UT), 198(NY), 230(MN)
Rural Areas	8(CO), 28(OR), 42(WY), 77(FHWA), 136(OR), 142(CA), 151(IA), 197(MS), 209(FHWA), 262(WY)
Both Urban and Rural Areas	1(AZ), 25(OH), 52(MA), 87(IN), 133(OK), 141(CA), 156(MN), 174(PA), 201(OH), 249(NY)

Best Practices by Traffic Conditions

High Traffic Volume	8(CO), 30(OR), 54(NY), 83(PA), 91(OH), 103(IN), 105(IN), 116(VA), 118(WA), 124(MS)
High Posted Speeds	29(OR), 35(PA), 84(UT), 89(MS), 123(MI), 134(OR), 168(OH), 222(CA), 259(VA)
Low Traffic Volume	28(OR), 52(MA), 77(FHWA), 90(MO), 104(IN), 121(GA), 154(MA), 162(NJ), 228(MN)
Large Trucks Present	31(OR), 33(PA), 38(UT), 44(FHWA), 45(FHWA), 62(PA), 63(PA), 163(NY), 203(PA)

Best Practices by Nature of Work

Bridge Maintenance	153(MD)
Bridge Repair	28(OR), 29(OR), 30(OR), 102(IN), 116(VA), 121(GA), 135(OR)
Construction	22(OH), 28(OR), 29(OR), 30(OR), 39(UT), 45(FHWA), 85(CA), 95(AZ), 143(FL)
Interchange Upgrade	26(OK), 31(OR), 89(MS)
Maintenance	28(OR), 29(OR), 30(OR), 77(FHWA), 78(FHWA), 85(CA), 92(OK), 245(MN), 252(PA)
Markings/Signs	20(NC), 141(CA), 144(FL), 162(NJ), 185(AZ)
Resurfacing	23(OH), 28(OR), 29(OR), 30(OR), 35(PA), 46(FHWA), 120(FL), 158(MS), 160(MO), 199(OH), 208(WA), 233(OH)
Night Work	139(CA), 150(IA), 156(MN), 162(NJ), 163(NY), 165(NC), 182(WA), 233(OH), 254(TX)
Utility Work	30(OR), 92(OK), 228(MN), 242(IL)

Best Practices by Roadway Characteristics

Major Arterials	40(VA), 87(IN), 92(OK), 98(CO), 143(FL), 163(NY), 180(VA), 194(IN), 206(UT), 243(IN)
Divided Facilities	19(NC), 31(OR), 90(MO), 259(VA)
Expressways	40(VA), 90(MO), 158(MS), 211(FL), 215(MA), 216(OK), 218(UT), 223(IN), 259(VA)
Freeways	7(CA), 11(IL), 33(PA), 64(PA), 142(CA), 174(PA), 222(CA), 233(OH), 258(VA), 262(WY)
Freeway Ramps	27(OK)
Major Corridors	8(CO), 85(CA), 88(MI), 91(OH), 94(VA), 103(IN), 145(FL)
Multi-Lane	10(FL), 69(VA), 75(FHWA), 134(OR)
Surface Streets	77(FHWA), 155(MA), 180(VA), 184(AZ), 185(AZ), 188(GA), 196(MA), 220(CA), 232(MO)
Toll Roads	79(FL), 146(IL), 147(IL), 190(IL)
Two-Lane	52(MA), 69(VA), 102(IN), 136(OR), 143(FL), 164(NC), 180(VA), 210(CA), 228(MN), 232(MO)
Any Roadway	1(AZ), 28(OR), 80(IN), 89(MS), 104(IN), 122(IN), 162(NJ), 227(MD), 238(CA), 257(UT)

Best Practices Area 1. *Policy and Procedures*

STATE-OF-THE-ART

Decisions are based upon a customer driven comprehensive work zone traffic management policy that focuses on reducing the exposure of the road user and worker. This policy addresses high-quality design, construction, and maintenance operations, minimizing disruption to the highway user and maintaining a safe, efficient roadway environment for the traveling public and the highway worker. The organizational structure fully supports cross-cutting teams in all phases of work zone traffic management where capacity reductions adversely impact traffic flow.

To achieve state-of-the-art policies and procedures, transportation agencies would need to:

- Adopt strategic goals, objectives, and performance measures that define the Agency's expectations for allowable travel delay and crash rates.
- Provide an organizational structure that provides cross-cutting teams that tap the expertise and proactive involvement of all disciplines in the development and selection of corridor TMPs and project TCPs.
- Re-evaluate policies and procedures to ensure:
 - ✓ Contractor's participation in the development of the TCP, responsibility for successful implementation of the TCP, and rewards for exceeding expectations, i.e., a move towards performance-based traffic control specifications.
 - ✓ Utilization of road-user costs, economic impacts to the business community, and life-cycle- cost in the decisionmaking process.
 - ✓ Public participation during the development and selection of corridor TMPs and project TCPs.
 - ✓ Customer feedback and evaluation.
 - ✓ Traffic management principles that focus on reducing the exposure of road-users and workers are integrated into all related manuals and guidelines, such as project development schedules, design manuals, consultant selection, and the Manual on Uniform Traffic Control Devices (MUTCD).
- Develop and deliver training courses in work zone traffic management principles and strategies.

The following “best practices” relate to work zone policy and procedure:

Subcategory	Ref. #	Policy and Procedures Best Practices
Closure Policy	1	Road Closure Program
	3	Street Closure Program
	10	Lane Closure Policy: On the Interstate (maintain the existing number of through travel lanes in the work area; in no case less than two lanes)
	19	Limited length of lane closure within a project
	21	Lane Closure Policy/Map
	22	Weekend closures and total closures to accelerate work and minimize motorist delay
	27	Ramp closures during reconstruction
	40	Lane Closure Coordinator for Interstate Highways in a State Highway District
Collaboration	6	Design for Safety Partnership (Design-construction-maintenance) formed to design projects to enhance worker safety and minimize worker delays
	11	Round table discussions on urban freeway reconstruction and rehabilitation project issues
	12	Mayor’s Transportation Management Task Force
	26	Public-private partnership incentives for early completion
	34	Multi-agency Work Zone Safety Committee (Trucking Assoc., State Police, PennDOT)
Organizational Strategy	2	Design and construction of City Water and Sewer Lines within the street right of way is done by the Street Transportation Department
	18	Office of Capital Project Safety
	25	Full-Time Work Zone Traffic Control Person in Metro District Offices
	36	Work zone safety program established by TxDOT
	44	I-95 Corridor Coalition
Performance Goals and Measures	9	Work zone performance measures for minimizing delay period/queue length
	13	INDOT Strategic Goal-Reduce Congestion in Work Zones
	14	Work zone baselines, benchmarks, and performance goals for fatalities and injuries
	15	Business Plan Strategy – Reduction of Businesses/Motorist Impact Due to Work Zones
	16	Twelve-Minute Delay Rule
	17	Guide to Establish Speed Limits in Highway Work Zones
	20	Policy/Standards for Slow Moving Maintenance Operations
	28	The specification for 20 minute maximum delay period
	29	Performance Goal – Work Zones to be Designed at the Posted Speed
	32	Business Plan Strategy – Reduce Work Zone Delays and Crashes
	42	Work zone performance goal – 20 Minute Maximum Delay Specification
47	Performance Plan Objective to reduce the public’s exposure to highway construction activities	
Technical Guidance	7	Long Life Pavement Rehabilitation Program for Urban Freeways
	23	Life-cycle costing to select longer-lasting materials/products
	31	Minimum geometric standards for work zones
	33	Policy – “Guidelines for Improving Safety in Freeway Construction Zone” – “Work Zone Traffic Control Congestion and Delay” – Congestion Reduction Work Zones
	39	One Season Construction Contracts
	46	Guidance – Uneven Pavement and Edge Drop-Off
Traffic Management Planning	4	Caltrans Traffic Management Plan
	5	Traffic Management Plan on major urban projects
	24	Compendium of Options (Construction Traffic Maintenance Strategies)
	35	Removal of traffic control pattern if not working multiple shifts
	37	Policy – Balanced Transportation Program and Projects Advertised on Time
	38	Motor Carrier Initiative – “Work Zone Accident Reduction/Prevention Project”
	41	Construction Work Zone Traffic Control Strategy
	43	Guidelines for use of flaggers and police details for highway work zones
45	Accelerated Construction Initiative included in Region 3’s FY 98 Work Plan	
User Services/ Incentives	8	Purchase of transit vehicles to reduce volume of automobiles through construction work zone
	30	Use of commuter incentives to minimize congestion in work zones

1. MARICOPA COUNTY, ARIZONA

BEST PRACTICE POLICY:

Road Closure Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A project by project determination is made prior to construction concerning road closures that will be permitted during the construction of the project. The county has used this process for about 5 years. The county does a benefit/cost (B/C) study utilizing the traffic volumes, duration of the project, and length of detour that will be required. If the B/C study indicates it is advantages to close the roadway during construction it will be noted in the contract special provisions. Occasionally, on projects where closure is not so noted in the contract, the contractor may propose a schedule for a lesser duration of road closure that will result in an acceptable, B/C rate and the contractor will be permitted to close the roadway. Local traffic access for affected residents and businesses is still maintained during road closures.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The county is aware of the cost of the project to both the county as well as the traveling public. Road closures are expected to permit the construction to be completed quicker, at lower cost and with greater safety to both the contractors workers and the motorist.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Lower cost, safer project, and construction completed earlier.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Any county road – urban and rural

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2. CITY OF PHOENIX, ARIZONA

BEST PRACTICE/POLICY:

Design and Construction of City Water and Sewer Lines Within the Street Right Of Way is Done by the Street Transportation Department

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Prior to the implementation of this policy, each entity designed and constructed their facilities in a separate project. This in effect resulted in the neighborhoods being torn up on 3 separate occasions to construct the project. By bringing all work under the Street Transportation Department, the work could all be accomplished in one contract thereby saving time, money, increasing safety, and having less impact and disruption to the community.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Two of the main advantages of this practice were less disruption or inconvenience to the neighborhood and it eliminated the amount of trenching through a new pavement to adjust facilities. The city also implemented a penalty provision for utilities that trench through new pavements.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Fewer complaints are received from the neighborhood. Savings in time, money, and safety are also benefits.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All streets and highways

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3. CITY OF PHOENIX, ARIZONA

BEST PRACTICE/POLICY:

Street Closure Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This is a program that has been in effect within the City of Phoenix for many years. The program permits the closure of minor city streets for utility and construction work. Local traffic is normally permitted. Through traffic is detoured to adjacent streets. The contractor or utility needing to close the street must obtain a permit from the city prior to starting work.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

It was determined to be much safer to work crews as well as local residents if the amount of traffic through the project was reduced. Construction time can be reduced if the contractor does not have to contend with through traffic. For, the program is used mainly for overlay and slurry seal type of projects that are normally for short duration.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Safer for both the workman and the neighborhood. Less conflict for construction work. Projects completed quicker.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All streets and highways

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4. CALIFORNIA

BEST PRACTICE/POLICY:

Caltrans Traffic Management Plan

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Traffic Management Plan (TMP) is a cohesive program of operational and demand management strategies designed to maintain acceptable levels of traffic flow during periods of construction activities. A major consideration in developing and implementing the TMP is its interaction with the planning, designing, constructing, and funding phases of the transportation project.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Plan coordinates the efforts of planners, engineers, and construction workers, law enforcement agencies and local government with two goals in mind:

- Minimizing congestion and delays caused by construction, and
- Making construction zones safer for motorists and workers alike.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Congestion through construction zones minimized; the construction zones are safer and construction time and cost are reduced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Primarily Reconstruction, Restoration/Rehabilitation for Urban Freeways

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5. CALIFORNIA

BEST PRACTICE/POLICY:

Traffic Management Plan on Major Urban Project:

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Comprehensive effort to accommodate traffic during construction. Activities and products include Traffic Control Plan, Highway Advisory Radio, and public information/media campaigns.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Assess impact to region before construction, and determine potential solutions in a larger sense rather than localized remedies (e.g., signing) within the project limits.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Thinking beyond limits allows for non-traditional remedies to traffic impacts.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Location: Reconstruction, Restoration/Rehabilitation on Urban Freeways

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6. CALIFORNIA

BEST PRACTICE/POLICY:

“Design for Safety” partnership (Design-construction-maintenance) formed design projects that enhance worker safety and minimize worker delays.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This was a one-time effort that was intended to identify twenty plus safety related items for opportunities to develop worker safety practices for designers to consider when designing projects. An example of an item is for a designer to design into a project access for maintenance workers from off the Right-of-Way. Some practical considerations were to purchase additional ROW, or to round slopes to provide more easy access.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Caltrans Director wanted to look at cross functional safety improvements. He formed a cross functional task force consisting of design, construction, and maintenance. This effort is currently going through a revitalization and the information developed as best practices is being incorporated into the Caltrans Project Engineer Academy curriculum.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Caltrans now has maintenance forces come into the Project Engineer Academy to discuss designing for worker safety. Designers have at their disposal a number of best practices to consider in design.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Reconstruction of Freeways

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7. CALIFORNIA

BEST PRACTICE/POLICY:

Long Life Pavement Rehabilitation Program for Urban Freeways

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Long Life Pavement Rehabilitation Program (LLPRP) for Urban Freeways began in April of 1997. It grew out of the Caltrans Headquarters, Office of Maintenance, specifically Pavement Managers, as they developed proposals for multi-year funding of 4R work on the State system. Every pavement rehabilitated under the LLPRP will have a 30- to 40-year design life. Thus the program will pay dividends to the highway users and Caltrans in reducing the frequency of maintenance and rehabilitation treatments, thereby, reducing the number of work zones, number of maintenance activities, and therefore worker exposure.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The driving force behind long life pavement rehabilitation strategies is user costs. The most significant factor in driving up user costs are delays due to congestion, something our freeway users clearly don't want. An extra benefit of this strategy is to reduce the number and duration of lane closures during pavement reconstruction, rehabilitation, or maintenance.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Long life pavement rehabilitation strategies are developed to meet highway users' demands (i.e., safe, smooth freeways, with minimal disruptions to traffic and minimum delays for road work). Since construction windows are confined to off-peak hours, the disruption to traffic is minimized. Innovative materials, such as FSHC with higher compressive and flexural strengths, have been developed to maximize productivity within the narrow work windows.

LLPRP treatment is intended to reduce the frequency of highway work. The extra dollars paid up front for the longer design life will pay dividends by extending the time between required periodic maintenance or rehabilitation, and reduce the related traffic delays, additional operating costs, and pollution. The safety of users and highway workers will be enhanced by reducing the frequency of highway work.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Urban high-volume freeway rehabilitation

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8. COLORADO

BEST PRACTICE/POLICY:

Purchase of Transit Vehicles to Reduce Volume of Automobiles Through Construction Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Purchase of transit vehicles and provision of temporary transit priorities during construction to attract transit ridership (and reduce auto use) during construction.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Full reconstruction and 4-laning of highly congested (but rural) corridor anticipated to cause significant delays to commuter-users. Reducing number of autos would improve situation so enhancing transit use was encouraged through purchase of additional transit buses and giving transit queue bypass opportunities during congestion. Construction included improvement of existing shoulders for bus-by pass use.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Provision of priority bypass for transit results in less delay for transit users and encouraging transit results in reduction in number of autos in use during highly congested periods, which reduces delay for all.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Two-lane rural NHS corridor undergoing reconstruction and 4-laning.

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9. FLORIDA

BEST PRACTICE/POLICY:

Work Zone Performance Measures for Minimizing Delay Period/Queue Length

DESCRIPTION OF BEST PRACTICE:

Chapter 10 of the Florida DOT Plans Preparation Manual includes lane closure analysis worksheets for a designer to use to determine the impacts of a lane closure. These sheets are used to determine the time of day a closure can be allowed without causing excessive travel delay for freeways, signalized, or two-lane, and two-way roadways. This process was developed approximately 10 years ago.

REASON(S) FOR ADOPTING BEST PRACTICE:

To reduce the impacts of lane closures on driver's delay by better determining when traffic volumes will allow road closures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced driver delay and frustration

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE: All types of facilities – All types of work

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10. FLORIDA

BEST PRACTICE/POLICY:

Lane Closure Policy: On the Interstate, maintain the existing number of through travel lanes in the work area; in no case less than two lanes.

DESCRIPTION OF BEST PRACTICE:

For Interstate construction, the FDOT's policy is that the work zone design plans maintain the existing number of lanes for the various work phases. No lane closures will be permitted on Interstate construction where only two travel lanes normally exist. In all cases, traffic volumes will be analyzed to determine if any lane closures can be permitted for short durations. This policy has been in effect since December 1995.

REASON(S) FOR ADOPTING BEST PRACTICE:

Public criticism of unnecessary lane closures on existing facilities. This awareness was heightened due to several hurricane evacuations where less than all lanes were available.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced driver delay and frustration and better public relations.

LOCATION AND TYPES OF PROJECTS THAT THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of facility: High-volume/high-speed, urban or rural freeways and other multi-lane access controlled roadways. All types of work

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11. ILLINOIS

BEST PRACTICE/POLICY:

Roundtable Discussions on Urban Freeway Reconstruction and Rehabilitation Project Issues

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Relatively small group (i.e., 10 to 12 subject experts) discussions on issues, experiences, and potential solutions to reduce the impacts of urban freeway rehabilitation projects. Project issues were divided into four categories: community outreach, project development process, corridor planning and management, and construction methods/materials. The first roundtable on construction methods and material was conducted in April 1998. The remaining three roundtables are scheduled for late summer or early fall 1998.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Develop new strategies for the rehabilitation and reconstruction of freeways through the generation of new ideas and concepts and the sharing of “best practices.”

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The exchange of ideas and experience along with an understanding of the issues from the perspective of others such as industry.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Although geared towards high-volume urban rehabilitation projects, the concept has application to any project, especially those with high user impacts.

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12. CITY OF CHICAGO, IL, DEPT OF TRANSPORTATION (CDOT)

BEST PRACTICE/POLICY:

Mayor's Transportation Management Task Force

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Routinely compiles a list of projects and special events that have the potential to significantly impact traffic throughout the City of Chicago. Items are grouped according to geographic location, with the exception of new or priority projects/events, which are grouped at the beginning of the "Mayor's WEEKLY TRAFFIC BULLETIN." The task force and bulletin has been in-place since 1982.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Initially started in response to office building construction and infrastructure projects which were occurring simultaneously throughout the Central Business District (CBD), the city surveyed all such activities which might adversely impact traffic flow and began coordinating efforts to help motorist drive through construction work zones of all kinds.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The multi-agency task force meetings once a week; reviews city-wide construction and maintenance activities which extend beyond roadway projects to include, sewer, utility, maintenance, building construction, and other kinds of construction impacts to traffic flow. The task force also takes into account up-coming special events. By meeting and formulating coordinated traffic flow mitigation efforts, the motoring public has advance notice of the weekends' and following weeks' construction projects and events underway. The ones considered by the task force to have the greatest impact to traffic are those included in the weekly Bulletin. Moreover, all Aldermanic Offices and a multitude of other agencies, such as police and community organizations, also regularly receive the weekly "Mayor's Bulletin" and task force meeting minutes. This enables the public to plan ahead and even avoid, all together, areas where construction activities are going to occur.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of facilities include all of Chicago's freeways, streets, 2-lane/2-way highways, bridges, and even major building construction sites, etc. The locations throughout the City are broken down in the Bulletin by Downtown, Expressways/Major Arterials such as the Eisenhower or Chicago Skyway, the Central Area of Chicago, the Chicago's North/Northwest areas, the West/Southwest areas and, finally, by the South/Southeast areas. The Bulletin's also indicate just basic information relative to the type of work, such as Resurfacing, Reconstruction, Restoration/Rehabilitation, utility, etc.

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13. INDIANA

BEST PRACTICE/POLICY:

Reduce Congestion in Work Zones – INDOT Strategic Goal

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The INDOT recently developed a Strategic Plan. One of the tasks is to have a multi-disciplinary team investigate and recommend procedures for reducing congestion in work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This task was undertaken because of a large number of complaints from the motoring public about long delays in work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

It is anticipated that innovative methods of reducing congestions will be identified and implemented.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Applicable to all types of construction, utility, and maintenance projects.

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14. INDIANA

BEST PRACTICE/POLICY:

Work Zone Baselines, Benchmarks, and Performance Goals for Fatalities and Injuries

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This practice is a performance-based process to measure effectiveness in work zones. Indiana began this process in 1996 as a pilot State.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The benchmarks (10 years of data) provide a statistical picture of Indiana's traffic safety challenges. The baselines, benchmarks, and performance goals is Indiana's traffic safety action plan. The traffic safety action plan can only be achieved by successful partnerships. These partnerships set out to achieve a similar goal, often use this as a road map to guide them along the way.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit realized is that it provides a clear vision for Indiana and keeps stride with National efforts.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice/policy is most applicable with all types of projects.

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15. MARYLAND

BEST PRACTICE/POLICY:

Business Plan Strategy – Reduction of Businesses/Motorist Impact Due to Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Business Plan Strategy is a new goal of the State Highway Administration. Its objective is to improve mobility and safety through work zones to minimize impacts on businesses and the traveling public. This best practice will focus on improving the design of traffic control plans, developing strategies to eliminate traffic congestion, and reducing work zone accidents, while considering the economic benefits or drawbacks to the traffic control plans.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Governor of Maryland has identified work zone congestion as a serious problem in Maryland that can have a negative economic effect on the State. New businesses will be less likely to locate in Maryland while existing businesses may choose to relocate out of State to escape the negative effects congestion and delay will have on their business. This best practice will address the Governor's concern and give this issue the priority it deserves.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Since this is a relatively new policy, elements of this policy are still being worked out. Benefits of this policy should become apparent within next several months.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

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16. MASSACHUSETTS

BEST PRACTICE/POLICY:

Twelve Minute Delay Rule

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Analyses are performed, during design, based on volume and reduced capacity due to the work zone. If the expected delay approaches or exceeds 12 minutes, other alternative or work hours are to be considered. This has been in effect for 5 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A design practice was needed to help give insight into the reduction of congestion through a work zone. It helps in preparing and understanding such issues as stage construction and allowable work hours.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Work zone queuing is reduced and extra work orders for adjusting stage construction are eliminated.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities, locations, and work

CONTACT(S):

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17. MINNESOTA

BEST PRACTICE/POLICY:

“Guide to Establishing Speed Limits in Highway Work Zones”

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Mn/DOT has produced a document entitled, “A Guide to Establishing Speed Limits in Highway Work Zones.” This document outlines the guidelines, proper layouts and procedures for implementing work zone speed limits. The Mn/DOT used the guide in a training class which they presented throughout the State of Minnesota in 1997-98. Through this training class Mn/DOT has trained over 500 people.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Mn/DOT developed this document to provide uniform guidelines for the proper application of speed limits in highway work zones. Work zone safety is enhanced with proper use of speed limits throughout the length of a work zone. Proper practice also aids in speed limit enforcement efforts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Work zone speed limits in Minnesota are now being implemented and signed more uniformly. This should be effective in making work zones safer for the highway worker and the traveling public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The use of this guide is applicable to all highway work zones.

CONTACT(S):

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18. NEW JERSEY

BEST PRACTICE/POLICY:

New Jersey DOT (NJDOT) Established a New Safety Office Entitled – “Office of Capital Project Safety” (OCPS)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The OCPS’s goal is to improve and enhance safety awareness in construction work zones for the contractor, construction worker, motorists, and NJDOT employees. As problem areas are identified in work zones, it will be the responsibility of the OCPS to evaluate and resolve the problem, and then develop a process to prevent it from reoccurring. A recent accomplishment of the OCPS was the development of a new “Safety Program” specification which requires all contractors to have a written safety program prior to starting work on a project. The OCPS will also issue “Safety Alert Bulletins” when needed, develop an employee safety program, and gather and analyze work zone injury data to provide feedback to the construction industry for safety improvement purposes. Work zone safety awareness is also being implemented via revisions to the State’s Motor Vehicle and Commercial Vehicle Driver’s Manuals to include a section on work zone safety. Other areas of public outreach are also being explored, such as, requiring driver’s education and defensive driving courses to include a section describing motorist’s responsibilities when passing through work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The purpose of the OCPS is to reduce injuries and fatalities in work zones, reduce projects costs and to provide uniformity in work zone safety issues and requirements in New Jersey.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

As a new initiative, benefits from the OCPS have not been fully realized. However, expected benefits include: reduction in injuries and deaths in work zones, reduced insurance rates for contractors, reduction of project costs, and the enhancement of work zone safety awareness on a statewide basis.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Efforts from the OCPS will effect all construction projects in New Jersey.

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19. NORTH CAROLINA

BEST PRACTICE/POLICY:

Limited Length of Lane Closure Within a Project

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Work zone lane closures are limited to 1 to 2 miles within a project. Lane closure length is based on traffic volumes, percent grade, and directional travel demand. The restriction based on roadway grade is applied in the mountainous region of western North Carolina. Directional restrictions are applied in urban areas where rush hour traffic predominates. Lane closure restrictions have been used by NCDOT since the early 1990s.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Controlling the work of the contractor by setting limits on lane closures reduces the opportunity for vehicles to become involved in a collision.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Congestion is reduced and safety of the motorists is increased.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This policy applies to high-volume/high-speed divided facilities with major construction projects.

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20. NORTH CAROLINA

BEST PRACTICE/POLICY:

Policy/Standards for Slow Moving Maintenance Operations

DESCRIPTION OF THE BEST PRACTICE/POLICY:

First, a determination is made if the operation is continuously moving (e.g., striping) or if it is a mobile operation will stop periodically (e.g., pot-hole patching). Standard drawings are provided for both types of slow moving (3 MPH or faster) maintenance operation caravans. The number of advance vehicles with signs, arrow panels, and a truck mounted attenuator at the approach to the application vehicle will vary based on the type of facility where the operation will take place. This procedure has been used for the past year.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The increase in volume and speed along the high-type facilities in North Carolina led to an increase in collisions between motorists and maintenance vehicles. Before these standards were introduced, there was no clear differentiation in traffic control required between 2-lane/2-way facilities; and high-speed/high-volume divided highways.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

There have been no serious collisions between motorist and maintenance vehicles since the introduction of the Moving Operation Caravan standard drawings.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This procedure applies to all routes where a moving maintenance operation occurs.

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21. OHIO

BEST PRACTICE/POLICY:

Lane Closure Policy/Map

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Using the Highway Capacity Manual formulas, the freeways in the Cleveland area were analyzed using hourly traffic counts. The map shows the times of permitted lane closures that will not cause back ups on either weekdays or weekends. This practice has been in use in its respective ODOT district for 5 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Too many lane closures by contractors and ODOT forces caused major back-ups.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced delays for short-term work zones; increased night work; and increased customer satisfaction (happier motorists).

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All freeways – All types of work

CONTACT(S):

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22. OHIO

BEST PRACTICE/POLICY:

Weekend Closures and Total Closures to Accelerate Work and Minimize Motorist Delay

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The best practice is the closure of a section of road for a period of time. This practice is being used extensively in the reconstruction of the Spring-Sandusky interchange.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The main reasons to adopt the practice was to accelerate the completion of construction projects and to minimize delays.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The contractor can work without worrying about traffic in the work zone. The total time to construct a project and the cost of the project are reduced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

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23. OHIO

BEST PRACTICE/POLICY:

Life Cycle Costing to Select Longer Lasting Materials and Products

DESCRIPTION OF THE BEST PRACTICE/POLICY:

When selecting the type of pavement to be used, a life cycle cost analysis is performed to determine what type of pavement would be best for ODOT.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

In the past, pavements were selected for a variety of reasons: supply, personal choice, maintenance, etc. These reasons were never quantified; instead they were generally subjective. In many instances they were correct, but sometimes they were not and did not yield a long pavement life.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A life cycle cost analysis gives you quantitative information about which pavement type you should use on a project. Your decisions are defensible and the cost of the pavements along with the life of the pavements are maximized.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects – All locations

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24. OHIO

BEST PRACTICE/POLICY:

“Compendium of Options” (Construction Traffic Maintenance Strategies)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The “Compendium” is a listing of strategies and options that should be considered by designers for maximizing capacity while maintaining traffic through work zones. It is broken down into 6 areas: 1) construction/traffic maintenance strategies, 2) options outside the work zone, 3) options inside the work zone, 4) time limitations with liquidated damages, 5) contracting procedures, and 6) administrative options. This guidance has been in use since 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The ODOT’s goal is to reduce delay and improve safety for both the workers and the motorists through work zones. It was also one of ODOT’s first efforts to identify and disseminate best practices throughout it’s districts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Improved capacity and safety through work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

CONTACT(S):

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25. OHIO

BEST PRACTICE/POLICY:

Full-Time Work Zone Traffic Control Person in Metro District Offices

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Making sure motorists have a safe and efficient means of travel through work zones. Also, take measures to reduce delays and work zone crashes and to improve communication with the motorists. The ODOT, District 12 (Cleveland area) has used this position for 6 years. Similar positions are also used in the Columbus and Cincinnati areas.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Increasing delays caused by construction projects also to reduce liability from law suits in construction zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A person who is only concerned with the movement of traffic and does not have to worry about other concerns normally associated with project inspection. Reduced delays in work zones. More informed motorists by using highway advisory radio and portable changeable message signs.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

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26. OKLAHOMA

BEST PRACTICE/POLICY:

Public-Private Partnership Incentives for Early Completion

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was originally begun when a large food chain was building a new store near an existing interstate interchange that was being rehabilitated and expanded. The food chain offered the Oklahoma Department of Transportation (ODOT) \$300,000 if the project was completed prior to the grand opening of the new store. The ODOT chose to offer the \$300,000 to the contractor as an incentive for early completion of the project. This has been received so well by the state government and public that ODOT will be seeking similar public-private partnerships in the future.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Besides reducing user delay, this practice encourages similar public-private partnerships with the private sector realizing that they receive tremendous economic benefits from improved transportation facilities and that they can facilitate similar partnering arrangements with relatively minor expense to themselves. Also, given the limited amount of funds available to the highway departments, ODOT can offer these types of incentives with no additional risk or expenditure to themselves.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This type of public-private partnership will be used on a case-by-case basis.

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27. OKLAHOMA

BEST PRACTICE/POLICY:

Ramp Closures During Reconstruction

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This policy was initiated to facilitate the reconstruction and improve public relations when existing ramps must be closed for rehabilitation projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The primary benefits are facilitating and accelerating the reconstruction. These in turn reduce the motorist delay and improve safety. The secondary benefits derived from this practice are increased public awareness of the construction projects and work zones, less confusion on the local citizens seeking alternate routes, and occasionally, new ideas on different approaches to closing the ramps.

The Oklahoma Department of Transportation conducts a public hearing for the surrounding neighborhoods to notify the public of the upcoming closures and to address the concerns expressed by the public. Typically, this is done just prior to closing the ramps.

In the future, ODOT plans to conduct the public hearings during the planning and design phases to ensure that all local concerns are addressed and that no economic hardship to the local economy will be produced from the ramp closures. Also, ODOT plans to distribute questionnaires after completion of the construction project to determine how the local population was affected and what improvements can be made to the ramp closure process.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice mainly affects the high-speed/high-volume, access-controlled interstates, and freeways during rehabilitation and reconstruction.

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28. OREGON

BEST PRACTICE/POLICY:

The specification for 20 Minute Maximum Delay Period

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The State of Oregon has a policy of not delaying traffic more than 20 minutes. The 20-minute maximum delay period has been affect since 1974.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The 20-minute maximum delay was an adopted to reduce the traveling public's frustration of waiting long periods. A vehicle queue build up for the 20-minute period is usually not high enough to queue up beyond the traffic control zone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A benefit of the 20-minute maximum delay is that the public sees progress with minimal delay to their travel. Also the delay period is not too long so that people may not run though the construction zone contributing a safety hazard.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is most applicable to two-lane highways in rural areas with lower volumes involving any type of work.

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29. OREGON

BEST PRACTICE/POLICY:

Performance Goal for Work Zones to be Designed at the Posted Speed

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In instances where traffic realignment is required through the work zone, the realignment (e.g., reversing curves and superelevations) is designed for the posted speed rather than the reduced work zone speed. This practice has been in effect for approximately 12 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Simply posting signs with a lower speed through a work zone, without any enforcement, does not result in reduced speeds.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit is that safety is enhanced through the project. Without the unexpected curves, the traffic flow is maintained and rear-end accidents are reduced. The elimination of sharp curves also reduces the amount of truck roll-over accidents and the number of vehicles running off the road.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is considered for every project. It is most effective for high-volume/high-speed locations. Any type of work requiring the realignment of traffic.

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30. OREGON

BEST PRACTICE/POLICY:

Use of Commuter Incentives to Minimize Congestion in Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Techniques such as incident management and an aggressive lane rental specification were used to preserve existing freeway capacity for on ODOT projects. To minimize congestion ODOT also implemented demand reduction measures to reduce the number trips made in the corridor during peak commute periods. Demand reduction measures included: providing transit incentives such as free Amtrak commuter rail service, providing carpool incentives such as free carpool parking and a guaranteed ride home program, temporarily converting general purpose travel lanes to HOV lanes, increasing transit service coverage and frequency, constructing additional or expanding existing park and ride lots so that transit connections are more convenient, and marketing and promoting telecommuting, job-sharing, and employee flex-time programs with employers in the affected area.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

In anticipation of traffic congestion resulting from reduced freeway capacity due to highway construction-related impacts, ODOT and local transit providers worked together to implement travel demand reduction measures in order to maintain acceptable levels of service through the work zone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits include reduced traffic congestion in the work zone and less traffic diverted onto neighborhood streets; attract drivers from single-occupant vehicles during construction with the additional benefit of retaining some ridership beyond the project completion; and improve air quality due to fewer vehicles in the traffic stream.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Projects in urban areas with established transit systems in operation would be applicable. Projects on facilities with HOV lanes or general purpose lanes which could be converted to HOV in locations with established carpool programs in operation can also benefit from commuter incentive programs.

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Bill Creger, Project Manager, ODOT

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31. OREGON

BEST PRACTICE/POLICY:

Minimum Geometric Standards for Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

It is the policy that work zone lane and shoulder widths will meet the minimum geometric standards specified in the Oregon DOT Highway Design Manual. Internal policy also calls for 300 foot minimum acceleration lanes. This policy has been in effect approximately 12 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Wider lanes and shoulders increase work zone safety by reducing the potential for side-swipe accidents and truck off-tracking. The safety of the construction personnel is also improved because they are farther away from moving traffic.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Safety is enhanced through the project by reducing the number of potential conflicts often associated with narrow lanes and shoulders.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is considered for every project. It is most effective for high-volume/high-speed locations. Any type of work.

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32. PENNSYLVANIA

BEST PRACTICE/POLICY:

Business plan strategy to reduce work zone delays and crashes.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Since 1994 work zone traffic control safety and congestion reduction strategies are incorporated in the Department's Business Plan to guide our efforts during the following fiscal year.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide high level goals, objects and guidance for our work zone safety and congestion reduction efforts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Promotes a uniform effort throughout the Department. The number of fatalities in long-term freeway construction projects dropped from a high of 27 in 1993, to 11 in 1994, five in 1995 and none in 1996. Four fatalities occurred in 1997.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

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Telephone: (717) 221-4517

33. PENNSYLVANIA

BEST PRACTICE/POLICY:

Policy – “Guidelines for Improving Safety in Freeway Construction Zones,” Work Zone Traffic Control Congestion and Delay,” Congestion Reduction Work Zones.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

These are a series of internal policy letters for PennDOT Engineering Districts containing recommendations for congestion reduction and safety in work zones. For example: Station a uniformed State Police Officer in a patrol car with emergency lights flashing one-quarter to one-half mile upstream of any queue; provide a sufficient number of lanes to handle the volume demand; include incentive/disincentive clauses and lane rental provisions in construction contracts; schedule work during off-peak hours, etc. These policy letters were issued in part because of multi-agency meetings involving contractors, the trucking industry, State police, and the Department.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

An increasing number of fatal crashes which occurred in long-term freeway construction work areas even though the traffic control met or exceeded PennDOT and MUTCD standards.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The number of fatalities in long-term freeway construction projects dropped from a high of 27 in 1993, to eleven in 1994, five in 1995 and none in 1996. Four fatalities occurred in 1997.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST

APPLICABLE/EFFECTIVE:

Freeways, expressways, major arterials – All locations – All types of work

CONTACT(S):

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Telephone: (717) 221-4517

34. PENNSYLVANIA

BEST PRACTICE/POLICY:

Multi-agency work zone Safety Committee (Trucking Assoc., State Police, PennDOT)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1993, the Pennsylvania Department of Transportation established a high-level steering committee composed of Department officials, the Pennsylvania State Police, the Pennsylvania Motor Trucking Association and the construction contacting industry to develop mitigation strategies to reduce the number of fatalities occurring in work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This was in response to a dramatic increase in the number of fatal crashes which occurred in long-term freeway construction work areas even though the work zone traffic control exceeded the requirements described in Part VI of the MUTCD and Pennsylvania Department of Transportation's policies and Regulations.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The number of fatalities in long-term freeway construction projects dropped from a high of 27 in 1993, to 11 in 1994, five in 1995 and none in 1996. Four fatalities occurred in 1997.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways, expressways, major arterials – Restoration/Rehabilitation, utility, etc

CONTACT(S):

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35. PENNSYLVANIA TURNPIKE COMMISSION

BEST PRACTICE/POLICY:

Removal of Traffic Control Pattern if not working multiple shifts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This practice requires the contractor to remove the lane closure if not working multiple shifts. This practice is used on milling and paving projects. The 1998 construction season is the first this is being used.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice is to used to encourage the contractor to work multiple shifts and improves driver expectations by only having lane closures during work periods.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Improved customer service, safety and driver expectation.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This is used on mill and pave projects on high-speed/high-volume roads.

CONTACT(S):

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E-Mail: tscanlon@paturndpike.com

Michael Castellano, FHWA Pennsylvania Division

Telephone: (717) 221-4517

36. TEXAS

BEST PRACTICE/POLICY:

Work Zone Safety Program Established by TxDOT

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The TxDOT Give Us A Brake program has been in existence for approximately 5 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To reduce work zone injuries/fatalities.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Work zones that are safer for both drivers and workers. We have begun collecting more specific data from collisions during this fiscal year, but there is no previous data to accurately gauge the effectiveness of this best practice.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

Greg Brinkmeyer, Policy & Standards Engineer, Traffic Operations Division, TxDOT

Telephone: (512) 416-3120

E-Mail: gbrinkme@mailgw.dot.state.tx.us

37. UTAH

BEST PRACTICE/POLICY:

Policy – Balanced Transportation Program and Projects Advertised on Time

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Utah DOT has used their Preconstruction Project Management System (PPMS) and performance ratings for the Regional Directors as ways to stabilize their letting schedule and balance their program. Before this effort many projects were delayed until late into the fiscal year, resulting in last minute surges in resources and inefficient use of time. Since incorporation of these principles, the schedule for advertising projects has stabilized. Progress is monitored by UDOT management.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To improve the use efficiency of staff resources and to deliver the transportation program on time.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Commitments are made on time and staff resources are used more effectively.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects

CONTACT(S):

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38. UTAH

BEST PRACTICE/POLICY:

Motor Carrier Initiative- *“Work Zone Accident Reduction/Prevention Project”*

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Focus public campaigns and outreach efforts to help prevent work zone crashes. This is accomplished through the following methods: 1) monthly meetings to discuss and identify where work zones are located, 2) Distribution of educational materials during compliance reviews and public meetings, and 3) Mass mailings of educational materials to area motor carriers identifying work zone hazards and how to minimize the chances of having crashes.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for implementing the policy was to maintain a level of zero crash zone fatalities and curb any potential increase of crashes by our increased proactive outreach efforts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits are still being realized. However, it is expected to result in a decrease in overall work zone crashes.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects, but particularly those where high motor carrier user volume could occur.

CONTACT(S):

Robert Kelleher, FHWA, State Director, (801) 963-0096, ext. 247

Shirleen Hancock, Manager, Utah DOT, Motor Carrier Division, (801) 965-4781

39. UTAH

BEST PRACTICE/POLICY:

One Season Construction Contracts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Utah DOT has committed to completing construction projects in one season where feasible. This began in 1996 with the effort to plan for the massive \$1.59 billion reconstruction of I-15. It was felt that this policy would further strengthen the UDOT's pledge to the public to minimize disruptions.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for implementing the policy was to minimize disruptions to the public and potentially improve project quality.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits are still being realized. However, it is expected to result in increased user satisfaction and better project management.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects, but particularly those where major user delays could occur.

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40. VIRGINIA

BEST PRACTICE/POLICY:

Lane Closure Coordinator for Interstate Highways in a State Highway District

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Provides for a single contact for compilation and distribution of planned lanes closures in coming week. Practice began in 1997 in Northern Virginia District.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To avoid concurrent lane closures, whether they be on maintenance, construction, operation or utility work areas, on nearby sections of roadway and to avoid conflicts in operations.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduce traffic delay and congestion due to multiple operation in nearby areas.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways, Arterials and Major and Minor Collectors All types of work – All locations

CONTACT(S):

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41. WASHINGTON

BEST PRACTICE/POLICY:

Construction Work Zone Traffic Control Strategy

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Early in project development a work zone traffic control strategy is identified. The strategy is developed during a required project design conference that is attended by traffic engineers, law enforcement officials, and construction engineers. It may constrain the number of lanes that can be closed, hours of the day, and days of the week when work can occur, LOS to be provided to motorists during construction and the need for night operations.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To ensure that the strategies are considered in design and later in developing the traffic control plan for the PS&E.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A check list has been developed to alert people to the various strategies available. Early in the project design phase funds are earmarked to cover the costs. Provides adequate safety and minimizes travel time delays.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Any project, urban or rural, which will need a work zone on the roadway prism.

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42. WYOMING

BEST PRACTICE/POLICY:

Work Zone Performance Goal – 20 Minute Maximum Delay Specification

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Wyoming has adopted a maximum motorist delay specification of 20 minutes for construction projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This specification was adopted in order to minimize delay to motorists. Since no reasonable detours usually exist, it is especially applicable to environmentally sensitive, remote rural locations in which major construction activities must be performed under traffic.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This type of approach is a win-win situation for both the motorist and the contractor. It permits the contractor to perform major work without major traffic interference. It also permits the motorist to continue to use existing routes without unreasonable delays or detours.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable to major construction activities in remote locations.

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43. EASTERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Guidelines for Use of Flaggers and Police Details for Highway Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This guideline/regional policy identifies the type of work zone situation which warrants the use of a civilian flagger and which situations warrant the use of a uniform police officers. This guideline was prepared particularly for use by the Massachusetts Division Office in working with the Massachusetts Highway Department on assigning police details to Federal-aid construction projects. The guideline has been shared with the other Divisions in Region 1, and may have application for all States using uniformed police officers in highway work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Concern had been raised by the media, legislative representatives, and the general public, that uniform police details were being used on construction projects in some States in Region 1, particularly in Massachusetts, where their presence was not necessary. A review was made by the FHWA of existing practices to determine where the use of police details and of flaggers would best be served; then develop guidelines for implementing their recommended use.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This guideline has been used by the Massachusetts Division in determining Federal-aid participation in police details on Federal-aid construction projects. The guideline also provides a basis for a work zone designer to make initial assignments and estimates of uniformed officers and of flaggers on a construction project under design.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All Federal-aid projects.

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44. EASTERN RESOURCE CENTER

BEST PRACTICE/POLICY

I-95 Corridor Coalition

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The I-95 Corridor Coalition is a partnership of major public and private transportation agencies, toll authorities, and industry associations, serving the northeastern corridor of the United States from Maine to Virginia. Built on the foundation of cooperation, consensus, and coordination, the Coalition's programs add value to the transportation systems of its member agencies to provide "seamless" travel by well-informed travelers. A number of activities are underway to minimize motorist delays in work zones and coordinate system preservation projects between States:

- Information Exchange Network
- Highway Operations Working Group
- Construction Advisories
- Northeast Travelers Alert Map
- Information Exchange Forums
- Variable Message Signs/Highway Advisory Radio Deployment
- Information Clearinghouse

Information Exchange Network (IEN) – The IEN provides a sophisticated communications network between all state transportation/highway operations agencies throughout the Corridor. It facilitates the sharing of real-time incident, traffic condition, and construction information among state agencies so that regional diversions can be implemented and/or planned for, as necessary. Currently 52 IEN workstations have been deployed throughout the Corridor.

Highway Operations Working Group (HOGS) – The focus of the HOGS is to improve incident management and highway operations, particularly in multi-jurisdictional situations. HOGS members include operational and law enforcement representatives from member agencies, most of who are responsible for some aspect of facility operations. The HOGS are split into four regional groups and meet several times a years.

Construction Advisories – Bi-weekly construction advisories that summarize construction activity on major facilities throughout the Corridor are produced and distributed by the Coalition for member agencies, the private sector, and the traveling public.

Northeast Travelers Alert Map – This map identifies major construction activities upcoming events, and typical holiday weekend bottlenecks. It is produced twice a year (Summer and Fall) and is made available to the general public free-of-charge at welcome centers and rest areas along the major roadways in the Corridor. It is also available at regional AAA offices, some truck stops, convention and visitor bureaus, chambers of commerce, and on the Coalitions web page (www.i95coalition.org).

Information Exchange Forums – Several exchange forums have been held to facilitate increased knowledge and understanding of activities and technology advancements within the Coalition.

Variable Message Signs/Highway Advisory Radio Deployment – Guidelines have been prepared to ensure that messages on variable message signs are stations have been installed at critical junctures throughout the Corridor, where diverting traffic assist in mitigating regional congestion.

Information Clearinghouse – clearinghouse for Coalition members through which would make available information of procurement, operations and maintenance practices, ongoing projects, and other related information.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Information Exchange Network – interconnect the corridor agencies into a single dedicated information exchange network for improved communications, coordination, and enhanced regional strategies to manage transportation facilities, and provide tracking information.

Construction Advisories, Northeast Travelers Alert Map, and Variable Message Signs/Highway Advisory Radio deployment – provide traveler information to motorist in a timely and cost-effective manner for pre-trip and real-time planning purposes.

Highway Operations working Group, and Information Exchange Forums – provide structured communications among the agencies to coordinate Coalition activities.

Information Clearinghouse – improve the flow of important information among Coalition member agencies.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The mission of the I-95 Corridor Coalition is to bring the technology and benefit of ITS to the Northeast. More specifically, the Coalition promotes coordination and cooperation among its members to ensure that the latest technologies and systems are applied and implemented in order to create a seamless, multi-modal, and state-of-the-art transportation system from Maine to Virginia.

Improvements in mobility through the implementation of ITS and the Coalition's initiatives will enhance business profitability. For example, a time savings of as little as 10 minutes per trip for the 14 million eastbound trucks entering New York City each year would translate into a direct cost savings of nearly \$50 million per year. ITS and related Coalition programs would also help to lower infrastructure costs. The capital costs for new highway construction are approaching \$18 million per lane mile in some parts of the region. Over 380 new lane miles would need to be constructed each year in the principle I-95 Corridor urban areas just to maintain traffic flow at current levels of congestion. The total estimated cost for this construction could reach almost

\$6.9 billion annually. The annual cost of construction related delays exceeds several hundred million dollars in the Maine to Virginia corridor.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The Coalition focuses on major high-volume routes in the Maine to Virginia corridor. Any type of construction project which has region-wide implications would be applicable. Most applicable where long distance auto travelers and commercial vehicle operators need real-time traveler information on construction areas, traffic conditions and alternate routes.

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John Baniak

Executive Director of I-95 Corridor Coalition

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45. EASTERN RESOURCE CENTER

BEST PRACTICE/POLICY

Accelerated Construction Initiative included in Region 3's FY 98 Work Plan

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In order to address the growing problem of motorist delay as a result of construction and/or maintenance operations, the resource center has committed to implementing accelerated construction techniques on 25% of the projects within the five state area by the year 2000. At this time no specific techniques have been initiated; the national review being performed by the FHWA's Headquarters will be the basis for regional outreach efforts.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide a safer, cost-effective, and longer lasting facility with reduced maintenance for the traveling public.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits to be gained by using accelerated construction techniques and innovative/high quality materials will be reduced-user delays. This will result in time savings, improved air quality, reduced work zone related accidents for the general motorist. Economic benefits include cost savings to businesses that use transportation facilities. Over the long term, efficient and improved travel times could induce further economic development from industry.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The types of transportation facilities that are most suited for these techniques would be those with high traffic volumes and those commercial routes predominantly used by businesses to deliver their products to their customers.

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46. SOUTHERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Region 4 Guidance – Uneven Pavement and Edge Drop-Off

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The guidance was issued October 31, 1997. The guidance is contained in two tables: one for low speed (<50 km/hr), and one for high speed (>50 km/hr) by type of drop-off (all surfaces, centerline for opposing traffic, edge line, and outside of edge line). The values given were based on review of the January 1996 AASHTO Roadside Design Guide, 1988 MUTCD, Part VI, Revision 3 (September 1993), and NCAT Research Report 96-3, "A Study of Longitudinal Joint Construction Techniques in HMA Pavements."

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The new guidance replaces Region 4 guidelines issued February 27, 1989. Recommended construction practices for Superpave mixes suggest using thicker lifts than generally used in the past. The thicker lifts used in Superpave construction can result in drop-offs that exceed the recommendations of the 1989 guidelines. The revised guidance permits more flexibility in making decisions concerning drop-offs and appropriate mitigation measures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The revised guidance explains in more detail mitigation measures for various drop-off conditions. The suggested mitigation measures are based on field experience and research conducted since 1989 and serves to implement the Superpave program.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects

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47. WESTERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Performance Plan Objective to Reduce the Public's Exposure to Highway Construction Activities

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This regional initiative is designed to minimize motorist delays by reducing the public's exposure to highway construction. The initiative is focused on increasing the use of contracting methods that reduce contract time (A+B and I/D), reducing lane closures (lane rental), etc. and using durable materials. Each FHWA division office in the Region is working with its State highway agency to incorporate strategies in Federal-aid highway projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This initiative is in response to the NQI Survey which showed the public was dissatisfied with construction delays and is in keeping with the Mobility, Safety, and Productivity goals in FHWA's Strategic Plan.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced motorist delay and exposure to construction.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects where proposed construction activities will reduce the capacity of the facility below the traffic demand.

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Best Practices Area 2. Public Relations, Education, and Outreach (General Public, Driver, and Elected Officials)

STATE-OF-THE-ART

The driving community and elected officials are informed, involved, and sensitive to the highway worker and work site safety needs.

To achieve state-of-the-art education and outreach, transportation agencies would need to:

- Assume a proactive leadership role in work zone educational efforts.
- Develop, update, and distribute work zone safety educational materials for:
 - ✓ Driver handbooks/manuals
 - ✓ Commercial drivers handbooks/manuals
 - ✓ Driver license test questions
 - ✓ Driver education courses
 - ✓ Teaching modules for elementary and secondary schools
 - ✓ Media (television, radio, newspaper)
 - ✓ Road user groups, insurance companies, rental car agencies (magazines, newsletters, inserts)
 - ✓ Elected officials
- Develop media partnerships to educate and inform the public about work zone safety.
- Sponsor national and State work zone safety awareness initiatives.
- Share work zone public service announcements and educational materials with other highway agencies.
- Develop guidance and tools to assist decision makers in balancing the expenditure of additional funds for longer-lasting materials and designs in today's projects to achieve a faster delivery, a longer service life, and reduce future motorist delay and exposure.
- Update the National Highway Institute (NHI) work zone training courses and expand the audience to include designers, State police, local public agencies, utility companies, consultants, and contractors.

The following "best practice" relate to public relations, education, and outreach:

Subcategory	Ref. #	Public Relations and Outreach Best Practices
Drivers (Psngr/Truck)	49	DOT personnel involved in driver education programs.
	56	Work Zone Safety Campaign – “Work Zone – Stay Alert”
	58	Work Zone Safety video for truckers
	62	“Wizard” CB Radio transmissions providing work zone safety messages to truckers
	63	Partnership with Motor Truck Association
	64	Fixed sign message “XXX People Killed in this Work Zone” displayed in advance of work zone
	65	Work Zone Safety materials distributed at rest areas, welcome stations and truck stops
General Public	70	Driver’s Education: Learning Work Zone Safety
	50	Public Information Campaign
	51	Circuit Rider Van Program
	52	Public outreach through use of neighborhood liaisons
	53	Media outreach program for construction and maintenance work zones
	54	TRANSCOM transmits to user groups
	55	Public Awareness Committee/Public Education and Outreach Program for Work Zone Safety
	57	“IMPACT” – Public Information Program
	59	Work Zone Safety Public Service Announcement – “At the Office”
	61	Public outreach efforts to increase participation in traffic management plan strategies
	66	Work Zone Safety Week
Media	67	Joint training with contractor and VDOT construction/maintenance work zone personnel
	71	Dissemination of work zone information
State/ Contractors/ Workers	77	“You Show Us How” Contests
	60	Develop media partnerships
	48	Constructing Your Image – A Public Relations Handbook for Contractors
	68	Work Zone Safety Round Tables
	69	What’s Wrong With This Work Zone – training video
	72	Quality Management Workshop
	73	Regional Work Zone Conferences
	74	Safety Regional Technical Specialty Team
	75	Promotion of A+B bidding; lane rentals; incentives/disincentives; PR campaign
	76	Satellite video conference on work zone safety
	78	Maintenance Tour Region

48. COLORADO

BEST PRACTICE/POLICY:

Constructing Your Image – A Public Relations Handbook for Contractors

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Concerned about their image in general, Colorado contractors undertook an effort to produce guidance for construction site managers that can improve image and public relations. Hard-copy guidance was produced by contractors associated with the Colorado Contractor's Association (ACC).

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

As stated above, various representatives of industry were concerned about the image projected as an industry, as an employer and part of the communities in which they operate.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Project personnel have literal guidance that should enhance the image of their company and industry as a whole. *Constructing Your Image*, in partnership with CDOT and CCA, this document is an excellent tool for providing visibility and improving industry's image with the public. It provides templates on public information office, sample letters, notifications, thank you letters, media releases, press tips, crisis management strategies, and a checklist for public relations.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects, but generally higher type projects and facilities; more complex projects

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49. INDIANA

BEST PRACTICE/POLICY:

DOT Personnel Involved in Driver Education Programs

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This best practice focuses on student driver awareness of traffic control devices, including devices in the work zone. It usually is taught in driver education classes at the school. The practice began in 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The best practice was developed as a co-partnership with the Indiana state police to provide more awareness and understanding of traffic control devices to the younger driver.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit being realized is that it educates students of particular traffic control devices that they were never aware of before.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable to all types of projects.

CONTACT(S):

Mike Hoffmann, Traffic Engineer, INDOT

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E-Mail: mhofmann@indot.state.in.us

50. IOWA

BEST PRACTICE/POLICY:

Public Information Campaign

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Department has contracted with a public relations firm to raise awareness and educate drivers of the dangers of work zones. Each year thousands of TV and radio spots are used to “get the word out.” Information related to specific projects is also developed and distributed.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To increase work zone awareness and improve safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Improved public image and increased driver awareness in work.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All work zones.

CONTACT(S):

Jerry Dickinson, Work Zone Public Relations Coordinator, IDOT

Telephone: (515) 239-1667

51. MINNESOTA

BEST PRACTICE/POLICY:

Circuit Rider Van Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Mn/DOT operates a Circuit Rider Van Program: a mobile outreach effort providing face-to-face transfer of the latest technologies and information on a variety of topics such as work zone safety.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Circuit Rider Van Program was instituted to bring new technologies to field personnel and to gather information on new methods and technologies used at a particular field site to share with others throughout the State.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The Circuit Rider Van Program has proven to be a very effective technology transfer mechanism. It is an excellent way to give field personnel hands on experience with both common and “state-of-the-art” work zone traffic control devices.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The Circuit Rider Van Program is used throughout the State of Minnesota.

CONTACT(S):

Paul Keranen – Maintenance Research Engineer (612) 282-2281

52. MASSACHUSETTS

BEST PRACTICE/POLICY:

Public Outreach Through Use of Neighborhood Liaisons

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Liaisons are assigned to each neighborhood affected by the construction. They represent the project, organize community meetings, and answer questions.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Construction is to last 14 years through the heart of the city, for both commercial and residential areas. Liaisons give affected individuals and groups a direct conduit to obtain information and forward concerns.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The community has confidence that the project will listen and respond. Mechanisms help projects adapt to changing conditions. The community has real ability to influence project decisionmaking.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, streets, 2-lane/2-way highway, and bridge.

Location: Urban, rural, and recreational.

Volume/Speed: High-volume/high-speed, high-volume/low-speed, low-volume/high-speed, low-volume/low-speed.

Type of Work: Resurfacing, reconstruction, restoration/rehabilitation, and utility.

All, depending on project size and abetter concentration.

CONTACT(S):

Jeremy Crockford, Chief of Staff

Telephone: (617) 951-6120

Charlie Rountree, Environmental Site and Site Manager

Telephone: (647) 342-1134

53. MISSISSIPPI

BEST PRACTICE/POLICY:

Media outreach program for construction and maintenance work zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MDOT has implemented a practice of using the media (faxes, radio, TV, newspapers) to notify the public of upcoming and ongoing construction and maintenance projects. This media campaign informs the public of road closures and other ongoing construction or research activities that are expected to cause traffic delays.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was the result of a comprehensive traffic management effort on a major Interstate project in the State. The result of keeping the public informed of construction activities resulted in less complaints and inquiries by the media and public. It also helped to build good will for the Department. It is believed that the information provided also increased safety for the travelers as well as workers.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

By adopting this practice, MDOT has realized a decrease in negative comments from the media and complaints from the traveling public. The traveling public did not mind waiting in a traffic delay as much if the specific activity causing the delay was known. This information was verified through public surveys on active construction projects.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The practice is used for all projects. The more complex the project and for projects located in high population areas or heavily traveled areas, the media campaign effort is increased.

CONTACT(S):

Donna Lum, Public Affairs Director, MDOT
Telephone: (601) 359-7017

54. NEW YORK

BEST PRACTICE/POLICY:

TRANSCOM Transmits to User Groups

DESCRIPTION OF THE BEST PRACTICE/POLICY:

TRANSCOM was formed as a regional transportation coalition which would serve as a clearinghouse for transportation incident and construction information in the States of New York, New Jersey, and Connecticut. It transmits information to hundreds of transportation agencies, media outlets, and major employers throughout the day informing them of incidences and delays.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Fourteen major transportation agencies and the Federal Highway Administration saw the need for some type of regional clearinghouse for this type of information that would transcend the normal transportation agency's boundaries and would include all transportation modes in the greater New York City area.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Transportation providers are able to provide better service to their customers in either responding to incidences or having the users avoid the incidences by detour routing, delaying trips, etc. The users benefit by spending less time unnecessarily sitting in congestion due to roadway and transportation incidences.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This information applies to every major road, bridge, tunnel, and transit facility in the greater New York City area.

CONTACT(S):

Emmett McDevitt, Safety Engineer, FHWA New York Division

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Ed Roberts, NYSDOT

Telephone: (518) 457-1232

55. NORTH CAROLINA

BEST PRACTICE/POLICY:

Public Awareness Committee/Public Education and Outreach Program for Work Zone Safety

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The committees were formed to identify methods that reach specific target audiences with regard to work zone safety. The goals of each committee was to brainstorm ideas that make work zones safer, and then pursue implementation of selected methods from the brainstorming sessions.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The NCDOT identified areas of concern with regard to work zone safety and formed these committees to address the concerns.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The committees have identified potential innovative public awareness methods that inform motorists about work zone safety. These efforts lead to the motorist having an increased awareness of the need for safety in the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The results of the two NCDOT committees are applicable for all work zones on all types of highway facilities.

CONTACT(S):

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56. NORTH CAROLINA

BEST PRACTICE/POLICY:

Work Zone Safety Campaign – “Work Zone – Stay Alert”

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A logo and theme were developed for the “Work Zone – Stay Alert” campaign in 1990 and are still in use today. All print materials: PSAs, radio spots, and maps, etc. utilize this theme. Construction advance warning signs also utilize this theme.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The campaign was developed to promote a heightened sense of awareness in work zones. This heightened awareness allows motorist to react faster and be more cautious when traveling in work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The NCDOT has safer work zones and more alert drivers. Speed differentials are minimized, thus reducing the severity of accidents.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is available for all facilities and all projects.

CONTACT(S):

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57. NORTH CAROLINA

BEST PRACTICE/POLICY:

“IMPACT” – Public Information Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Information Management Public Affairs Construction Traffic “**IMPACT**” effort is a public information program which is housed within the Central Construction Unit. The IMPACT strives to promote safety in the work zone and provide exceptional customer service. This program began in 1987 and has continued to grow.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The NCDOT felt it was important to inform motorists, businesses, and residents of upcoming construction activity and possible impacts. Encouraging motorists to use alternate routes and avoid congestion associated with work zones helps to ease traffic volumes and educate the drivers.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Surveys conducted show that motorists, businesses, and residents are being informed of construction activities. This aids in the reduction of congestion and increases safety to the motorist and construction workers.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This program targets and is effective on any type of construction project.

CONTACT(S):

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58. NORTH CAROLINA

BEST PRACTICE/POLICY:

Work Zone Safety Video for Truckers

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The NCDOT developed, produced, and distributed a 7½ minute video geared towards truckers and the trucking industry. This video is produced from the truckers' perspective on North Carolina's highways. The video was distributed to more than 600 members of the North Carolina Trucking Association for truck safety training in 1992 and is still in use today.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The work zone safety video was developed to educate and inform a specific target audience—truckers; because of the large number that utilize North Carolina's highways and the potential effect this group of motorists have on others traveling through work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The NCDOT has safer work zones and a more informed trucking industry. The trucking industry realizes that they have a significant effect on speeds in the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE.

The video applies to truckers in all types of work zones on the Interstate, US routes, and NC routes in both rural and urban areas.

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59. NORTH CAROLINA

BEST PRACTICE/POLICY:

Work Zone Safety Public Service (PSA) Announcement – ***“At the Office”***

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The NCDOT purchased this PSA in 1996, and added its own “tag” at the end of the video.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The message from this video allows the motorist to visualize his/her office in a work zone, thereby, creating an impact that will be remembered.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Motorists definitely remember the PSA when they travel through a work zone according to comments NCDOT has received. Awareness of work zones and safety within them is consequently increased.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This video applies to all projects and all routes within North Carolina.

CONTACT(S):

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60. OREGON

BEST PRACTICE/POLICY:

Develop Media Partnerships

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Establish regular contact with State and/or local media (Radio, TV, Cable) to provide an on-going dialogue on work zone safety issues. This practice had been used since 1994 when 20 people were killed in Oregon roadway work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice is valuable because:

- The media become confident in the value of the information to their customers.
- The likelihood of coverage of work zone safety in the media is increased.
- There is a known contact at the State DOT.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The likelihood of coverage of work zone safety in the media is increased, along with better informed motorists and a reduction in work zone worker deaths.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects

CONTACT(S):

Larry Christianson, Oregon DOT

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61. OREGON

BEST PRACTICE/POLICY:

Public Outreach Efforts to Increase Participation in Traffic Management Plan (TMP) Strategies

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A multi-jurisdictional, bi-state Traffic Management Team worked together to develop a TMP to lessen the traffic impacts anticipated with the closure of the northbound I-5 Interstate Bridge crossing of the Columbia River. As a strategy identified in the TMP, the Oregon and Washington State DOT undertook a public outreach effort to advise commuters in Portland, Oregon and Vancouver, Washington of the possibility of severe traffic congestion and to inform them of travel alternatives which would help relieve it. A common theme in the outreach effort was that commuters need to share in some responsibility for the “problem” and individuals were encouraged to take the initiative to change their commute habits during the closure.

It was recognized that employers would be key in allowing commuters to utilize commute options and to promote and disseminate options for how people can get to work. An employer outreach program was established targeting employers with 50 or more employees crossing the Columbia River. Three types of contact were used with employers. Telephone contacts were made initially, followed by mailings which included information packets, followed by company presentations to provide an overview of the project and explain commute alternatives to employees.

It was also recognized that a news media partnership would be necessary to communicate traffic management strategies to the public. A series of press releases were issued through the summer to provide periodic updates on the project with a final advertising campaign three weeks prior to closure. This advertising campaign promoted commuter options by distributing maps and brochures from displays in retail centers and placement of advertisements in print and radio mediums.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A Traffic Management Plan was adopted for this project and it contained 13 strategies, one of which was a public outreach program which was crafted to provide information to commuters and employers. It was recognized that public participation would be integral in achieving the targeted 26 percent reduction in trips.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits included a high level of community awareness of the project. A trip reduction of 19 percent was realized. An increased level of awareness of transit alternatives in the corridor. A renewed interest in HOV lanes in the metropolitan area. Future projects on the Interstate Bridge will have a “roadmap” in the TMP to follow in order stage projects without gridlock.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Use of public outreach efforts to inform the public is most effective in urban areas with good radio, newspaper, and television broadcast coverage.

CONTACT(S):

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E-Mail: Jeffrey.D.Graham@fhwa.dot.gov

Bill Creger, Project Manager, ODOT

Telephone: (503) 731-3257

62. PENNSYLVANIA

BEST PRACTICE/POLICY:

“Wizard” CB Radio transmissions providing work zone safety messages to truckers.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Wizard Work Zone Alert Radio is a portable radio which broadcasts traffic safety and work zone information on citizens band radio channels. It is primarily aimed at long-haul truckers. The Wizard monitors CB transmissions on one or more preselected frequencies. When it detects a lull, the Wizard will broadcast a safety message. Under development since 1994. Certificate of Approval issued in January 1998.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Department was looking for a unique way of targeting long-haul truckers with safety information as they approached work areas.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Truck drivers are alerted to the work zone and any new traffic patterns.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

Richard J. Sesny, Manager, Regulations and Control Section, PennDOT

Telephone: (717) 783-6080

Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

63. PENNSYLVANIA

BEST PRACTICE/POLICY:

Partnership with Motor Truck Association

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Involvement of representatives from State Motor Truck Association in the identification, development and implementation of actions to reduce crashes associated with work zones. Practice was initiated in 1995.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Practice was initiated due to high number of fatal crashes involving commercial vehicles in or near work zones. Motor Truck Association was contacted to provide a trucking industry perspective on how to address problem and to serve as direct conduit to provide information to industry.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Obtain knowledgeable perspective on how proposed actions will impact commercial vehicles. Direct conduit to industry on problem and what they can do to correct.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

Daniel R. Smyser, Motor Carrier Division, PennDOT

Telephone: (717) 787-7445

Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

64. PENNSYLVANIA

BEST PRACTICE/POLICY:

Fixed sign Message “XXX People Killed in this Work Zone” displayed in advance of work zone.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Fixed signs placed in advance of the project in which the legend stated, “People Have Died In This Work Zone.”

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

There were several fatal accidents in the work zone. The sign was intended to be dramatic to better attract the attention of motorists.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

No formal study was conducted. Anecdotal data suggested that it did draw the attention of drivers.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

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Telephone: (717) 221-4517

65. PENNSYLVANIA

BEST PRACTICE/POLICY:

Work Zone Safety Materials distributed at rest areas, Welcome Stations and truck stops.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A brochure titled "Highway Construction Advisory" has been printed and disseminated since the 1970's. The brochure includes a map and detailed information on the routes under construction and safe driving tips. Disseminated through the Department's Welcome Centers, rest areas, drivers license centers and District Offices.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This brochure was developed in the 1970's as a public service to the motoring public. Safety information was included to educate the public on how to drive safely when traveling in construction areas. For a copy of the brochure, call (717) 787-6746

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Motorists are informed where construction is occurring and are better educated on how to drive safely in work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

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Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

66. VIRGINIA

BEST PRACTICE/POLICY:

Work Zone Safety Week

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1998, the VDOT conducted the first statewide work zone safety awareness campaign for both VDOT employees and the general public the week following the implementation of daylight savings time. Press conferences with the Virginia State Police were held across the state, with the dangers of working in and driving through work zones emphasized. The State Police increased their presence in work zones during the week, and VDOT employees drove with their headlights on and displayed orange ribbons and “**GIVE 'EM A BREAK**” bumper stickers on their vehicles. Daily activities focusing on work zone safety were conducted and give-a-ways such as key chains, pen lights, and rain ponchos were distributed to all VDOT employees.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To increase the awareness of both VDOT employees and the general public to the dangers and hazards of working in and driving through work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Encourage employees to pay closer attention when performing work zone activities, encourage motorists to drive with caution and obey the posted speed limits when traveling through work zones, and demonstrate to our employees VDOT’s top value, to put “Safety in Everything We Do”.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: All roads – All location

CONTACT(S):

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67. VIRGINIA

BEST PRACTICE/POLICY:

Joint Training With Contractor and VDOT Construction/Maintenance Work Zone Personnel

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The VDOT, in conjunction with the Virginia Road and Transportation Builders Association (VRTBA), conducts joint VDOT/contractor Work Zone Safety training statewide in a series of training sessions held every winter. Started five years ago, the one day courses are generally split 50/50 between department and contractor personnel. The training is conducted by VDOT work zone safety personnel as well as traffic control experts from the contracting side. The course consists of a review of state standards and guidelines for work zone traffic control, participation in a mock tort liability trial, and interaction between attendees in solving a work zone safety exercise. The one day course allows interaction and builds teamwork between the contracting industry and VDOT personnel.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide the necessary training to both VDOT and contracting personnel, to review changes and new requirements, and to develop teamwork and improve communication between the Department and the contracting industry.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Better trained personnel, increased awareness to and focus on work zone safety requirements, improved communication between the Department and the contracting industry, and the development of teamwork to solve work zone safety challenges.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Urban and Rural Freeways Statewide

CONTACT(S):

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E-Mail: rush_db@vdot.state.va.us

68. VIRGINIA

BEST PRACTICE/POLICY:

Work Zone Safety Round Tables

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Twice a year work zone safety representatives from VDOT's nine districts meet with work zone safety personnel from the Department's Central Office to review and discuss the Department's Work Zone Safety Program. The format allows each district to discuss and share general or specific work zone problems and concerns, as well as best practices and/or solutions to problems encountered in their district. The day-and-a-half to two day meetings have been conducted since the spring of 1990.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To share information and successful practices statewide; to develop consistent work zone safety practices statewide; to interpret and discuss federal and state work zone safety requirements, standards and guidelines; and to review and discuss the latest in work zone traffic control devices.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Statewide consistency in the work zone safety program; increased participation and input in the development and implementation of work zone safety standards and guidelines; greater focus and compliance to the work zone safety program; and improved communication and cooperation between districts and Central Office Work Zone Safety personnel.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All roads statewide – All location

CONTACT(S):

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69. VIRGINIA

BEST PRACTICE/POLICY:

“What’s Wrong With This Work Zone” – Training Video

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In the spring of 1998, the VDOT developed and distributed a work zone training video which displays two improperly setup work zones; a lane closure operation on a four-lane roadway, and a flagging operation on a two-lane roadway. From a motorist’s perspective, viewers are driven through the work zones and asked to find the deficiencies in each. The video then shows and discusses each deficiency. The corrections are made and the work zones are viewed again to show the improvement over the improperly setup work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide a training tool to increase the awareness to common work zone installation deficiencies found on Virginia roadways and show the differences and dangers between incorrectly and correctly installed work zone traffic control.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Increasing the awareness of VDOT and contractor field personnel in the importance in following established standards and guidelines as they relate to work zone traffic control.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Two-lane and multi-lane urban and rural roadways with various volumes and speeds for all types of construction/maintenance activities.

CONTACT(S):

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70. WASHINGTON

BEST PRACTICE/POLICY:

Driver's Education: Learning Work Zone Safety

DESCRIPTION OF THE BEST PRACTICE/POLICY:

An 11½ minute video designed to educate new student drivers about work zone safety and awareness. This video is brand new...but is in conjunction with our "Give 'em a Brake" work zone safety motorist awareness campaign which came on strong in 1993.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The video was produced because of the lack of awareness of work zone safety in the younger age groups (new student drivers). Students lacked education about what various work zone signs mean and how to properly proceed through a work zone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits include safety for our workers as well as better educated "new drivers."

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

High school driver education classes and independent driving schools.

CONTACT(S):

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71. WYOMING

BEST PRACTICE/POLICY:

Dissemination of Work Zone Information

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Dissemination of work zone information through the Wyoming Trucking Association, low-powered radio, Notices at truck stops, ports-of entry, motels, and restaurants is made for projects involving possible lengthy closures. In addition, normal news media is used including newspaper, radio, and television.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

During the construction of a major project on I-80, the contractor was permitted to close the road for up to 1 hour at a time for blasting operations.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Motorists were able to plan their trips around the construction closure schedule. The contractor was required to determine the closure schedule 3 days in advance so proper notification could be made throughout Wyoming, western Nebraska, and northern Colorado.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Highly visible projects involving complete road closures or major delays.

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72. SOUTHERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Region 4 Quality Management Workshop (QMW)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The QMW is an annual event that has been sponsored by the Region 4 Office Engineering Services Team for the last 7 years as an outgrowth of the National Quality Initiative (NQI). The 3-day format is in constant transition due to the variety of subjects covered under the umbrella of Quality. The effects of durability and constructability are the principal focus. Management practices aimed at producing quality of construction and materials allows a reduction of traffic exposure to Work Zone activities are a key consideration in continuing this workshop. Construction, Maintenance, and Materials personnel from State DOTs and private industry are the targeted audience.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

FHWA Region 4 recognized a need for more uniform application of technological advances and lessons learned across the south. The disparity range of applied technology was very broad and this was a method to bring lagging States up to speed.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The FHWA, State DOT, and industry personnel are better networked so that information is shared across state lines on a routine basis. The annual conference allows hot topics to be discussed at the regional level so that experiences and potential solutions can be applied in all the States of Region 4 quickly. This has also provided a good opportunity to introduce new issues to all the States at once.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects, Design through Maintenance activities. The annual conference is attended by DOT and FHWA Management and Technical Programs Specialists.

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73. MIDWEST RESOURCE CENTER

BEST PRACTICE/POLICY:

Regional Work Zone Conferences

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1995 and 1997, Region 5 held Work Zone Conferences in conjunction with ATSSA How-To Conferences. Participation in these conferences included FHWA, State, local and industry representatives. In 1998, a State/Federal only, Work Zone Workshop was held in the Region 5 Office. Another Regional Work Zone Conference is being planned for January 1999, in conjunction with the ATSSA How-To Workshop to be held in Columbus, Ohio.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Work zone safety was identified as one of our strategic objectives. The conferences were developed, so that the State personnel involved in the administration of the work zone safety programs in their States, could get together and share practices and discuss common concerns.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The ability of the States to share best practices with each other and discuss common concerns. In the last workshop, time was set aside for the States to compare specifications.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All facilities – All types of work

CONTACT(S):

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74. MIDWEST RESOURCE CENTER

BEST PRACTICE/POLICY:

Safety Regional Technical Specialty Team (RTST)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Safety RTST was formed in 1992. Membership on the team included the Division Office Safety Program Engineers, the Regional Safety Program Engineer, and representatives from OMC, NHTSA, and FRA. In 1998, the RTST has been replaced by the Safety Strategic Goal Team, which includes a broader range of skills from the Division Offices and also includes a partner from a State DOT.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

One of the primary purposes of the Safety RTST was to develop, implement, and monitor the Safety portion of the Regional Strategic Plan each year. The role of the Safety SGT will be to develop and monitor the Regional Business Plan. The change in composition of the team was to get a broader input from different disciplines within the Agency into the development of the Regional Business Plan.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This Team was responsible for setting up the Region 5 Work Zone Conferences. In conjunction with the Work Zone Conferences, the Team has also developed a spreadsheet questionnaire which lists the practices of the Region 5 States in the area of work zone practices, including the name, address, and phone number of State work zone contacts.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All facilities – All types of work

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75. SOUTHERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Promotion of A+B Bidding; Lane Rentals; Incentives/Disincentives; PR Campaign

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Region strongly promoted A+B Bidding, Lane Rentals and Incentives/Disincentives for projects on an elevated section of I-45 through downtown Houston and on I-40 through Albuquerque. These types of contracting procedures had not been used before in these areas.

The Region also promoted use of Public Relations Campaigns on both projects. The region office consulted with the division and state and provided information and assistance on the extensive public relations/media blitz that was used on these projects to keep the public informed. The campaigns included TV, radio, newspapers and handout flyers to provide advance information on upcoming street closures, etc. so drivers could plan alternate routes. In Houston, a separate public information contract, as well as a high mast lighting contract for better night operations, was let in advance of the main reconstruction contract.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To expedite completion of the work, reducing the time the projects were actually under construction. I- 45 through Houston is one of the primary hurricane evacuation routes during hurricane season.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Greatly shortened the time for project completions, compared to what it would have been under usual procedures. This reduced the length of time the public was inconvenienced and delayed.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

High-volume, urban type facilities and other critical sections of highways.

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76. SOUTHERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Satellite Video Conference on Work Zone Safety

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Region personnel (Regional Administrator, Safety Engineer) participated as speakers and panelists at an APWA Work Zone Safety video conference held at Oklahoma State University, and explained/promoted streamlined contract procedures such as A+B bidding.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The forum reached many highway and other public works professionals and a high degree of interest was shown, especially in A+B bidding.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Streamlined contraction procedures, with emphasis on reduced time required to complete the work once started, benefits the traveling public. This use of satellite telecommunications video conferences spread the word faster to a diverse audience.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects and locations.

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77. WESTERN RESOURCE CENTER

BEST PRACTICE/POLICY**

“You Show Us How” Contests

DESCRIPTION OF THE BEST PRACTICE/POLICY:

An annual contest open to all counties in Region 8 has been conducted annually since 1994 to solicit new ideas. One category is “enhancement of safety in daily roadway or roadside maintenance operations.” The counties submit entries for novel concepts they are using to meet the goal of the category. Entries are published in an annual report to all counties. Winning entries are selected and presented with plaques during the annual County Road Advisor’s meeting.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Most counties are very short on resources. However, they continually develop new concepts and techniques to accomplish their objectives, but they are not shared with other jurisdictions that might well benefit from the same idea.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Publishing novel concepts, as well as recognition of the best ideas, transfers technology and creates energy for trying new and better ways of conducting business.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Local roads

Location: Primarily rural, some urban

Volume/Speed: Primarily low-volume, low-speed, but includes others

Type of Work: Primarily maintenance

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78. WESTERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Maintenance Tour

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A state maintenance engineers' tour of innovative maintenance activities has been conducted annually since 1996. Participants in the tour include each Region 8 state's maintenance engineer, as well as participants from each Division Office, the Resource Center, and Headquarters. The tour provides a forum to meet and discuss maintenance ideas and technology of common interest, including temporary traffic control. Each state takes a turn hosting the event.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Many states utilize new technology and/or practices in their maintenance activities. Unfortunately, there is not a good mechanism for routinely sharing the ideas with other states. The tour provides for the exchange of information.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefit being realized from this annual tour are the increased use of new technology and practices in neighboring states.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: all

Location: all

Volume/Speed: all

Type of Work: all

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Best Practices Area 3. *Prediction Modeling and Impact Analysis: Congestion and Crashes*

STATE-OF-THE-ART

Available prediction/analysis tools are user-friendly and readily adapted to the local construction site and situation. These tools can accurately analyze and reliably predict congestion situations including travel times, queue length, travel speed, total delay, crash rates, severity levels, and interactive feedback to both the design and construction team.

To achieve state-of-the-art prediction modeling and impact analysis, transportation agencies would need to:

- Update and enhance existing computer modeling software to make it user-friendly and to realistically predict traffic impacts (travel times/speed, queue lengths) and the crash potential (frequencies and severity) for various reconstruction alternatives on freeways as well as urban arterial grids.
- Develop user-friendly computer modeling software (PC based) for analyzing proposed project specific changes to the traffic control plan at the project site. (Comparisons of travel times/speed, queue lengths, as well as crash frequencies and severity.)
- Develop user-friendly project specific computer software (PC based) that can predict capacity breakdown on freeways before it occurs.

The following “best practices” relate to prediction modeling and impact analysis:

Subcategory	Ref. #	Prediction Modeling and Impact Analysis Best Practices
Closure Effects	79	Lane closure analysis for toll roads
Delays	80	QUEWZ software is used to predict congestion and associated user costs
	81	Modeling projected traffic delay
	82	Traffic Impact Report
	83	Traffic Impact Analysis
	84	Tool – DELAY Enhanced 1.2 Software for Estimating User Delay Impacts and Costs for Freeway Capacity Restrictions

79. FLORIDA

BEST PRACTICE/POLICY:

Lane Closure Analysis for Toll Roads

DESCRIPTION OF BEST PRACTICE/POLICY:

The Florida Turnpike performs a lane closure analysis in the design phase and again during construction to assess the traffic impacts due to construction. To help ensure the accuracy of the level of service analysis, quarterly traffic counts are used.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Since the Turnpike has patrons who pay to use their services, they are very sensitive to their customers' needs. The Turnpike strives to minimize disruption and lessen the inconvenience to their customers due to highway construction.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

It is used as a planning tool to help determine the scheduling of work for the project (i.e., day or night operations, number of lane closures allowed, etc.). It also allows for fine-tuning of work hours during construction if there are any changes due to field conditions.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Used on all Turnpike projects

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80. INDIANA

BEST PRACTICE/POLICY:

QUEWZ Software is Used to Predict Congestion and Associated User Costs

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This information is used as one method to identify projects warranting a TMP. The user cost information is also used to establish incentives on A+B Contracts and as criteria to the best alternative for maintaining traffic.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A method was needed to estimate user costs. The version of QUEWZ used by INDOT has the ability to take into account the traffic that will divert from the route. It has been calibrated by INDOT and found to be reasonably accurate.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefits being realized is accurate user cost and delay information which has resulted in more efficient construction phasing and maintenance of traffic planning.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This version of QUEWZ is primarily applicable to freeways for any type of project.

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81. MASSACHUSETTS

BEST PRACTICE/POLICY:

Modeling Projected Traffic Delay

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A computerized traffic model (TRANPLAN) was developed during preparation of the project's environmental impact statement. This model has been upgraded and refined to support final design and construction.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Project construction requires changes and impacts to I-93, I-90, and 5 separate geographic neighborhoods in the City of Boston. Many of these traffic impacts involve complex redistribution of vehicles. The TRANPLAN model helps clarify potential traffic impacts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Complex traffic redistributions are made more comprehensible in planning for traffic changes required by project construction.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, streets, 2-lane/2-way highway, and bridge.

Location: Urban, rural, and recreational.

Volume/Speed: High-volume/high-speed, high-volume/low-speed, low-volume/high-speed, low-volume/low-speed.

Type of Work: Resurfacing, reconstruction, restoration/rehabilitation, and utility.
Most.

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82. NEW JERSEY

BEST PRACTICE/POLICY:

Traffic Impact Report (TIR)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

On certain projects, the Traffic Impact Report is used to identify construction impacts on traffic. It contains recommendations for traffic mitigation to be utilized by the designer of the traffic control plan (TCP). The decision to develop a Traffic Impact Report is a mutually reached decision of the Project Manager, Design Coordinator, and the Regional Traffic Operations Manager. This practice was initiated on February 3, 1994.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Coordinating the required mitigation and the timing of the project with other construction projects, both local government and private. This caused conflicting detours and overlapping traffic impacts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The designer has the benefit of the Traffic Impact Report which recommends mitigation such as night work, restricted hours, number of lanes available for traffic, staging requirements, public information program, transportation strategies (Park and Ride, Shuttle Buses, etc.). The designer utilizes the Traffic Impact Report in the preparation of the traffic control plans and staging plans. This approach has proven to result in a better overall traffic control plan and reduction of the inconvenience of the motorist.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practiced is applicable to all facility types where significant impacts to traffic is expected due to construction activities.

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New Jersey Department of Transportation Web Page – Design Manual – Section 14 – Design Guidelines for Traffic Control Plans and Details

Section 14 of the Design Manual: <http://www.state.nj.us/transportation/cpm/RoadwayDesignManual/sect14.htm>

Sub-Section 14-04: <http://www.state.nj.us/transportation/cpm/RoadwayDesignManual/sect14.htm#14.04> Traffic Impact

83. PENNSYLVANIA TURNPIKE COMMISSION

BEST PRACTICE/POLICY:

Traffic Impact Analysis

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Prior to designing a project, detail traffic capacity analysis is completed to determine how many lanes must be maintained and when. The capacity analysis is completed for a typical weekday, Friday, Saturday and Sunday for each month of the year. This practice has been used for about 10 years

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was adopted to limit any possible delays in the work area.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This practice has improved customer service and safety.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice has been used on high-speed/high-volume facilities.

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84. UTAH

BEST PRACTICE/POLICY:

Tool – DELAY Enhanced 1.2 Software for Estimating User Delay Impacts and Costs for Freeway Capacity Restrictions

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The DELAY Enhanced software was developed in 1997 by Martin Knopp of the FHWA, Utah Division. It is in initial stages of deployment. The UDOT has used the program for: incident management, evaluating maintenance striping alternatives, and limited ITS evaluations.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The program was created to improve the quantification of user delay costs caused by freeway restrictions to traffic flow in an easy-to-use interface for quick estimations. The program was initiated more for incident management, but can be used for simple work zones.

The Version 2.x is under development and will increase the flexibility for work zones and general ease-of-use.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The model quickly provides estimates of: Total Delay, Time-to-Normal Flow, Maximum Queue of Vehicles, Maximum Queue Length, Maximum Individual Vehicle Delay, Average Individual Vehicle Delay, Excess Fuel Use, Vehicle Emissions, and Financial Loss. This information can be used to estimate program benefits or compare alternatives very quickly.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This tool is applicable to freeways. The current version is geared more for shorter-term closures, but the next version under development will provide more flexibility for scenarios lasting longer during the day.

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Best Practices Area 4. *Planning and Programming*

STATE-OF-THE-ART

A corridor approach is used in evaluating, planning, and programming. This process gives full consideration to long-range corridor needs, traffic demands, road-user costs, potential business community impacts, use of extended designs and high-performance materials, and overall evaluation of total costs for the life of the improvement.

To achieve state-of-the-art planning and programming, transportation agencies would need to:

- Optimize the grouping and sequencing of long-range corridor improvements (capacity, structural, operational, and system preservation) into projects which minimize traffic delays, reduce the exposure to motorist and workers, as well as provide for the safe, efficient travel needs of today and for future generations.
- Routinely program systems preservation, including dedicated funds to provide for planned preventive maintenance treatments performed at the right time.
- Integrate work zone traffic management principles into the FHWA planning and National Environmental Policy Act (NEPA) processes.
- Utilize cross-cutting and multi-agency teams to develop corridor traffic management plans.
- Give full consideration to road-user costs and impacts to affected business and residential communities in the selection of the corridor TMP.

Conduct public relations campaigns that inform the public and involve them in the selection of corridor TMPs.

The following “best practice” relate to work zone planning and programming:

Subcategory	Ref. #	Programming and Planning Best Practices
Corridor Planning	85	Corridor management approach for maintenance and construction operations
	86	Corridor planning used vs. project planning to minimize delays and enhance safety in work zones
	88	Corridor planning
	91	Corridor Traffic Management Plans vs Project Traffic Control Plans
	93	Tool – Use of “MENUTP” Corridor Modeling for the Valley Concerning I-15 Construction Closure and Restriction Alternatives
Organizational Strategy	90	High Impact Project Task Forces
	92	Coordination of all State DOT, local government, and utility construction and maintenance work to minimize motorist delays in the Oklahoma City and Tulsa areas
	94	I-81 Steering Committee
Traffic Mgmt Planning	87	Traffic Management Plans (Chapter 81 in INDOT’s Design Manual)
	89	Comprehensive Traffic Management Plan for the reconstruction of the I-55/I-20 interchange

85. CALIFORNIA

BEST PRACTICE/POLICY:

Corridor Management Approach for Maintenance and Construction Operations

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The California DOT coordinates multiple construction/maintenance projects within a corridor. For maintenance projects a complete corridor will be closed off during the night with a “maintenance gang” performing the work. Construction projects are much longer in duration and entail coordination among different projects to be tied into one corridor project. This concept has been used sporadically over the past year and more recently is being implemented statewide.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

An effort of the State DOT trying to be sensitive to the traveling public and to make the most of taxpayers money.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduction in the overall congestion and delay to the traveling public as well as the improved perception by the public through coordination and planning efforts by the State DOT.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

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86. INDIANA

BEST PRACTICE/POLICY:

Corridor Planning Used Versus Project Planning to Minimize Delays and Enhance Safety in Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The INDOT collects data on current traffic and determines the amount of traffic the road can carry while being reconstructed. They conduct an analysis on the likely routes to be used in the corridor by traffic that cannot be accommodated on roads under construction. Improvements are made on alternate routes as needed to have sufficient capacity. This practice has been used for at least the last 10 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice of reviewing an entire corridor and upgrading its traffic carrying capacity, was implemented to improve safety and capacity. Also, it helped to reduce the number of complaints received by INDOT about construction zone delays.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Safety on the construction project is increased and motorist delay is decreased substantially.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Normally applied to freeway and other high-volume arterials.

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87. INDIANA

BEST PRACTICE/POLICY:

Traffic Management Plans (TMP) (Chapter 81 in INDOT's Design Manual)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A traffic management plan is an overall strategy for accommodating traffic during construction on a project or corridor. They have been used consistently since June 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The INDOT realized that construction on a specific project could impact an entire highway corridor and on many other facilities (hospitals, schools, emergency response, shopping centers, etc.). The TMP is necessary to lessen the impact.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Increased safety and reduced delay and congestion. Fewer complaints from motorists and the affected facilities such as shopping centers, restaurants, and gas stations.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Applicable to major projects with high volumes of traffic mainly in urban, suburban, or rural areas.

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88. MICHIGAN

BEST PRACTICE/POLICY:

Corridor planning

DESCRIPTION OF THE BEST PRACTICE/POLICY :

Especially in the Detroit area, MDOT is now attempting to identify all needed construction work in a corridor and then let a contract to deal with it all. The principle they are applying is “get in, get out, and stay out”. A typical example of this new approach is current bridge work being done on I-94 where all crossroad bridges were packaged into the contract.

Also, MDOT has applied the corridor approach to short term road work from a variety of sources. A typical implementation is for the MDOT to allow a total weekend closure within a long-term contract project, and invite road maintenance, utility and survey forces to also work on their road interests during that time period.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MDOT was looking for ways to reduce the seemingly constant road closures on freeway corridors. In the past it was not uncommon for the State to be working on a given stretch of highway, year after year, doing different elements of work.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Traffic inconvenience is minimized by this approach. It is also expected that DOT credibility with the public will be enhanced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This concept is being used primarily on high-volume urban freeway projects where traffic distribution is a major issue.

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89. MISSISSIPPI

BEST PRACTICE/POLICY:

Comprehensive Traffic Management Plan for the reconstruction of the I-55/I-20 interchange

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MDOT implemented a comprehensive traffic management plan for the reduction of traffic delays and for providing emergency vehicles access. A team composed of MDOT, FHWA, contractors, and local authorities covering police, fire, emergency medical and road services were responsible for the plans and provisions for the access to incident sites for emergency vehicle personnel and other necessary personnel for all stages of construction. This team approach was used to reduce traffic delay and decrease the emergency response time. Practices adopted included Contractor Supplied Service Patrols, Using a Professional Advertising Agency to keep the public informed of construction activities, Using Emergency Medical Services, Establishing Continuous Police Presence, Establishing a Staging Area, Using Portable Changeable Message Signs, Establishing a "Hotline," and Establishing a Detour and Alternate Route Signing. Some of these practices have been incorporated by MDOT for use on other projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The I-55/I-20 interchange handles over 100,000 vehicles a day and is the major East-West and North-South routes through the State and the City of Jackson. The innovative practices for reducing delays and improving emergency response time was considered vital for increasing safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

There were significant reductions in traffic delays for the traveling public and emergency response time was delayed. The use of radio, TV, and facsimiles to inform the traveling public of upcoming road closures and delays greatly enhanced the public perception of the construction project and MDOT as a whole. By keeping the public involved and informed of the status of construction activities, a good working relationship developed between the Department, Contractors, and the public. The public was much more willing to tolerate delays and soon began to find alternate routes without complaining. Safety was also seen to increase.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable where the traffic demand and public perception would warrant its use. Any type of construction activity on a high-speed roadway or major roadway with high volumes of traffic could implement this practice.

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90. MISSOURI

BEST PRACTICE/POLICY:

High Impact Project Task Forces

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A “High Impact Project Task Force” is a task force formed during the project development phase. The members of the task force are from the various disciplines within MoDOT and are charged to examine and review all aspects of the project which may impact the traveling public (motorist). This practice has been utilized for 5 years and has been integrated with MoDOT’s utilization of project managers.

The members of the task force employ various methods for examining the impacts, such as value engineering targeted to reduce contract time and motorist impacts and input from the public and road user groups along with local businesses, communities and elected officials on traffic management plans.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Examples of success: 1) formation of a multi agency partnership to reduce traffic on I-70 bridge rehabilitation in St. Louis—public and private agencies working together promoting and implementing traffic demand management strategies; 2) major bridge rehabilitation project requiring revised traffic routing. Impacted businesses and the public provided input on the traffic management plan which revealed an operational problem—solution was identified and included in the construction project proposal.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The use of High Impact Project Task Force has resulted in reduced construction time, less impact to the traveling public through recommended revisions to the traffic management plan, better understanding and buy in of the traffic management plan by the users and the use of new techniques to monitor traffic through construction.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, major bridge, expressways, complex interchange

Location: Urban or Rural, over major rivers

Volume/Speed: High-Volume/High-Speed, High-Volume/Low-Speed

Type of Work: Reconstruction, Restoration/Rehabilitation

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91. OHIO

BEST PRACTICE/POLICY:

Corridor Traffic Management Plans Versus Project Traffic Control Plans

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The entire I-71 corridor will be reconstructed from Columbus to Cleveland over the next 10 years. Plans are being made on how to best manage the traffic for the entire corridor during construction.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

With multiple highway construction projects occurring in the metropolitan area by a variety of jurisdictions, there needs to be coordination between projects as far as work zone, closures, etc. This coordination will lead to minimal impacts on the public.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

By conducting traffic management for the metropolitan area, we have coordination of work zones whenever possible therefore improved traffic flow for the public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All high-volume corridors

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92. OKLAHOMA

BEST PRACTICE/POLICY:

Coordination of all State DOTs, local governments, utility constructions and maintenance work to minimize motorist delays in the Oklahoma City and Tulsa areas.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Oklahoma found that many adjacent and alternate routes were being rehabilitated at the same time causing motorist delays. In addition, many instances were found where an overlay/rehabilitation job was completed, then shortly thereafter, a new utility crossing was installed—effectively ruining a new project.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The primary benefit is the reduction of motorist delay. The secondary benefits included providing an open forum to discuss formal agreements to detour traffic from the state routes to local routes or visa versa; to discuss funding arrangements to improve a local highway facilities to act as an alternate route for detouring traffic through and around a state highway project; and managing traffic through partnerships and networking. Although it was recognized early that not all projects could be effectively coordinated because of funding limitations or politics, the majority of projects could be coordinated to provide the least amount of delay to the motoring public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Currently, all types of urban projects are being considered for coordination. Major arterials are the main focus at this time with the expectation that eventually residential streets will be considered once the methods of coordination are improved. This effort was begun in January 1998.

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93. UTAH

BEST PRACTICE/POLICY:

Tool – Use of MENUTP Corridor Modeling for the Valley Concerning I-15 Construction Closure and Restriction Alternatives

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The MENUTP program is a travel demand forecasting model commonly used for transportation planning utilizing traffic assignment capabilities, thus allowing planners to evaluate closure scenarios and model the changes in volume on alternate routes. The UDOT utilized the Wasatch Front Regional Council (WFRC) database to compare closure alternatives for the I-15 closure and restriction options. The analysis was used to fund capacity changes on alternate routes and to help determine the optimum construction strategies and sequencing.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The analysis was performed as part of a comprehensive construction and procurement plan performed because of the magnitude of impact by reconstructing I-15 through the Salt Lake Valley. I-15 is the major route in the valley and the scope of work (\$1.6 billion) necessitated increased analysis not typical for construction projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Detailed analysis data provided for decision-making. The planner is better enabled to evaluate impacts on a corridor level, not just on one route.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Not typical for routine projects. The model is highly complex and data intensive. The model is mostly used in planning long term improvements and is most appropriate for projects of regional impact with sufficient time to undertake long term analysis.

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94. VIRGINIA

BEST PRACTICE/POLICY:

I-81 Steering Committee

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The I-81 steering committee was formed in the spring of 1996 to monitor and coordinate efforts to provide improved safety and ease of movement of people and goods along I-81. The I-81 Steering Committee is made up of representatives from location and design, bridge, environment, right-of-way, public affairs, construction, urban, ITS and traffic management.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

VDOT divided the 325-mile long I-81 corridor into ten study areas, each with a separate consultant contract. The I-81 Steering committee provides guidance to the various disciplines to ensure conformity of design throughout the corridor. By treating the corridor as a whole, VDOT can provide a safer roadway, improve traffic flow and increase capacity, enhance economic development and user services, incorporate the latest technology, disseminate information, and coordinate consultant and department efforts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The Steering committee has provided guidance to the ten consultant firms to ensure quality and consistency of design, consistency of traffic data collection and projections, open channels of communication, public involvement, and financial responsibility.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Reconstruction and Restoration/Rehabilitation High-Volume/High-Speed Urban and Rural Freeways

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Best Practices Area 5. *Project Development/Design*

STATE-OF-THE-ART

Motorist delay, road user, worker safety, and impacts to adjacent communities are assessed on all major urban and other high-volume corridors. Cross-cutting teams and multi-agency/interests are used in developing alternatives and selecting the preferred design that minimizes present and future exposure to road users and workers. The project development process results in a TCP that provides for shared risk and benefits for owners, contractors, and the traveling public. Contract times and motorist delays are minimized through the use of CPM scheduling and accelerated contracting procedures.

To achieve state-of-the-art project development/design, transportation agencies would need to:

- Extend traffic management principles into **all** construction and maintenance projects adversely impacting traffic, not just high visibility projects.
- Develop TCP options prior to beginning the detailed design (± 30 percent stage).
- Utilize cross-cutting teams to develop and evaluate TCPs.
- Provide for contractor involvement in the development of the TCP and active public input into the selection of the TCP.
- Use computer modeling to assess the traffic and safety impacts as well as the construction time required for the TCP options being considered.
- Modify project development schedules to reflect development and evaluation of TCP options prior to beginning detailed designs (30 percent stage).
- Consider road-user, life-cycle, and other impact costs in the selection of the preferred design, materials, TCP, and contracting options.
- Utilize CPM scheduling to establish the maximum contract time included in the bid proposal.
- Develop user-friendly computer software to calculate realistic, but expedited contract times.
- Provide CPM scheduling training courses to staff and consultant designers.
- Conduct public relations campaigns to inform the public and involve them in the selection of the preferred TCP.

The following “best practice” relate to project development and design:

Subcategory	Ref. #	Project Development and Design Best Practices
Constructability Review Process	95	Traffic Management Workgroups
	96	Involvement of affected communities and businesses in the project development process
	97	Formal Constructability Review Process
	98	Constructability reviews by construction industry representatives during project design
	100	Utilizing video to enhance public involvement
	103	Multi-disciplinary teams to design, evaluate, and select traffic management plans
	105	Constructability reviews on high visibility projects in design phase
	109	North Carolina Contractor's Association participation in constructability reviews
	111	Community Advisory Councils
	112	Contractor participation in constructability reviews
	115	Emergency Response Team and Trucking Association involved in the design/evaluation of the traffic control plan
116	Contractor hired by the design consultant to do constructability review on James River Bridge	
Tools and Practice	99	Constructability practices for reducing motorist and business exposure to the work zone
	101	Policy – Sequence, Coordinate and Schedule Projects to Minimize Motorist Delay and Interference to Affected Business-Residential Community
	102	Road-user cost in evaluating and selecting traffic management plans
	104	Comparisons of the estimated construction time required to maintain traffic through the work zone vs closing the highway and diverting the traffic
	106	Traffic Control Plan Checklist (Chapter 82-7 in INDOT's Design Manual)
	107	Comparison routinely made of the estimated construction time to maintain traffic through the work zone versus the closing the highway and diverting the traffic
	108	Total road closure
	110	"Coordination of Road Closure/Detours During Construction" – Design Procedures Manual
	113	CPM scheduling to set contract time
	114	Value-engineering studies are conducted on major projects in the early phases of design and focus on traffic management
	117	Value-engineering (all projects over \$2 million) to minimize construction time and road-user cost
118	Methods of Reducing Work Zone Congestion "Tool Box"	

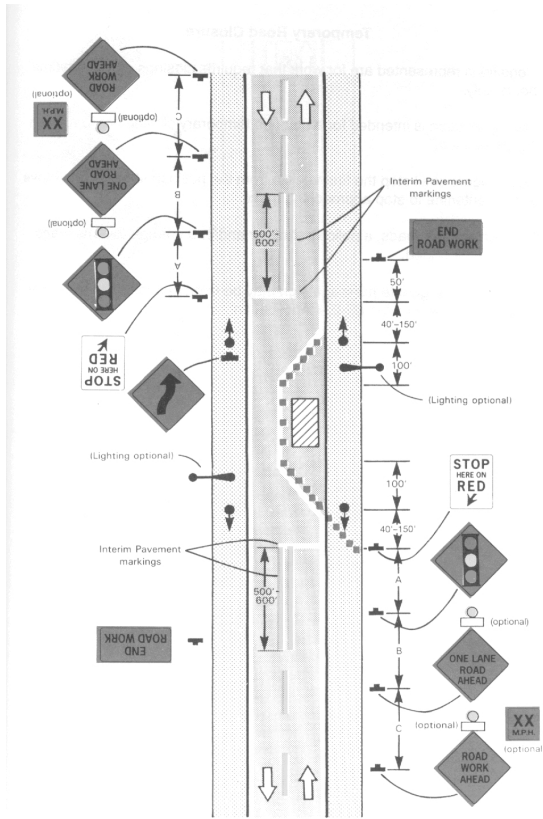


Figure TA-12. Lane closure on two-lane road using traffic signals.

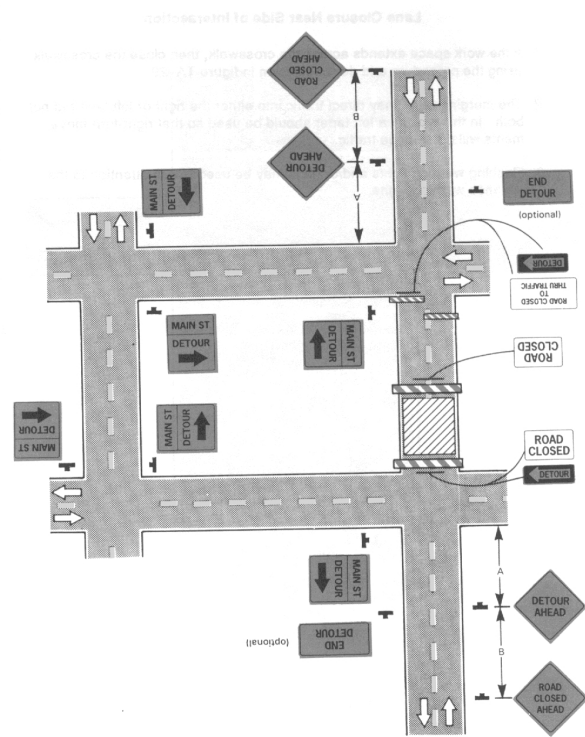


Figure TA-20. Detour for closed street.

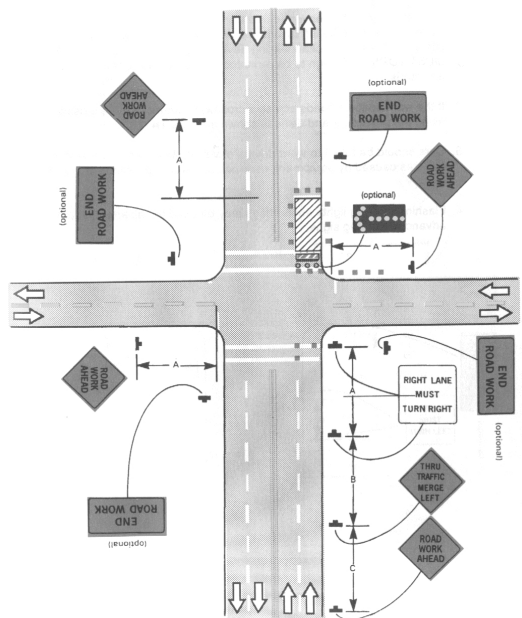


Figure TA-22. Right lane closure far side of intersection.

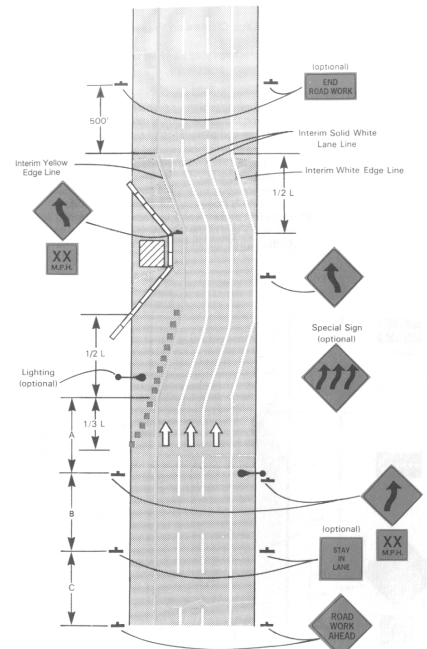


Figure TA-36. Lane shift on freeway.

Work Zone Traffic control plans from the Manual on Uniform Traffic Control Devices

95. ARIZONA

BEST PRACTICE/POLICY:

Traffic Management Workgroups

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Traffic Management Committees or Workgroups have been utilized on major projects over the past 10 or 12 years. These groups meet on a regular basis to discuss work zone issues as well as those problems affecting the local community and especially nearby residents. The Workgroup makeup generally includes construction and contractor personnel, police agencies, fire departments, local city engineering and traffic engineering departments, local businesses, schools, shopping centers, and neighborhood associations.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

These meetings make everyone aware of what the construction efforts will be for the coming month as well as resolving any neighborhood traffic, safety, noise, or other concerns. Problem areas are discussed and solutions determined where possible. Newsletters that are being proposed for release to the neighborhood are reviewed and modified if necessary. Traffic Management Studies have been initiated through this group.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Local agencies, businesses, and neighborhoods know where they can go to get reliable answers to their questions. The State and contractor personnel get a greater sense of what the community desires are and conflicts are more easily resolved.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of facility: Generally freeways or large dollar projects

Location: Generally urban projects.

Volume/Speed: High-volume/high-speed

Type of work: New construction or major reconstruction

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96. MARICOPA COUNTY, ARIZONA

BEST PRACTICE/POLICY:

Involvement of Affected Communities and Businesses in the Project Development Process

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This practice is used on a project by project basis and has been in effect for 3 or 4 years. The county holds a number of meetings with the local neighborhood and business groups to obtain their input into the design of projects. In some of these meetings workgroups are organized to discuss specific issues and then report back to the whole group their recommendations. These meetings give the local citizens a feeling of ownership in the project.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The purpose of these meetings was to get the communities' feel for the project and better understand their needs. Information is obtained early and eliminates surprises that may otherwise not be brought out until the end of the design process or even during construction. Better community relations is also one of the reasons for adopting the process.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

At these meetings some citizens find it easier to bring out and discuss their opposition and at the same time come to an understanding as to the desires of their neighbors. In a sense, they are brought on board as decisionmakers. It makes the counties job easier and reduces conflict.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All major new and reconstruction roadway projects

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97. CALIFORNIA

BEST PRACTICE/POLICY:

Formal Constructability Review Process (CRP)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

CRP is an iterative, multi-disciplinary review of the PS&E at various defined stages of the project development process. This review will include all functional areas including, but not limited to: traffic, design, construction, and maintenance. The CRP has been implemented on all projects greater than \$25 million since July 1997 and will be implemented for all major projects (>\$750,000) by July 1998.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To improve overall PS&E construct ability in an effort to reduce contract time extensions and delay claims and the overall cost/time of construction.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The CRP would address many of the root causes leading to construct ability problems, CCOs, and delay claims. Constructing a project right the first time would not only minimize contract time, but reduce or eliminate some future maintenance problems. All of this adds up to less inconvenience to the traveling public and a better perception by the public of the State DOT.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

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98. COLORADO

BEST PRACTICE/POLICY:

Constructability Reviews by Construction Industry Representatives During Project Design

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Working with Colorado Contractor's Association, a construction contractor is selected to review and critique plans under development at about 30 percent complete stage.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Problems with plans that could have been identified by those more familiar with construction or work phasing. Review by contractors allows correction prior to advertisement and start of construction.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Fewer costly changes during construction. Some savings in delay and congestion due to revisions to work sequencing or traffic control that affects users.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects, but generally higher type projects and facilities; more complex projects

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99. FLORIDA

BEST PRACTICE/POLICY:

Constructability Practices for Reducing Motorist and Business Exposure to the Work Zone

DESCRIPTION OF BEST PRACTICE/POLICY:

In 1996, as part of their statewide Quality Control/Enhancement Plans, the Florida Department of Transportation (FDOT) instituted constructability reviews into the project development process. In general, this involves active participation by FDOT Construction personnel early in the design stages of a project, possibly even during planning for large or complex groups of projects, to ensure the scope addresses construction issues so as to prevent conflicts and reduce contract time.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

There are two primary reasons: 1) reducing the time the public is exposed to construction conditions, and 2) reducing costly construction supplemental agreements and claims.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

By implementing constructability practices, FDOT hopes to better anticipate field oriented issues and conflicts which have typically plagued projects (e.g., utility conflicts, maintenance of traffic which cannot be implemented, etc.) and to encourage use of new construction methods (administrative and technical) which increase the quality and reduce time on the job.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable for all construction projects, but especially those with more complex maintenance of traffic or which have a high impact to adjacent property owners.

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100. ILLINOIS

BEST PRACTICE/POLICY:

Utilizing Video to Enhance Public Involvement

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Illinois Department of Transportation, District 4, has utilized videos on several projects to give interested stockholders insight into project specifics. One example is the video utilized for the rehabilitation of the Havana Bridge over the Illinois River.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The people of Havana stated early in the preliminary engineering stage that closure of the bridge was unacceptable due to the perceived impacts to the area. It was determined that the rehabilitation would require closure at least during the floor beam replacement. Three alternatives were developed, each requiring a different degree of closure. To convey this information to the public, a video was developed that described the different alternatives and their impacts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Public sentiment in Havana went from, “You can’t do that!” to “Close the bridge and get it fixed as quickly as possible!” Much of this change in sentiment is attributed to the video. (FYI: The bridge was closed for the rehabilitation and a ferry boat system and a park and ride facility were used.)

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Enhance public involvement, including the use of video, should be utilized on **complex urban projects and other projects that involve major impacts** to the traveling public. Video is an efficient medium for conveying information on **complicated projects**.

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101. CITY OF CHICAGO, ILLINOIS

DEPARTMENT OF TRANSPORTATION (CDOT)

BEST PRACTICE/POLICY:

Policy – Sequence, Coordinate and Schedule Projects to Minimize Motorist Delay and Interference to Effected Business/Residential Community

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Internal coordination meetings are routinely held to discuss various projects from the Bureaus of Traffic, Highways, and Bridges which have the greatest impact on traffic. Specifically, CDOT internally discusses the upcoming construction seasons major projects and proceeds to map out coordinated project letting schedules in order to minimize motorist delay and interference to effected business/residential communities. Moreover, some basic information which comes from these regular CDOT internal meetings are used to update their public web site, <http://www.ci.chi.il.us/WorksMart/Transportation>.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Simply to enhance the sequencing, coordinating, and scheduling of projects during each year's construction season, which has the greatest potential to impact traffic in order to minimize delay and maintain an acceptable level of mobility and safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Construction cost savings related to enhanced project coordination. Travel time improvements and motorists/pedestrian safety improvements within construction and maintenance work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

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102. INDIANA

BEST PRACTICE/POLICY:

Road User Cost in Evaluating and Selecting Traffic Management Plans

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Road user costs are evaluated on bridge replacement projects to determine whether to construct a runaround or to close the road; and provide detour via State roads or upgraded local roads. This practice has been in effect for the last 15 years. User costs are also implemented in planning interstate rehabilitation projects to determine the best methods for construction phasing and maintaining traffic.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A desire to choose the most cost effective traffic control plan

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

User costs are taken into consideration and the TCP is not just based on construction costs.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Applicable to all bridge replacements on 2 lane/2-way State roads.

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103. INDIANA

BEST PRACTICE/POLICY:

Multi-Disciplinary Teams to Design, Evaluate, and Select Traffic Management Plans (TMP)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The development of TMPs by multi-disciplinary teams began in June 1997, after the issuance of INDOT's new Design Manual which has an entire chapter devoted to the subject of TMP's.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The INDOT realized that major projects on high-volume routes could impact an entire corridor and many other facilities such as hospitals, schools, recreational facilities, and shopping centers. The TMP is necessary to lessen the impact on all facilities.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Increased safety, reduced delay and congestion. Fewer complaints from affected facilities such as shopping centers and motorists. Evaluation of TCP's by the team reduced the chance of errors being repeated.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Applicable to major projects with high volumes of traffic, mainly in urban and suburban areas.

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104. INDIANA

BEST PRACTICE/POLICY:

Comparisons of the estimated construction time required to maintain traffic through the work zone verses closing the highway and diverting traffic.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This practice is covered under the transportation management plans (TMP) which is part of INDOT's design manual. It is considered specifically when reviewing traffic control alternates. The INDOT has completely closed one side of an urban freeway, but not the entire freeway. This practice is common on lower volume routes, and a detour is provided. The INDOT formally began the practice of TMP in 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for adopting this practice is determined after reviewing various aspects, including cost effectiveness, of traffic control alternates.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit realized is easier construction for the contractor and increased safety of the traveling public and it is usually cost effective.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This type of practice may be cost effective on various types of facilities. Each project is site specific.

CONTACT(S):

James Poturalski, Chief of Contracts and Construction, INDOT
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105. INDIANA

BEST PRACTICE/POLICY:

Constructability Reviews on High Visibility Projects in Design Phase

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Constructability reviews would fall under the Transportation Management Plans (TMP) which is included in INDOT's Design Manual. Constructability reviews include reviewing construction phasing and scheduling, reviewing design alternates, reviewing traffic control alternates, reviewing the adequacy of alternate routes, coordinating the design with other TMP plans in the region, and coordinating funding and timing with other projects within the corridor. The INDOT formally began the practice of TMP in 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for adopting constructability reviews is to ensure that a reasonable transportation management strategy has been incorporated into the traffic control plans.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit gained is that it provides a team approach with a variety of disciplines. This is an approach that looks outside the box for potential solutions.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This type of practice is most applicable on any type of facility of high visibility (primarily urban freeways).

CONTACT(S):

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106. INDIANA

BEST PRACTICE/POLICY:

Traffic Control Plan Checklist (Chapter 82-7 in INDOT's Design Manual)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This checklist has been in used for at least the past 15 years by designers to insure that they have considered all necessary factors in developing TMP's and TCP's.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This list was developed by INDOT's Traffic Control Review Committee which annually reviews work zones on a sample of projects. The list includes items that should have been considered on projects, but were not, resulting in problems.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Use of this list helps to insure that all necessary items are considered in the development of TMP's and TCP'S.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects on all types of facilities.

CONTACT(S):

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107. MASSACHUSETTS

BEST PRACTICE/POLICY:

Comparison routinely made of the estimated construction time to maintain traffic through the work zone versus closing the highway and diverting traffic.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Impacts to traffic from construction are closely monitored by the local press, business oversight groups, abettors, and concerned citizens. The credibility of the project rests in large part upon making reasonable tradeoffs between traffic flow and construction.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

- Maintain pre-existing levels of vehicular and pedestrian mobility; and
- Minimize construction cost and schedule.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The project obtains a high-degree of trust and confidence from external agencies and organizations which allows construction to proceed as desired.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

CONTACT(S):

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108. MICHIGAN

BEST PRACTICE/POLICY:

Total road closure

DESCRIPTION OF THE BEST PRACTICE/POLICY :

The highway is closed (if freeway, one direction only) to allow unrestricted contractor access to road.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice, when combined with incentive/disincentives, significantly cuts down the time to complete work.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Significant reductions in project construction time, which results in less delay to motorists. Also, as a result of shorter construction time, less total traffic is exposed to work zone hazards and the challenges of changing work zone traffic control.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

MDOT has applied total closures to Urban or suburban freeways (usually one direction only), in areas where local street system or other freeway segments exist to handle the diverted traffic.

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109. NORTH CAROLINA

BEST PRACTICE/POLICY:

North Carolina Contractor's Association Participation in Constructability Reviews

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The North Carolina Contractor's Association is actively involved in constructability reviews early in the design process. The reviews have been conducted since 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The process has been developed to provide a more constructable design by using contractor input early in the design process. Historically, there have been many projects delayed in North Carolina due to lack of contractor input in the design process.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The greatest benefit to date is reduction in contract time—sometimes dramatic decreases. There have also been reductions in contract costs, reduction in user costs, and better traffic control designs.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Projects selected for review are typically on high-volume, urban freeways. The projects are major rehabilitation and new construction projects with special environmental mitigation concerns.

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110. NORTH CAROLINA

BEST PRACTICE/POLICY:

“Coordination of Road Closure/Detours During Construction” – Design Procedures Manual

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The NCDOT Traffic Control Unit works with the NCDOT Permits Unit to inform and direct over-sized, over-weight, and over-height vehicles around restricted work zones. The criteria for detouring traffic on high-type and lower-type facilities is provided to the NCDOT Division offices for careful prescription of signing, number of lanes provided, maximum length, etc. The coordination procedures have been in existence since 1995.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The NCDOT is responsible for providing consistent detours that will not mislead or endanger the motorist.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The coordinated effort between NCDOT, other agencies and local citizens ensures safe, efficient, and necessary detours for the motorist in or around work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This procedure applies to all work zones and all roadways.

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111. CITY OF COLUMBUS, OHIO

BEST PRACTICE/POLICY:

Community Advisory Councils

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This best practice has been used in the Columbus area on two large projects, more than \$250 million, over the last 5 years. The advisory councils are comprised of businesses, neighbor associations, Paving the Way, and other interested parties. They provide a forum for complaints and were involved in developing the communication plan for the projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The size of the projects and the number of individuals that would be impacted by the projects were such that it was believed that they needed a voice in the design and construction process. With projects of this magnitude, public relation problems could be minimized with the establishment of the councils.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A buy in the process by those individuals represented by the advisory council. Individuals have a forum to hear their complaints.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All public roads

CONTACT(S):

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112. OKLAHOMA

BEST PRACTICE/POLICY:

Contractor Participation in Constructability Reviews

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The constructability reviews were begun largely because there was an untapped wealth of experience of contractors who know how to construct projects in the most economical and expedient manner.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This practice allows **all** of the contractors to review the plans in advance of advertisement to ensure that the best, most economical, and quickest design and construction methods are incorporated prior to advertisement. Besides incorporating better, more economical, and expeditious methods of construction, having the contractors review the plans early provides a way to detect errors overlooked in the design phase and allows the contractors additional time to become more familiar with the project, and therefore, enabling them to submit more accurate bids. This practice was begun in 1997.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This is done on projects over \$5 million.

CONTACT(S):

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113. OKLAHOMA

BEST PRACTICE/POLICY:

CPM Scheduling to Set Contract Time

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

When the Oklahoma Department of Transportation began A+B bidding projects, the contractors who were unfamiliar with the processes involved tended to bid the time part very conservatively. Setting the maximum allowable contract time by use of the more accurate CPM scheduling method reduced the maximum allowable amount of time the contractor can bid, thereby encourages the contractors to be more aggressive in bidding the time part of the contract.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Accelerated contract completion and reduced motorist delays.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Any complex project that is over \$5 million.

CONTACT(S):

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Roadway Design Engineer

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114. TEXAS

BEST PRACTICE/POLICY:

Value Engineering (VE) Studies are Conducted on Major Projects in the Early Phases of Design and Focus on Traffic Management

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The TxDOT began conducting voluntary VE studies in 1991. One of the elements of their designs was to focus on traffic management as it relates to constructability and traffic management through work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The VE provided benefits to the project development and potential constructability of the projects. The VE was also used to analyze processes; such as the utility accommodation and local agency projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Improved early communications between Design, Construction and Maintenance.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The VE is conducted on major projects or processes.

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115. UTAH

BEST PRACTICE/POLICY:

Emergency Response Team and Trucking Association Involved in the Design/Evaluation of the Traffic Control Plan

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A cooperative effort of all emergency response agencies, private sector companies, and media to institute a limited access contingency plan and a proactive response to emergency situations. This response plan was submitted and incorporated within a traffic control plan. This practice also allowed emergency response agencies, and private sector companies to have input into the overall traffic control plan.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for implementing the practice was to provide a limited access contingency plan and a proactive response to emergency situations within a work zone. The practice was implemented to improve the efficiency and effectiveness of the use of resources to deliver emergency response.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The coordination of the parties involved has brought no major problems in delivering emergency response to the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects.

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116. VIRGINIA

BEST PRACTICE/POLICY:

Contractor Hired by Design Consultant to do Constructability Review on James River Bridge

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In January 1997, VDOT awarded a consultant contract to provide design services for the reconstruction of the James River bridge carrying I-95 through downtown Richmond. As part of this contract a local construction contractor was hired to review construction alternatives for feasibility, cost and timing.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The replacement of the James River bridge is a high visibility project with high traffic volumes. Involving a representative of the construction industry at the design phase will eliminate problems during the construction phase.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This construction contract will have several uncommon provisions including strict limits on impacts to traffic requiring innovative construction practices, staged construction with completion dates for each phase and A+B bidding. Having a construction contractor on board has assisted the design consultant and VDOT in developing a project that is feasible to construct and financially responsible.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Any project requiring innovative construction techniques or major traffic impacts.

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117. VIRGINIA

BEST PRACTICE/POLICY:

Value Engineering (all projects over \$2 million) to Minimize Construction Time and Road User Cost

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Value Engineering is a systematic, creative approach to obtaining optimum value for every dollar spent. A Value Engineering review is conducted by a multi-disciplined team of experienced engineers and technicians not originally involved in the project. VDOT began performing value engineering studies in the mid-1970's.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

By identifying the most cost-effective use of funds, the program assists management in providing the best transportation system possible. In 1990, the Virginia General Assembly legislated a Value Engineering study be performed on all construction and maintenance projects exceeding \$2 million.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Value Engineering can reduce construction time and road user cost with out sacrificing quality or operation and maintenance capabilities. Value Engineering achieves one of the highest returns on investment the Citizens of the Commonwealth make in their transportation system. Value Engineering team members increase familiarity of other disciplines by participating in Value Engineering studies.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects except repetitive routine maintenance.

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118. WASHINGTON

BEST PRACTICE/POLICY:

Methods of Reducing Work Zone Congestion “Tool Box”

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The “Tool Box” is a summary of the practices we identified for safely reducing travel delays caused by construction work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The WSDOT’s Work Zone Safety Task Force had devoted substantial resources to developing protection for highway workers and to improving the safety of traveling public. Nighttime work was losing favor for safety and pavement quality reasons. The “Tool Box” was intended to improve traffic flow and safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The “Tool Box” contains new information on how to inform the public. These practices allow WSDOT to develop innovative solutions to urban traffic in construction zones. For example, WSDOT successfully closed sections of the Interstate during two weekends to complete a full width overlay. Adequately informed public avoided the route.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE :

The “Tool Box” contains suggestions for many locations.

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Best Practices Area 6. Contracting and Bidding Procedures

STATE-OF-THE-ART

Contracting and bidding procedures reward contractors for quality work, innovation, accelerated early completions, minimizing motorists delays, and enhancing the safety of road-users and workers. On high-risk, high-visibility, and complex projects contractors are pre-qualified on the basis of quality and past performance.

To achieve state-of-the-art contracting and bidding, transportation agencies would need to:

- Utilize time-based bidding and flexible Notice to Proceed dates on **all** projects which adversely affect the existing level of service.
- Incorporate the quality and timeliness of a contractor’s past performance into pre-qualification procedures.
- Update and enhance existing computer software for calculating road-user costs to make it user-friendly and ensure that outputs are realistic and legally defensible.

The following “best practice” relate to work zone contracting and bidding procedures:

Subcategory	Ref. #	Contracting and Bidding Best Practices
Contracting Practices	119	Alternative Contracting Practices
	137	Frequent use of innovative contracting procedures
Contractor Qualifications	125	Contractor Rating System
	129	Pre-qualification to restrict the bidding capacity of contractors who were behind schedule on current DOT contracts or who consistently demonstrated their inability to complete DOT contracts on schedule.
Flexible timing	120	Flexible Start Times
	121	Summertime Bridge Reconstruction Program
	132	Flexible start time provisions in contract
	136	Narrow window for on-site construction
Incentives/ Disincentives	122	A+B, I/D and Lane Rental in reducing contract time
	123	A+B, and Incentive/Disincentive clauses
	124	Time Based Bidding (A+B, I/D, and Lane Rental)
	126	A+B with I/D for reducing contract time
	127	A+B contracts
	128	A+B Bidding Clauses in North Carolina DOT contracts
	133	A+B Bidding (Time-Based Bidding)
	135	Contract award of the I-5 Interstate bridge lift span repair project based on performance and cost
Lane Rental	130	Construction lane-mile rentals
	131	Lane rental
	134	Lane Rental specification

119. FLORIDA

BEST PRACTICE/POLICY:

Alternative Contracting Practices

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1996, the Florida Legislature authorized the Florida Department of Transportation (FDOT) to use accelerated contracting techniques on construction projects, and limits innovative contracting to \$60 million in contracts annually. Alternative contracting techniques include the following: A+B, Lane Rental, Design/Build, Warranty Clauses, No Excuse Bonus, Lump Sum, Liquidated Savings, and Incentive/Disincentive.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To accelerate contract completion and to control cost overruns on construction projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Early project completion results in reduced disruption and inconvenience to motorists and abutting businesses and homeowners.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Alternative contracting practices are used on many different types of projects. FDOT specifically evaluates which method may be most suitable for a particular project. More than one alternative contracting technique may be used on the same project (e.g., Lane Rental/No Excuse Bonus). Incentive/Disincentive is used on all critical projects on the Turnpike.

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120. FLORIDA

BEST PRACTICE/POLICY:

Flexible Start Times

DESCRIPTION OF BEST PRACTICE/POLICY:

In 1987, after endorsement by the Florida Legislature, the Florida Department of Transportation (FDOT) began using flexible start times on construction projects. Normally, after award of a project, the “Notice to Proceed” is issued and the contractor is to begin work within 15 days. However, with flexible starting provisions, the contractor is allowed to extend this period of time (usually up to 100 days) to start construction.

REASON(S) FOR ADOPTING BEST PRACTICE/POLICY:

Flexible start times are used for two primary reasons: 1) reducing the time period the public is exposed to construction conditions, and 2) increasing the frequency of completing contracts within the authorized contract time.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Flexible start time encourages competition in the bidding process and enables a contractor to have more flexibility in scheduling use of equipment and manpower. By having additional flexibility in scheduling resources, the contractor should have less scheduling problems which may cause delay to completion of a contract. Therefore, contracts using flexible start time are expected to finish on time.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This provision is being used on State funded projects and projects not on the National Highway System. In addition, it is primarily used on smaller, less complex projects such as resurfacing contracts.

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121. COBB COUNTY, GEORGIA

BEST PRACTICE/POLICY:

Summertime Bridge Reconstruction Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Summertime Bridge Reconstruction Program is a program to let bridge replacement projects to contract with beginning construction dates coinciding with the day after the last day of the school year and completion dates coinciding with the day before the first day of the following school year.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Replace deficient bridges on school bus routes while minimizing inconvenience to school children being transported over these routes.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A number of bridge replacement projects can be let to contract throughout the year. Contractors then have time to schedule work to begin construction on the day after school lets out for the summer break. The construction must be complete before school begins at the end of the summer break which encourages contractors to schedule work in the most efficient manner.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of work: Bridge Replacement – Urban & Rural – Low Volume

CONTACT(S):

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122. INDIANA

BEST PRACTICE/POLICY:

A+B, I/D and Lane Rental in Reducing Contract Time

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The A+B bidding is cost plus time bidding; A is the traditional bid for contract items, and the work to be done under the contract; B is time with an associated cost and is used in low-bid determination. The B is the time, which is bid of the number of days/periods required to complete the contract of identified parts of the contract phases as estimated by the bidder. The value of the day/period is established by the owner and is based on user costs. Therefore, B equals number of days/periods (estimated by Bidder) times monetary value of day/period (determined by the Agency). The low bid is determined by the sum of A+B values. All A+B contracts have an incentive/disincentive provision in them. The disincentive provisions is incorporated into the contact to discourage the contractor from overrunning the time bid for work. The incentive provision is included to reward the contractor if work is completed earlier than the time bid. The contractor has set their own destiny with his or her time bid. This becomes the completion date/time, restriction time. Indiana has used A+B bidding since 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The A+B bidding provides time savings which reduces travel impacts to the public due to reduced construction time.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

With construction time reduced, the user cost to the traveling public. Almost all A+B contracts in Indiana have finished 30 days ahead of time bid.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All type of facility – All types of work

CONTACT(S):

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123. MICHIGAN

BEST PRACTICE/POLICY:

A+B, and Incentive/Disincentive clauses

DESCRIPTION OF THE BEST PRACTICE/POLICY :

- **A+B bidding** – The contractor is asked to factor in his estimated time, including the cost of his work.
- **I/D** – The contractor is assigned a cost value for time, that rewards or costs him money during execution of the contract, depending on how efficient his operation is.
- **Disincentive only** – In some cases, MDOT will assign a disincentive cost to lane closures, and assess the contractor in 15-minute intervals. This type of contract provision is used to assure that certain lanes will be opened by the contractor to accommodate rush hour or weekend directional traffic patterns. On this type of clause, there is no incentive money awarded for opening a lane ahead of the rush hour; this is disincentive only.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MDOT wanted to minimize the time required to complete work thereby reducing the amount of traffic inconvenience. By utilizing the A+B technique along with an I/D clause, MDOT has been able to tap contractor ingenuity as to how to get the work done in the least time possible.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

- **A+B bidding** – Reduced overall contract time, with resultant reduced motorist delay.
- **I/D and Disincentive only** – reduced delay during critical high-traffic periods.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

These particular techniques have been reserved for those projects in which the construction has a major impact on traffic. Generally these projects have been on their major urban freeways.

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124. MISSISSIPPI

BEST PRACTICE/POLICY:

Time Based Bidding (A+B, I/D and Lane Rental)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

These are the typical innovative contracting practices implemented under SEP-14.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MDOT has used these practices on a few projects. These practices were used in an effort to reduce the delays to the traveling public either by restricting lane usage and charging the contractor to close down a lane (lane rental) or potentially expediting a project by having the contractor bid contract time (A+B).

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The primary benefit is the reduction of delays to the traveling public. MDOT has seen the benefits to using some of these methods, but they are used on a limited basis.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Typically these methods are used for projects on high-volume roadways in urban areas or on Interstate projects. These methods are used mostly for 3R or 4R type work.

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125. MISSOURI

BEST PRACTICE/POLICY:

Contractor Rating System

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A Contractor Performance Rating System involving ratings in four categories of quality, prosecution and progress of work, contract compliance and safety was implemented by MoDOT January 1, 1998. The new system replaced MoDOT's Contractor Performance Report process which had been in place since June 1991. The new rating system was developed by a MoDOT Task Force including representatives from the FHWA Division and the Associated General Contractors. The system provides incentives, based on a statistical analysis of ratings, including awards to top achievers and penalties for unacceptable performance such a probation or suspension from bidding on MoDOT projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Major problems of MoDOT's Contractor Performance Report process implemented in 1991 were identified as the evaluation criteria were too subjective; category criteria overlapped, performance measures weren't included to rate financial responsibility; documentation wasn't provided to support ratings; rewards were minimal; penalties were non-existent; and information regarding subcontractor's effect on the overall rating was difficult or impossible to determine. The Task Force mentioned above was responsible for reviewing the problems and concerns with the MoDOT Contractor Performance Report and to provide recommendations to resolve those issues. The recommended rating system addresses the problems identified.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The new performance reporting system has been developed to remove subjectivity and to provide a more objective rating with supporting documentation. An anticipated benefit is an incentive to contractors to continuously improve their operations and for MoDOT to reward outstanding performance.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable to all projects awarded to a contractor and administered by the Missouri Department of Transportation.

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126. MISSOURI

BEST PRACTICE/POLICY:

A+B with I/D for reducing contract time

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MoDOT defines A+B with I/D clauses as Job Special Provisions designed to accelerate the completion of a particular phase of a project or for total project completion. The practice of A+B with I/D special provision includes the establishment of a road user cost per day which is multiplied by the quantity of time (no. of days) stated by the bidder and used to calculate the low bidder. MoDOT began using the A+B with I/D clauses in late 1988 and since then has utilized this practice approximately fifty times. The MoDOT's objective to reducing the time in which the traveling public is disrupted has been attained through the use of this practice and MoDOT is committed to continually striving to improve on the practice and various aspects of the practice.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MoDOT's experience has shown that reduction of construction time and reduction of time the traveling public is disrupted has been attained when using the practice, specifically I/D with A+B Bidding. The Engineer's estimate of days or hours of closure time is critical in this practice to provide for comparison of the bids. Also, it has been noted by staff that the practice may add to the cost of a project, and the decision to use the I/D clause should be project specific, with consideration of road user costs and input from management.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The data shows I/D clauses do achieve the goal of shortening construction time on the phase or activity selected and reduction of time that the traveling public is disrupted.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, 2-lane/2-way highway, bridge

Location: Urban or complex Rural, impact to public safety or schools

Volume/Speed: High-Volume/High-Speed, High-Volume/Low-Speed

Type of Work: Resurfacing, Reconstruction, Restoration/Rehabilitation

**Note: Also considered for projects with intense public interest, or when a project or phase of project is critical to scheduling of future projects or work.*

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127. NEW YORK

BEST PRACTICE/POLICY:

A+B Contracts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A+B Contracts specify a bid for the work (A) and a bid for the time that a highway facility will be occupied by the contractor (B). The State began use of this specification on selected projects in 1994.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The State began using this innovative contracting method to reduce the duration of construction delays in urbanized areas.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

To date they have used this method on 65+ projects. These projects have saved an estimated 8,500 contract days based on the difference between the estimated contract time and the contract time bid. The State estimates that these projects have resulted in a \$100 million reduction in user delay costs.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The A+B projects are employed on all types of projects with high volumes (urbanized freeways) and on other projects where substantial user delay (i.e., bridge replacement where difficult detours are necessary) will occur.

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128. NORTH CAROLINA

BEST PRACTICE/POLICY:

A+B Bidding Clauses in North Carolina DOT Contracts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The A+B Clause in NCDOT contracts allows contractors to set contract time. Specific criteria are applied to any project under evaluation for this technique to ensure that the benefits from reduced contract time are equal or greater to the potential increased cost. North Carolina has used this technique 20 times since 1989.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This method was used to assist in accelerating contract time for critical projects. Critical projects are defined as having a high user cost during construction activities.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The use of A+B bidding has thus far resulted in substantial contract time reductions on the majority of projects where it has been utilized.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This method is typically used on high-volume urban rehabilitation projects.

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129. OHIO

BEST PRACTICE/POLICY:

Pre-qualification to restrict the bidding capacity of contractors who were behind schedule on current DOT contracts or who consistently demonstrated their inability to complete DOT contracts on schedule.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The ODOT prequalifies contractors two different ways: 1) By type of work to be accomplished in the contract, (Can the contractor build this type of bridge, etc?), and 2) the Contractor's ability to manage a certain dollar value of projects, (Can the Contractor manage 4 projects worth \$250 million?).

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Contractors were being awarded projects that they could not finish because they were not professionally qualified or able to manage projects of that size. This leads to continued disruptions of traffic because a new contractor must be hired or the work is inferior and will not last as long.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

When a contractor is awarded a project, there is no question as to his ability to complete the project. The responsibility issue of the contractor is eliminated. Projects are not delayed due to the inability of a contractor to complete a project.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work – All locations

CONTACT(S):

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130. OKLAHOMA

BEST PRACTICE/POLICY:

Construction Lane-mile Rentals

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was started to reduce user delay by encouraging the contractor to work during non-peak hours and minimize the length of the work zone lane closures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This method provides a fair and equitable means to allow the construction contractors to choose their own methods of construction and coordination. Because the rentals charges are based on conservative, real numbers—changes in highway capacity, minimum wages, average gasoline prices in the area, etc.—the charges reflect the actual, measurable costs experienced by the motoring public and make the contractor aware of and responsible for the costs.

By encouraging the contractor to limit the length of the work zone lane closures, the public's respect for the work zone is increased because they will no longer see multiple miles of work zone lane closure with no construction activity.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Currently this technique is only used on the Oklahoma Turnpikes, but can be effective on any roadway type for rehabilitation and reconstruction projects.

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131. OKLAHOMA

BEST PRACTICE/POLICY:

Lane Rental

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was started to minimize motorist delay by encouraging the contractor to work during non-peak hours. It provides a fair and equitable means to allow the construction contractor to choose its own methods of construction. The lane rental costs for peak volume hours are relatively high (up to \$60,000 per hour per lane), are reduced for non-peak daylight hours, and are generally free for night time construction operations.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced motorist delay and accelerated construction times on the work requiring a lane closure. Because the rentals charges are based on conservative, real numbers—changes in highway capacity, minimum wages, average gasoline prices in the area, etc.—the charges reflect the actual, measurable costs experienced by the motoring public and make the contractor aware of and responsible for the costs. Since this practice was recently begun (spring 1998), the Oklahoma Department of Transportation has not seen the full effects of this practice yet.

One of the problems associated with bidding a project with lane rentals is that it is generally perceived to be a large risk to the smaller contractors and therefore may limit competition.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This technique is used mainly on the high-volume/high-speed interstates and highways for rehabilitation and reconstruction projects.

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132. OHIO

BEST PRACTICE/POLICY:

Flexible start time provisions in contract: Pre-qualification to restrict the bidding capacity of contractors who were behind schedule on current DOT contracts or who consistently demonstrated their inability to complete DOT contracts on schedule.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The ODOT prequalifies contractors two different ways: 1) By type of work to be accomplished in the contract, (Can the contractor build this type of bridge, etc?), and 2) the Contractor's ability to manage a certain dollar value of projects, (Can the Contractor manage 4 projects worth \$250 million?).

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Contractors were being awarded projects that they could not finish because they were not professionally qualified or able to manage projects of that size. This leads to continued disruptions of traffic because a new contractor must be hired or the work is inferior and will not last as long.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

When a contractor is awarded a project, there is no question as to his ability to complete the project. The responsibility issue of the contractor is eliminated. Projects are not delayed due to the inability of a contractor to complete a project.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work – All locations

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133. OKLAHOMA

BEST PRACTICE/POLICY:

A+B Bidding (Time Based Bidding)

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A+B bidding was begun to encourage innovation from the construction contractors to reduce construction time, thus reducing user delays.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The contract time bid is generally less than the maximum allowable contract time set by the DOT in the bid documents.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The high-volume/high-speed interstates and highways for rehabilitation and reconstruction projects.

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134. OREGON

BEST PRACTICE/POLICY:

Lane Rental Specification

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The ODOT has used an aggressive lane rental specification on several Portland area reconstruction projects beginning in 1993. Lanes are rented in 15-minute increments. Charges, based on road user costs, can be as high as \$50,000 per lane per hour or free during nighttime hours.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Use of the lane rental specification was adopted to minimize lane closures and make contractor responsible for road user costs.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Lane closures are minimized. (Due to high costs, there are few rentals except during free periods.)

Lane closures are determined by the contractor alone and disagreements with the ODOT construction staff are eliminated.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Lane rental has been used only on urban freeways, but the concept is applicable to all highways, especially multi-lane facilities.

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135. OREGON

BEST PRACTICE/POLICY:

Contract Award of the I-5 Interstate Bridge Lift Span Repair Project Based on Performance and Cost

DESCRIPTION OF THE BEST PRACTICE/POLICY:

To ensure that repairs were made by the most qualified contractor with the most attractive price proposal, the Oregon DOT decided to base the contract award upon performance and cost. This was the first time the ODOT awarded a construction contract on any basis other than the low bid for the work.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Because of the specialized nature of the work, short time period for the bridge closure (21 days), and the high level of public and news media attention, it was decided that contract award should be made based on consideration of price and contractor qualifications in order to ensure that the contract would be awarded to the bidder with a both a satisfactory price proposal and the necessary expertise to perform the work. Bidders submitted both a technical and a price proposal which were scored and the highest combined score was the basis for award. Price proposals were scored according to the following criteria:

- The average of price proposals received will equal 50 points,
- Each proposal less than the average price will receive an additional 1 point for \$10,000 it is less than the average, to a maximum of 50 points,
- Each proposal above the average price will have 1 point subtracted for each \$10,000 it is greater than the average, to a maximum of 50 points, and
- The maximum score will be for one (or more) proposal(s) \$500,000, or more, below the average of all proposals, which would be 100 points. The minimum score would be for one (or more) proposal(s) \$500,000, or more, above the average of all proposals, which would be 0 points.

Technical proposals were evaluated by a panel of experts for ODOT Bridge Section, the design consultant, ODOT Program Services, and the AGC. A maximum of 100 points was the maximum score for technical proposals. Criteria considered in scoring the technical proposals included:

- Waterfront/Moveable Bridge construction experience could score up to 30 points,
- Fabrication of complex machinery experience could score up to 25 points,
- Crane maintenance, inspection, and operation could score up to 25 points, and
- Construction management team experience could score up to 20 points.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The contract was awarded to the most qualified contractor who coincidentally submitted the lowest bid.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is most applicable on complex projects which require specialized equipment, materials, fabrication, or expertise. Because of state law ODOT needed to get an administrative exemption in the event award was not made to the lowest bidder. Use of the performance and cost based award concept was also approved by FHWA under SEP-14 as an alternate bidding method.

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136. OREGON

BEST PRACTICE/POLICY:

Narrow Window for On-Site Construction

DESCRIPTION OF THE BEST PRACTICE/POLICY:

On selected projects, ODOT specifies a restricted time frame for on-site construction within the allowable contract time. For example, on-site work on an overlay project might be limited to 30 consecutive calendar days although the contractor may have 100 calendar days to complete the entire project.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This was adopted to minimize the length of time traffic is disrupted and to present a more positive image to the public.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Projects are completed in a more timely manner with minimal disruption.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This policy is most applicable to overlay projects on 2-lane rural highways, but can be applied to other work.

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137. UTAH

BEST PRACTICE/POLICY:

Frequent Use of Innovative Contracting Procedures

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The UDOT, with FHWA approval and encouragement, has utilized several different aspects of innovative contracting procedures on highway projects. From I/D clauses to A+B contracting, and design-build projects. The UDOT has been utilizing these innovative contracting practices for several years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The main reason for adopting these practices was to minimize traffic disruptions to the traveling public. Each of these practices serves to reduce the time needed to complete a project.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefits are exactly what was intended by using these practices; reduced traffic disruptions to the traveling public, and quicker completion of projects.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects.

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Best Practices Area 7. Specifications and Construction Materials, Methods, and Practices

STATE-OF-THE-ART

The same level of service is provided through the work zone. Workers are physically separated and are protected from the traffic. Work areas are sufficiently illuminated at night without blinding the motorist and gawk screens are used to prevent the motorists from being distracted during daytime operations. Contractors have a vested interest in quality, timeliness, and road-user safety. Facilities perform at an acceptable level of service for 35-50 years with the minimum planned system preservation. Acceptance is based on performance.

To achieve state-of-the-art construction materials, methods, and practices transportation agencies would need to:

- Revise prescriptive-type specifications to performance-based specifications.
- Adopt specifications that reward contractors for innovation, quality, and exceeding expectations.
- Develop and utilize performance-based specifications for traffic control.
- Routinely include warranty specifications with bonuses for exceeding the expected life of the end product.
- Require positive barriers to physically separate the workers from the traffic.
- Adopt specifications that require adequate lighting for all nighttime operations, lane shifts, lane drops, and temporary gores.
- Insist on quality work and timely completion of the work.
- Develop short-term testing and modeling for newly constructed highway components to reasonably predict long-term performance and remaining life.
- Develop design specifications, guidelines, and testing methods for composite materials.
- Standardize design details to encourage a greater use of precast materials.
- Provide real time work zone traffic information to road users and workers in sufficient time to make informed decisions.

The following “best practice” relate to specifications and construction materials, methods, and practices:

Subcategory	Ref. #	Specifications and Construction Materials, Methods, and Practices
Construction Methods	142	Portable concrete barrier (K-rail) connection
	143	“Train” method of construction
	144	“Rolling Roadblock” – method for total road closure
	153	Extended warranty specification for bridge painting contracts
	157	Restricting the length of active work zones
	158	14-foot lane width pavements for all rehabilitation/reconstruction projects
	160	Diamond grinding finish profile on PCC pavements (“White Velvet Pavement”)
	163	Nighttime construction operations
	176	10 Year Warranty (maintenance provision) for I-15
Incident Management	140	Incident management in work zones
	148	Emergency Traffic Patrol motorist assistance and incident management program
	151	Project monitoring with incident response
	159	Incident management Special Provision in Construction Contracts
	164	Incident management inter-agency teams
	170	Incident Management in the Westside Corridor work zones
	174	An incident management plan is required on long-term construction projects – Freeway projects normally require a preconstruction meeting with emergency responders
	175	Contractor-furnished Service Patrols on the I-15 project
	177	Work zone incident management provisions in construction contracts
Oversight/ Control	152	Employ a part-time retired bridge contractor to assist designers and to perform constructability reviews
	155	City of Boston Traffic Engineers included on CA/T Traffic Engineering staff
	161	A “Safety Program” specification has been recently developed by the NJDOT and accepted by the construction industry
	169	Certified Worksite Traffic Control Supervisors required in contracts
	171	Monitoring of the contractor’s Critical Path Method (CPM) schedule
	181	Constructability reviews focused on minimizing construction contract time and user delays
Traffic Control	138	Disincentive specification for failure to remove lane closures by the prescribed time each day
	141	Quick Change sign post
	145	Use of the Orlando Traffic Control Center/Surveillance & Motorist Information System (SMIS) during construction projects
	146	All lane closures are approved by the Authority
	147	Standard specification that requires the contractor to correct deficient traffic control at the Engineer’s request or be subject to a \$500 penalty
	149	45 mph posted speed when flashing
	154	Dispute Resolution Process Agreement for changes to traffic control plan between CA/T and City of Boston
	166	Closure of entrance ramps during construction
	167	Drone radar on changeable message signs approaching work zones to get the driver’s attention
	168	Rumble strips at the beginning of work zones to get the driver’s attention
	172	Motorist Services
	180	“Pocket size Guidelines For Temporary Traffic Control”
Worker Safety/ Productivity	139	Reflectorized suits for nighttime work
	150	High visibility worker apparel
	156	High visibility reflective clothing required for night work
	162	NJDOT Nighttime Lighting Specification for night work
	165	Portable lighting specified in contracts containing critical lane closures and/or merges
	173	Highly visible reflectorized flagger vest (strong yellow green & orange)
	178	Flagger Certification Program
	179	Work Zone Safety Checklist” Form
182	Temporary High Mast Lighting	

138. CALIFORNIA

BEST PRACTICE/POLICY:

Disincentive Specification for Failure to Remove Lane Closures by the Prescribed Time Each Day

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The contractor provides to the State DOT, prior to establishing a lane closure, a contingency plan in the event of an equipment breakdown or materials failure which delay opening the lane or lanes within the time limits specified. A specified dollar amount is set for each 10 minutes that all lanes are not available for use by public traffic. This practice has been in operation since the middle of 1995.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Concerns for delays to the traveling public on very sensitive major commute routes.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Eliminate or reduced delay while taking a lane(s). Also, the requirement of the contractor to submit a plan for the work that has contingencies for equipment and material failures which was not required prior to this specification.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All Urban Freeways

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139. CALIFORNIA

BEST PRACTICE/POLICY:

Reflectorized Suits for Nighttime Work

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The California DOT has adopted the use of full body suits for nighttime inspection purposes. The prototype suits have reflectorized material that outlines the full body and a strip that goes around the torso. The use of the full body reflectorized suits was implemented in 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The California DOT has had an increased awareness of worker exposure and was looking at ways to improve safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Increase visibility of inspectors during nighttime work which improves safety on the project.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

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140. CALIFORNIA

BEST PRACTICE/POLICY:

Incident Management in Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Designated towing-service responsible for keeping work zone free of disabled vehicles.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Observing the operational breakdown resulting from disabled vehicles and other incidents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The quick response time associated with an on-site tow-service is crucial and results in an exponential decrease in queue lengths and motorist delays.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE

Reconstruction, Restoration/Rehabilitation on Urban Freeways

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141. CALIFORNIA

BEST PRACTICE/POLICY:

Quick Change Sign Post

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A precast concrete base with metal sleeve is placed in augured hole, leveled, backfilled, and compacted. The sign post is placed into the metal sleeve and held in place by two rubber wedges. When sign is hit, rubber wedges are popped out, new sign post replaces broken post and rubber wedges are replaced. This practice is currently experimental.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The California DOT has had an increased awareness of worker exposure and was looking at ways to improve safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced worker exposure in high hit locations. What might have taken hours to replace now takes minutes and requires less equipment and workers.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

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Installing the quick change post in ground receptacle

[see next page for more illustrations of quick change post]



Removing broken signpost from quick install location

142. CALIFORNIA

BEST PRACTICE/POLICY:

Portable Concrete Barrier (K-rail) Connection

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Connection from existing concrete barrier or MBGR to K-rail.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Typically, a protected work zone includes K-rail butted up against existing concrete barrier or MBGR and flared out to the required width of the work zone. The transition from existing barrier to the K-rail is not a smooth one; rather, it leaves the “blunt-end” of the first K-rail section exposed. The traditional solution is to shield the blunt-end with a sand-barrel array. The standard sand-barrel array used on high-speed facilities includes two rows, leaving very little horizontal clearance.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The K-rail connection eliminates the need to shield the blunt-end of a sand-barrel array. The result is greater horizontal clear distance between traffic and the highway safety feature, as well as improved sight distance. Also, the maintenance/replacement of damaged sand barrels no longer exists reducing worker exposure and saving time and money.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Reconstruction, Restoration/Rehabilitation of Rural Freeways

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Illustrations of K-rail application in California

143. FLORIDA

BEST PRACTICE/POLICY:

“Train” Method of Construction

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The train special provision has been in use the past several years, and it is essentially a method of phase construction. It specifies to the contractor the sequence of construction operations while restricting the limits of construction for the operation. In other words, the contractor must complete a certain item of work within a section of the project limits before being allowed to start work on the next section.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

With attention to business impacts becoming an increasingly sensitive and political issue, the train method of construction provides for an orderly and expedient sequence of construction to minimize inconvenience to adjacent business establishments.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The proper phasing of construction lessens the business owner’s impacts since it prevents the whole length of the project from being under heavy construction during the entire contract time. By doing this, it minimizes the property access impacts to the business.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

It usually involves larger or more complex urban projects with lengthy contract times where businesses will be impacted by construction.

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144. FLORIDA

BEST PRACTICE/POLICY:

“Rolling Roadblock” Method for Total Road Closure

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This method is used when roadway construction activities (e.g., placing bridge beams, overhead sign structures, etc.) are taking place in or above all lanes of the roadway, thus requiring traffic to be temporarily slowed rather than completely stopped. Traffic is paced at a safe speed (desirably not less than 20 mph on the Interstate) to provide a gap in traffic and allow the work activities to be performed. The pacing of traffic is controlled by pilot vehicles (i.e., law enforcement vehicles with blue lights flashing) driven by uniformed law enforcement personnel. Any on-ramps between the beginning point of the pacing area and the work area are blocked until the pilot vehicle has passed. Two-way radios provide constant communication to pilot vehicles, contractor’s workers, flaggers stationed at on-ramps, and the project engineer. Advance signing warning motorists of the traffic pacing area is also provided. Florida has successfully used this technique on several projects in the past 2 or 3 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To increase safety and reduce the number of crashes caused by roadway construction activities by allowing traffic to continue moving at a reduced speed rather than coming to a complete stop. This method is much less expensive and more convenient than building detours.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Increased safety by reducing the risk of crashes due to stationary vehicles on the roadway and reduced project costs.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

High-volume/high-speed urban and rural freeways and other multi-lane access controlled facilities – Type of work: Overhead work (e.g., bridges and overhead signs, etc.) requiring total roadway closure

CONTACT(S):

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Cheryl Adams, Design Engineer, Florida DOT

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145. FLORIDA

BEST PRACTICE/POLICY:

Use of the Orlando Traffic Control Center/Surveillance and Motorist Information System (SMIS) During Construction Projects

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Florida Department of Transportation's (FDOT) SMIS system stretches over 39 miles and includes 50 surveillance cameras, 16 dynamic message signs, and 76 loop detector stations tied together using fiber optic cable. The system is monitored/managed by FDOT and the Florida Highway Patrol using a PC-based Graphical User Interface software developed for FDOT. When FDOT built their SMIS system to manage reoccurring I-4 congestion in Orlando, they did not originally have construction work zones in mind. However, on several recent construction projects the SMIS has been actively used to manage I-4 traffic by notifying motorists of upcoming work, including lane/ramp closures and expected congestion.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide current traffic information to the traveling public (which includes a large number of tourists) regarding activities (construction work zones, accidents, etc.) that have a major influence on traffic.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The primary benefit is to provide early warning and wide area coverage of construction work zone activities and incidents by using dynamic message signs to grab the attention of the motorist. This may provide congestion benefits since early warning will allow motorists to choose alternate routes or vary time of travel to avoid the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Typically used on highly congested, limited access facilities, especially urban corridors with heavy construction activity.

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Trey Tillander, Systems Manager, Florida DOT
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146. ILLINOIS STATE TOLL HIGHWAY AUTHORITY

BEST PRACTICE/POLICY:

All Lane Closures are Approved by the Authority

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Tollway Authority keeps close track of all lane closures on the tollways. Within the Tollway Authority, one person maintains a list of all lane closures and coordinates these lane closures with the State police, public relations, construction and project development.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was developed to better coordinate work zones for safer travel, better communication with the public and the police, and to have a record for incidents within work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

An updated list of lane closures is always available for public relations, the Authority and the police. This also provides for better record keeping and analysis for incidents in work zones. The Authority has a better handle on where lanes are being closed and is able to coordinate projects so as to provide the minimum impact to motorists.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is involved any time a work zone contains a lane closure.

CONTACT(S):

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Daniel Mathis, Assistant Division Administrator, FHWA, Illinois Division

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147. ILLINOIS STATE TOLL HIGHWAY AUTHORITY

BEST PRACTICE/POLICY:

Standard Specification that Requires the Contractor to Correct Deficient Traffic Control at the Engineer's Request or be Subject to a \$500 Penalty

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The contractor will be subject to a penalty of \$500 per incident per day for each occurrence when the Engineer determines that the contractor is not in full compliance with the Maintenance of Traffic Specifications. The contractor is required to respond within an half-hour to any request from the Engineer for re-aligning, replacing or moving traffic control devices, or moveable concrete barrier, or otherwise re-establishing compliance with the Maintenance of Traffic Specifications.

REASONS FOR ADOPTING THE BEST PRACTICE/POLICY:

The tollways are located in urban areas and it is imperative to have proper traffic control to maintain traffic flow and safety to the public. This specification puts a time frame on which the contractor must respond to the Engineer's request and the penalty gives the Engineer an instrument to further enforce the specification.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The traffic control is better maintained even without the Engineer requesting the Contractor to correct any deficiencies. Ultimately, this specification helps provide a safer work zone for the public with both the Engineer and the contractor attentive to traffic control deficiencies.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is a standard specification and is incorporated into every tollway project.

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148. ILLINOIS

BEST PRACTICE/POLICY:

Emergency Traffic Patrol Motorist Assistance and Incident Management Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

District One (Chicago) of the Illinois Department of Transportation (IDOT) has a world renowned incident management program. Incidents are identified through various sources, including emergency traffic patrols, maintenance patrols, State Police patrols, monitoring of citizen band radios, "Good Samaritan" cellular telephone calls (*999), and reports of traffic flow irregularities from the Traffic Systems Center. The emergency traffic patrol fleet includes vehicles that are equipped to correct minor breakdowns, push or tow vehicles, and upright and move tractor trailers, if necessary. The Minutemen will either get stranded vehicles moving (e.g., jump-start, provide fuel, etc.) or they will move the vehicle off of the roadway. Vehicles requiring towing are towed off of the roadway to a transfer location where they are picked up by a private towing company. The IDOT has also established various crash investigation sites that are used to get vehicles off of the roadway and shoulders during investigations and report preparation.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Traffic incidents, even those located off of the travel lanes, can have a significant negative impact on traffic flow. Rapid response to such incidents is paramount to minimizing their impact on traffic flow. During rush hour periods, incident response delays of minutes can impact congestion for hours.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The IDOT incident management program helps to minimize the negative effects on traffic flow that result from vehicle breakdowns and traffic crashes. Quick response and removal of incapacitated vehicles assists in traffic flow recovery from incident related congestion. In addition, motorist assistance provides an added measure safety and security to the traveling public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

While most applicable to high-volume routes, the incident management concept has application to any route. On a project basis, incident management is most applicable to projects with significant traffic restrictions and lengthy maintenance of traffic stages without shoulders.

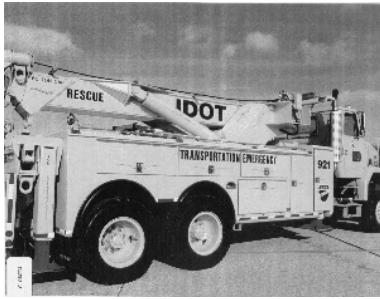
CONTACT(S):

John Mitchell, IDOT District One

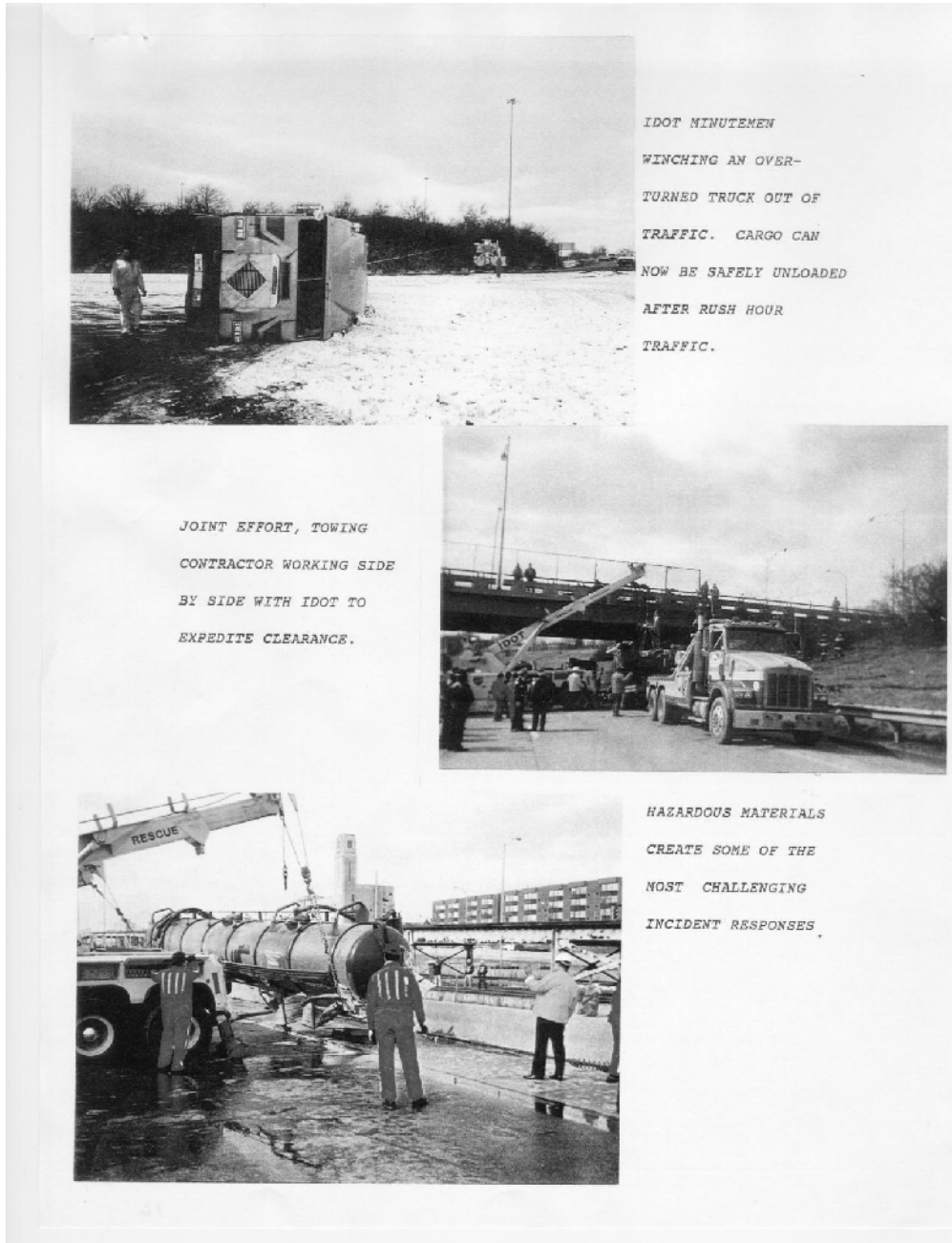
Telephone: (773) 624-0470

Wendall Meyer, Urban Mobility Engineer, FHWA, Illinois Division

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Roadside emergency response vehicles available to IDOT response teams



IDOT Response Team working with the contractor to clear the roadway

149. INDIANA

BEST PRACTICE/POLICY:

45 MPH Posted Speed When Flashing

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Used since 1989–1990. Allows for higher speed driving when actual construction is not in progress. Reduced speed limit (45 mph when flashing) is only activated when in the vicinity of actual construction activity. Other areas within the contract limits are permitted to travel at a greater speed.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Initially developed for lengthy interstate construction (4R, maintenance, projects). Previously the only (practical) way to obtain a reduced speed through the construction zone was to post the entire length. However, we received several complaints about reduced speed for a 10-mile section of road, when actual visible construction was only occurring in a cone or 2-mile section. Motorists tended to disregard the speed restriction when they did not see workers present.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Vehicular traffic does slow down in a work areas where construction workers and activities are present, which provides for increased worker and motorist safety. In areas where activities are not taking place, motorists can travel at a higher rate of speed thus improving efficiency and mobility.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All type of facility – All types of work

CONTACT(S):

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150. IOWA

BEST PRACTICE/POLICY:

High Visibility Worker Apparel

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Department has begun issuing employees a new style fluorescent yellow-green and orange safety vest. Pants and caps of the same color and design are also available.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To improve safety in work zones by making workers more visible in various lighting and working conditions.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The Minnesota DOT has done a lot of research to develop this style of apparel. We hope to see other States and jurisdictions begin using this apparel for uniformity.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Any work area.

CONTACT(S):

Barb Mallon, Safety Coordinator, IDOT
Telephone: (515) 239-1594

151. IOWA

BEST PRACTICE/POLICY:

Project Monitoring with Incident Response

DESCRIPTION OF THE BEST PRACTICE/POLICY:

On major Interstate reconstruction projects, contract services provide 24-hour per day continuous monitoring of traffic control devices and incident response. The contractor traverses the work zone providing assistance to stranded motorists and maintaining traffic control devices.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To improve traffic safety and traffic flow through major reconstruction projects and to provide a service to stranded motorists.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Better traffic flow and prompt notification of incidents and problems.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Interstate rural reconstruction projects with TWTLO.

CONTACT(S):

Mark Bortle, Construction Traffic Control Engineer, IDOT
Telephone: (515) 239-1587

152. MARYLAND

BEST PRACTICE/POLICY:

Employ a part-time retired bridge contractor to assist designers and to perform constructability reviews

DESCRIPTION OF THE BEST PRACTICE/POLICY:

An engineer with 35 years experience in construction, retired from a local contracting company with extensive bridge building experience in the region, is available on a part-time basis (approx. 20 hours per week) to review plans; discuss economical design and detailing; recommend methods of repairs, construction staging and scheduling; traffic control phasing; estimate costs; provide time schedules; and assist in resolving field problems. State has used this practice for over ten years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide the SHA Office of Bridge Development the benefit of an individual experienced in the construction industry, in general, and bridge construction, in particular. Frequently, designers, especially young engineers, do not have the benefit of actual construction experience and may not be aware of the implications of their design decisions on the contractors who have to build them. Prior to the employment of this retired contractor, SHA design engineers had to rely on their own, sometimes limited, experience or had to seek advice from active contractors willing to assist. This practice was not always in the best interest of the State.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits being realized include: the avoidance of design details which are difficult and expensive to build; development of economical methods to build, rehabilitate or repair structures; valuable assistance in the more efficient and economical resolution of field problems; reduction in the number of field problems and construction claims; having insight into the contractor's point of view regarding methods and sequences of construction; and the development of the importance of the concept of design constructability in the minds of bridge design engineers. An added benefit is the reduction of inconvenience to the traveling public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice can be used on all structure projects, regardless of size or location.

CONTACT(S):

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153. MARYLAND

BEST PRACTICE/POLICY:

Extended Warranty Specification for Bridge Painting Contracts advertised by the State Highway Administration (SHA)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A four span steel beam bridge carrying I-695 over US Route 40 was advertised for bids. The Contractor provided a 5-year minimum (10-year maximum) warranty to the Administration for the period starting from the date of acceptance of the construction phase of the project. The Contractor selected the method of cleaning and the coating system while meeting all environmental (State, Federal, local) regulations and maintenance of traffic requirements. A performance criteria was included in the contract documents. In addition to long-term warranties the SHA has also developed short term (2-year) warranties to ensure prevention of early failures and associated maintenance and protection of traffic requirements.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This is an alternative method/practice of advertising bridges for painting. The Administration wants to look at the cost effectiveness of extended warranties as well as the methods of cleaning and the coating(s) selected by the Contractor. Another objective is to minimize early failures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits of extended warranties would allow a reduction in inspection staff. Also less in-house expertise would be required to manage bridge painting contracts. In addition, warranties should ensure durable products, requiring fewer work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All bridges with lead based paint.

CONTACT(S):

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Bridge Inspection and Remedial Engineering Division
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154. MASSACHUSETTS

BEST PRACTICE/POLICY:

Dispute Resolution Process Agreement for Changes to Traffic Control Plan Between CA/T and City of Boston.

DESCRIPTION OF BEST PRACTICE/POLICY:

This agreement is a critical element in establishing a cooperative working relationship between CA/T project and the City of Boston. In lieu of protracted legal processes, the State and City signed an agreement to mutually cooperate on construction coordination and traffic management.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This agreement gave the CA/T project and the City the basis to establish ongoing Task Forces that meet weekly to review and resolve, design, construction staging, and maintenance of traffic issues.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The most important, outstanding, or unresolved design and construction issues between the project and the City get resolved in a timely manner. Secondly, by cooperating with each other, the combined talent and expertise of the project and City insures the highest level of traffic maintenance.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, streets, 2-lane/2-way highway, and bridges.

Location: Urban, rural, and recreational.

Volume/Speed: High-volume/high-speed, high-volume/low-speed, low-volume/high-speed, low-volume/low-speed.

Type of Work: resurfacing, reconstruction, restoration/rehabilitation, and utility.
All.

CONTACT(S):

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155. MASSACHUSETTS

BEST PRACTICE/POLICY:

City of Boston Traffic Engineers Included on CA/T Traffic Engineering Staff

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The project is being constructed primarily within the jurisdiction of the City of Boston. The project encourages active participation by the City.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The project impacts many major streets in downtown Boston. City staff have decades worth of experience in operating these streets.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The City experience enables the project to develop successful maintenance of traffic plans which contribute to the credibility of that the project enjoys.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, streets, 2-lane/2- way highway, and bridges.

Location: Urban, rural, and recreational.

Volume/Speed: High-volume/high-speed, high-volume/low-speed, low-volume/high-speed, low-volume/low-speed.

Type of Work: Resurfacing, reconstruction, restoration/rehabilitation, and utility.
All.

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156. MINNESOTA

BEST PRACTICE/POLICY:

High Visibility Reflective Clothing Required for Night Work

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Mn/DOT requires that full-length-high-visibility reflective clothing (tops and bottoms) be worn by all workers during night work.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Due to increased traffic congestion during the day, Mn/DOT began doing more night time construction and maintenance. To increase the safety for workers at night time, Mn/DOT requires them to wear full length high visibility reflective clothing. This makes the workers more visible to the motorist.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Requiring full-length-high-visibility clothing increases worker safety. Motorists can see that the reflecting object is a human and they generally tend to be more cautious and slow down.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This policy is in effect for all night time construction and maintenance work.

CONTACT(S):

Bill Servatius Mn/DOT Construction Programs Coordinator
Telephone: (651) 296-2721

157. MISSISSIPPI

BEST PRACTICE/POLICY:

Restricting the length of active work zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MDOT has developed a policy that restricts the length of active work zones within a project. This policy limits the length of road closures on a project to one mile on Interstate and two miles on primary routes. This policy does not allow the contractor to open up or be working on the entire section of the project with little or no progress being made. The contractor is allowed to have more than one operation working at one time, but the distance between operations must meet the active work zone length as stated above.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MDOT adopted this policy to prohibit lengthy road closures on construction projects. With restricted lengths of road closures on construction projects, the delay to the traveling public is reduced.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The primary benefit is travel delays are reduced because the length of road closure is reduced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This policy is applicable to all types of facilities and all types of projects. There have been a few exceptions granted to extend the length to three miles on a few projects throughout the State, but those were based on engineering judgement.

CONTACT(S):

Thomas Russell, State Construction Engineer, MDOT
Telephone: (601) 359-7301

158. MISSISSIPPI

BEST PRACTICE/POLICY:

14-foot lane width pavements for all rehabilitation/reconstruction projects

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MDOT has implemented a policy on paving projects to pave 14-foot wide lanes. The travel lanes will be striped at 12 feet with the remaining two feet of pavement to act as a paved shoulder. The policy was implemented in early 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MDOT adopted this policy to provide a safer roadway for the traveling public and to reduce the cost for maintaining the roadways. The additional two feet of pavement eliminates low shoulder conditions that often result in vehicles (specifically trucks) running off the roadway and creating wash outs adjacent to the pavement.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits are a safer roadway for the public and a lower maintenance cost for the roadway shoulders.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This policy has been adopted for all State and NHS facilities and implemented for all 3R+ work.

CONTACT(S):

John Pickering, Roadway Design Division Engineer, MDOT
Telephone: (601) 359-7257

159. MISSISSIPPI

BEST PRACTICE/POLICY:

Incident Management Special Provision in Construction Contracts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A special provision was developed and implemented on the I-55/I-20 Interstate reconstruction project. The special provision outlined the responsibilities of the contractor so that the contractor became part of the Incident Management Team with the responsibility of reducing traffic delay and providing access to the site for emergency vehicles. (See Comprehensive Management Plan Best Practice for Details)

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The special provision was adopted because the contractor was considered a key part of a successful Incident Management Team. The I-55/I-20 Team consisted of MDOT, FHWA, police, fire, emergency, and other public agencies, all involved in the effort to provide a safe and efficient traffic management plan for this project.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The contractor became a partner and was involved in making decisions with the Incident Management Team rather than an adversary and was much more willing to be responsible for improving traffic control and emergency vehicles access on the project.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This special provision was used on the first and second phases of one specific project (reconstruction of I-55/I-20 Interchange) and will be used again for the third phase.

CONTACT(S):

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160. MISSOURI

BEST PRACTICE/POLICY:

Diamond Grinding Finish Profile on PCC Pavements

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Diamond Grinding for finishing texture on new PCC Pavement on Route 60 in Butler County (MoDOT District 10). The diamond grinding is an innovative finishing technique being tested by MoDOT which is designed to ensure a smoother ride and increased durability of the pavement. The finishing technique utilizes diamond-tipped blades in a large grinding wheel to smooth and cut grooves into the concrete pavement. The Route 60 new PCC pavement project was approximately 10 miles and the diamond grinding finish was specified on four of the 10 miles. It is a pilot project and is being evaluated to determine the effectiveness of diamond grinding of new PCC pavements in lieu of tining. The results of the diamond grinding were successful in producing a smooth pavement. The section of route where the diamond grinding process was used was opened to traffic in August of 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The practice is being piloted in Missouri to evaluate the effectiveness of diamond grinding of new PCC pavements as a finishing texture technique in lieu of tining. The process as proposed is designed to ensure a smoother ride and increased durability. This technique could impact the life-cycle cost of PCC pavements.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

MoDOT is continuously looking at new ways of approaching construction projects and construction techniques. The benefit of diamond grinding producing a smoother PCC pavement has been realized on the pilot section. The benefit of increased durability and affect on life-cycle cost is being evaluated.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, 2-lane/2-way highway – New PCC Pavements

Location: Urban, Rural

Volume/Speed: High-Volume/High-Speed, High-Volume/Low-Speed, Low-Volume/High-Speed

Type of Work: New Portland Cement Concrete Pavements

CONTACT(S):

Bill Yarnell, MoDOT State Design Division Engineer

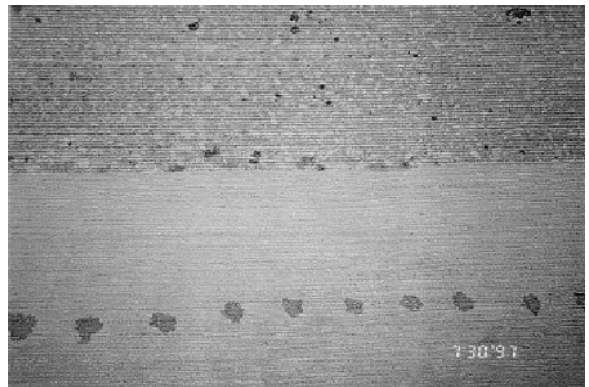
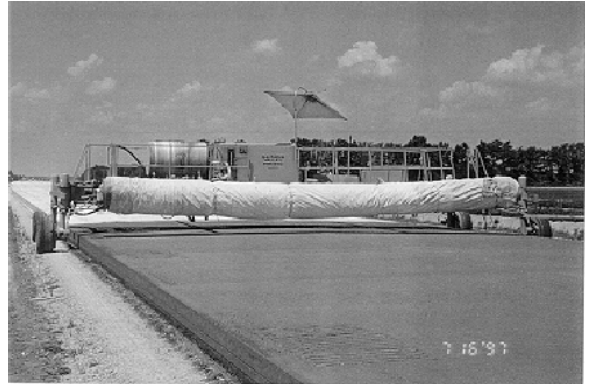
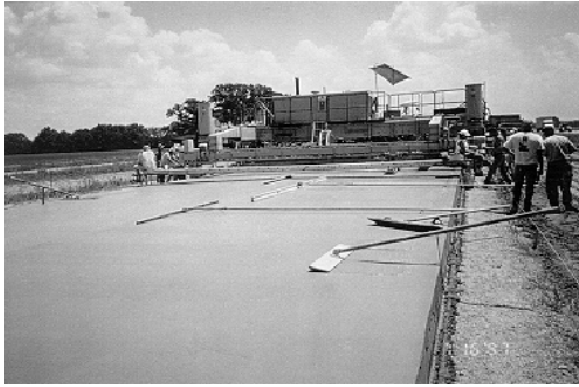
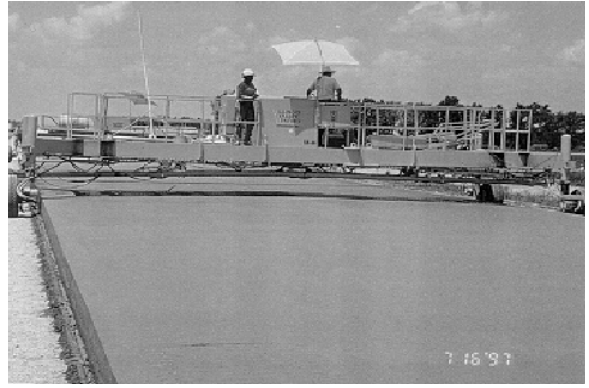
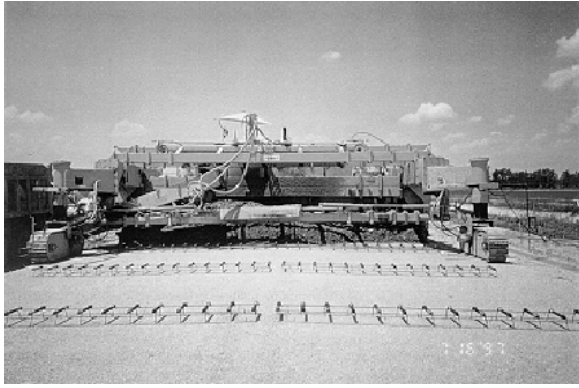
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Processes used in Missouri's Diamond Grinding Supersmooth Pavement Project

161. NEW JERSEY

BEST PRACTICE/POLICY:

A “Safety Program” Specification has been Recently Developed by the NJDOT and Accepted by the Construction Industry.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This specification requires a contractor to have a written safety program prior to starting work on a project.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The purpose of the program is to increase the level of safety in work zones. The “Safety Program” is required to be written by a qualified safety professional and is not a contract pay item. The contractor is wholly responsible for the program. Elements of the program include safety responsibilities, emergency plans, training, implementation and discipline procedures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

As a new specification, full benefits have not been fully realized. However, expected benefits include: reduction in injuries and deaths in work zones, reduced insurance rates for contractors, reduction of project costs, and the enhancement of work zone safety awareness on a statewide basis.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This specification is applicable to all construction projects throughout the State.

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162. NEW JERSEY

BEST PRACTICE/POLICY:

NJDOT Nighttime Lighting Specification for Night Work

DESCRIPTION OF THE BEST PRACTICE/POLICY:

To mitigate the impact of construction activities to the traveling public and to maximize the duration of construction operations for contractors, the NJDOT has resorted to letting construction contracts for night work on major roadways. A multi-discipline task force evaluated the existing specification in an effort to determine the required levels of illumination to enhance work zone safety and provide quality workmanship for specific work elements. An initial version of the Night Lighting Specification was first used on an experimental basis during the 1997 summer construction season. Through this process a final specification was developed and recently incorporated into the NJDOT Standard Specifications.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Mitigate the impact of construction activities to the traveling public, enhance work zone safety, and to maximize duration of contractors operations.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This is a new specification, full benefits have not been fully realized. Expected benefits include: enhancement of work zone safety for night work, increase quality level of workmanship, and the possible change in construction equipment options, by equipment manufactures, to include accessories for easy conversion/adaption for night lighting equipment.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The night lighting specification is applicable to all projects that specifies or allows night work.

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163. NEW YORK

BEST PRACTICE/POLICY:

Nighttime Construction Operations

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Nighttime operations have been part of the project development consideration and departmental specifications since early 1995. However, the Governor signed legislation requiring the New York State Department of Transportation (NYSDOT) to evaluate the feasibility of nighttime construction on many projects in the urbanized areas of downstate New York. The NYSDOT has taken the legislation one step further and made the nighttime construction part of the consideration and evaluation process of project development on all urbanized, high-speed/high-volume arterials. Other departmental guidance and requirements for nighttime construction are included in the following Engineering Instructions:

- Requirements For Maintenance and Protection of Traffic During Nighttime Construction,
- Maintenance and Protection of Traffic During Nighttime Operations – Revision to Section 619 of the Standard Specifications, and
- Lighting for Nighttime Operations.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

- Safety, and
- Reduce construction related congestion.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

- Safety, and
- Minimizing congestion.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work on high-volume/high-speed facilities

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164. NORTH CAROLINA

BEST PRACTICE/POLICY:

Incident Management Inter-Agency Teams

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Since 1991, representatives from emergency response agencies have met periodically to improve the response and clearance of incidents on North Carolina highways. During team meetings, agencies are informed about construction projects by NCDOT resident engineers, and about special events by city engineers that will have an effect on traffic flow.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was adopted to improve coordination, communication, and cooperation when incidents occur on North Carolina highways.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Through pre-planning and preparation for incidents, emergency response agencies are able to access the scene and care for the injured quickly. The quick response and clearance of incidents by predetermined alternate route detours helps maintain traffic flow.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This program applies to high-volume/high-speed freeways, 2-lane/2-way highways, and bridges in rural and urban settings. Major construction projects that will effect traffic flow are considered by the incident management teams.

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165. NORTH CAROLINA

BEST PRACTICE/POLICY:

Portable Lighting Specified in Contracts Containing Critical Lane Closures and/or Merges

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Portable lighting is provided in the areas of night-work activities by the contractor. Traffic control devices, workers, and equipment movements are all illuminated during a construction operation by machine lights. Temporary lighting is also provided in rural areas with little or no ambient lighting at traffic shift locations. This practice has been used since 1993.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Lighting specific to critical vehicle movements in the work zone provide extra illumination beyond that provided by tower lights.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Motorists do not have to spend extra time attempting to interpret movements in a work zone when additional light is provided in areas where it is needed most.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The projects only involve night work in high-volume/high-speed facilities for major construction projects.

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166. CITY OF COLUMBUS, OHIO

BEST PRACTICE/POLICY:

Closure of Entrance Ramps During Construction

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The best practice is the closure of entrance ramps during construction. This practice has been used for over 5 years when deemed necessary.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The primary reason for closing entrance ramps is to reduce accidents in the construction work zone. Because of a reduced weaving area and increased congestion, the ramps are closed.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A reduction in the number of accidents and less congestion in the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All high-volume freeway projects

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167. OHIO

BEST PRACTICE/POLICY:

Drone Radar on Changeable Message Signs Approach Work Zones to Get the Driver's Attention

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Drone radar has been placed on portable changeable message signs (PCS) used on freeway construction projects. Since the PCS have power and are generally in advance of the work zone it serves as an advance warning device. The ODOT, District 12 (Cleveland area) has been using this for approximately 3 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The drone radar is intended to ALERT drivers that something is unusual on or near the road ahead (road work). It is especially intended for long haul commercial motor vehicle drivers not familiar with the area.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Drivers entering the work zone are more alert, especially at night.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

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168. OHIO

BEST PRACTICE/POLICY:

Rumble Strips at the Beginning of Work Zones to Get the Driver's Attention

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Thermoplastic rumble strips are placed transversely across the travel lane(s) heading into a long-term work zone. They are 4 inches wide, 250 mil thick with the following spacing: 2 sections – 10 transverse strips, 6 feet apart, then 90 feet away the next section starts with 10 transverse strips, 4½ feet apart. The ODOT District 12 (Cleveland area) has been using this practice for 1 year.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Alert motorist of the construction zone to slow the motorists down.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Drivers are more alert going into the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

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Rumble strip for work zone speed control

169. OHIO

BEST PRACTICE/POLICY:

Certified Worksite Traffic Control Supervisors Required in Contracts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Contractors on large freeway projects must have a certified worksite traffic control supervisor (WTS) on the job when lanes are closed, etc. The ODOT has been using various forms of this specification for 3 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Poor quality of work zones. Contractor's personnel not knowing the basics of the Manual on Uniform Traffic Control Devices (MUTCD).

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Somewhat better quality work zones. The WTS must document daily and perform weekend inspections of the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Large freeways projects – All types of work

CONTACT(S):

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170. OREGON

BEST PRACTICE/POLICY:

Incident Management in the Westside Corridor Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A series of highway improvements and the construction of light rail transit (LRT) are transportation improvements that comprise the Westside Corridor Project. Highway improvements have been grouped into eight separate contracts to meet the project schedule and coordinate with LRT construction. A typical incident response program involved detection and verification of an incident, response and removal of obstructions, traffic management, and motorist information. Some of these measures include:

- Providing a safe pullout areas for disabled vehicles where shoulder widths are reduced,
- Providing of a tow truck and operator during peak travel hours,
- A full-time traffic control supervisor whose duties include patrolling the project at least once every 4 hours to maintain work zone traffic control devices, and to be on call 24 hours,
- Providing the supervisor a truck equipped with strobe light, push bumper, and two-way radio. In addition, the truck will also have jacks, jumper cables, flares, tow cables, water, and gasoline.
- Providing routine service patrols to assist motorists in distress. The ODOT COMET trucks routinely patrol metropolitan area freeways, including the work zones of the Westside project.
- Establishing a call-in number for motorists to report incidents. Motorists are connected to the ODOT Freeway Management Operations Center who could dispatch service, as well as re-program permanent overhead variable message boards to alert motorist of incidents and congestion.
- Providing traffic advisories on local radio stations. In Portland, a highway reporting service distributes information to the news media in the metropolitan area. This can be an efficient way to advise motorists of an incident.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Studies have shown that more than half of the congestion on highways in Portland is the result of non-recurring incidents such as stalls, breakdowns, or accidents. Incident management techniques are used to reduce congestion and delay in the work zone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits include reduced delay and enhanced safety in the work zone because incidents are responded to, and cleared faster than without the incident management measures. Incident management fosters good will with the public; people recognize the ODOT is working to improve the movement of people, goods, and services through work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Incident management is most effective in urban areas on high-volume and high-speed freeways operating at or/near capacity where a reduction in capacity would result in delay and queuing.

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171. OREGON

BEST PRACTICE/POLICY:

Monitoring of the Contractor's Critical Path Method (CPM) Schedule

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Every week ODOT receives a bi-weekly work schedule from the contractor, including work to be done and traffic control plans for that period. This schedule gives ODOT the ability to accurately notify the public of upcoming road conditions within the construction zones. This has been used for over 10 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This practice was adopted to give the public more accurate and up to date information concerning work zone conditions. It also is used as a planning tool by ODOT's project management staff in monitoring the project.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit realized is that the public is well-informed. By providing accurate information to the public, the choice is left to the traveler and unexpected delays are reduced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is best suited for large projects either freeways, highways, or bridges. This is also particularly beneficial in urban high-volume areas. In either case, this is useful whenever there is a disruption of a large amount of traffic.

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172. PENNSYLVANIA

BEST PRACTICE/POLICY:

Motorist Services

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Use of tow truck for incident management on long-term freeway work zones. Used on a selective basis since early 1980's.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Incident Management – remove vehicles from travel lanes when disabled to reduce delays and congestion.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

- Improved public image
- Incident management

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

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173. PENNSYLVANIA

BEST PRACTICE/POLICY:

Highly visible reflectorized flagger vest (strong yellow green & orange)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Department is using fluorescent versions of strong yellow-green and orange vests. Workers may wear either to provide a suitable contrast with the background. Vests have three 3-inch retroreflective stripes, either orange or strong yellow-green. Used since July 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Better contrast was need in Autumn when leaves are changing colors. Previously used orange which blends into the Autumn background.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Depending on the situation, better contrast between the highway workers, the background and orange channelizing devices.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

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174. PENNSYLVANIA

BEST PRACTICE/POLICY:

Incident Management meetings on construction project.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

An incident management plan is required on long-term construction projects. Freeway projects normally require a preconstruction meeting with emergency responders. Policy in use since 1994.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Each construction project presents unique problems for emergency responders. Meetings are held to develop strategies and work through various scenarios. Access to work area is reviewed. These meetings eliminate guess work during actual emergencies.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

- Effective response.
- Reduced delay.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

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175. UTAH

BEST PRACTICE/POLICY:

Contractor Furnished Service Patrols on the I-15 Project

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Service patrols have been in use on both I-15 and the alternate route of I-215 since the project began. These service patrols consist of vehicles equipped to handle minor vehicle problems such as flat tires, overheating, out of fuel, etc.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

It is widely known that on high-volume facilities it takes very little for traffic to break down into an unstable flow situation. In many instances, all it takes to create a major congestion condition is for travelers to decrease speed to look at stranded motorists with vehicle problems on the roadside. The service patrols were set up to get these stranded motorists either back on their way, or off the interstate to a service facility.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

An assumed decrease in congestion due to “rubber-necks” assistance to stranded motorists, and good public relations with the community.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All large projects

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176. UTAH

BEST PRACTICE/POLICY:

10 Year Warranty (maintenance provision) for I-15

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In the I-15 contract, the Utah DOT has included provisions for a 5-year maintenance option plus an additional five 1-year options. If exercised, these options would allow UDOT to have the I-15 project's design-builder, Wastach Constructors, maintain the facility on basic elements such as structures, pavements, geotechnical areas, etc. It does not include maintenance operations such as snow and ice removal.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This maintenance option is one of the "quality hooks" incorporated into the I-15 design-build effort. By having these owner options, it is expected that the overall quality of the project will be increased. The UDOT initially considered up to a 20-year warranty for the project, but cost implications became prohibitive.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

It is expected that project quality will be higher. It also allows UDOT future options to met their maintenance responsibilities to the public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Major projects and design-build initiatives

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177. UTAH

BEST PRACTICE/POLICY:

Practice – Work Zone Incident Management Provisions in Construction Contracts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The I-15 reconstruction project included a requirement for the contractor to provide: Courtesy Patrol services, providing motorist assistance, and minimizing safety hazards caused by stopped vehicles in the highway right-of-way. The following types of assistance are provided as appropriate: travel information, fuel (10 liters maximum), tire changing (assistance only), pushing of vehicles to pull-out locations, arrangements for towing assistance, and placement of cones and safety flares.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The limited capacity of the I-15 work zone necessitated that minor incidents be cleared quickly because the impacts to traffic would affect many routes on a regional scale (e.g., general attention to public safety and mobility). The UDOT current incident management team does not have the manpower to effectively accommodate the level of attention needed for the I-15 work zone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduction of motorist delay and improved safety through the work zone, as well as improved confidence by the public in transportation services.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is most advantageous to work zones with high-volume-to-capacity ratios, especially with limited pull-off areas within the highway right-of-way.

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178. VIRGINIA

BEST PRACTICE/POLICY:

Flagger Certification Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1990, the VDOT began requiring certified flaggers in work zones. The flagger applicant must watch a VDOT produced basic flagging informational video and take and pass a written test based on the video and other training material. The successful candidate then receives a flagger certification card which must be in his possession while performing flagging duties. The flagger must be re-certified every 2 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To improve basic flagging techniques of flagpersons by exposing them to the required standards, guidelines, and best practices.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Improved flagging operations over those who received little to no training.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All Roadways Statewide

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179. VIRGINIA

BEST PRACTICE/POLICY:

“Work Zone Safety Checklist” Form

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1997, the VDOT developed and implemented a two page, four copy carbon-less work zone safety checklist form for reviewing and documenting the status/condition of work zones for construction/maintenance/utility/permit operations. The form is required to be filled out a minimum of once a week by construction inspectors, with every other review performed at night. The contractor is given a copy for correcting work zone deficiencies, and a copy is filed with the project records.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To develop a statewide standardized form for use in conducting and documenting work zone safety reviews, to provide contractors, in writing, a list of work zone deficiencies, and to improve the appearance and function of work zone traffic control.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Consistent reviews of work zones by construction inspectors and district work zone safety personnel, improved documentation of work zone conditions, and improved response time to work zone deficiencies by contractors.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All Roadways Statewide.

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180. VIRGINIA

BEST PRACTICE/POLICY:

Pocket Size “Guidelines For Temporary Traffic Control”

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1997, the VDOT produced and began distribution/sale of a 70-page, color laminated work zone safety pocket guide to field personnel responsible for the installation, inspection, and removal of temporary traffic control measures. The guide contains standards for traffic control devices and displays 23 of the most used typical traffic control layouts for maintenance/utility/permit operations.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To make work zone safety information more readily available in an easy to read and understand format for field personnel in Virginia.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Ensuring that more people possess the standards and guidelines for traffic control in work zones, and improving the installation of traffic control devices and the flow of traffic through work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Primarily for rural and urban primary and secondary roadways and streets, the guide can also be used for many freeway and limited access highway applications.

CONTACT(S):

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181. VIRGINIA

BEST PRACTICE/POLICY:

Constructability Reviews Focused on Minimizing Construction Contract Time and User Delays

DESCRIPTION OF THE BEST PRACTICE/POLICY:

On major projects VDOT uses an independent consultant and in some instances contractor(s) to review the plans for a project to develop the best sequencing of work and to establish an optimum construction period to minimize exposure and impact on traffic.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To shorten construction time and minimize traffic delays.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Less user delay and public compliant.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All major facilities – All types of work

CONTACT(S):

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182. WASHINGTON

BEST PRACTICE/POLICY:

Temporary High Mast Lighting

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Use of Temporary High Mast Illumination systems for long term construction project work zones. One hundred foot timber poles are located in non-conflict areas to provide continuous illumination of the work zone.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

There is a need to provide adequate illumination in work zones especially those work zones with temporary channelization, detours, and night work, etc. The High Mast system allows pole placement in non-conflict areas and provides a consistent, high level of lighting for the duration of the project.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Driver safety by providing better visibility of features needed to drive through the work zone safely. Worker safety through uniform high light levels. Also, the quality of work by providing adequate illumination of the work area during night work operations.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Long term, stationary work zones. Usually high-speed/high-volume with detours, lane closures, temporary channelization, and night work.

CONTACT(S):

Scott Phelps, WSDOT, Olympic Region; Regional Traffic Control Engineer
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Best Practices Area 8. Traveler and Traffic Information (Project Related)

STATE-OF-THE-ART

Accurate real-time work zone (construction/maintenance/utility operations) information is provided to the road users in sufficient time to make informed travel decisions.



HAR Notice to drivers



Pole mounted HAR antenna

To achieve state-of-the-art traveler and traffic information at the project level, transportation agencies would need to:

- Monitor work zone traffic conditions on all NHS projects on a Statewide/area-wide basis through fixed traffic management systems, portable traffic management systems, and/or cameras tied into a Statewide/area-wide communications system.
- Display real-time work zone traffic conditions on the Internet, large screens at rest areas, welcome centers, weigh stations, truck stops, major tourist attractions, large parking garages, large office buildings, employment centers, and/or other large traffic generators.
- Use changeable message signs, traffic advisory radio, and early warning systems to warn motorists approaching congested work zones.
- Use ITS hardware to safely guide motorists through the work zone.
- Develop media and private sector partnerships that provide real-time work zone information to the public.

The following “best practices” relate to work zone traveler and traffic information:

Subcategory	Ref. #	Traveler and Traffic Information Best Practices
PR/Media campaigns	183	Construction Project Public Information/Public Relations Program (Newsletters)
	187	Dissemination of work zone project information by Public Information Offices
	188	Georgia NAVIGATOR (www.georgia-navigator.com)
	189	Public relation campaigns and the use of public relation firms
	190	Public relations campaign for Illinois State Toll Highway Authority (ISTHA) construction and maintenance projects in the Chicago metro area
	192	Media partnership to inform public of traffic affected by construction and maintenance operations
	193	Hoosier Helper
	194	Media to minimize work zone delays and inform public of work zone delays
	199	"Paving the Way"
	201	Media partnership to reduce the volume of traffic through the work zone
	204	Work Zone Advisory Brochure
	205	Place mats with work zone safety information given to restaurants and truck stops along Interstate routes
	206	Extensive media campaign for I-15 project – real-time traffic information to public via 800 telephone lines, Website, faxes, mailings, and public meetings
207	Dissemination of information on current work zones through the trucking associations	
209	Traffic Safety Information Center	
Traffic Information Management	184	Bid item in the construction contract for public relations
	186	District Work Zone Traffic Management Coordinator
	195	Joint Approval Form (CAT and City of Boston) for Traffic Advisories and Alerts
	202	Contractor involvement in public information meetings and lane closure notifications
Traveler information	185	Signing for businesses affected by the construction of city streets
	191	Provide real-time traffic information to the public
	196	Web Site for Traffic Information, Advisories and Alerts (http://www.bigdig.com/traffic.htm)
	197	Traveler's Information Kiosks in Rest Areas – Work Zones
	198	Use of INFORM to advise motorists of work zone delays
	200	"Fax on Demand" traffic information
	203	Use CB Radio to warn truckers to slow down in advance of work areas
208	Weekend closure of I-405 for resurfacing	

183. ARIZONA

BEST PRACTICE/POLICY:

Construction Project Public Information/Public Relations Program (Newsletters)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This program is directed at the project level. The program involves making the status of local construction projects known to the community and local businesses through the issuance of weekly newsletters. In addition, pre-construction public information meetings and monthly traffic management meetings may be held. The newsletters are sent to the media, business, local residents, and others who request to be included. The newsletters normally give the project status, lane restrictions, ramp closures, recommended detour routes, access to area business, and what other work zone traffic restrictions will be in effect for the next few weeks.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A need exists to provide current information to a wide range of people. In addition to providing roadway closure information, the newsletters include a list of several places they can call for additional information. The names and phone numbers are listed of the Resident Engineer, Community Relations Firm, and ADOT District Office.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Local citizens are kept informed and made aware of where they can call for additional information. Motorist can plan trips to avoid the work areas affected and reduce congestion.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of facility: Generally freeway or very large projects in urban areas; although some rural use have been tried.

CONTACT(S):

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Mark Bonan, Public Relations, District Construction

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Dennis Alvarez, Assistant District Engineer, ADOT

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184. MARICOPA COUNTY, ARIZONA

BEST PRACTICE/POLICY:

Bid Item in the Construction Contract for Public Relations

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Maricopa County includes a bid item in many of their construction contracts to handle public relations on the project. They have used this process for 4 or 5 years. The contract will spell out how many public meetings will be required, the number of newsletters (these may be weekly or monthly) that are to be issued which cover the contractors anticipated schedule and other pertinent information, the operation of a 24-hour hotline to receive complaints or to answer questions about the project, and meetings with businesses or local residents as the need arises.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The county is aware that the construction is a disruption to the neighborhood and feel that the neighborhood residents are due an explanation of what is going on and how it affects them. The newsletters give the telephone numbers where they can obtain information.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits to this type of program are a vast reduction in the number of complaints that are received. Residents will alter their trips to safer routes and to reduce congestion when they understand the construction schedule. Sometimes information is provided by the citizens that the county was unaware of and should have taken into consideration. Adjustments can be made when necessary.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects

CONTACT(S):

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Kent Hamm, Assistant County Engineer

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185. CITY OF PHOENIX, ARIZONA

BEST PRACTICE/POLICY:

Signing for Businesses Affected by the Construction of City Streets

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The City of Phoenix has recognized that during construction, reconstruction, or resurfacing of their city streets that they do have a negative effect on local business. In order to aid the business customer in finding the access into the business, the City of Phoenix has elected to install small signs delineating this access route.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The City of Phoenix recognizes that businesses pay a large percentage of the revenue that the city receives. It is the cities intent to keep them in operation and not unduly affect their business during construction. Fewer complaints are received as the business community sees that the city is trying to mitigate the effects on them due to construction.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Friendlier communication with business owners. Less complaints. Businesses are better able survive the construction project.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All streets and highways

CONTACT(S):

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Jim Sparks, Traffic Engineer, City of Phoenix

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186. CALIFORNIA

BEST PRACTICE/POLICY:

District Work Zone Traffic Management Coordinator

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Single person in each of the 12 Caltrans Districts has authority to halt lane closures, temporary signals, etc.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The cumulative effect of projects in close proximity can sometimes lead to poor, inefficient operations. Also, travel volumes tend to be dynamic in nature and fluctuate due to incidents or recreational/holiday demand.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The Coordinator is able to see the “bigger picture” and make decisions that provide relief to an area affected by construction. The Coordinator’s stays abreast of the regional traffic situation whereas the Resident Engineer tends to focus only on the happenings within the project limits of his/her contract.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

Joy Pinne, Caltrans Construction

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David Saia, Caltrans Freeway Operations

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187. FLORIDA

BEST PRACTICE/POLICY:

Dissemination of Work Zone Project Information by Public Information Offices

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The public information office in each of the State's 8 Districts provides information on the location and duration of construction work zones to the public and the news media. In addition, for larger projects, the CEI staff includes a project level public information position. On some major projects a toll-free hot line has been established for project information. These practices have been followed for many years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Better public awareness of the location and duration of work zones so as to lessen the impacts by encouraging the use of alternate routes.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Better public relations and a lessening of the traffic impacts due to public's ability to better avoid construction delays.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable to all types of construction projects on all types of facilities.

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188. GEORGIA DEPARTMENT OF TRANSPORTATION

BEST PRACTICE/POLICY:

Georgia NAVIGATOR (www.georgia-navigator.com)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Georgia NAVIGATOR is an Internet web site developed by the Georgia Department of Transportation (GDOT) to provide real time traffic information. The web site was first created during the 1996 Olympics and then enhanced in 1998.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide real time traffic information to Internet users so they can make travel plans accordingly, including when to leave, what route to take, or what mode of transportation to use.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The NAVIGATOR site enables users to view traffic conditions on the Interstates and arterials via over 60 color camera snapshots refreshed every 4 minutes. If alternate routes or transportation modes are taken, travel times can be reduced, associated delay due to an incident or congestions can be reduced, and travel speeds can be increased. The site received over 4 million hits during the month of April 1998 and is currently averaging 100,000 hits per weekday.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All Urban freeways and streets – All types of construction and maintenance operations

CONTACT(S):

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189. ILLINOIS

BEST PRACTICE/POLICY:

Public Relation Campaigns and the Use of Public Relation Firms

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Illinois Department of Transportation (IDOT) hires public relations firms to communicate project information to the traveling public regarding high-volume urban freeway reconstruction projects. The services include, but are not limited to, advance information campaigns to encourage the use of alternate routes, assistance with press releases and conferences, presentations to neighborhoods and other groups, and preparation of newspaper and radio advertisements. Public relations firms are required to submit a proposal and make a presentation on their proposal as part of the selection process.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The IDOT recognizes the need to utilize specialists in the area of public relations. In the past, efforts were conducted by IDOT personnel whom were not trained, nor did they have the background, in communicating effectively with the public.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The presentation of information to motorists in an easily understood and interesting format increases the effectiveness of alerting commuters to traffic impacts. Public relations firms have the resources to develop professional publications (e.g., brochures, maps, fliers, etc). The distribution of publications, in conjunction with professionally produced presentations and multi-media advertisements, effectively communicates information regarding projects. In addition, another advantage that public relation firms have over transportation agencies is their established contacts with news media personnel.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Although geared towards high-volume urban rehabilitation projects, the concept has application to any project, especially those with high user impacts.

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Kevin McLaury Engineering Team Leader, FHWA, Illinois Division

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190. ILLINOIS STATE TOLL HIGHWAY AUTHORITY

BEST PRACTICE/POLICY:

Public Relations Campaign for Illinois State Toll Highway Authority (ISTHA)
Construction and Maintenance Projects in the Chicago Metro Area

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The ISTHA has a public relations department that informs the media of all construction and maintenance activities that impact traffic. The construction manager and a public relations representative fly over all the work zones regularly throughout the construction season. This allows the public relations department to see the work zones and discuss any issues with the construction department.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

In large urban areas, it is very important to inform the public of traffic delays. Especially on the tollway where the public pays a user fee, if the public becomes dissatisfied with unexpected delays they will choose alternate routes and the tollway will lose revenues.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The public is more aware of construction and maintenance activity and this will help alleviate traffic congestion and reduce the public's dissatisfaction.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Projects that have an impact on the flow of traffic such as lane closures.

CONTACT(S):

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Daniel Mathis, Assistant Division Administrator, FHWA, Illinois Division
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191. ILLINOIS

BEST PRACTICE/POLICY:

Provide Real-Time Traffic Information to the Public

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Illinois Department of Transportation (IDOT) Communications Center for the Chicago metropolitan area collects and distributes real-time traffic information for a portion of their Interstate routes. The traffic information is generated by their Traffic Systems Center. In addition, construction and maintenance work zone lane closure information is updated on at least a daily basis. The real-time information is broadcast on the Highway Advisory Radio and is continuously sent to the media and traffic information service providers via automatic direct feed. The information is also available by toll-free telephone and over the Internet.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

While free-flow traffic cannot always be attained, the traveling public does want to minimize their travel time. By obtaining accurate real-time traffic information, motorists can make informed route decisions and help to balance the demand on the system.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Informed motorists can select the route(s) that will provide the best travel time. Because the information is real-time, motorist can adjust their routes, even while en route, to avoid traffic delaying incidents. In addition to providing improved travel times, such route adjustments help to alleviate the demand and assist in traffic flow recovery from incident related congestion.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Most applicable on a systematic basis to larger urban areas that have several route choices. However, to a lesser degree, the concept may have application in other areas or for a specific project.

CONTACT(S):

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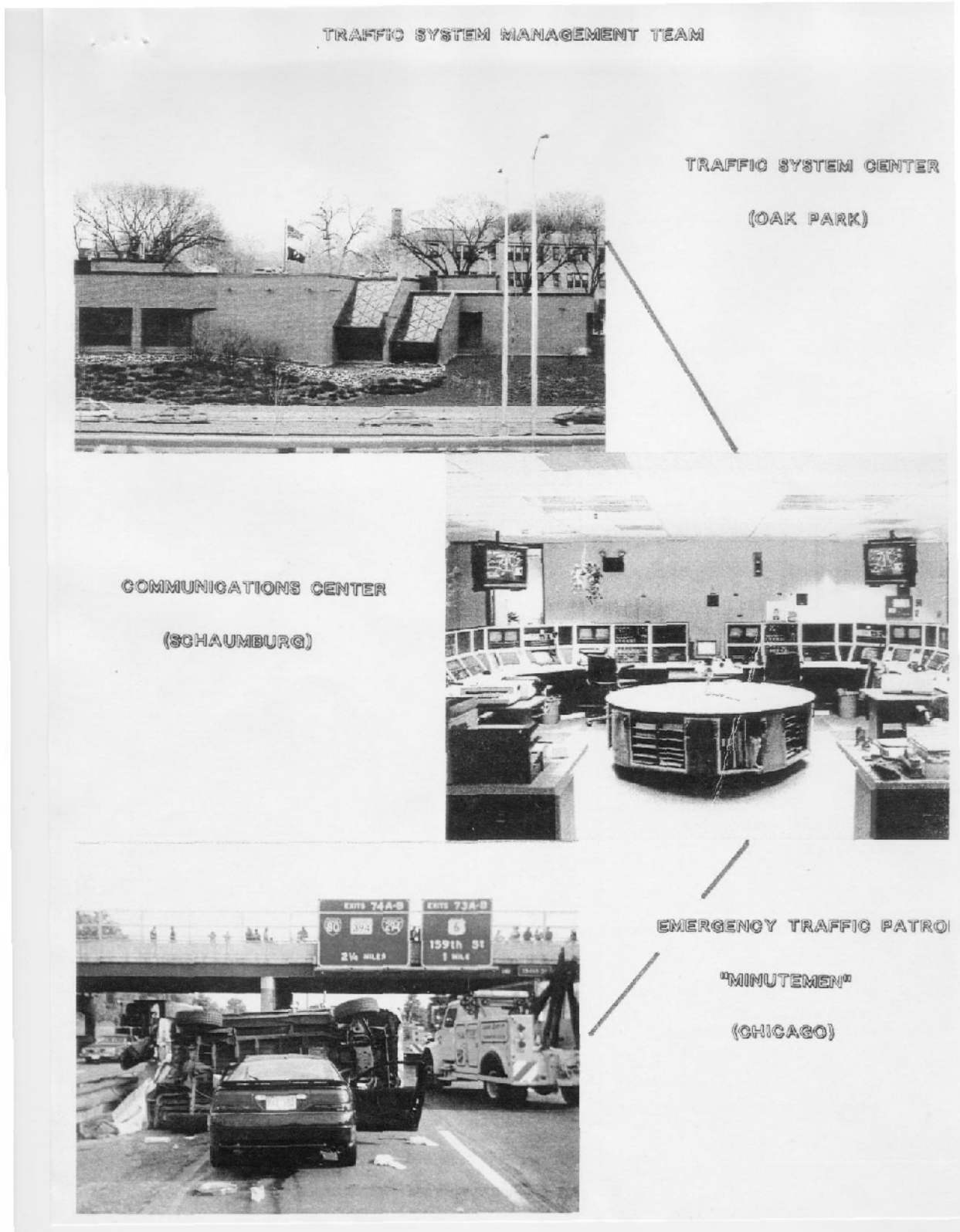
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Wendall Meyer, Urban Mobility Engineer, FHWA, Illinois Division

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[See illustration next page]



The Illinois Traffic System Team works to provide accurate, timely information to the roadside.

192. CITY OF CHICAGO, ILLINOIS

DEPARTMENT OF TRANSPORTATION

BEST PRACTICE/POLICY:

Media Partnership to Inform Public of Traffic Effected by Construction and Maintenance Operations

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Project fact sheets and news releases are coordinated and sent through the Chicago Police Department's Traffic Section or News Affairs to various print, radio and television media organizations.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To keep the motorists as up to date as possible with information regarding construction and maintenance project activity which has highest potential to adversely impact traffic. Alternative routes are often referenced to help the traveling public avoid, particularly troublesome work zone locations.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Travel time improvements through enhanced motorists/pedestrian awareness regarding the locations of construction and maintenance work zones. Also, enhanced safety through public awareness.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

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Matt Smith, Director of Communications, CDOT Commissioner's Office

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193. INDIANA

BEST PRACTICE/POLICY:

Hoosier Helper

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Hoosier Helper is a program consisting of incident response vehicles to assist stranded motorists and remove disabled vehicles. Hoosier Helpers are able to advise motorists of crash-related congestion by sending messages to highway advisory radio, variable message signs, and pagers from the scene of the crash.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The primary reason for adopting the Hoosier Helper Program was to quickly remove disabled vehicles from the freeway and improve congestion.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit is to restore capacity.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The Hoosier Helper Program is most applicable on high-volume freeways in both urban and rural environments, can also be used in congested work zones.

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194. INDIANA

BEST PRACTICE/POLICY:

Media to Minimize Work Zone Delays and Inform Public of Work Zone Delays

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The INDOT has used the media extensively for the past 15–20 years to notify motorist by radio, TV, and the newspapers of upcoming projects, possible delays and suggested alternate routes.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Informing motorists, especially commuters, of road construction that would effect them became essential as reconstruction on existing routes began in large scale.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The advance notice reduced traffic volumes significantly on routes under construction as motorist found alternate routes to avoid the areas under construction.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This is primarily applicable to high-volume arterials in urban and suburban areas.

CONTACT(S):

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195. MASSACHUSETTS

BEST PRACTICE/POLICY:

Joint Approval Form (CA/T and City of Boston) for Traffic Advisories and Alerts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

All major changes to existing traffic patterns caused by project construction must be approved by the project's senior traffic manager and the City of Boston's chief liaison to the project prior to implementation.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The project has 50 different construction contracts, most of which require traffic and pedestrian routing and detours. A team of project and City traffic staff are assigned to each contract. Project and City managers sign off on the plans and recommend actions.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Senior project and City manager ensure that each separate construction team coordinates its work and traffic impacts with adjacent and/or related construction activities.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, streets, 2-lane/2-way highway, and bridges.

Location: Urban, rural, and recreational.

Volume/Speed: High-volume/high-speed, high-volume/low-speed, low-volume/high-speed, low-volume/low-speed.

Type of Work: Resurfacing, reconstruction, restoration/rehabilitation, and utility.
Most.

CONTACT(S):

Glen Berkowitz, Traffic Manager

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196. MASSACHUSETTS

BEST PRACTICE/POLICY:

Web Sight for Traffic Information, Advisories, and Alerts

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The web sight is important element of the project. Recent, upcoming, and long-term traffic changes are updated weekly with a list provided by traffic managers via e-mail. Maps are included.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Web technology gave us the ability to distribute traffic information to concerned audiences directly, in real time.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Easy, quick, comprehensive communication for concerned audiences underscores the project's commitment to complete public information.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, streets, 2-lane/2-way highway, and bridge.

Location: Urban, rural, and recreational.

Volume/Speed: High-volume/high-speed, high-volume/low-speed, low-volume/high-speed, low-volume/low-speed.

Type of Work: Resurfacing, reconstruction, restoration/rehabilitation, and utility.

CONTACT(S):

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197. MISSISSIPPI

BEST PRACTICE/POLICY:

Travel's Information Kiosks in Rest Areas – Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MDOT is in the process of having a contractor install and maintain Public Information Kiosks at the Interstate rest areas in Mississippi. The kiosks will provide the traveling public information on construction activities, motel/hotel accommodations, service stations, restaurants, etc. MDOT will be connected to the kiosks via Internet and will have the ability to override the system to put emergency information (hurricane evacuation routes) directly into the systems.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

MDOT adopted this practice to provide the traveling public with up to date travel information on work zone locations throughout the state maintained highway system in addition to providing them with public service information.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This service will be provided free of charge. All persons who travel and use the rest areas in Mississippi can benefit by being more informed about highway conditions, laws, and services that are provided for those traveling through the state. However, the biggest benefit will be seen in the increase in safety. Motorist will have up to date information during times of emergencies such as hurricane evacuation of the coast.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The kiosk facilities are only being installed at rest areas where there is a 24-hour security guard on duty. There is approximately 12 rest areas of this type in the state.

CONTACT(S):

Donna Lum, Public Affairs Director, MDOT
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198. NEW YORK

BEST PRACTICE/POLICY:

Use of INFORM to Advise Motorists of Work Zone Delays

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Approximately 10 years ago, the NYSDOT and FHWA created a traffic management system and center on Long Island. It covered most of the Long Island Expressway (I-495), Northern State Parkway, and State Route 25. Loop detectors, ramp meters, a computerized signal system, cameras, and variable message signs were placed throughout this 35-mile corridor, to provide traffic information with an ability to manage congestion and provide motorist information on incidences.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The NYSDOT and FHWA realized that traffic was increasing such that there could be no building a way out of congestion. Therefore, it was decided to try and manage the facilities to minimize the delays due to congestion and to provide detour alternatives in case of major incidences.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The NYSDOT was able to gain greater information on a real-time basis of traffic flows and to react quicker to incidences. Motorists benefitted by spending less time in congestion unnecessarily.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Urban and suburban – Freeway, parkway, and suburban arterial

CONTACT(S):

Emmett McDevitt, Safety Engineer, FHWA New York Division

Telephone: (518) 431-4125, ext. 231

Ed Roberts, NYSDOT

Telephone: (518) 457-1232

199. CITY OF COLUMBUS, OHIO



BEST PRACTICE/POLICY:

Paving The Way

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Paving The Way is a comprehensive traffic-management program that provides public information and commuter-assistance services to Columbus area motorists. It is a cooperative partnership between the Federal Highway Administration, the Ohio Department of Transportation, and the City of Columbus.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide one source for all information pertaining to highway construction projects in the Columbus Metropolitan area and to coordinate traffic control between projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Paving the Way keeps motorists informed on work zone traffic control with one point of contact for information. The organization conducts safety campaigns and monitors projects to improve traffic control.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All public roads

CONTACT(S):

Kim Shepherd, Coordinator, City of Columbus

Telephone: (614) 645-3970

E-Mail: CPShepherd@cmhmetro.net



200. CITY OF COLUMBUS, OHIO

BEST PRACTICE/POLICY:

Fax on Demand Traffic Information

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The public can access construction information and maps by calling CONSTRUCTION LINK, a 24-hour fax-on-demand service, at 614-818-LINK. The caller can list the directions and when asked you enter your FAX number and your requested information is faxed to you.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Paving the Way has a limited staff. In order to handle the large number of request that were received and not tie up staff the FAX on demand system was implemented.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Individuals and organizations with fax machines are able to get an immediate response to their need for information. The staff can devote their time and energy to other items.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All public roads

CONTACT(S):

Kim Shepherd, Coordinator, City of Columbus

Telephone: (614) 645-3972

E-Mail: CPShepherd@cmhmetro.net

201. CITY OF COLUMBUS, OHIO

BEST PRACTICE/POLICY:

Media Partnership to Reduce the Volume of Traffic Through the Work Zone

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Issuance of press releases concerning traffic control of projects in the Columbus to the print media, television and radio stations, and traffic reporters.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide one consistent dependable source for all information pertaining to highway construction projects in the Columbus Metropolitan area and to coordinate traffic control between projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Keeping the public and motorist informed on work zone traffic control with one point of contact for information. The organization conducts safety campaigns and monitors projects to improve traffic control.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All public roads

CONTACT(S):

Kim Shepherd, Coordinator, City of Columbus

Telephone: (614) 645-3972

E-Mail: CPShepherd@cmhmetro.net

202. OHIO

BEST PRACTICE/POLICY:

Contractor Involvement in Public Information Meetings and Lane Closure Notifications

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The best practice is the contractor keeping the public informed on lane closures and status of construction. A plan note is in the contract that requires the contractor to inform so many days in advance of any planned lane closures. Project meetings are attended by Paving the Way staff.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for adopting the policy was to give advance notice and to keep the public notified of lane closures and the status of construction.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The public is kept informed of lane closures and Paving the Way has advance notice to properly prepare notification of closures.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work – All facilities

CONTACT(S):

Kim Shepherd, Coordinator, City of Columbus
Telephone: (614) 645-3972
E-Mail: CPShepherd@cmhmetro.net

203. PENNSYLVANIA

BEST PRACTICE/POLICY:

Use CB Radio to warn truckers to slow down in advance of work areas.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Department engaged a woman who lives near Interstate 81 who had an established CB base station to communicate work zone and other safety information to truckers during a 1993-95 construction project.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Department was looking for a unique way of targeting long-haul truckers with safety information as they approached work areas.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Truck drivers are alerted to the work zone and any new traffic patterns.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

Richard J. Sesny, Manager, Regulations and Control Section, PennDOT

Telephone: (717) 783-6080

Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

204. PENNSYLVANIA

BEST PRACTICE/POLICY:

Work Zone Advisory Brochure

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Since 1994, a brochure titled “A Map and Guide for Driving in Pennsylvania’s Work Zones” has been printed and disseminated. The brochure includes a map of Pennsylvania’s roads and major routes under construction and safe driving tips. Disseminated through the Department’s Welcome Centers, rest areas, driver license centers and District offices.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Most of the crashes in construction zones in 1993 were due to driver error. This brochure was developed to inform and educate the public on how to drive safely when traveling in construction areas.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Better educated motorists resulting in less work zone crashes.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

Richard J. Sesny, Manager, Regulations and Control Section, PennDOT

Telephone: (717) 783-6080

Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

205. PENNSYLVANIA

BEST PRACTICE/POLICY:

Place Mats with Work Zone safety information given to restaurants and truck stops along Interstate routes.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Since 1994, a placemat entitled “Construction Ahead – a Map and Guide for Driving in Pennsylvania’s Work Zones” has been printed and disseminated. The placemat includes a map of Pennsylvania’s roads and major routes under construction and safe driving tips. Disseminated through District offices to restaurants.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Most of the crashes in construction zones in 1993 were due to driver error. This placemat was developed to inform and educate the public on how to drive safely when traveling in construction areas.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Better educated motorists resulting in less work zone crashes.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

Richard J. Sesny, Manager, Regulations and Control Section, PennDOT

Telephone: (717) 783-6080

Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

206. UTAH

BEST PRACTICE/POLICY:

Extensive Media Campaign for I-15 Project – Real-Time Traffic Information to Public via 800 Telephone Lines, Website, Faxes, Mailings, and Public Meetings

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The public information campaign for the I-15 project began before construction started. As noted above, it includes a “hotline” for real-time information on closures, and/or planned closures. The website also contains this real-time information. Quarterly, glossy brochures are mailed to residents in the corridor describing activities and progress of the reconstruction.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide as much information as possible to the traveling public so that they can make informed decisions on which route to use and/or which mode. Depending on the information (and their flexibility), they may even decide to make the trip at another time.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

- Accident reductions, congestion reduction in the work zone.
- Travel behavior modification (i.e., using alternate routes, postponing, or rescheduling trips, etc.)

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

High-volume urban arterials or freeways.

CONTACT(S):

Jeff Kolb, Field Operations Engineer, FHWA, Utah Division

Telephone: (801) 963-0078, ext. 232

E-Mail: fh08utpo.jkolb@state.ut.us

John Leonard, UDOT I-15 Team

Telephone: (801) 594-6236

E-Mail: jleonard@dot.state.ut.us

207. UTAH

BEST PRACTICE/POLICY:

Dissemination of Information on Current Work Zones Through the Trucking Associations

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This is an outreach effort to help prevent work zone crashes. It is accomplished through the distribution of a weekly news document "Trucking Hot News," which discusses and identifies: where work zones are located, hazards, and how to minimize the chances of having crashes. The creation and distribution of the news document is performed by the Utah Motor Transport Association.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for implementing the practice was to maintain a level of zero crash zone fatalities and curb any potential increase of crashes by our increased proactive outreach efforts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits are still being realized. However, it is expected to result in a decrease in overall work zone crashes, and to allow motor carriers to act proactively to help reduce delays in transportation.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects, but particularly those where motor carrier user volume could occur.

CONTACT(S):

Robert Kelleher, State Director, FHWA, Utah Division

Telephone: (801) 963-0096, ext. 247

Terry Smith, Utah Motor Transport Association

Telephone: (801) 973-9370

208. WASHINGTON

BEST PRACTICE/POLICY:

Weekend Closure of I-405 for Resurfacing

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This was the State's first experience with closing a north/south Interstate facility over entire weekends to accommodate resurfacing operations. In the last 10 years, various closure operations have been used on the east/west I-90 corridor in the vicinity of Seattle. The more common practice has been to require night time paving operations, allowing the Contractor to close only partial widths of the Interstate facility. Complete closures usually require natural detour routes and are a more common practice on minor roadways where these detours can be accommodated.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The primary reason the State chose to completely close the facility was to deal with noise ordinances and best mitigate (by shortening the exposure period) the noise impacts. Secondary reasons included: minimizing the disruption to daily commuters; increasing the quality and safety of the paving operation due to the absence of traffic through the work zone; and providing the opportunity to research and measure the various impacts on commuters, trucking, and businesses, as well as safety characteristics and quality of the finished product.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

- Weekday traffic disruption is eliminated.
- Weekend traffic disruption is tolerated by the public, as it is known to be of short duration and they can plan accordingly. Positive public relations were a win-win solution.
- Safety to the motoring public **and** paving crew were greatly improved.
- Positive feedback from the public—again a winning public relations ploy.
- Unimpeded access of equipment and materials to the job site.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Resurfacing of an urban Interstate

CONTACT(S):

Kim Henry, Project Engineer, WSDOT

Telephone: (425) 649-4436

E-Mail: henryk@wsdot.wa.gov

Jim Spacys, WSDOT Roadway Construction Engineer

Telephone: (360) 705-7824

209. WESTERN RESOURCE CENTER

BEST PRACTICE/POLICY:

Traffic Safety Information Center

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The FHWA Region 10 Office of Motor Carriers, the Oregon Department of Transportation, and the Oregon State Police, established a Traffic Safety Information Center. A trailer was set up at the Baldock Rest Area and is used by the agencies to provide educational materials to the motoring public.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This safety center was established as a means for the agencies to jointly work together in sending out safety information. It is a cooperative effort on working together to reduce injuries and fatalities.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefits are the pooled resources and the large number of contacts we can make. The public can go to one location and get information on the “Give ’em a Brake,” “No-Zone,” and drunk driving; plus many other topics covered by the agencies.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeway Rest Areas/Welcome Stations

CONTACT(S):

Tori (Victoria) Kinee, FHWA Multi-Model Safety
Telephone: (503) 399-5775

Best Practices Area 9. Enforcement

STATE-OF-THE-ART

Work zone trained and qualified, full-time uniformed police officers are readily available for construction and maintenance operations. State-of-the-art technology is used to maximize effectiveness of these police officers.

To achieve state-of-the-art enforcement, transportation agencies would need to:

- Utilize uniformed police officers in all work zones on high-speed/high-volume facilities, as well as, those involving lane and ramp closures, severely restricted areas, and where major changes to existing traffic patterns result.
- Provide training for uniformed police officers in work zone traffic control, completing work zone data on State accident/crash report forms, the MUTCD, and incident management.
- Secure dedicated, full-time uniformed police officers for work zone enforcement activities.
- Use automated speed enforcement in confined and high-speed work zones.
- Equip uniformed police officers with state-of-the-art equipment for use in controlling speed, and crash investigation/reporting.



Work zone enforcement activities

The following “best practices” relate to work zone law enforcement:

Subcategory	Ref. #	Enforcement
Evaluation/ Coordination	210	Construction Zone Enhanced Enforcement Program and Maintenance Zone Enhanced Enforcement Program
	213	Evaluation of Project ADVANCE (Aggressive Driving Video and Non-Contact Enforcement)
	217	Periodic meetings with State Police to discuss work zone issues
Police Presence	211	Use of active law enforcement services to control speed in work zones
	212	Full-time State Police Liaison Officer assigned to the State Highway Administration
	214	Dedicated (full time) New Jersey State Police Construction Unit assigned to New Jersey DOT construction projects
	215	Drone radar in work zones
	216	State Police hired by the contractor
	218	State Police hired by the contractor on the I-15 project

210. CALIFORNIA

BEST PRACTICE/POLICY:

Construction Zone Enhanced Enforcement Program (COZEEP) and Maintenance Zone Enhanced Enforcement Program (MAZEEP)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The California Highway Patrol (CHP) has contracted with the California DOT to provide services on an as-needed basis. The CHP, where appropriate, provides awareness of work zone areas and enforcement of the speed limit. This program has been on-going since 1992.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Speed reduction and awareness of work zones was not being accomplished through the use of signing, and channelizing devices, etc.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduction in highway and worker related accidents which lead to an overall safer work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types – All locations

CONTACT(S)

Joy Pinne, Caltrans Construction
Telephone: (916) 654-5627
E-Mail: Joy_Pinne@dot.ca.gov

211. FLORIDA

BEST PRACTICE/POLICY:

Use of Active Law Enforcement Services to Control Speed in Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The predominate use of on-duty Florida Highway Patrol (FHP) officers for active patrolling of projects for speed control/traffic enforcement began in 1995. Prior to that, the use of off-duty officers was the normal practice. The FDOT reimburses the FHP out of project funds per the FDOT/FHP agreement. The use of off-duty officers hired by the contractor is limited to: 1) Project Phase Traffic Shifts to Facilitate Traffic Flow—a bid item; and 2) Contractor’s Option for Equipment Movement, etc.—no direct pay.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The use of off-duty officers was not achieving the desired results of lowering speeds on major freeway projects. Off-duty officers on contractor’s payroll had to obtain “on-duty” status to issue citations, thus rarely wrote citations for speeding.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The on-duty FHP officers are providing active patrolling with an emphasis on speed enforcement. Officers, when paid directly by the State, gives more control of the officer’s assignments to the project’s personnel and is coordinated in advance with the FHP.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Urban or rural freeways and limited access roadways – All types of work

CONTACT(S):

Norbert Munoz, Safety Engineer, FHWA – Florida Division

Telephone: (850) 942-9650, ext. 3024

E-Mail: Norbert.Munoz@fhwa.dot.gov

Gregg Xander, State Construction Engineer, Florida DOT

Telephone: (850) 414-5203

E-Mail: Gregg.Xander@dot.state.fl.us

212. MARYLAND

BEST PRACTICE/POLICY:

Full-time State Police Liaison Officer Assigned to State Highway Administration (SHA)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The State Police Liaison Officer is available to provide valuable input on a number of highway safety related issues including work zones. The State Police and the SHA understand each other's roles and work together as a team to solve mutual safety problems. The Liaison Officer has been working on location with SHA for over 10 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The State Highway Administration and Maryland State Police realized that Maryland's highway system would operate more efficiently and safely if both agencies worked as a team. A number of highway safety issues: 1) work zone traffic control safety concerns, 2) freeway incident traffic management, 3) special events, and 4) seasonal traffic management responsibilities, led to the adoption of this policy.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefits being realized from this best practice are: 1) improved highway safety, 2) immediate action on highway safety issues, and 3) a much more informal relationship between law enforcement and SHA personnel. This best practice has the added benefit of eliminating the bureaucratic red tape that had existed in the past between the two agencies.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

Sgt. Richard Vercera, Maryland State Police Liaison Officer

Telephone: (410) 582-5616

E-Mail: rvercera@mdshahq.shahanvc.

Wayne Styles, Traffic Policy and Management Team Leader, MDSHA

Telephone: (410) 787-5865,

E-Mail: wstyles@sha.state.md.us

213. MARYLAND

BEST PRACTICE/POLICY:

Evaluation of Project ADVANCE (Aggressive Driving Video and Non-Contact Enforcement) to Monitor Undesirable Driving Behavior

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Project ADVANCE is a 2-year pilot program targeting aggressive drivers on the Capital Beltway. The project goal is to develop a mobile imaging device that would automatically recognize and take a computer image of an aggressive driver by recognizing vehicles that are speeding, making unsafe lane changes, and following too closely. The system was implemented in December 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Project ADVANCE represents a new and innovative way to enforce traffic laws and protect the motoring public on high-volume roadways.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This system allows for traffic enforcement without disrupting traffic flow. This method of traffic law enforcement also enhances the police officer's safety by reducing his exposure to traffic.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Currently used on an urban freeway – Has the potential to be used in any work zone

CONTACT(S):

TFC M. Almond, Maryland State Police Commercial Vehicle Enforcement
Telephone: (410) 694-6100

214. NEW JERSEY

BEST PRACTICE/POLICY:

Dedicated (Full Time) New Jersey State Police (NJSP) Construction Unit Assigned to New Jersey Department of Transportation (NJDOT) Construction Projects

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Memorandum of Understanding between NJDOT and NJSP developed a unique construction unit consisting of NJSP Troopers to assist NJDOT Resident Engineers in monitoring and enforcement of the approved traffic control plans (TCP's). Unit was activated in 1994 to increase the performance level of law enforcement services relating to work zone safety and to establish consistency in enforcement of TCP's on a statewide basis. Members of the NJSP Construction Unit receives specific work zone safety training.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Increase level of performance of law enforcement personnel in work zones and to provide enforcement consistency on a statewide basis.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Provides uniformity in implementation of the approved TCP's, Resident Engineers project control relating to TCP enforcement and contractor's operations has improved, increased level of safety for workers and the traveling public. This also resulted in significant savings (estimated \$4–\$6 million per year) for the State by providing a mechanism for direct billing to the State for law enforcement services, rather than as a contract pay item.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The NJSP Construction Unit personnel are used on an as needed bases at the request of the Resident Engineer for a variety of project types and classifications.

CONTACT(S):

Robin L. Schroeder, Area Engineer, FHWA New Jersey Division Office

Telephone: (609) 637-4235

E-Mail: Robin.Schroeder@fhwa.dot.gov

Michael W. Gross, Manager, Bureau of Construction Services, NJDOT

Telephone: (609) 530-5500

Sargent Wade, Supervisor, NJSP Construction Unit

Telephone: (609) 883-0247

215. MASSACHUSETTS

BEST PRACTICE/POLICY:

Drone Radar in Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A drone radar unit is attached to an arrow panel or sign post. The signal will then activate any and all radar detectors within range. This has been in effect for 1½ years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The idea is to alert vehicles to slow down to a reasonable speed through work zones. The advance notice would also alert sleepy, fatigued, and inattentive drivers.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Speed reductions and safer work areas.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of high-speed facilities, locations, and work

CONTACT(S):

Charles F. Sterling, P.E.; Traffic Engineer; Massachusetts DOT

Telephone: (617) 973-7360

E-Mail: Charles.Sterling@state.ma.us

John Formosa, Technical Services Team Leader; FHWA, Massachusetts Division

Telephone: (617) 494-3359

E-Mail: John.Formosa@fhwa.dot.gov

216. OKLAHOMA

BEST PRACTICE/POLICY:

State Police Hired by the Contractor

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The practice was begun to increase safety in the construction work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The contracts include a bid item for State Police. However, there is no transference of funds between State agencies; the money goes straight from the contractor to the State Police. This provides an incentive to the contractor to judiciously plan their work and only have the State Police on the project when their presence is needed. The Oklahoma Department of Transportation has found participation of the State Police is better, when they are hired by the contractor.

Having police presence in and about the work zones greatly reduces the speed of the through traffic, which in turn reduces the numbers of work zone accidents. Also, when a policeman is writing one speeding ticket, hundreds of motorists witness the results of speeding increasing the overall awareness of the work zones and the results of violating the posted regulatory signs.

The next generation of this practice will be to establish a state-wide funding pool so that any project engineer may request police presence at any given time as the need arises.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is used on projects where speeding is anticipated—mostly on high-volume/high-speed roadways during reconstruction/rehabilitation work.

CONTACT(S):

Mr. Veldo Goins, Oklahoma Department of Transportation
Assistant Director, Preconstruction
Telephone: (405) 522-0647
E-Mail: veldo.goins/odot@fd9ns01.okladot.state.ok.us

217. PENNSYLVANIA

BEST PRACTICE/POLICY:

Periodic meetings with State Police to discuss work zone issues.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Yearly statewide meeting between the Department and State Police. District level meetings are held quarterly. Meetings held since 1994.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Coordinate work zone enforcement on long-term, freeway construction projects.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Fatalities in freeway work zones dropped from a high of 27 in 1993 to zero in 1996.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work

CONTACT(S):

Richard J. Sesny, Manager, Regulations and Control Section, PennDOT

Telephone: (717) 783-6080

Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

218. UTAH

BEST PRACTICE/POLICY:

State Police Hired by the Contractor on the I-15 Project

DESCRIPTION OF THE BEST PRACTICE/POLICY:

To increase police visibility in work zones in an effort to help prevent work zone crashes.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for implementing the policy was to maintain a level of zero crash zone fatalities and curb any potential increase of crashes by our increased proactive efforts.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefits are still being realized. However, it is noted that police presence in work zones results in lower traffic speed, which is expected to result in a decrease in overall work zone crashes. It also keeps the police jurisdiction in the information “loop” as to activity within the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All projects, but particularly those where high user volume could occur.

CONTACT(S):

Robert Kelleher, State Director, FHWA

Telephone: (801) 963-0096, ext. 247

Sgt. Danny Catlin, Utah Highway Patrol

Telephone: (801) 965-4676

Best Practices Area 10. ITS and Innovation Technology

STATE-OF-THE-ART

The ITS systems are used to automatically collect and analyze before, during, and after traffic flows in the work zone; provide accurate real-time information automatically to motorists and to the construction team; enforce speed; as well as safely guide motorists through the work zone.

To achieve state-of-the-art ITS and innovative technology, transportation agencies would need to:

- Enhance the software and communication modules in existing portable traffic management systems, in order to provide accurate real-time traffic information automatically to motorists and the construction team.
- Utilize portable or fixed traffic management systems to collect and disseminate real-time information to motorists in all work zones:
 - ✓ On high-speed, high-volume facilities,
 - ✓ Involving lane and ramp closures,
 - ✓ Located in severely restricted areas, and
 - ✓ Involving major changes to existing traffic patterns.
- Develop effective tools and techniques for safely and efficiently merging traffic approaching a work zone with lane closures.
- Develop effective tools, techniques, and enforcement for slowing down traffic approaching work zones, as well as maintaining a safe speed through work zones.
- Develop automated/robotic equipment to perform high-exposure, short-term maintenance operations.
- Develop a positive barrier system, with a gawk screen, that provides lateral protection to workers performing mobile construction and maintenance operations.
- Develop a cost-effective, positive barrier system that provides lateral protection to workers performing static short-term maintenance operations.
- Develop erasable, temporary pavement markings that do not produce a shadow/ghost when removed.



PTMS with mast mounted video and RF antenna.

- Develop a cost-effective, quick way to remove, cover, and/or obliterate existing pavement markings to prevent a conflict with new markings; and/or do not produce a shadow or ghost.
- Showcase success stories.

The following “best practices” relate to ITS and innovative technology practices:

Subcategory	Ref. #	ITS and Technology Best Practice
Traffic Control	219	Highway Closure and Restriction System
	220	Mobile Surveillance/Ramp Metering via wireless communication systems (This is a field operational test)
	221	Automated Data Acquisition and Processing of Traffic Information in Real-time
	223	Indiana lane merge
	225	Portable ITS technology in work zones.
	226	Condition-Responsive Work Zone Traffic Control (CRWZTC) System
	227	Evaluation of ADDCO's Advanced Portable CCTV System
	229	Portable Traffic Management System – Smart Work Zone
	231	“Trilogy” (In vehicle guidance)
	232	Portable ITS technology in work zones
Traveler Information	234	Evaluation of Portable Traffic Management System
	224	ATIS (Advanced Traveler Information System) or Indiana expert system
Work Zone Control	230	“Orion” (Traffic map/video in parking garages)
	222	Development of an automated machine for cone placement and retrieval
	228	Remotely Operated Autoflagger (Slow/Stop Sign)
	233	Use of 42" flexible cones (a.k.a. “Grabber Cones”)

219. ARIZONA

BEST PRACTICE/POLICY:

Highway Closure and Restriction System

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Highway Closure and Restriction System allows the Construction and Maintenance Offices throughout the State to input information relative to roadway closures or restrictions whether they be from highway activities, weather, or roadway incidents/accidents. This information may be retrieved either through the Internet or by telephone. Requests to activate the variable message signs are also included as a part of this system. The system went on line in January 1998.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The previous system used by ADOT was not usable by the general public. This system was designed to make work zone activities and road closure information more easily available to everyone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Provides real-time information to motorist and highway officials. Ease of access and quality of information. This system has been active for only a few months. The most recent month that information is available reported 135,366 web page hits.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of facility: All State highways

Location: Statewide

Volume/Speed: All volumes/speeds

Type of work: Any activity affecting traffic

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220. CALIFORNIA

BEST PRACTICE/POLICY:

Mobile Surveillance/Ramp Metering Via Wireless Communication Systems (This is a field operational test)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This practice features self-powered mobile surveillance trailers with various off-the-shelf technologies such as: wireless communication infrastructure operating in several unlicensed frequencies (spread spectrum), and video image processing. This technology is able to transmit images and traffic data (speed, volume, occupancy) to the Traffic Management Center (TMC) for locations without surveillance infrastructure, such as: sensors, loops, and CCTV, etc. The trailers can control ramp meters that may have had their surveillance disabled and remain in communication with the TMC. This is a field operational test in the final evaluation stage and has been operational since November of 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for exploring this method of traffic surveillance, is in some instances during construction, surveillance for essential links in the freeway system or in city street network, may be disrupted. If no existing surveillance infrastructure existed before construction begins and considerable traffic disruption is expected, this method would allow for collection of information that can be used to detour or inform the traveling public by activating variable message signs. During an event management scenario (Super Bowl, large conventions, or the State Fair), the trailers can be helpful in managing traffic.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This practice will allow the collection of traffic data (speed, volume, occupancy) and the transmittal of video images while the existing surveillance infrastructure is inoperable (due to construction, and maintenance, etc.) or if there is no existing infrastructure. Freeway ramp meters will be running in normal mode and will remain in communication with the Traffic Management Center although their sensors and loops may not be operating.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This method of collecting data can be utilized on freeways and city streets, in urban areas and rural areas, in a variety of construction activity.

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221. CALIFORNIA

BEST PRACTICE/POLICY:

Automated Data Acquisition and Processing of Traffic Information in Real-time (ADAPTIR)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A system which senses and processes data relating to current traffic conditions and automatically provides travelers with appropriate speed control, lane control, delay and diversion advisory messages via variable message signs (VMS), and highway advisory radio (HAR). The ADAPTIR is currently being used by Maryland DOT on an experimental basis and being evaluated by California DOT.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

ADAPTIR provides real-time information to travelers while improving safety and managing congestion in work zones. Currently there is better acceptance and adherence to information presented for the traveling public because the information is updated.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Possible accident reduction, congestion mitigation, and cost savings.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work on urban and rural freeways

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222. CALIFORNIA

BEST PRACTICE/POLICY:

Development of an Automated Machine for Cone Placement and Retrieval

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Caltrans is developing and field testing a machine that will mechanically place and retrieve cones, thus reducing maintenance personnel exposure to the hazards of traffic and physical exertion involved in handling the cones.

The development of the machine is being conducted by the Advanced Highway Maintenance and Construction Technology Center (AHMCT) (<http://www-anmct.engr.ucdavis/ahmct/>), which is jointly managed by the University of California, Davis and Caltrans.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Deployment of the cone is currently achieved by a person riding on the exterior of a modified vehicle. This process requires a considerable amount of manual effort and our personnel are exposed to the hazards of traffic in addition to the physical exertion involved in handling the cones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Workers exposure to the hazards of traffic will be reduced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Roadway maintenance – All freeways

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223. INDIANA

BEST PRACTICE/POLICY:

Indiana Lane Merge

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Indiana lane merge is a dynamic no passing zone placed prior to the taper of a work zone. The first sign includes flashing strobes which are always activated. Additional signs are automatically activated upstream of the work zone depending upon capacity. The Indiana lane merge is being evaluated under a research project which began in 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Indiana lane merge was developed to reduce aggressive merging near the taper and encourage motorist to switch lanes well upstream of the discontinuous lane taper. This improves traffic smoothness and safety in the work zone.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit realized from this practice is improved safety as a result of crash reduction. Phase II of the research will concentrate on measuring improved safety.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The primary type of project this practice is most applicable on is freeways both urban and rural. The Indiana lane merge is currently being tested on a very high-volume routes (I-80/I-94 (Borman Expressway)).

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224. INDIANA

BEST PRACTICE/POLICY:

Advanced Traveler Information System (ATIS) or Indiana Expert System

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The ATIS, Indiana Expert System, initially began as an operational test in 1996 for the Borman advanced traffic management system which is part of the GCM corridor. The expert system enables Hoosier Helper incident response teams to program messages to travelers from their vehicles at the site of an incident. The Indiana Expert System can send these messages to HAR, VMS, pagers, etc. simultaneously. The Indiana Expert System has also been used in the work zone to provide traveler information.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Indianan Expert System was adopted to reduce the time required to deliver real time messages to the public and minimize the number of people involved in the process. This information allows travelers to use alternative routes avoiding long delays and preventing additional crashes.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit realized is improved traveler information.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The Indiana Expert System is most applicable to urban and rural freeways, and is evolving into INDOT's statewide system.

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225. INDIANA

BEST PRACTICE/POLICY:

Portable ITS Technology in Work Zones – Indiana

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Indiana has used a variety of technologies including Highway Advisory Radio (HAR), Variable Message Signs (VMS), Indiana lane merge, 2/10 reference markers, tow truck service, ambulance service, closed circuit TV, and smiley-face signs. The “smart work zone” is a test case on the I-65 design/build project in FY 1998. The HAR is incorporated into the construction project and remains operational after construction to become a part of the State system. The ITS technologies have been used by INDOT for several years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The “smart work zone” includes various technologies to provide motorists with an earlier notice of when incidences occur. This information helps the motorist to consider other options. Also, it improves emergency response time to the incident.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefit realized is reduced congestion. Driver behavior is also improved due to making traveler information available.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The “smart work zone” is most applicable on freeway facilities both urban and rural. It is especially useful where high volume is experienced.

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226. MARYLAND

BEST PRACTICE/POLICY:

Condition-Responsive Work Zone Traffic Control (CRWZTC) System

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The CRWZTC System is a portable system designed to provide highway customers with real time traffic information in a work zone. This system enables drivers to make better driving decisions on approach to and throughout the length of a work zone. The system utilizes changeable message signs, highway advisory radio, queue detectors, and portable sensors, all controlled by a central computer which analyzes traffic volumes and speeds, and displays traffic delay information to the motorist.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This best practice was adopted to determine whether a system such as this can provide better traffic management in work zones. The system has been deployed two times for short periods for testing and evaluation. This system will undergo a more comprehensive implementation in the near future.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefits of the CRWZTC System will be to provide a smooth progression of traffic and a reduction of accidents through work zones. Furthermore, traffic volumes through the work zone will be reduced by providing motorists with the information they need to divert along an alternate route. Diversion messages may suggest an alternate route to take or the message may display the amount of travel delay to be expected.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All high-volume and recreational types of facilities – All types of work

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227. MARYLAND

BEST PRACTICE/POLICY:

Evaluation of ADDCO's Advanced Portable CCTV System

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Advanced Portable CCTV System is used to monitor traffic operations in construction and maintenance work zones. This system consists of one or more cameras and allows the project engineer to monitor the efficiency of traffic operations at selected sites in or on an approach to a work zone. This system was used for about 3 months in the spring of 1997.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This system allows the project engineer to observe any adverse traffic operations, including accidents, which may contribute to a breakdown in capacity. If such a condition were observed, the project engineer could then take immediate action to resolve the problem.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The system allows for the continuous monitoring of select locations within the work zone from a remote site. The ability to monitor the real-time traffic conditions within a work zone contribute to increased traffic capacity and a subsequent reduction in motorist delays.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

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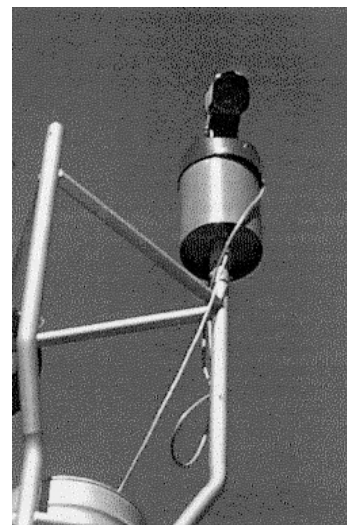
E-Mail: jpointdujour@sha.state.md.us



Rear view



Front view



Surveillance Camera

228. MINNESOTA

BEST PRACTICE/POLICY:

Remotely Operated Autoflagger (Slow/Stop Sign)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Mn/DOT is experimenting with a remotely controlled Stop/Slow Sign to be used in place of a human flagger on low-speed, low-volume, 2-lane highways.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Autoflagger is remotely controlled and requires only one person to operate. This effectively removes the flaggers from the traffic lane or shoulder thereby increasing their safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The remotely controlled Autoflagger increases the safety of the flaggers by removing them from the traffic lane or shoulder.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Use of the Autoflagger is limited to low-speed, low-volume, 2-lane highways. When used for lane closures, the length of lane closure is limited to 1000 ft. and there must be adequate sight distance.

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229. MINNESOTA

BEST PRACTICE/POLICY:

Portable Traffic Management System – Smart Work Zone

DESCRIPTION OF THE BEST PRACTICE/POLICY:

MnDOT has experimented with the Portable Traffic Management System or Smart Work Zone for the past 2 years. The system utilizes traffic detection cameras and a series of changeable message signs in and around the work zone area to manage traffic and can be fully deployed and operational within four hours.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The system was developed to utilize existing technology to better manage traffic through work zones. This technology enables traffic to be monitored and diverted to alternate routes during periods of congestion or when incidents occur.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The Portable Traffic Management System can be fully deployed and operational within four hours. Traffic can be managed more effectively to improve operations through construction zones. Changeable message signs effectively alert motorists regarding congestion and incidents through the work zone.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

The portable traffic management system or smart work zone is most effective in metropolitan areas where traffic can be diverted to alternative routes when construction or incidents create congestion.

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230. MINNESOTA

BEST PRACTICE/POLICY:

“Orion” (Traffic map/video in parking garages)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This system displays real time traffic information on Cable TV and on monitors in parking garages within the central business districts. Monitors are located at pedestrian access points to those parking garages with greater than 500 stalls.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Information gathered from previous operational tests demonstrated that the two most desired points where drivers want traffic information are immediately before departing and en route. Having monitors in the parking garages were strongly preferred over monitors in the office before leaving work.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This system provides real time, useful traffic information in the form that drivers want. With this information, drivers can make informed decisions and can be alerted to hazardous conditions before they begin their trip.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This system is most effective within the central business districts to provide drivers with real time traffic information just before they depart to and from work.

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231. MINNESOTA

BEST PRACTICE/POLICY:

“Trilogy” (In vehicle guidance)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This system provides traffic information created at the Traffic Management Center (TMC) into vehicles in real time. This was a two year operational test of the Radio Data Broadcast System (RDBS). Traffic information is overlaid on a graphic navigation display unit in the vehicle.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Market research revealed that people want real time traffic information , such as congestion, lane closures, and construction projects on a map displayed in the car on the dashboard.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The system provides real time useful traffic information in the form that drivers want. Drivers can use this information to make informed decisions and can be alerted to hazardous conditions as they drive.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This system is most effective in metropolitan areas where real time traffic information is available.

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232. MISSOURI

BEST PRACTICE/POLICY:

Portable ITS Technology in work zone – Missouri

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Portable ITS Technologies such as variable message signs (VMS), highway advisory radio (HAR), and queue length detectors have been utilized on various construction projects in Missouri. The queue length detector technology was used and evaluated on an I-70 Missouri River Bridge rehabilitation project in 1995 near Rocheport, Missouri. The use of video imaging for use in developing traffic management plans is under consideration as well as the use of traveler information systems in construction zones. Branson Travel and Recreation Information (TRIP) system is an ITS operational test in a tourist location which experiences fluctuations in tourist traffic. The lessons learned from Branson TRIP will be utilized in the future development of ITS techniques for application in traffic management plans.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The ITS technologies such as the queue length detectors provide additional data on the traffic situation and thus allow more effective management of the traffic thru the construction zones. The ITS technologies of VMS and HAR are effective methods to provide continuous and updated information to the traveling public as they approach or travel through the construction zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Benefits are improved traffic management thru the construction zones and reduction in frustration of traveling public if delays are experienced.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Type of Facility: Freeways, Streets, 2-lane/2-way highway, bridge, intersections
Location: Urban, Rural, Recreational, tourist locations with seasonal traffic
Volume/Speed: High-Volume/High-Speed, High-Volume/Low-Speed
Type of Work: Resurfacing, Reconstruction, Restoration/Rehabilitation

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233. OHIO

BEST PRACTICE/POLICY:

Use of 42" Flexible Cones (a.k.a. "Grabber Cones")

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Use of this device is still in the evaluation stage. The ODOT's evaluation began during the 1997 construction season. They expect to issue a policy on the use of this device within the next year. This device is used in the "activity" area of the work zone, with drums being used on transitions/tapers. The device spacing is 30 to 50 feet versus the standard spacing of 2S. The ODOT is also considering using this device in tapers on low-speed facilities. In that event, ODOT will permit the usage of this device in the transitions/tapers as well. When used in transitions/tapers, the device spacing will also be 30 to 50 feet.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The ODOT was looking for a device to use for short-term night time setups that could be installed/torn down quickly, and reduce the chance of driver confusion.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

1) Ease of installation/tear-down, which results in less exposure for the work crew during these periods, 2) Reducing the amount of time for installation/tear-down reduces the chance of driver confusion, and 3) Reduced spacing of the devices in the "activity" area presents the driver with more of a visual barrier between the travel way and the work area.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Resurfacing on freeways resurfacing

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234. PENNSYLVANIA

BEST PRACTICE/POLICY:

Evaluation of an Automatic Work Zone Traffic Management System (ASTI Transportation Systems' CHIPS (Computerized Highway Information Processing System)].

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Fully automatic traffic monitoring (24 hours a day) of a 2-year major freeway reconstruction project in Eastern Pennsylvania. The system consisted of queue detection with automatic radio communications to a temporary control center, VMS, CMS, HAR, temporary ramp meters, internet project web site, State enforcement officers, EMS, agencies, remote terminals to other key agencies, and pagers for key State and construction personnel. Provided real time information about traffic in the work zone with automatic messaging and control actions.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Provide effective communication with the motoring public and key local agencies and officials concerning real time traffic information throughout the project. Objective was to have well-informed drivers about stoppages ahead and to allow diversion to alternate routes as drivers determined, thereby reducing rear end crashes and delays.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A good safety record and efficient traffic flow, fulfilling the reasons listed above for using the system. Side benefit was improved public relations with commuters and local business officials.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeway Reconstruction Projects

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Best Practices Area 11. *Evaluation and Feedback*

STATE-OF-THE-ART

Uniform work zone crash data is collected electronically in all States and the raw data is simultaneously transmitted to the State DOT. Work zone crash data is automatically analyzed and trends and reports are periodically furnished to appropriate DOT offices (including, but not limited to, design and construction project personnel). Performance measures for work zone congestion/delay are used to evaluate how well agencies are meeting performance goals for mobility and safety in work zones. Motorists provide perspectives on how well their demands for mobility and safety in work zones are being met.

To achieve state-of-the-art evaluation and feedback, transportation agencies would need to:

- Adopt uniform work zone definitions and work zone data for reporting work zone crashes.
- Develop performance measures for work zone congestion and delay that can be applied to a specific project, as well as, Statewide and nationally.
- Develop and implement an electronic crash data collection system that simultaneously transmits the raw work zone crash data to the DOT.
- Collect and evaluate before, during, and after work zone traffic flow data.
- Conduct project area-wide customer surveys to routinely evaluate work zone acceptability.

The following “best practices” relate to evaluation and feedback:

Subcategory	Ref. #	Evaluation and Feedback Best Practices
Data Collection/ Analysis	238	Baseline of accidents in the work zone
	248	Analysis of work zone crash data
	256	Achievement – No work zone fatalities in 1996 and no work zone fatalities involving commercial vehicles in the past 5 years
	261	Analysis of work zone crash data
Driver Surveys	241	Analysis of truck drivers’ opinions on safety and traffic control on highway work zones
	250	Annual customer survey on effectiveness of traffic through work zones
	251	Customer survey for work zones Pennsylvania
Equipment Evaluation	253	Crash testing of work zone devices
	254	Research project on lighting configurations of work zone devices and equipment
Project Review	236	Traffic/Through Construction Workgroup
	237	City organized consultant and contractor Quality Improvement Team to recommend ways to build projects quicker, better, cheaper and safer. Peer review by other cities
	239	Involvement of the Colorado Contractor’s Association in annual work zone traffic control reviews
	240	Maintenance of Traffic Committee
	242	Total Quality Management Utility Relocation Team
	243	Evaluation of traffic management plans (successes and failures) after the project is complete
	244	Maintenance of Traffic Task Force
	245	Work Zone safety award program for county maintenance
	246	Work zone safety award program for MNDOT contractors and MNDOT employees
	247	Work zone safety committee
	249	Statewide Work Zone Inspection Program
	252	Work Zone Quality Assurance Review
Studies and Analysis	260	Work Zone Safety Task Force
	235	Research Project entitled “Effective Countermeasures to Reduce Accidents in Work Zones”
	255	Human factors project on motorist reaction to work zones
	258	Study – “Effectiveness of Unmanned Radar – A Speed Control Technique in Freeway Work Zones”
	259	Research Study – “Effectiveness of Changeable Message Signs (CMS) in Controlling Vehicle Speeds in Work Zones-Phase II”
262	Study – “Road Construction Safety Audit Procedure” (University of Wyoming)	

235. ARIZONA

BEST PRACTICE/POLICY:

Research Project: “Effective Countermeasures to Reduce Accidents in Work Zones”

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This research project is a part of ADOT’s current research program. The project is just getting underway. The research proposal has been reviewed and an approved Intergovernmental Agency Agreement with Arizona State University has been initiated. Dr. Jonathan Upchurch is the Principal Investigator for the project.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The frequency of work zone accidents has been identified as a problem in Arizona. Arizona has a goal to reduce the number of work zone accidents, fatalities, and injuries. This study will identify effective countermeasures for reducing work zone accidents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The goal is to reduce the number and frequency of work zone accidents. This will result in fewer injuries, fatalities and economic loss.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of highways – All types of work: Resurfacing, Reconstruction, Restoration/ Rehabilitation, Utility, etc.

CONTACT(S):

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Curt Litin, ADOT Traffic Design Group

Telephone: (602) 255-8687

236. ARIZONA

BEST PRACTICE/POLICY:

Traffic/Through Construction Workgroup

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This group has been meeting for several years to discuss work zone problems and to evaluate various countermeasures and determine ways to move traffic safely. The work group includes members from ADOT Traffic Design, Construction Operations, Roadway Design, the cities of Phoenix and Tempe, as well as local ATSSA members and FHWA.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This group provides a means for those most involved in traffic control to meet and discuss common problems and to resolve conflicts. Problem situations are discussed among those who are most qualified to suggest and make decisions.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Communication at this level between the State, cities, and the barricade companies resolve conflicts at a common level resulting in a win-win situation for all. This is partnering.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of highway work: Resurfacing, Reconstruction, Restoration/Rehabilitation, Utility, etc.

CONTACT(S):

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237. CITY OF PHOENIX, ARIZONA

BEST PRACTICE/POLICY:

City Organized Consultant and Contractor Quality Improvement Team to Recommend Ways to Build Projects Quicker, Better, Cheaper, and Safer – Peer Review by Other Cities

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This program was started approximately 13 years ago and is updated when applicable. This program brought together members of the Contractor and Consultant organizations to evaluate what the hurdles are to getting projects built faster, safer and at less cost. Following this study, the city invited representatives from other cities to come to Phoenix to review the recommendations and to refine the process.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The City of Phoenix realizes the impact local street construction has on the neighborhoods and schools and wanted to be more responsive to their needs. If projects could be built faster, they would have less impact, most likely save money and they believed the work would be done safer.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Less impact on the neighborhood community. Savings in construction dollars. Better relationships between the citizens, city band the construction/consultant groups.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All streets and highways

CONTACT(S):

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Jim Sparks, Traffic Engineer, City of Phoenix

Telephone: (602) 262-4435

238. CALIFORNIA

BEST PRACTICE/POLICY:

Baseline of Accidents in the Work Zone

DESCRIPTION OF THE BEST PRACTICE/POLICY:

A baseline of accident rates in the construction work zone has been established for projects completed in calendar year 1996.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The baseline of accident rates in the construction work zone was chosen to represent safety as a measure of performance in construction. Other performance measures included quality and workmanship (better), cost (cheaper), and time (faster).

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Quantifiable, and therefore credible data, for the sake of comparison between Caltrans districts and regions and statewide where further data refinement is available.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work and facilities

CONTACT(S):

Ken Kochavar, Safety/ITS Engineer
Telephone: (916) 498-5853

239. COLORADO

BEST PRACTICE/POLICY:

Involvement of the Colorado Contractor's Association in Annual Work Zone Traffic Control Reviews

DESCRIPTION OF THE BEST PRACTICE/POLICY:

As part of Colorado's 1997 Quality Assurance program, the Colorado Contractors Association (CCA) participated as a member in the statewide work zone traffic control review. The CCA's involvement during this inspection provided an industry perspective for the review team in addressing construction work zone practices.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Since CDOT, CCA, and the FHWA have a strong working relationship, their participation and input on the current safety devices and procedures, provided excellent feedback from the industry. This allowed the review team to incorporate additional findings and recommendations, simplifying standards, improving safety, and ensuring efficient traffic flow through work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

As a result of this partnership, CCA will continue to be an active member on the quality assurance review team for work zones. This offers industry support, buy in, and enhances the communication between contractors and government officials for properly maintaining traffic control on construction projects.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects – All locations

CONTACT(S):

Eldon Strong, Colorado Contractors Association

Telephone: (303) 290-6611

John Ward, Colorado Department of Transportation

Telephone: (303) 757-9592

240. FLORIDA

BEST PRACTICE/POLICY:

Maintenance of Traffic (MOT) Committee

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The MOT Committee consists of a multi-discipline team made up of representatives from construction, roadway design, maintenance, traffic engineering, safety, product evaluation, utilities and FHWA. Included are two non-voting members from industry: ATSSA and the Florida Transportation Builders Association (FTBA). The Committee functions under an advisory committee reporting to the State Highway Engineer; which consists of Directors of Design and Construction, State Safety Engineer, and State Maintenance Engineer. This Committee was established about 10 years ago.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To provide a regular, structured method to review and improve the conditions for safely handling traffic through construction work zones. Through regular bi-monthly meetings issues are worked on and policy/procedures are improved.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A multi-discipline team makes better, more informed decisions and is better able to advance the State of the practice. As part of the teams efforts, an annual statewide MOT conference is conducted for all interested participants from the construction industry, vendors, State, and local employees.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice is applicable to all types of construction projects on all types of facilities, but has the most significant impact of the more involved, more complex projects.

CONTACT(S):

Norbert Munoz, Safety Engineer, FHWA – Florida Division

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E-Mail: Norbert.Munoz@fhwa.dot.gov

Alan Lafferty, Product Evaluation Administrator (current MOT Chairman), Florida DOT

Telephone: (850) 414-4110

E-Mail: alan.lafferty@dot.state.fl.us

241. ILLINOIS

BEST PRACTICE/POLICY:

Analysis of Truck Drivers' Opinions on Safety and Traffic Control on Highway Work Zones

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This study was conducted to determine the truck drivers' travel characteristics, concerns about work zone traffic control devices, assessment of work zone features, as well as to determine the location of crashes and bad driving situations based on experiences and perceptions of truck drivers.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The study identified a number of problems, confirmed a few suspicions and provided reassurance regarding some good practices. Flagger visibility was an issue that was immediately acted upon by changing the color of the safety vest to yellow green. (Truck drivers indicated that flaggers were blending into the orange traffic control devices.) A similar study was performed a few years earlier looking at older drivers and general traffic control devices.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

Dennis Whitehead, Work Zone Manager, Illinois Department of Transportation

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Russ Jorgenson, Safety & Traffic Operations Engineer, FHWA, Illinois Division

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242. ILLINOIS

BEST PRACTICE/POLICY:

Total Quality Management Utility Relocation Team

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The TQM study was undertaken because of increasing concern from IDOT, FHWA, contractors, and utility companies regarding the coordination of utility relocation activities. The mission of the TQM Utility Relocation Team was to identify and recommend procedures to minimize the impact of utility relocation on construction projects. In 1993, the team conducted a review of the Illinois Department of Transportation (IDOT) utility relocation procedures and policies and reported findings and recommendations in a final report entitled, "TQM UTILITY RELOCATION TEAM REPORT," dated August 1997.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The study identified twelve problems ranging from plans not being submitted in a timely fashion to delays in obtaining ROW causing delays in relocation of utilities, to tree removal issues impacting relocations. There are numerous benefits already being realized as a result of the study. Each IDOT district hosts an annual meeting with the utility companies to discuss upcoming projects, as well as policies and procedures. Meetings are also convened prior to and during very complex projects with significant utility relocation work. There are also formal training programs for utility coordinators. Numerous other recommendations are early in their implementation but appear to have potential for significant improvement.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of work on urban facilities

CONTACT(S):

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243. INDIANA

BEST PRACTICE/POLICY:

Evaluation of Traffic Management Plans (TMS) (successes and failure) After the Project is Complete

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Preparation of a TMP evaluation report on individual projects is required by Chapter 81-1(3) of INDOT's Design Manual. The entire TMP process has not been in effect long enough to produce the first TMP Final Report.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This procedure was initiated to avoid repetitious use of procedures that do not work.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Failure will not be repeated and successes will be highlighted for use on other projects.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This is primarily applicable to high-volume arterials in urban and suburban areas.

CONTACT(S):

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244. MARYLAND

BEST PRACTICE/POLICY:

Maintenance of Traffic (MOT) Task Force

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The MOT Task Force is comprised of representatives from various offices: construction, design, districts, maintenance, traffic, and contractors, who review major problems pertaining to MOT. This Task Force reviews, investigates, and develops recommendations (for senior management) to improve the MOT for all work zone traffic control. Some issues referred to the MOT Task Force have been pavement edge drop-off protection, MOT cost overruns, revision of specifications, and safety training. The Task Force has been together for approximately 5 years.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This best practice was adopted to bring together a group of experts from various fields to solve complex MOT issues while providing safe and efficient movement of traffic through construction and maintenance work zones. Furthermore, this Task Force can quickly mobilize to address MOT issues that require an immediate response.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The biggest benefits realized from this best practice are: 1) good input from the various offices/associations, 2) better policies and/or directives are developed, 3) better information exchange and the reduction of potential problems, and 4) promotes development of a good working relationship with other offices.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

Wayne Styles, Traffic Policy and Management Team Leader, MDSHA
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245. MINNESOTA

BEST PRACTICE/POLICY:

Work Zone Safety Award Program for County Maintenance Employees

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Mn/DOT has had a Work Zone Safety Awards Program for county maintenance employees in place since 1994. This program is designed to recognize those counties which put forward outstanding work zone safety efforts on county maintenance projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This program was implemented to increase the awareness of work zone safety to counties and their maintenance workers by rewarding those whose work demonstrates outstanding efforts in work zone safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This award program has had a very positive impact toward improving work zone traffic control for county maintenance work throughout Minnesota.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All counties in the State of Minnesota are eligible to win this award.

CONTACT(S):

Bill Servatius – Mn/DOT Construction Programs Coordinator
Telephone: (651) 296-2721

246. MINNESOTA

BEST PRACTICE/POLICY:

Work Zone Safety Award Program for Mn/DOT Contractors and Mn/DOT Employees

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Mn/DOT has had a Work Zone Safety Awards Program in place since 1988. This program is designed to recognize those contractors and public agency personnel who have put forward outstanding work zone safety efforts on construction projects.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

This program was implemented to increase the awareness of work zone safety to contractors and Mn/DOT construction personnel by rewarding those whose work demonstrates outstanding efforts in work zone safety.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

This award program has had a very positive impact toward improving work zone safety consciousness with front-line workers.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All contractors and public agency personnel involved on a State supervised construction project are eligible to win this award.

CONTACT(S):

Bill Servatius – Mn/DOT Construction Programs Coordinator
Telephone: (651) 296-2721

247. MINNESOTA

BEST PRACTICE/POLICY:

Work Zone Safety Committee

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Minnesota has had a Work Zone Safety Committee for the past 5 years. This Committee has representation from contractors, consultants, vendors, trucking industry, local government, Mn/DOT, and the FHWA. The function of the Committee is to discuss problems, listen to comments, and make recommendations to improve work zone safety.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The Work Zone Safety Committee was developed to provide consistency in policies/procedures and gather expertise from all constituents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

By having cross sectional representation, the Committee has been more readily able to develop and implement solutions to work zone safety problems and ensure buy-in from all involved parties.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Not applicable.

CONTACT(S):

Mike Robinson – District Engineer (Committee Chairman), MnDOT
Telephone: (218) 723-4960

248. NEW YORK

BEST PRACTICE/POLICY:

Analysis of Work Zone Crash Data

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The New York State Department of Transportation (NYSDOT) also compiles work zone fatalities and injury accidents based on type, area within the work zone, and driver characteristic, etc. The data is categorized and analyzed also by type of collision. This information is used to identify trends in driver behavior and work zone emphasis areas, as well as for reporting purposes to the FHWA and NYSDOT in their Annual Report. The information is collected at the NYSDOT Regional level and collected and analyzed by the main office. The information is categorized in many ways including the following:

- 1) Accident Category (fatal, hospital, minor, unknown)
- 2) Accident Type (i.e., rear end, worker hit by vehicle, etc.)
- 3) Work Zone Situation (i.e., alternating 1-way traffic, lane shift, etc.)
- 4) Project Related Traffic Accidents at Flagger-Controlled Locations (i.e., head-on, sideswipe, etc.)
- 5) Project Related Traffic Accidents Related to Project Type (i.e., bridge, pavement, maintenance, etc.)
- 6) Project Related Traffic Accidents Related to Facility Type (principal arterial interstate, minor collector, etc.)
- 7) Project Related Traffic Accidents Related to Driver Characteristics (age, sex, locality)
- 8) Project Related Traffic Accidents Related to Time of Day (daytime, nighttime, hourly, etc.)
- 9) Accidents Involving DOT Employees (i.e., trip or fall, vehicle struck worker, etc.)
- 10) Accidents Involving Consultant Employees
- 11) Accidents Involving Contractor Employees (i.e., fall from elevated structure, work zone intrusion, etc.).

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To identify trends and develop countermeasures to reduce the deaths and injuries associated with the accidents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Reduced fatalities and injuries as a result of the countermeasures.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All New York State Department of Transportation projects

CONTACT(S):

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249. NEW YORK

Best Practice/Policy:

Statewide work zone inspection Program

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The NYSDOT has a very aggressive safety program within the department which is committed from top management all the way down to the project level inspectors. The safety program includes worker safety, as well as maintenance and protection of traffic. The annual statewide survey of maintenance and protection of traffic was conducted for the tenth consecutive year, with results indicating a continuation of steady improvement. Each year NYSDOT inspects approximately 25 percent of all active NYSDOT construction projects. The purpose of the Statewide Work Zone Inspection Program is to gather information which enables NYSDOT to evaluate the overall adequacy of work zone traffic control on department projects and to identify areas where improvements are needed. The evaluation encompasses the entire scope of the departments efforts including design, implementation, and maintenance of work zone traffic control. It reflects the department standards, practices, and policies on a statewide basis as well as the training, knowledge, and attention to detail of project level personnel. The program also serves to promote the open exchange of ideas between Regional and Central Office personnel. The NYSDOT evaluates the work zones based on a zero through five rating system. Emphasis Points are also developed based on trends that are observed in the previous years inspections. A report is written up for each project that is inspected. Any project that receives a rating of three or less for daytime construction or a four or less for nighttime construction, is given a list of corrective actions that the NYSDOT Regional Office must take to bring the project into compliance. The Regional Director must also submit the steps that have been taken to improve the deficiencies that were documented during the review to the NYSDOT Chief Engineer. Training initiatives are developed each year based on deficiencies that are observed during the field reviews Specifications are also considered when deficient areas are identified that are a result of lack of specificational guidance.

The NYSDOT also compiles work zone accidents based on type, area within the work zone, and driver characteristic, etc. This information is used to identify trends in driver behavior and work zone emphasis areas, as well as for reporting purposes to the FHWA and NYSDOT in their Annual Report.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Continual improvement of maintenance and protection of traffic on New York State Highways through a process of evaluating uniformity and compliance with state standards.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Effective traffic control through maintenance and construction work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All work zones on New York State highways, with an emphasis on construction and maintenance work zones.

CONTACT(S):

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250. CITY OF COLUMBUS, OHIO

BEST PRACTICE/POLICY:

Annual Customer Survey on Effectiveness of Traffic Through Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This best practice is the conducting of a survey of your customers to determine the effectiveness of the Paving the Way program. A survey is conducted at the beginning of the year and at the end of the year.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The reason for adopting the policy was to determine the effectiveness of the Paving the Way program and to ensure that the customer's need are being met.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The benefit is that the public is that Paving the Way is able to modify their program in order to meet the customer's.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of projects

CONTACT(S):

Kim Shepherd, Coordinator, City of Columbus
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E-Mail: CPShepherd@cmhmetro.net

251. PENNSYLVANIA

BEST PRACTICE/POLICY:

Customer Survey for Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The Pennsylvania Department of Transportation conducted a random telephone survey of over 1,000 Pennsylvania licensed drivers to learn about their perception of Pennsylvania work zones. The questions included safety, sign clutter, adequacy of information, and lengths of work zones. The survey was conducted in 1998.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To learn how our “customers” perceive us.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The top three concerns are: Receiving timely and accurate information about congestion, delays and detours; receiving adequate guidance through the work zone; and safety. Sixty nine percent of our costumers ranked Pennsylvania work zones as good or excellent.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All types of facilities – All types of work

CONTACT(S):

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Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

252. PENNSYLVANIA

BEST PRACTICE/POLICY:

Work Zone Quality Assurance Review

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Since 1988 the Bureau of Maintenance has conducted on-site evaluations of the Work Zone Traffic Control of in-progress maintenance work operations using a prepared check list — WZTC Quality Assurance Review Form.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

1. To assess compliance with Department policy (Pub. 203).
2. To identify deficiencies and recommend corrective action.
3. To identify training needs and target audience.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

1. Ensures compliance with Department policy.
2. Increases safety within Work Zone.
3. Provides training.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Any maintenance activity involving work traffic control set-up within Work Zone.

CONTACT(S):

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Michael J. Castellano, FHWA, Pennsylvania Division Office

Telephone: (717) 221-4517

253. TEXAS

BEST PRACTICE/POLICY:

Crash Testing of Work Zone Devices

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Crash testing of generic, non-proprietary work zone traffic control devices to verify compliance with crashworthy criteria contained in the National Cooperative Highway Research Program Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features (also known as NCHRP 350).

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Previous TxDOT testing showed that Work Zone Traffic Control Devices could be hazardous and typically did not perform to the same standards as permanently installed traffic control devices.

The FHWA mandate that required most types of traffic control devices be NCHRP 350 compliant by October 1, 1998.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Crashworthy devices that should result in safer work zones.

Lighter devices that may be easier to transport and install.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

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254. TEXAS

BEST PRACTICE/POLICY:

Research Project on Lighting Configurations of Work Zone Devices and Equipment

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Research project uses a sequencing light which repeatedly runs across the taper. Still in research/development stage.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

We are experiencing problems with drivers going through the taper and into the work area at lane closures for nighttime operations such as lane closures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Non-applicable.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Freeways – All types of work with a taper

CONTACT(S) :

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255. TEXAS

BEST PRACTICE/POLICY:

Human Factors Project on Motorist Reaction to Work Zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

To determine the anxiety level of motorists as the drive through commonly used traffic control setups.

To determine the comfort level of motorists with respect to their operating speed.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Need to improve safety and the comfort of motorist in work zones.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Non-applicable.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All locations – All types of work

CONTACT(S):

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256. UTAH

BEST PRACTICE/POLICY:

Achievement – No Work Zone Fatalities in 1996 and No Work Zone Fatalities Involving Commercial Vehicles in the Past 5 Years

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Achievement is credit to community at large and numerous factors that involve agency emphasis, commercial vehicle awareness efforts, public education, statistical variations, and cooperation among jurisdictions.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

N/A

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Safety to workers and traveling public.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

N/A

CONTACT(S):

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257. UTAH

BEST PRACTICE/POLICY:

Project specific customer surveys on I-15 project to evaluate the effectiveness of minimizing delays and enhancing the safety of work zones

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This practice was implemented as a part of the I-15 reconstruction contract and the surveys actually began shortly after construction began. This practice basically consists of mail-out surveys and central location surveys to acquire input from the traveling public on the effectiveness of the maintenance of traffic measures utilized on the project. Changes are made if problem areas are identified by the surveys.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The main reason for adopting this practice was the sheer size of the I-15 reconstruction project and the fact that it will undoubtedly impact most of the traveling public in the Salt Lake City at one time or another. This practice is an effort to incorporate that large database of public opinion to or reaction to the project maintenance of traffic measures.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Extensive public input into the traffic control measures as well as modifications based on input received.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Large urban projects.

CONTACT(S)

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258. VIRGINIA

BEST PRACTICE/POLICY:

Study of “Effectiveness of Unmanned Radar – A Speed Control Technique in Freeway Work Zones”

DESCRIPTION OF THE BEST PRACTICE/POLICY:

In 1996, the VDOT purchased 36 drone radar devices for use in construction work zones on the interstate system. A study was performed in 1997 which evaluated the effectiveness of the drone radar devices in slowing speeding motorists. The devices were successful in reducing the overall speeds in the selected work zones by an average of 3 to 4 miles per hour, and also reducing the speed variance of motorists traveling through the work zones.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

To reduce excessive speeding and speed variance through freeway construction work zones, and to increase awareness and reduce work zone accidents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

A slight reduction in both the overall speeds and the speed variance through the freeway work zones.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Urban and Rural Freeway Roadways Statewide.

CONTACT(S):

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259. VIRGINIA

BEST PRACTICE/POLICY:

Research Study – Effectiveness of Changeable Message Signs (CMS) in Controlling Vehicle Speeds in Work Zones-Phase II.

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This research studied the use of radar speed detection and display in work zones to slow traffic in work zones. Research was completed in 1998. Practices not yet implemented.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

Attempt to slow speeds in work zones to posted or advisory speeds.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

N/A at this time

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All high-speed facilities – All types of work

CONTACT(S):

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260. WASHINGTON

BEST PRACTICE/POLICY:

Work Zone Safety Task Force

DESCRIPTION OF THE BEST PRACTICE/POLICY:

This Task Force is comprised of Washington State Department of Transportation (WSDOT) Service Center and Regional representatives from design, construction, maintenance, traffic, and employee safety, along with representatives from Washington State Patrol, the construction industry, local professionals, and technical engineers. The Task Force initially identified 28 recommendations with the purpose of reducing work zone traffic related accidents and continues to meet quarterly to monitor progress with the implementation of the recommendations and to develop new initiatives.

REASON(S) FOR ADOPTING THE BEST PRACTICE POLICY:

The Task Force was initiated in response to the increase in work zone accidents and near miss traffic incidents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

The Task Force brings attention and focus to work zone safety with high level support. Issues are addressed by a multi-disciplined team. Numerous actions to improve work zone safety have been implemented as a result of their Task Force.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

All inclusive

CONTACT(S):

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261. WYOMING

BEST PRACTICE/POLICY:

Analysis of Work Zone Crash Data

DESCRIPTION OF THE BEST PRACTICE/POLICY:

The State Traffic Engineer continuously monitors construction related accidents and submits an annual report to the State Construction Engineer.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

The intent of this analysis is to correct problems with accident locations as they develop and to determine accident trends and the relationship between various methods of traffic control and accident incidents.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

Since this analysis is coordinated with other sections within WYDOT, actions (such as revising traffic control standards) can be taken to clarify/correct recurring observations. These corrective actions could involve situations in planning, pre-construction, construction, and maintenance.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

This practice/policy is applicable for all work zones.

CONTACT(S):

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262. WYOMING

BEST PRACTICE/POLICY:

Study – Road Construction Safety Audit Procedure (University of Wyoming)

DESCRIPTION OF THE BEST PRACTICE/POLICY:

Develop a safety audit procedure for WYDOT to use in evaluating alternatives for rural Interstate reconstruction projects. This procedure is being developed by the University of Wyoming under a research contract.

REASON(S) FOR ADOPTING THE BEST PRACTICE/POLICY:

A formal process to select reconstruction alternatives based on a safety perspective does not currently exist.

BIGGEST BENEFIT(S) BEING REALIZED FROM THIS BEST PRACTICE/POLICY:

After this procedure is developed, WYDOT engineers will be able to systematically compare and evaluate benefits, costs, and trade-offs of the various work zone and traffic redirection alternatives.

LOCATION AND TYPE(S) OF PROJECTS WHERE THIS PRACTICE/POLICY IS MOST APPLICABLE/EFFECTIVE:

Reconstruction on rural freeways

CONTACT(S):

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