The Maryland Quality Initiative (MdQI) Fourteen Years of MdQI Continuous Quality Improvement

Agenda

- Why Maryland Quality Initiative?
- History of MdQI
- Mission Statement
- Organization & Structure
- Achievements
- 2006 and Beyond
- Lessons Learned
Why Maryland Quality Initiative?

- Many organizations were meeting independently to address quality issues
- Needed forum for the exchange of ideas and cooperation within the highway industry
- Quality cannot be achieved without the commitment of all stakeholders
- Quality Strategies as a way of doing business

History of MdQI

- Maryland Highway Contractor’s Meetings
- Development of “Maryland With Pride” Awards Program
- Agreement made among Maryland’s key highway organizations to hold a statewide conference
- Initial charter signed & steering committee formed with the five sponsoring agencies
History of MdQI

- Maryland’s first NQI “Road to Quality” Conference/Workshop
- Some of the early initiatives
  - Performance evaluation for contractors
  - Performance evaluation for consultants
  - Performance evaluation for SHA
  - Reduced retainage
  - Re-wrote Specification Book 1993-1994 with contractor input

MdQI Mission Statement

“To provide the Maryland highway industry a forum that fosters coordinated and continuous quality improvement in order to ensure safe, efficient, and environmentally sensitive highways which meets the needs of all transportation stakeholders”
History of MdQI

- Six sub-committees were formed to consolidate the activities of the highway industry
  - Highway Operations
  - Project Development
  - Conference
  - Partnering
  - Training & Recruitment
  - Public Relations/Marketing
  - Safety (2005)
- MdQI Steering Committee meets monthly to address issues arising from our Annual Conference as well as new issues. Teams formed within Subcommittees.

1998

History of MdQI

- Maintain relationship with National Partnership For Highway Quality (NPHQ) Throughout our History
- Participate in NPHQ National Awards
- NPHQ Lead State
- NPHQ State Quality Partnership Accreditation Tier I & II (2006)
Growth of Sponsoring Agencies

Signed 3 New Charters To Incorporate New Members

Current MdQI Structure

MdQI Steering Committee
Doug Rose (SHA) Co-Chairman
Dan Cheng (ACEC & JMT) Co-Chairman

Highway Operations Sub-Committee
Public Relations Sub-Committee
Conference Sub-Committee
Safety Sub-Committee
Project Development Sub-Committee
Partnering Sub-Committee
Training & Recruitment Sub-Committee
Subcommittees

- **Highway Operations**: Innovative contract, maintenance, materials, specifications and construction issues
- **Project Development**: Planning, design, project delivery & environmental stewardship
- **Partnering**: Improve/enhance partnering process
- **Training & Recruitment**: Promote careers in engineering and construction, student outreach
- **Public Relations**: Promotes awareness of MdQI through media, newsletters and website (www.mdqi.org)
- **Safety**: Promotes work zone safety
- **Conference**: Organizes annual conference & Awards Banquet

Annual Conference

- **Two Days in January**
  - Day One
    - Luncheon
    - Vendor and Technology Exhibits
    - Interactive Workshops
  - Day Two
    - CEO Breakfast with Key Officials
    - Vendor and Technology Exhibits
    - Opening Session and Keynote Speaker
    - Technical Presentations
    - Luncheon
    - Technical Presentations
    - Training Opportunities
    - Banquet with Key Officials
    - Recognition of 20+ Awards of Excellence
      - Concrete & Asphalt Plants
      - DBE/Sub-Contractors
      - Unique Projects - Roundabouts
  - 2006 - Largest conference to date with 550 participants and 750 attendees for the Awards Ceremony
Achievements: Key Initiatives of Recent Years

- Partnering in Design/Construction
- Construction & Engineering Career Day
- Industry/SHA Technical Team
- Superpave Implementation
- NPHQ Lead State
- Partnering-Training Boot Camp
- Pavement Selection Program

Achievements

- Implemented contractor/consultant evaluation forms
- Implemented reduced retainage process
- Implemented appeal process for consultant errors and omissions
- Developed formal partnering guidelines for construction
- Developed 2nd Manual for Partnering in Design and Construction
- Established teams to reduce change orders
- Promoted ITS technology in incident management and work zones
- Improved project closeout and materials clearance
- Implemented District special projects guidelines
Achievements

- Developed ADA Training Program
- Implemented “Thinking Beyond the Pavement” Concepts (1999) which is now called “Context Sensitive Solutions”
- Implemented QC/QA measures and specifications
- Improved SHA's technology transfer program
- Executive leadership team
- Provided context sensitive design training
- MdQI newsletter and webpage: www.mdqi.org
- Implemented design build/best value/PPP
- Implemented safety team
- Introduction of construction mediation
- CPM specification rewrite
- Implementation of SHRP in Maryland
- Implemented Ride Smoothness Incentive

Benefits to Construction Program

- Partnering
  - Improves communication
  - Eliminates adversarial relationships
  - Streamlines project closeout (100 days on average)
  - Eliminates or minimizes delays
  - Reduced claims on construction projects
  - Reduces change orders
  - 91% or 118 out of 130 active construction projects were partnered as of June 2006. Represents 98% of all construction funds
- Measurement of partnering
- Value engineering
- Expedited Material clearance
Benefits to Construction Program

1994-1999 Change Orders Averaged 11.4%

FY 2000-2004 Change Order Totals:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>510</td>
<td>424</td>
<td>416</td>
<td>486</td>
<td>476</td>
</tr>
<tr>
<td>Change Order Cost</td>
<td>$19,603,949</td>
<td>$24,344,298</td>
<td>$18,329,000</td>
<td>$22,579,395</td>
<td>$24,880,545</td>
</tr>
<tr>
<td></td>
<td>5.45%</td>
<td>5.07%</td>
<td>3.06%</td>
<td>4.20%</td>
<td>4.62%</td>
</tr>
<tr>
<td>Expenditures</td>
<td>$359,503,036</td>
<td>$480,604,849</td>
<td>$599,750,463</td>
<td>$538,077,917</td>
<td>$636,261,110</td>
</tr>
</tbody>
</table>

Settled vs. Claimed 1988 thru 1997

<table>
<thead>
<tr>
<th>Year</th>
<th>$ Settled</th>
<th>$ Claimed</th>
<th>Linear ($ Claimed)</th>
<th>Linear ($ Settled)</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>$50,830.16</td>
<td>$1,483,762.39</td>
<td>$264,273.07</td>
<td>$4,673,944.03</td>
</tr>
<tr>
<td>89</td>
<td>$11,453,472.86</td>
<td>$1,091,707.77</td>
<td>$3,668,740.15</td>
<td>$2,039,423.38</td>
</tr>
<tr>
<td>90</td>
<td>$28,448.00</td>
<td>$4,073,594.02</td>
<td>$1,562,720.79</td>
<td>$14,557,739.00</td>
</tr>
<tr>
<td>91</td>
<td>$31,940,543.49</td>
<td>$3,045,897.05</td>
<td>$10,026,675.97</td>
<td>$10,131,146.23</td>
</tr>
<tr>
<td>92</td>
<td>$33,171,312.27</td>
<td>$2,545,602.02</td>
<td>$5,497,364.03</td>
<td>$5,497,364.03</td>
</tr>
<tr>
<td>93</td>
<td>$34,890,450.00</td>
<td>$2,116,197.31</td>
<td>$5,185,187.31</td>
<td>$5,185,187.31</td>
</tr>
<tr>
<td>94</td>
<td>$36,604,600.00</td>
<td>$1,787,197.22</td>
<td>$4,895,364.03</td>
<td>$4,895,364.03</td>
</tr>
<tr>
<td>95</td>
<td>$38,318,800.00</td>
<td>$1,475,197.22</td>
<td>$4,605,364.03</td>
<td>$4,605,364.03</td>
</tr>
<tr>
<td>96</td>
<td>$39,812,900.00</td>
<td>$1,165,197.22</td>
<td>$4,315,364.03</td>
<td>$4,315,364.03</td>
</tr>
<tr>
<td>97</td>
<td>$41,231,600.00</td>
<td>$855,197.22</td>
<td>$4,025,364.03</td>
<td>$4,025,364.03</td>
</tr>
<tr>
<td>Total</td>
<td>$413,086,787.86</td>
<td>$20,786,974.00</td>
<td>$110,026,675.97</td>
<td>$110,026,675.97</td>
</tr>
<tr>
<td>Count</td>
<td>12</td>
<td>5</td>
<td>21</td>
<td>28</td>
</tr>
</tbody>
</table>

1988-1997

<table>
<thead>
<tr>
<th>Year</th>
<th>$ Settled</th>
<th>$ Claimed</th>
<th>Linear ($ Claimed)</th>
<th>Linear ($ Settled)</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>$50,830.16</td>
<td>$1,483,762.39</td>
<td>$264,273.07</td>
<td>$4,673,944.03</td>
</tr>
<tr>
<td>89</td>
<td>$11,453,472.86</td>
<td>$1,091,707.77</td>
<td>$3,668,740.15</td>
<td>$2,039,423.38</td>
</tr>
<tr>
<td>90</td>
<td>$28,448.00</td>
<td>$4,073,594.02</td>
<td>$1,562,720.79</td>
<td>$14,557,739.00</td>
</tr>
<tr>
<td>91</td>
<td>$31,940,543.49</td>
<td>$3,045,897.05</td>
<td>$10,026,675.97</td>
<td>$10,131,146.23</td>
</tr>
<tr>
<td>92</td>
<td>$33,171,312.27</td>
<td>$2,545,602.02</td>
<td>$5,497,364.03</td>
<td>$5,497,364.03</td>
</tr>
<tr>
<td>93</td>
<td>$34,890,450.00</td>
<td>$2,116,197.31</td>
<td>$5,185,187.31</td>
<td>$5,185,187.31</td>
</tr>
<tr>
<td>94</td>
<td>$36,604,600.00</td>
<td>$1,787,197.22</td>
<td>$4,895,364.03</td>
<td>$4,895,364.03</td>
</tr>
<tr>
<td>95</td>
<td>$38,318,800.00</td>
<td>$1,475,197.22</td>
<td>$4,605,364.03</td>
<td>$4,605,364.03</td>
</tr>
<tr>
<td>96</td>
<td>$39,812,900.00</td>
<td>$1,165,197.22</td>
<td>$4,315,364.03</td>
<td>$4,315,364.03</td>
</tr>
<tr>
<td>97</td>
<td>$41,231,600.00</td>
<td>$855,197.22</td>
<td>$4,025,364.03</td>
<td>$4,025,364.03</td>
</tr>
<tr>
<td>Total</td>
<td>$413,086,787.86</td>
<td>$20,786,974.00</td>
<td>$110,026,675.97</td>
<td>$110,026,675.97</td>
</tr>
<tr>
<td>Count</td>
<td>12</td>
<td>5</td>
<td>21</td>
<td>28</td>
</tr>
</tbody>
</table>

Annual Construction Career Day

- This year we held our 3rd Annual Highway Construction & Engineering Career Day
Annual Construction Career Day

- Over 500 high school students in search of a rewarding career
- College-bound and non college-bound students
- Teachers, counselors, and other education officials
- Community college students, Urban Youth League, Job Corps., etc.

Communication

Website: www.mdqi.org

Semi-Annual Newsletter with Industry Briefs
MdQI National Awards

- **I-270 Design and Interstate Reconstruction**
  - NQI Achievement Award - 1995
- **MD 450/US Naval Academy Bridge**
  - NQI Achievement Award - National Finalist 1997
- **I-695 Baltimore Beltway Widening**
  - NQI Achievement Winner - Gold Level Award - 1999
- **Making a Difference State Quality Initiative**
  - Gold Level Award - 2000
- **US 413 Phase I**
  - NPHQ Recognition Award For Quality In A Small Project - 2001
- **Making a Difference Partnering - Silver Level Award - 2002**
- **Canal Parkway**
  - NPHQ Achievement Winner - Gold Level Award - 2003
- **Woodrow Wilson Bridge - Air Bubble Curtain System ("ABCS")**
  - NPHQ - Gold Level Award - 2004
- **Woodrow Wilson Bridge - Making a Difference**
  - Risk Taking NPHQ - Silver Level Award - 2004
- **I-270 - Rockledge Drive & MD187 Interchange Project**
  - NPHQ - Partnering Gold Level Award - 2004

2006 and Beyond

- Increase industry involvement and participation
- Increase membership - MSP, MDE, MOSH & Academia
- Partnering with utility companies
- Contract administration methods
  - G.E.C. construction management by consultants
- E&S specifications
- Technologies and innovations
  - Stakeless grading
  - Intelligent Compaction Program
  - Moveable Traffic Barriers
  - Concrete Maturity Meter Pilot
- Recycled Materials Specification
2006 and Beyond

- Mega projects
  - Woodrow Wilson Bridge
    - $2.5 billion est.
  - I-95/Section 100 – $850 million est.
  - Intercounty Connector – $2.4 billion est.
- Managed lanes/express toll lanes
- Performance specifications
  - Warranties
- Best value

Lessons Learned

- Commitment From the Top
- Evolutionary Process
- Monthly Steering Committee Meetings
  - Advance Agendas
  - Good Note Taking
  - Develop Action Items
  - Chief Engineer Rotation
- Contractors hard to get to table
- Assure Sponsoring Agencies, Contractors and Consultants are on each sub-committee. 2 Chairs for each sub-committee.