



DYE MANAGEMENT GROUP, INC.



Building a Business Case for Bridge Maintenance

Presentation to the
2010 Western Bridge Preservation Partnership

William D. Dye
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Making Your Business Case

- I. Run a good program
- II. Know your decision makers
- III. Speak their language
- IV. Case study



Clients

Alaska DOT

Arizona DOT

California DOT

Colorado DOT

Idaho Dot

Montana DOT

New Mexico DOT

Oregon DOT

Hawaii DOT

Utah DOT

Washington DOT

South Dakota DOT



Dye Management Group, Inc.

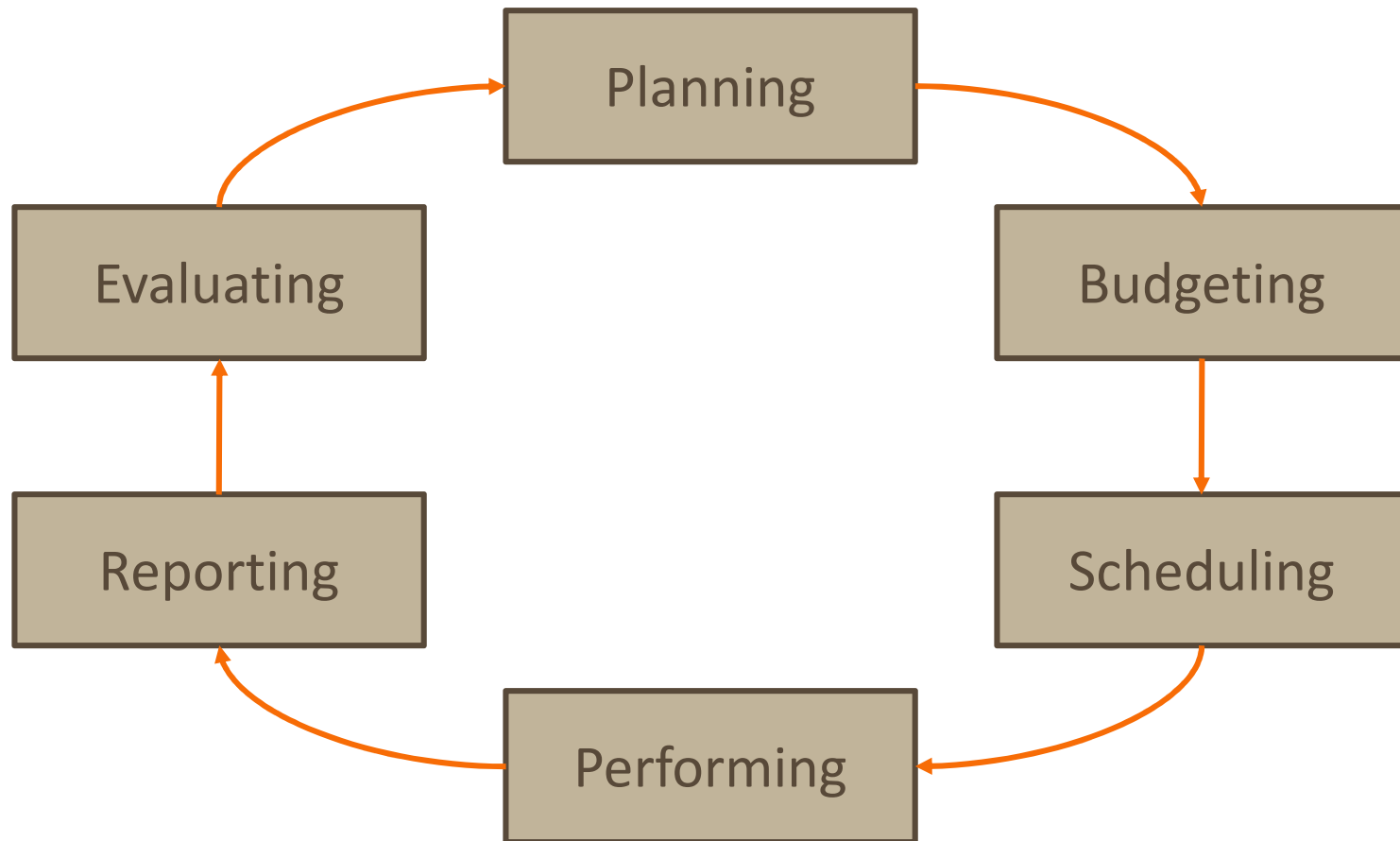
- Management consulting firm – transportation agencies
- Business process improvement
- Policy and planning
- Information technology
- Leader-Linking technical work to decisions
- President-Former state budget director



I. Run a Good Program



Comprehensive Maintenance





Tools and Techniques

- Maintenance quality assurance
- Preventive maintenance
- Asset management/life-cycle cost analysis
- Maintenance management systems
- Bridge management systems
- Budget models
- Citizen surveys



Maintenance Quality Assurance

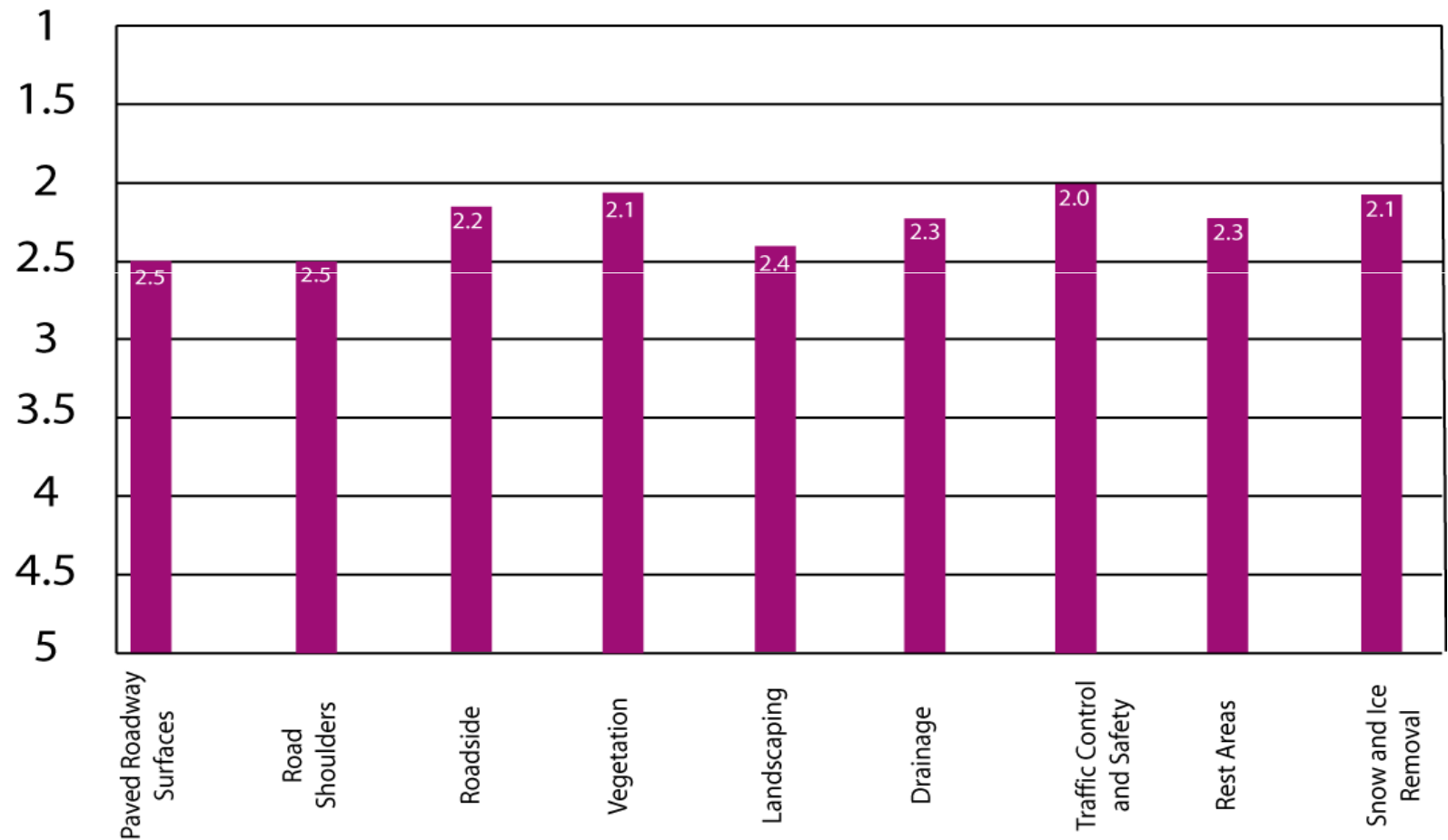
- Approach Slabs
 - Percent of approaches with a differential height greater than $\frac{3}{4}$ -inch
- Deck Spalling / Potholes
 - Number of holes and spalls with a depth of 1 inch or more.
- Deck Cracking
- Linear feet of cracking at least $\frac{1}{4}$ -inch wide



Maintenance Quality Assurance

Current Level of Service

Level of
Service
Ranking

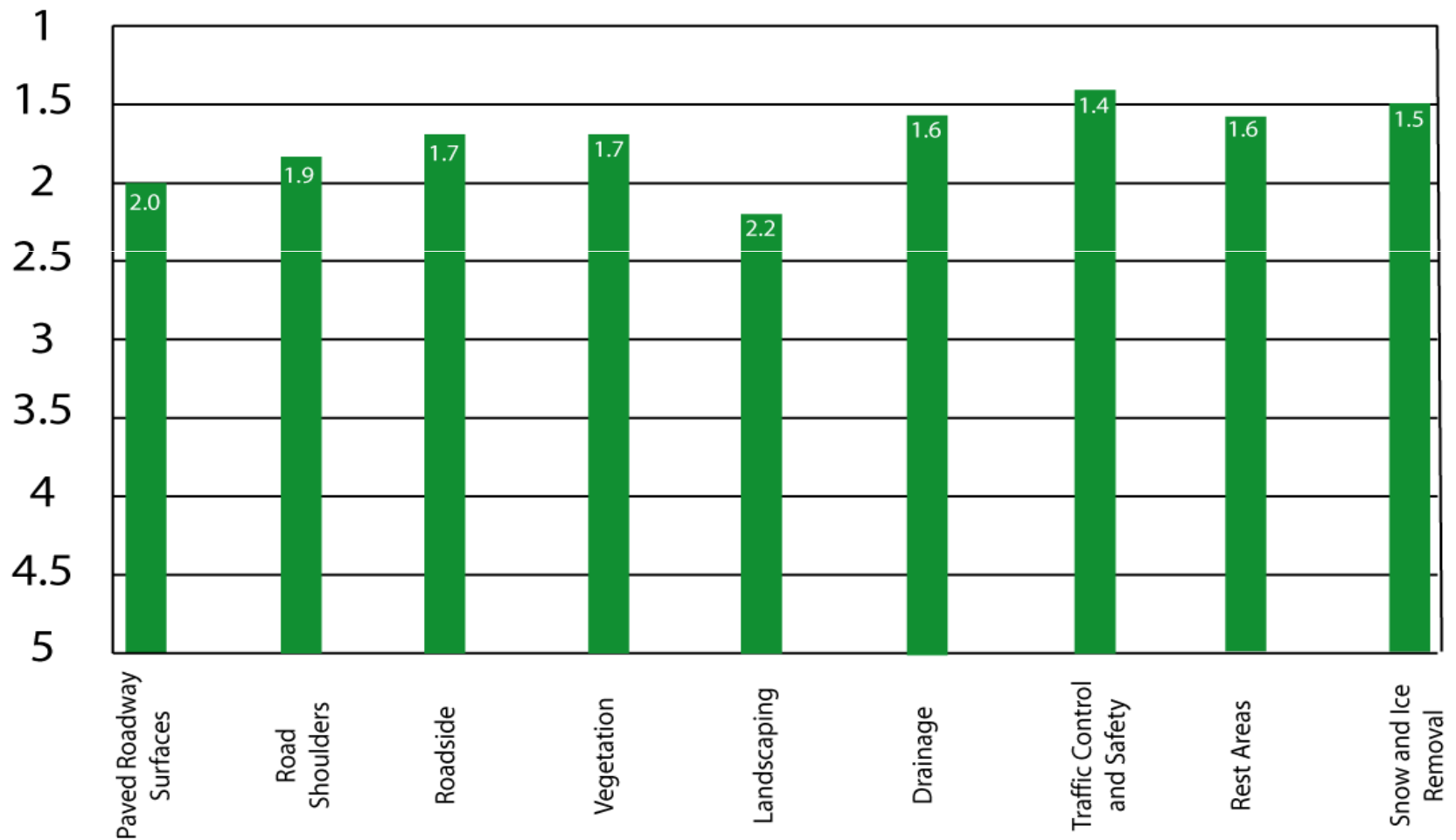




Customer Surveys

Desired Level of Service

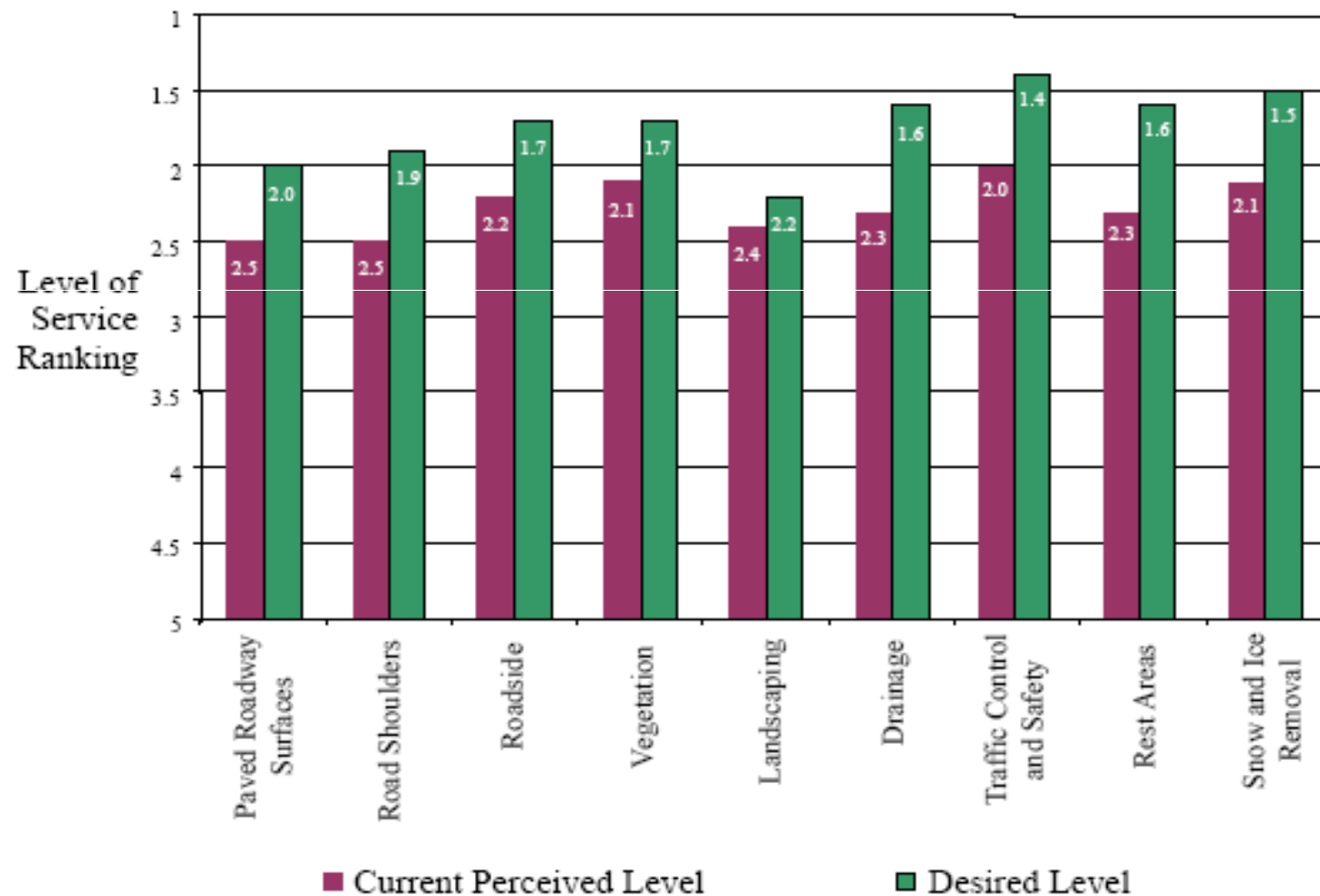
Level of
Service
Ranking





Customer Surveys

Current vs. Desired Level of Service





Asset Management

- Replacement
- Rehabilitation
- Preservation
- Maintenance



Asset Management

Asset Type	1	2	3	4	5
Pavement conditions					
Bridge conditions					
Signs and signals					



Why a Good Program?

- Verify you are using best practices
- Demonstrate you can perform as promised
- Show that you are delivering consistent with citizen priorities
- Establish credibility
- Maintain trust



II. Know Your Decision Makers



The Legislature





Typical House of Representatives

- 26 have no degrees
- 21 Lawyers
- 11 Business/Finance/Accounting degrees
- 9 Education degrees
- 4 Criminal Justice degrees
- 2 Engineering degrees
- 2 Political Science degrees
- 30 Other degrees



Decision Makers

- DOT
 - Secretary/Director
 - Transportation Commission
 - Budget Staff
 - Planning
 - Other



Decision Makers

- Governor's/Executive Office
 - Governor
 - Budget Office
- Legislature
 - Members
 - Staff



“Hot Buttons”

- Key issues
- Analysis
- Examples/anecdotes
- Consistency with Department, Administration, Legislative Direction
- Past performance
- Objections



Discovering “Hot Buttons”

- Management meetings
- Interviews
- Site visits
- Publications



III. Speak Their Language



What They Want

“It is not what it is, it is what it means (to them)”



What It Is

- Bridge Approaches
 - Average vertical shift below deck grade
 - LOS 5 $0 - \frac{1}{4}''$ – LOS 2 $< \frac{3}{4}''$
 - LOS 4 $< \frac{1}{4}''$ – LOS 1 $> 1''$
 - LOS 3 $< \frac{1}{2}''$



What it Means



Condition 5. No deterioration other than superficial cracks. The difference in the height between the roadway and the bridge deck is negligible



Condition 4. Minor deficiencies may be present. The difference in the height between the roadway and the bridge deck is approximately $\frac{1}{4}$ -inch, causing the travelers to experience a slight bump



Condition 3. Moderate deficiencies exist, but do not affect the integrity of the structure. The difference in the height between the roadway and the bridge deck is approximately $\frac{1}{2}$ -inch



Condition 2. Significant deficiencies exist. The difference in the height between the roadway and the bridge deck is approximately $\frac{3}{4}$ -inch, causing the travelers to experience a significant bump



Condition 1. The difference in the height between the roadway and the bridge deck is greater than 1-inch, which might give rise to a hazardous condition leading to potential vehicle damage



IV. Case Study



**Washington State
Department of Transportation**

Maintenance Accountability Process

MAP



1996

- Maintenance budget constantly cut
- Legislators did not understand maintenance
- Mistake in legislative testimony
- Lack of credibility and trust
- Legislature commissioned study



1997

- Study Recommendations
 - Maintenance Accountability Process - MAP
 - Develop measures of conditions and accomplishments
 - Establish a better way to communicate with the legislature and other decision makers
 - Link budgets to quality levels
 - Obtain citizen perspectives



1998-2003

- Increases to maintenance budgets when other DOT programs received none
- No cuts to maintenance budgets when other DOT programs got cuts
- Supported by headquarters and field management
- Used as example for governor's performance program-described by governor's budget staff as "elegant"



2004-2008

2004	Targets	Northwest	North Central	Olympic	Southwest	South Central	Eastern
4B1 Movable & Floating Bridges	B	B+		B+		D	
6B1 Signal Systems	C	D	B	C+	A	C+	D
5B1 Snow & Ice	C+	C	A-	B-	B	A-	B-
4B2 Keller Ferry	B						B
4B3 Urban Tunnels	B-	B					
4A2 Structural Bridge	C	F+	A-	C+	A-	A-	C
6A4 Regulatory Signs	C	A-	C	D	B	B-	C
2A5 Slope Repair	C+	A	B	A	B+	B+	C+
6B3 ITS	C	C	B	F	A+	C+	A-
2A3 Catch Basins	C+	B-	A-	B+	B+	B-	C+
1A1 Pavement Patching & Repair	B-	B+	B+	A	A	A	C+
4A1 Bridge Decks	C-	B	A	A	A	B	B-
6A7 Guardrail	B+	B+	A	A	A	A	A
6A1 Striping	B-	C	B	B+	A-	B	C
6A2 Raised/Recessed Markers	C	C	A	B	C	B-	B
3A4 Veg Obstructions	C	C-	B	C	B+	A-	C+
1A2 Crack Sealing	C-	B	D+	B	B	C+	C-
7B1 Rest Areas	B	B-	B	B	B+	B+	B
1A4 Sweeping	B	A	A+	B+	A	A+	A+
2A1 Ditches	C	C+	A	A-	A	B+	B
6B2 Hwy Lighting	B	A	A-	A	B+	A	A
6A6 Guide Posts	D+	D+	C	C	C-	C-	C
1B1 Safety Patrol	C	A	C-	D	C	B	B-
2A2 Culverts	D+	B-	C+	C	C+	C+	C-
6B4 Permits	B	B	B	B	C	B	B
6A3 Pavement Marking	D+	C	B	C	C+	C+	C-
3A2 Noxious Weeds	B	A	A	A	A	C+	A-
1A3 Shoulder Maint	C+	B	B	B+	C+	B	B-
6A5 Guide Signs	B-	A	B+	D+	B+	A-	B-
2A4 Detention Basins	C	C	C	C	C	C	C
4A3 Bridge Cleaning	C	B+	A-	B	B+	A-	B+
3A3 Nuisance Weeds	B-	A-	A-	A-	B+	B-	B+
3A5 Landscape	C-	C		C	C+	C	C-
3A1 Litter	D+	F+	C	D	C	D	C-

State Targets Missed – 1 Region Targets Missed - 19

2008	Targets	Northwest	North Central	Olympic	Southwest	South Central	Eastern
4B1 Movable & Floating Bridges	B+	A+		A		A+	
6B1 Signal Systems	C+	B-	C	F+	D+	C-	C-
5B1 Snow & Ice	A-	A	B+	A	A	A	B+
4B2 Keller Ferry	B						B
4B3 Urban Tunnels	B	B					
4A2 Structural Bridge	C	D	A+	D+	F+	F	F+
6A4 Regulatory Signs	C+	D	C+	B+	C+	D	D-
2A5 Slope Repair	B	A-	A	A	A+	A	A
6B3 ITS	B-	A	A-	A	D	A-	C+
2A3 Catch Basins	B	D+	C	C	C	C+	F+
1A1 Pavement Repair & Crack Seal	B	B-	C	A-	B+	C	C+
4A1 Bridge Decks	B-	C-	A-	C	B	C-	D
6A7 Guardrail	A	B	B	A	B	A+	B+
6A1 Striping	C+	C-	C-	C	C-	C-	C
6A2 Raised/Recessed Markers	B	C-	A+	C+	F	F+	C
3A4 Veg Obstructions	B-	F-	A	D	B	A+	C-
7B1 Rest Areas	B	B-	B-	B	B	B	B
1A4 Sweeping	B+	A+	A+	A	A-	A	A
2A1 Ditches	B	B-	B+	A	B	A+	B+
6B2 Hwy Lighting	B+	D	D+	B	D	B	A
6A6 Guide Posts	C-	D+	D+	C	D	F	D
1B1 Safety Patrol	C+	B	C-	C	C	C-	C
2A2 Culverts	C	F+	F+	C	D	D	F
6B4 Permits							
6A3 Pavement Marking	C-	C-	D+	D	C	C	C
3A2 Noxious Weeds	B	A	A	A+	A+	D+	D+
1A3 Shoulder Maint	B-	A	A	B+	A	C-	B-
6A5 Guide Signs	B-	C	A-	A	B	C+	B
2A4 Detention Basins	C						
4A3 Bridge Cleaning	C	B	B	B+	C	B-	B
3A3 Nuisance Weeds	B-	A+	B+	B	A+	D+	A-
3A5 Landscape	C-	D		C-	D	D+	C-
3A1 Litter	C-	D	D+	D	D	D	B

State Targets Missed – 16 Region Targets Missed - 85

Key:

Missed State Target

Missed Region Target



2009

- WSDOT as a whole had a very difficult year in the legislature
- Required to make budget cuts including loss of positions



2009

Maintenance obtained \$18,000,000
additional to meet backlog!



The DOT View

- “MAP...created a greater sense of partnership between the program and the legislature... Now that we have tools to better communicate with each other, it feels more like partners working together to plan and finance the best program we can.”

-Rico Baroga, WSDOT Maintenance



Award

2009 International Road Federation
Global Road Achievement Award for
Maintenance



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DYE MANAGEMENT GROUP, INC.



Bill Dye

bill@dyemanagement.com

City Center Bellevue • Suite 1700 • 500 108th Avenue NE • Bellevue, WA 98004-5500

T: (425) 637-8010 F: (425) 637-8020 • www.dyemanagement.com