



# **ACCELERATED BRIDGE PROGRAM**

Presentation to

**Regional Transportation Advisory Council**

August 12, 2009



## ABP Goals and Objectives

1. **Improve the Condition of the Commonwealth's Bridges**
  - Reduce the number of Structurally Deficient Bridges.
  - Improve the overall Bridge Health Index of Massachusetts Bridges
2. **Stimulate Economic Development and Job Creation**
  - The Accelerated Bridge Program will create thousands of jobs across the Commonwealth
3. **Save Money By Completing Projects Sooner**
  - Repair bridges now before further costly deterioration can occur
  - Hedge against construction cost inflation
4. **Complete Projects Efficiently and Innovatively**
  - Complete projects on-time and on-budget.
  - Complete projects with minimum disruption to people and commerce.
  - Use Design-Build and other innovative contracting techniques.
  - Focus on preservation and other strategies to improve the long-term condition of all Massachusetts bridges.



## ABP Goals and Objectives (Con't)

### 5. Access and Opportunity

To ensure access and opportunity on the part of women and minority individuals and businesses by establishing specific goals for each aspect of the program.

WBE/MBE Overall 14% utilization goal with a 10% race conscious goal and a 4% race neutral goal.

Women: contractor labor participation goal of 6.9%.

Minorities: contractor labor participation goal of 15.3%.

Women workforce participation goal of 24% in technical positions and 47.40% in non-technical positions.

Minority workforce participation goal of 10.48% in technical positions and 19.40% in non-technical positions.

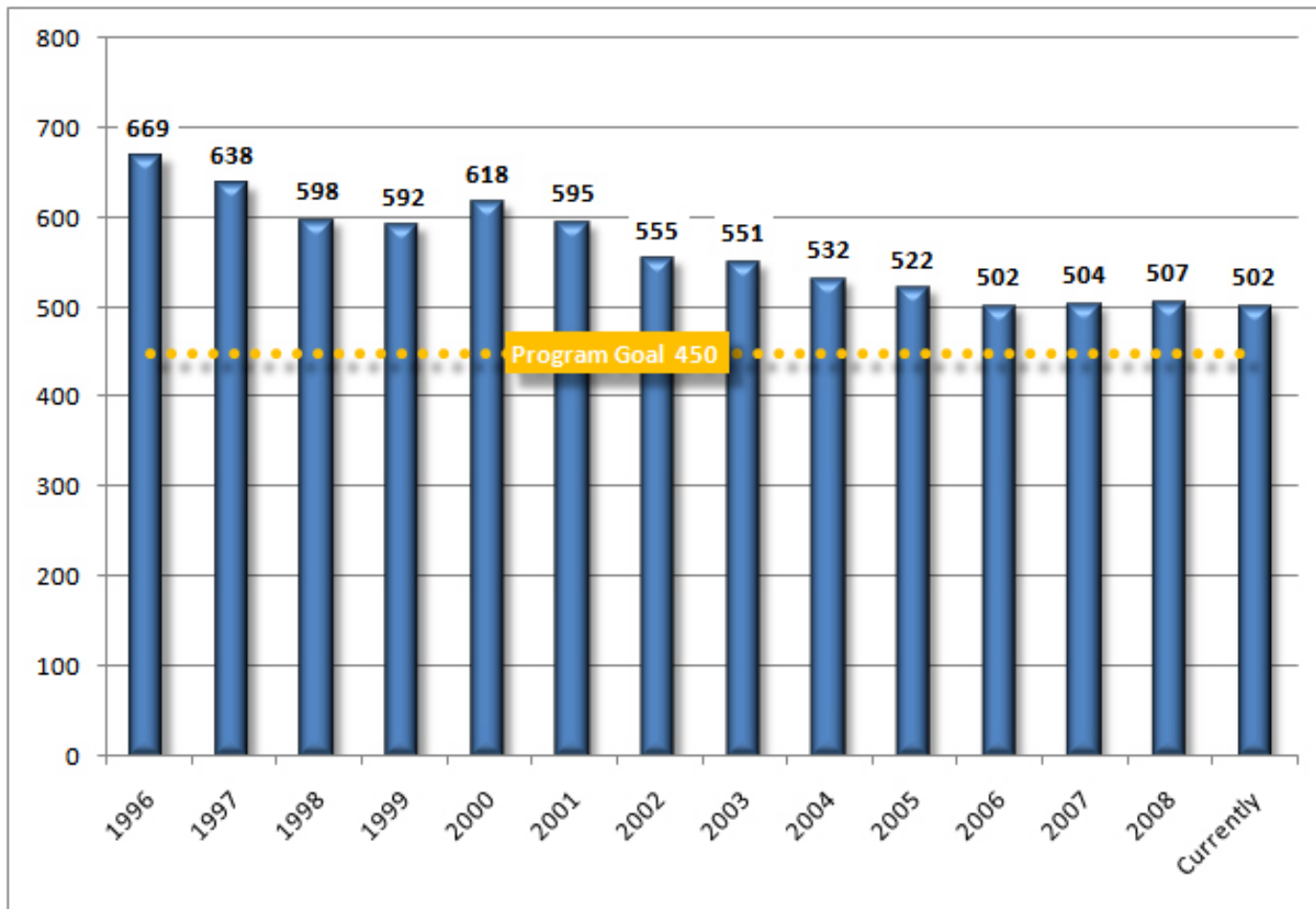
### 6. Transparency and Accountability

Provide frequent and detailed reports to the public on the progress of the ABP.

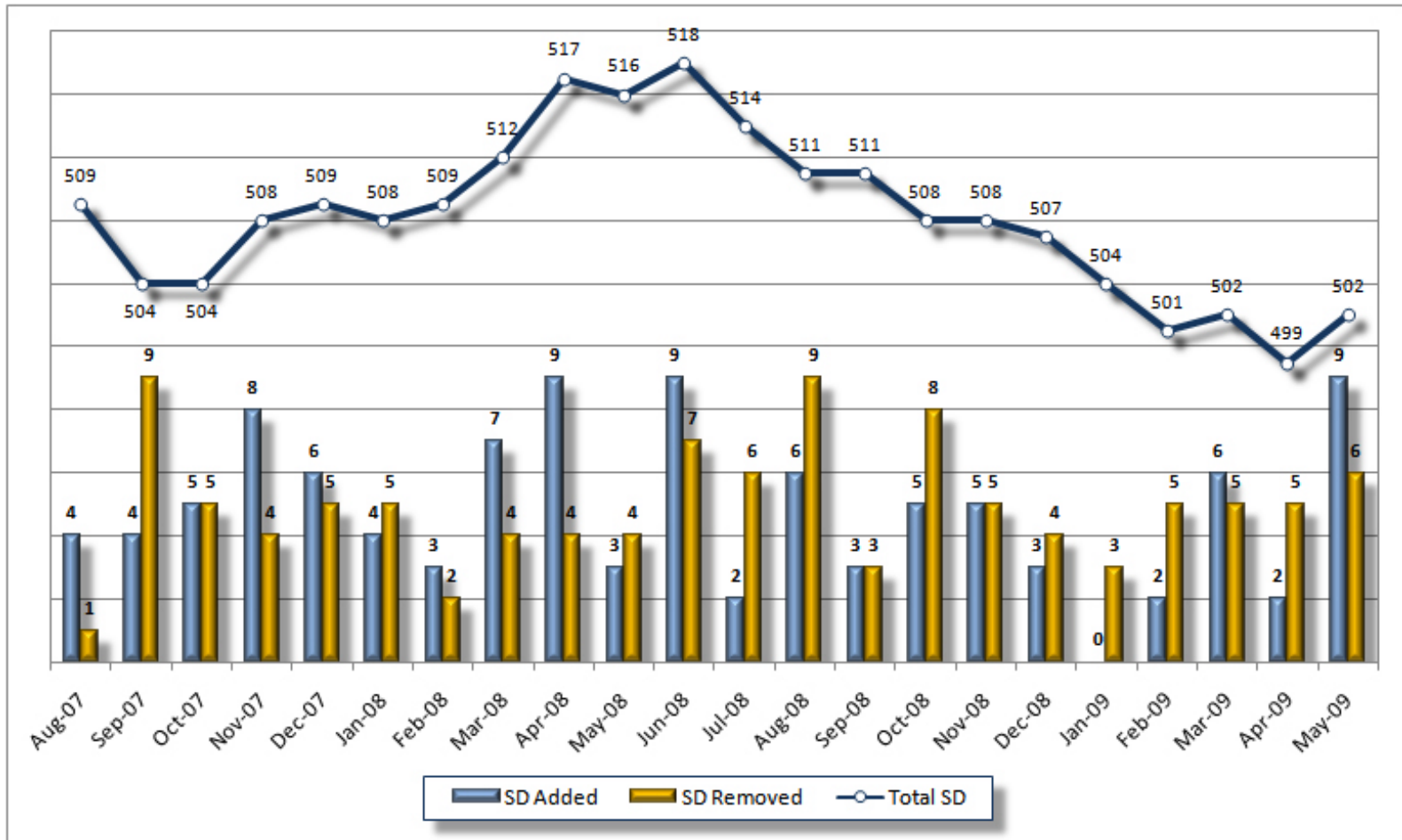
Develop overall project controls to ensure adherence to project schedules and budgets.

Measure agency performance in streamlining design and construction schedules.

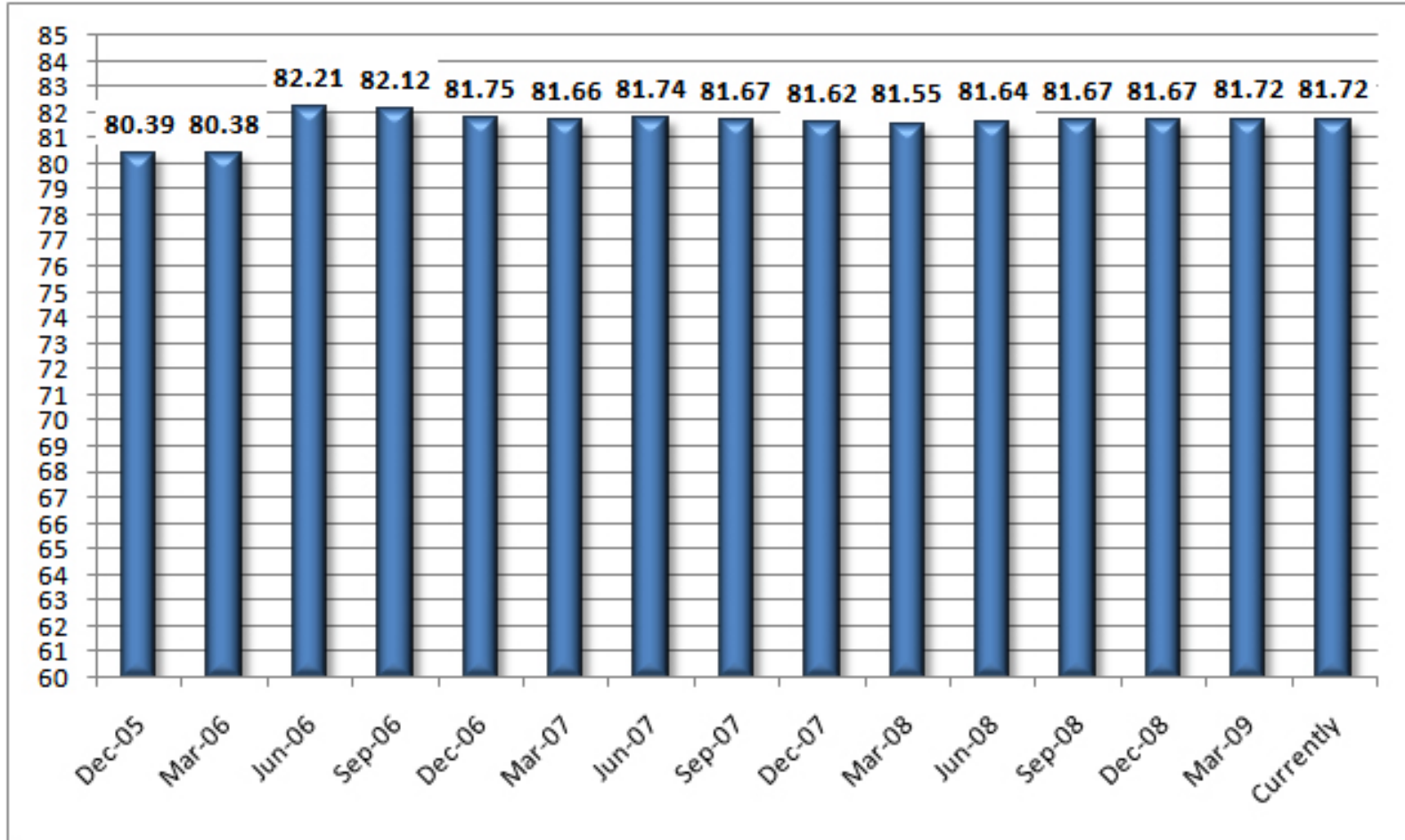
## Number of Structurally Deficient Bridges – by Year



## Number of Structurally Deficient Bridges – by Month



## Bridge Health Index



Bridge Health Index is the ratio of the current condition of each element to perfect condition expressed as a score of 0 to 100, with a value of zero indicating all of a particular bridge's elements to be in the worst condition.



## TRANSPARENCY AND ACCOUNTABILITY

The Accelerated Bridge Program will ensure the taxpayer's dollars are maximized: **Program Dollar Cap.** The total budget for the Program is capped at just under \$3 billion by law, meaning that no additional dollars can be spent without agreement by the Governor and the Massachusetts Legislature. Cost and schedule will be closely monitored to ensure that the cap is not exceeded.

**ABP Oversight Council.** The ABP Oversight Council will closely monitor and report every six months to the Legislature on the Program's compliance with the budget.

**State-of-the Art Program Controls.** The program managed by the Executive Office of Transportation has incorporated new schedule and cost control measures. An overall Program Controls Unit, independent of the design and construction process, will be created for the program as a whole to constantly review cost and schedule.

**ABP Tracking Against Current Fiscal Conditions.** The Secretary of Administration and Finance, in consultation with the State Treasurer and Commissioner of Revenue, must also report annually to the public and the Legislature that ABP projects will not adversely affect the Commonwealth's current fiscal condition, debt structure and bond ratings.



## ACCELERATED BRIDGE PROGRAM - COUNCIL UPDATE

Quarter: Project Inception through July 31, 2009

	Forecasted Construction Total			Projects Advertised to Date			Construction NTPs Issued		
	No. of Projects	No. of Bridges	Total Const. Cost	No. of Projects	No. of Bridges	Total Const. Cost	No. of Projects	No. of Bridges	Total Const. Cost
Year 1	52	65	\$299,727,410	46	58	\$255,539,342	45	54	\$254,370,001
Year 2	53	64	\$367,779,422	0	0	\$0	0	0	\$0
Year 3	32	41	\$513,766,232	0	0	\$0	0	0	\$0
Year 4	14	22	\$341,483,392	0	0	\$0	0	0	\$0
Year 5	8	8	\$15,272,618	0	0	\$0	0	0	\$0
<b>TOTAL</b>	<b>159</b>	<b>200</b>	<b>\$1,538,029,074</b>	<b>46</b>	<b>58</b>	<b>\$255,539,342</b>	<b>45</b>	<b>54</b>	<b>\$254,370,001</b>

	Pre 25% Design			25% Design			75% Design			100%/PS&E			Advertised		
	No. of Projects	No. of Bridges	Total Const. Cost	No. of Projects	No. of Bridges	Total Const. Cost	No. of Projects	No. of Bridges	Total Const. Cost	No. of Projects	No. of Bridges	Total Const. Cost	No. of Projects	No. of Bridges	Total Const. Cost
Year 1	0	0	\$0	0	0	\$0	0	0	\$0	6	7	\$44,188,068	46	58	\$255,539,342
Year 2	20	30	\$226,763,512	19	20	\$104,363,222	7	7	\$20,804,725	7	7	\$15,847,963	0	0	\$0
Year 3	22	24	\$449,683,799	6	8	\$26,195,874	1	2	\$16,315,206	3	7	\$21,571,353	0	0	\$0
Year 4	10	16	\$326,102,524	2	3	\$6,465,823	1	1	\$3,781,512	1	2	\$5,133,533	0	0	\$0
Year 5	6	6	\$9,169,620	1	1	\$1,153,260	0	0	\$0	1	1	\$4,949,738	0	0	\$0
<b>TOTAL</b>	<b>58</b>	<b>76</b>	<b>\$1,011,719,456</b>	<b>28</b>	<b>32</b>	<b>\$138,178,178</b>	<b>9</b>	<b>10</b>	<b>\$40,901,444</b>	<b>18</b>	<b>24</b>	<b>\$91,690,655</b>	<b>46</b>	<b>58</b>	<b>\$255,539,342</b>

### 3 Month Look Ahead

No. of Projects Scheduled to be Advertised in the next 3	10
No. of Construction NTPs which should be issued in the next 3	1
No. of Design NTPs which should be issued in the next 3	13

### Community Outreach Status

Dover/Needham - #603713 A public hearing was held at 7 PM on 7/15/09 at Dover Town Hall  
 Sterling - #604264 A public hearing will be held at 7PM on 8/20/09 at Butterick Municipal Building, Sterling  
 Bourne/Wareham - #603607 A public Hearing will be held at 7PM on 8/12/09 at Wareham Town Hall





**Frank Tramontozzi, PE**  
**Chief Engineer**

**Shoukry Elnahal, PE**  
**Director, ABP**

**Walter Heller, PE**  
**ABP Director of Program Delivery**

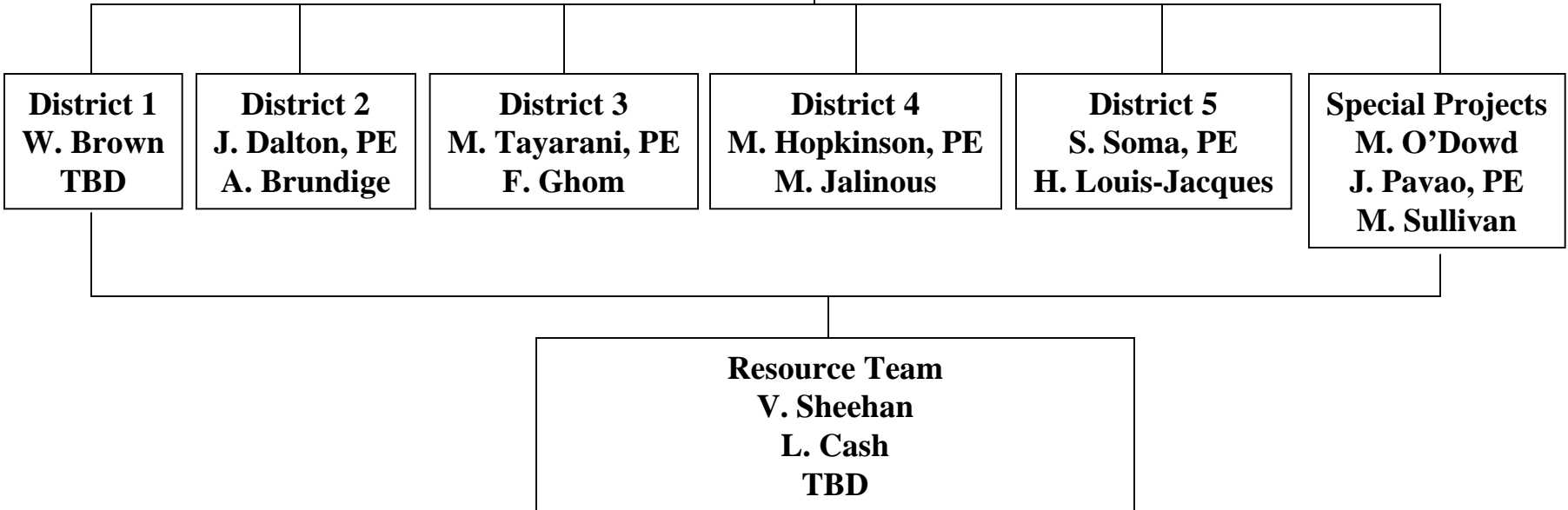
**Thomas Donald, PE**  
**ABP Director of Program Development**

**ABP Program Delivery Teams**

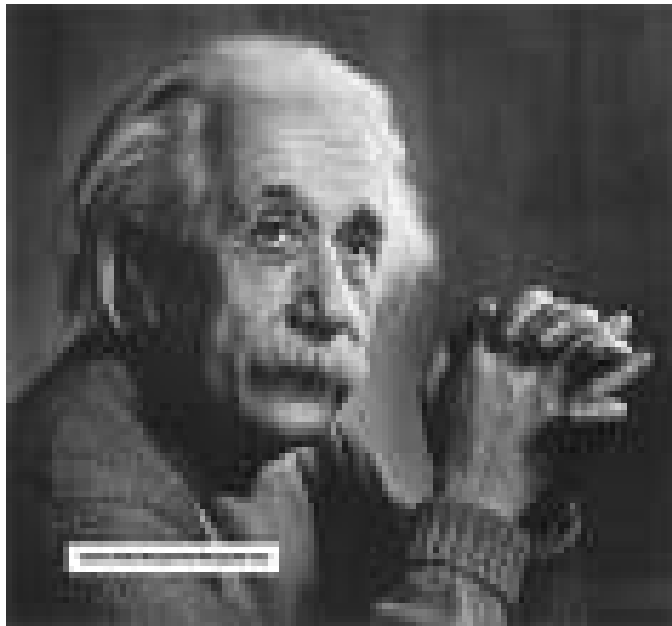
**ABP Program Development Teams**



**Thomas Donald, PE**  
**ABP Director of Program Development**



# The Laboratory of Innovation



Design

Construction

Procurement

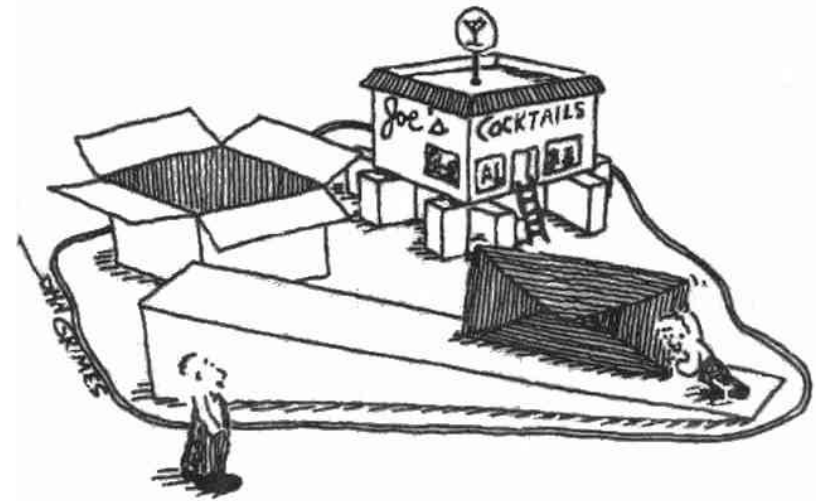
Project Controls

## Design Quality



## Design

- “Think outside the box” !! Don’t automatically default to conventional methods and details.
- Look for ways to have project’s delivered *faster*.
- Examples:
  - Detours vs. staged construction
  - Maximize use of precast and pre-fabricated elements
  - ABC techniques
  - Rapid construction methods



*“Bob, I didn’t realize  
you pushed the envelope,  
raised the bar, and  
thought outside the box.”*

*“Outta the loop,  
huh, Frank?”*

## Procurement

- Incentives / Disincentives
- Design-Build
- CM At Risk
- Alliancing

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"The paper and ink content is within acceptable norms, but the contract itself appears to have too many clauses."

## Construction

- Maximize use of precast/pre-fabricated elements
- No winter shutdowns
- Heavy Lift
- Self Propelled Modular Transporters (SMPT's)
- **Accelerated Bridge Construction (ABC) Techniques!!**



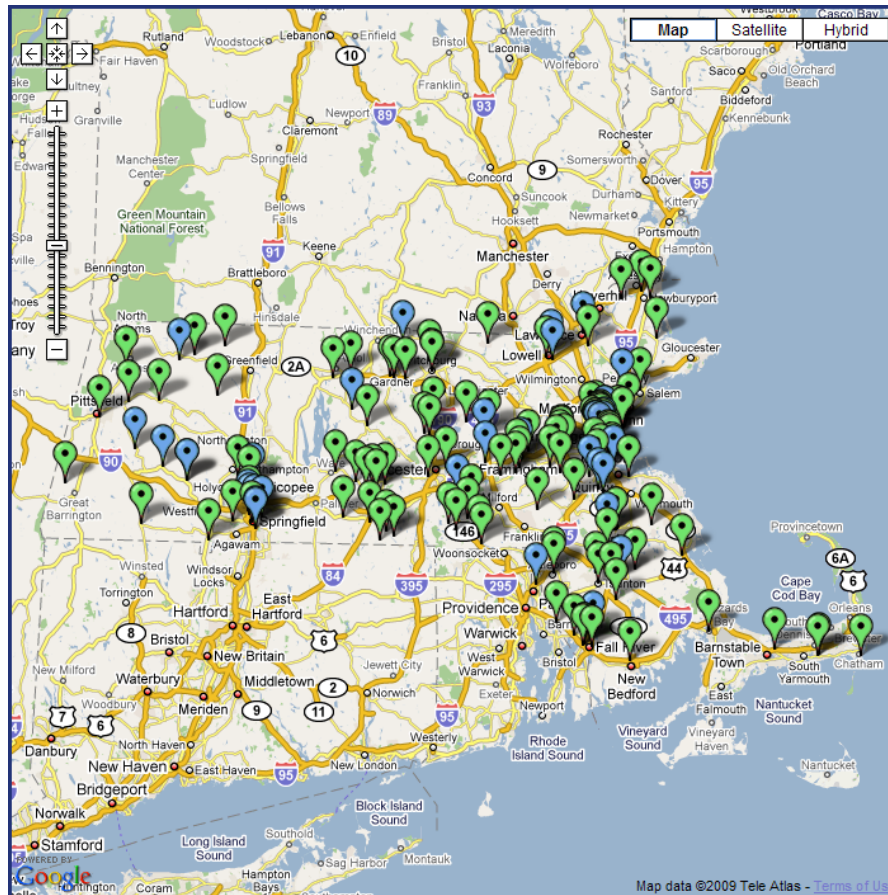
## Project Controls

- “Bottoms Up” estimating
- CPM Scheduling
- Invoicing – Updated schedule (MS Project) to be included
- Construction value to be a factor in determining extent of project controls
- Performance rating – tied to cost & schedule





[http://www.eot.state.ma.us/acceleratedbridges/pr\\_bridgemap.htm](http://www.eot.state.ma.us/acceleratedbridges/pr_bridgemap.htm)





			COST		AD DATE
LOCATION	DESCRIPTION	PROJECT TYPE	TFPC	BID AMOUNT	SCHEDULED
WELLESLEY	WELLESLEY- BRIDGE REPLACEMENT, W-13-007, ROCKLAND STREET OVER CONRAIL	Bridge Replacement	\$2,228,608.13		2/13/2010
MILLIS	MILLIS- BRIDGE REPLACEMENT, M-23-006, PLEASANT STREET OVER CHARLES RIVER	Bridge Replacement	\$4,422,259.81		1/9/2010
SOMERVILLE	SOMERVILLE- BRIDGE REHABILITATION, S-17-005, CROSS STREET OVER THE B&M RAILROAD	Bridge Reconstruction/Rehab	\$3,781,512.00		11/26/2011
FRAMINGHAM	FRAMINGHAM- BRIDGE REPLACEMENTS, F-07-003 & F-07-065, WINTER STREET OVER SUDBURY RIVER	Bridge Replacement	\$5,551,576.85		7/7/2012
IPSWICH	IPSWICH- BRIDGE REPLACEMENT, I-01-007, ROUTE 1A (HIGH STREET) OVER THE MBTA & B&M RAILROAD	Bridge Replacement	\$7,603,127.50		8/22/2009
RANDOLPH	RANDOLPH- BRIDGE REPLACEMENT, R-01-012, MDC ACCESS ROAD OVER ROUTE 24 (NB & SB)	Bridge Replacement	\$4,823,287.50	\$3858630.00	
FRAMINGHAM	FRAMINGHAM- BRIDGE BETTERMENT, F-07-040, MAIN STREET OVER ROUTE 9	Structures Maintenance	\$762,843.75	\$610275.00	
NORWOOD	NORWOOD- BRIDGE REPLACEMENT, N-25-003, MORSE STREET OVER THE NEPONSET RIVER	Bridge Replacement	\$1,570,956.25		9/5/2009
BOSTON	BOSTON- BRIDGE REPLACEMENT, B-16-167, RIVER STREET OVER MBTA	Bridge Replacement	\$9,633,664.05		3/13/2010
PEABODY	PEABODY- BRIDGE REPLACEMENT, P-03-013, HOWLEY STREET OVER NORTH RIVER	Bridge Replacement	\$1,153,260.00		11/3/2012
ASHLAND	ASHLAND- BRIDGE REPLACEMENT, A-14-002, ROUTE 135 (UNION STREET) OVER THE SUDBURY RIVER	Bridge Replacement	\$3,017,159.05		3/20/2010
BOSTON	BOSTON- BRIDGE REPLACEMENT, B-16-163, MORTON STREET OVER THE MBTA & CSX RAILROAD	Bridge Replacement	\$3,945,216.94		1/9/2010



			COST		AD DATE
LOCATION	DESCRIPTION	PROJECT TYPE	TFPC	BID AMOUNT	SCHEDULED
FRAMINGHAM	FRAMINGHAM- BRIDGE RECONSTRUCTION, F-07-063, DANFORTH STREET OVER THE SUDBURY RIVER	Bridge Reconstruction/Rehab	\$2,481,207.12		8/21/2010
FRAMINGHAM	FRAMINGHAM- BRIDGE REPLACEMENT, F-07-015, WINTER STREET OVER MBTA, AMTRAK & CSX RAILROAD	Bridge Replacement	\$7,115,925.00		3/5/2011
DOVER - NEEDHAM	DOVER- NEEDHAM- BRIDGE REPLACEMENT, D-10-004=N-04-007, WILLOW STREET OVER CHARLES RIVER	Bridge Replacement	\$8,701,164.35		9/4/2010
HOPKINTON - SOUTHBOROUGH	HOPKINTON- SOUTHBOROUGH- BRIDGE REPLACEMENT, BR# H-23-004=S-20-008 ROUTE 85 (RIVER STREET) OVER THE SUDBURY RIVER	Bridge Replacement	\$2,648,475.00		7/2/2011
WELLESLEY	WELLESLEY- BRIDGE REPLACEMENT, W-13-015, CEDAR STREET OVER ROUTE 9 WORCESTER STREET	Bridge Replacement	\$5,017,947.50		3/26/2011
BOSTON - CAMBRIDGE	BOSTON- CAMBRIDGE- BRIDGE REHABILITATION, B-16-009=C-01-002, CAMBRIDGE STREET OVER THE CHARLES RIVER (MEMORIAL DRIVE & STORROW DRIVE) (AKA - LONGFELLOW BRIDGE) DCR	Bridge Reconstruction/Rehab	\$267,500,000.00		10/9/2010



			COST		AD DATE
LOCATION	DESCRIPTION	PROJECT TYPE	TFPC	BID AMOUNT	SCHEDULED
QUINCY - WEYMOUTH	QUINCY- WEYMOUTH- BRIDGE REPLACEMENT, Q-01-001=W-32-001, STATE ROUTE 3A (WASHINGTON STREET) OVER THE FORE RIVER	Bridge Replacement	\$242,592,000.00		1/15/2011
HANOVER	HANOVER- HANSON- BRIDGE REPLACEMENT, H-06-003=H-07-003, BROADWAY OVER INDIAN HEAD RIVER	Bridge Replacement	\$1,766,193.75		8/1/2009
HUDSON	HUDSON- BRIDGE REPLACEMENT, H-25-003, STATE ROUTE 85 (WASHINGTON STREET) OVER THE ASSABET RIVER	Bridge Replacement	\$6,918,261.00		7/7/2012
QUINCY	QUINCY- BRIDGE PRESERVATION, Q-01-009, HANCOCK STREET OVER SAGAMORE STREET	Structures Maintenance	\$1,058,384.38	\$846707.50	
PEABODY	PEABODY- BRIDGE BETTERMENT, P-03-023 AND P-03-024, I-95 RAMPS (A & B) OVER STATE ROUTE 128	Structures Maintenance	\$5,706,786.05	\$4565429.00	
MARLBOROUGH	MARLBOROUGH- BRIDGE PRESERVATION, M-06-016, I-290 (EB & WB) OVER I-495	Structures Maintenance	\$4,433,781.25	\$3547025.00	
MILTON	MILTON- BRIDGE BETTERMENT, M-25-028, PONKAPOAG TRAIL OVER I-93/US-1	Structures Maintenance	\$3,940,655.00	\$3152524.00	
SOMERVILLE	SOMERVILLE - S-17-035, I 93 SB OFF RAMP OVER I 93 CONNECTORS (Betterment Project)	Structures Maintenance	\$677,450.00		9/17/2011



**THANK YOU**

**Questions?**

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