

## Trends in Highway Material Costs

The cost of construction materials plays an important role in the ability of WSDOT to deliver its highway construction program. Once a project is defined and legislative approval given, tracking the costs of construction materials becomes an important variable in the delivery of a project within scope, schedule and budget.

Tracking bid prices from construction contracts provides key data to monitor highway material cost trends. Seven typical construction bid items -- crushed surfacing, concrete pavement, structural concrete, hot mix asphalt, roadway excavation, steel reinforcing bar and structural steel --are currently tracked. The data, beginning in 1990, is graphed with an accompanying trend line which provides insight into the relative changes in the cost of a material.

Washington State DOT has developed a construction cost index (CCI) from the bid data collected from construction projects. The CCI is calculated based on historical use of the seven bid items and are tracked to show the trend in highway material costs. Several other states and the Federal Highway Administration (FHWA) also track bid prices and calculate a construction cost index using a similar formula. The indices from these sources all show increasing material price trends.

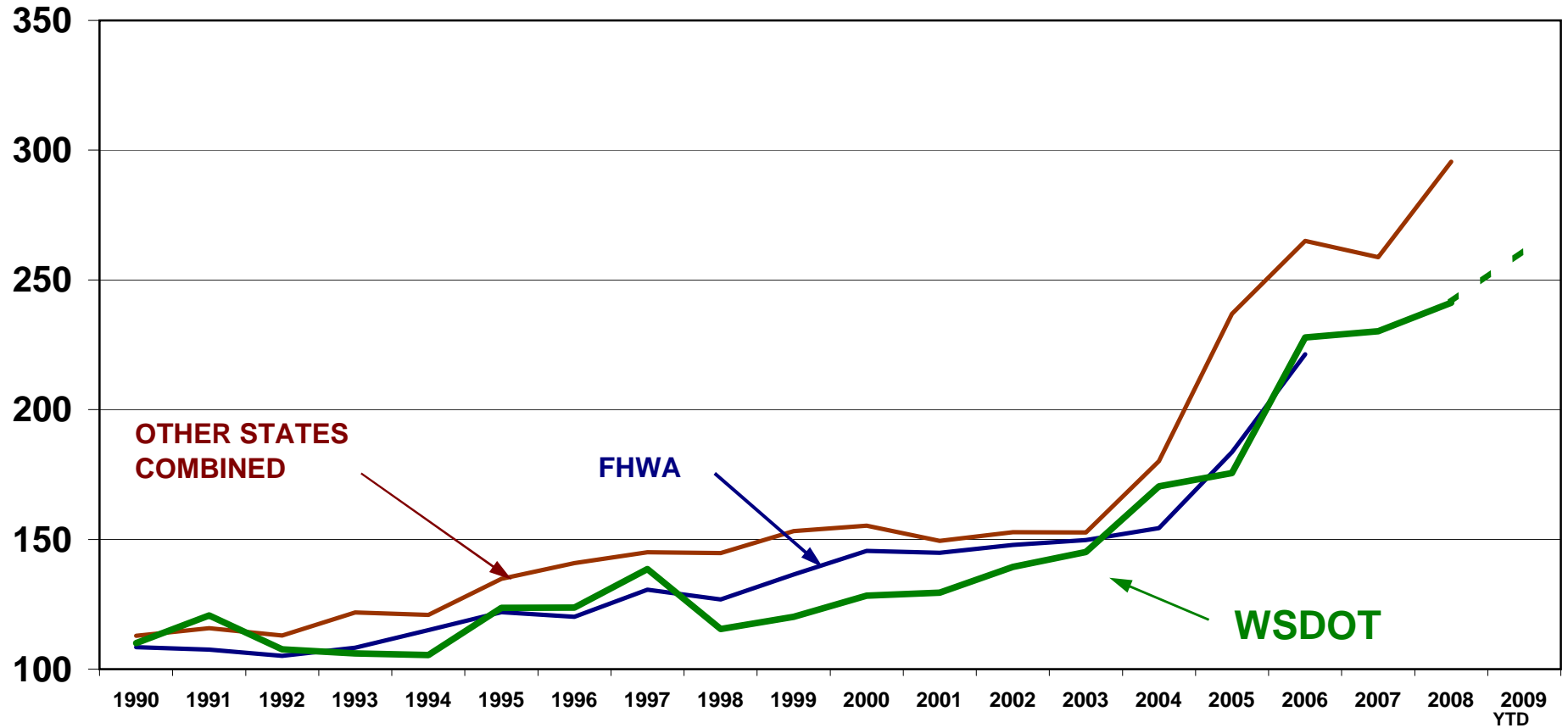
### Highway Construction Cost

- [Cost Index Graph](#) *Updated 4/9/2009*
- [Cost Index Data](#) *Updated 4/9/2009*
- [Unit Bid Prices for Last Quarter](#) *Updated 4/9/2009*
- [Unit Bid Prices 1990-2008 YTD](#) *Updated 4/9/2009*
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### WSDOT Construction Material Unit Price History

- [Concrete Pavement](#) *Updated 4/9/2009*
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- [Crushed Surfacing](#) *Updated 4/9/2009*
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# CONSTRUCTION COST INDICES



WSDOT BASE 1990 = 110  
 FHWA AND OTHER STATES BASE 1987 = 100  
 OTHER STATES: CALIFORNIA, COLORADO, OREGON, SOUTH DAKOTA & UTAH

Note: 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel

WSDOT 2009 INDEX IS FIRST QUARTER DATA  
 FHWA INDEX DISCONTINUED IN 2007  
 OTHER STATES 2008 DATA IS THE AVERAGE OF CALIFORNIA, COLORADO, OREGON, SOUTH DAKOTA AND UTAH ANNUAL INDICES.



# CONSTRUCTION COST INDICES

	WASHINGTON	FHWA	CALIFORNIA	COLORADO	OREGON	SOUTH DAKOTA	UTAH
YEAR	1990 = 110	1987 = 100	1987 = 100	1987 = 100	1987 = 100	1987 = 100	1987 = 100
1990	110	109	114	103	107	112	128
1991	121	108	108	111	119	114	126
1992	108	105	107	111	109	112	126
1993	106	108	113	115	115	117	151
1994	105	115	119	119	112	120	135
1995	124	122	115	122	138	133	166
1996	124	120	119	142	135	133	176
1997	139	131	125	140	150	147	163
1998	116	127	129	158	142	149	146
1999	120	137	139	159	155	169	143
2000	128	146	146	171	148	180	132
2001	129	145	154	157	130	153	153
2002	139	148	142	150	164	154	153
2003	145	150	149	154	172	161	127
2004	170	154	216	168	162	202	153
2005	176	184	268	255	206	196	260
2006	228	221	281	256	248	246	294
2007	230	—	261	271	241	268	253
2008	241	—	253	331	289	276	310
2009 YTD	262	—	*	*	*	*	*

WSDOT 2009 Index is for the first quarter

California, Colorado, Oregon, South Dakota and Utah 2008 CCI is annual data

\*Data not available

WSDOT 2003 and 2004 CCI data points adjusted to correct for spiking bid prices on structural steel

Note: FHWA CCI discontinued in 2007



# WSDOT Highway Construction Costs

March 2009

This is a recap of prices bid last quarter and includes a comparison to the previous quarter. It also compares the current year to date bid price for an item to the average from the previous year. All averages are the weighted average of a set of data. It is intended to provide insight into the cost of an item by showing the range of prices bid. The estimated cost of future projects is dependant on many factors and the unit price selected is determined by an evaluation of past history, future trends and specific details of the project. The average price listed for each item below is not intended to be the bid price used in an estimate.

## **Roadway Excavation: \$5.86 per cubic yard**

The unit bid price increased by \$0.87 from the average unit price of \$4.99 per cubic yard last quarter. The prices ranged from \$2.50 to \$190.00 per cubic yard. WSDOT awarded 304,473 cubic yards of roadway excavation during the first quarter of 2009 and 1,212,217 cubic yards during the fourth quarter of 2008. The average unit bid price in 2008 was \$8.85.

## **Crushed Surfacing: \$14.82 per ton**

The unit bid price increased by \$1.78 from the average unit price of \$13.04 per ton last quarter. The prices ranged from \$10.82 to \$52.00 per ton. WSDOT awarded 238,248 tons of crushed surfacing during the first quarter of 2009 and 98,406 tons of crushed surfacing during the fourth quarter of 2008. The average unit bid price in 2008 was \$13.61.

## **Hot Mix Asphalt: \$74.31 per ton**

The unit bid price decreased by \$15.54 from the average unit price of \$89.85 per ton last quarter. The prices ranged from \$60.90 to \$150.00 per ton. WSDOT awarded 411,123 tons of HMA during the first quarter of 2009 and 98,406 tons of hot mix asphalt during the fourth quarter of 2008. The average unit bid price for western Washington was \$74.85. The average unit bid price for eastern Washington was \$72.89. The average unit bid price for all areas in 2008 was \$66.08.

## **Concrete Pavement: \$246.15 per cubic yard**

The unit bid price increased by \$46.16 from the average unit bid price of \$199.99 per cubic yard in the second quarter. Prices ranged from \$238.00 to \$950.00 per cubic yard. WSDOT awarded 1,695 cubic yards of concrete pavement during the first quarter of 2009 and 31,666 cubic yards of concrete pavement during the fourth quarter of 2008. The average unit bid price in 2008 was \$206.33.

## **Structural Concrete: \$587.52 per cubic yard**

The unit bid price increased by \$173.20 from the average unit bid price of \$414.32 per cubic yard last quarter. Prices ranged from \$375.00 to \$2,500.00 per cubic yard. WSDOT awarded 9,610 cubic yards of structural concrete during the first quarter of 2009 and 20,747 cubic yards of structural concrete during the fourth quarter. The average unit bid price in 2008 was \$497.33.

## **Steel Reinforcing Bar: \$0.77 per pound**

The unit bid price decreased by \$0.21 from the average unit price of \$0.98 per pound last quarter. Prices ranged from \$0.58 to \$1.50. WSDOT awarded 1,280,200 pounds of steel reinforcing bar during the first quarter of 2009 and 4,211,759 pounds of steel reinforcing bar during the fourth quarter of 2008. The average unit bid price in 2008 was \$1.11.

**Structural Steel: \$2.73 per pound**

No structural steel was awarded during the first quarter of 2009. The average unit bid price during the fourth quarter of 2008 was \$2.68. The unit bid price decreased by \$0.27 from the average unit price of \$2.95 per pound in the first quarter of 2007. Prices ranged from \$2.55 to \$4.49 per pound. WSDOT awarded 5,606,400 pounds of structural steel during the fourth quarter and 1,370,000 pounds during the first quarter of 2008. No structural steel was awarded during the second or third quarter. The average unit bid price in 2008 was \$2.73.

# WSDOT UNIT BID PRICES

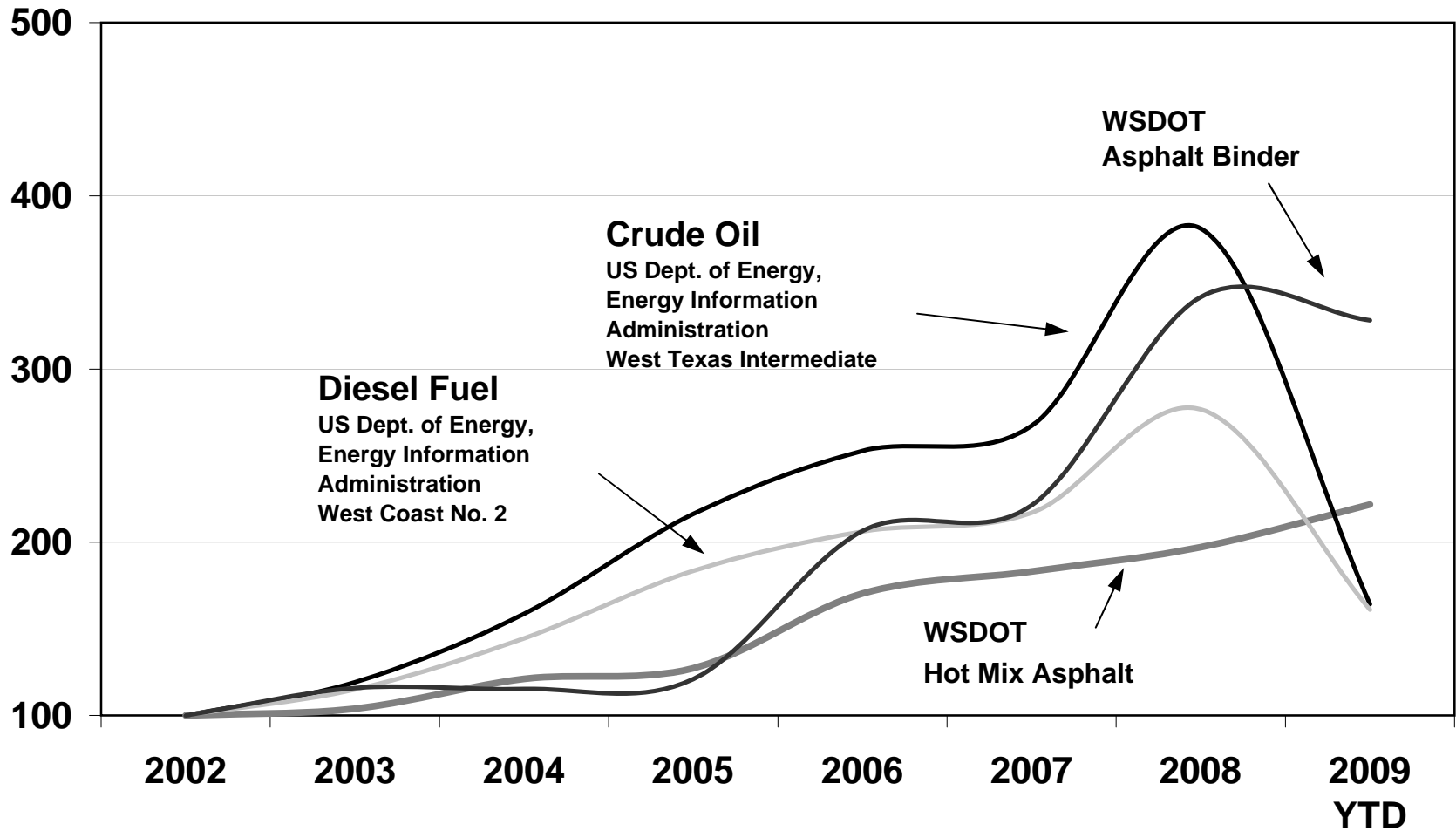
YEAR	ROADWAY EXCAVATION		CRUSHED SURFACING		HOT MIX ASPHALT		PORTLAND CEMENT CONCRETE PAVEMENT		STRUCTURAL CONCRETE		STEEL REINFORCING BAR		STRUCTURAL STEEL	
	\$/CY	CY AWARDED	\$/TON	TONS AWARDED	\$/TON	TONS AWARDED	\$/CY	CY AWARDED	\$/CY	CY AWARDED	\$/LB	LBS AWARDED	\$/LB	LBS AWARDED
1990	\$2.62	671,535	\$8.58	104,201	\$32.82	100,090	\$55.00	0	\$231.51	1,642	\$0.45	636,173	\$0.82	1,930,000
1991	\$4.05	1,808,745	\$9.62	571,159	\$28.62	1,013,919	\$61.53	22,740	\$322.81	10,415	\$0.45	3,510,600	\$1.04	2,186,000
1992	\$3.98	2,180,047	\$9.72	736,536	\$26.48	1,327,930	\$46.98	33,269	\$232.04	31,071	\$0.44	6,566,164	\$0.97	5,813,600
1993	\$3.24	6,142,080	\$7.65	1,988,632	\$27.23	2,043,134	\$59.97	58,370	\$265.49	40,201	\$0.42	8,054,307	\$0.88	11,848,000
1994	\$3.47	2,925,995	\$7.77	1,396,251	\$27.83	1,312,217	\$65.29	95,415	\$248.94	53,120	\$0.41	13,914,531	\$0.71	5,041,000
1995	\$4.46	2,551,036	\$9.28	1,079,113	\$28.28	1,282,315	\$100.83	16,508	\$285.02	28,026	\$0.44	5,601,982	\$1.34	1,378,000
1996	\$3.92	2,465,355	\$9.64	691,247	\$28.07	1,567,581	\$126.60	0	\$305.22	36,859	\$0.49	7,598,737	\$1.17	2,458,000
1997	\$4.92	1,406,484	\$10.30	631,209	\$31.35	1,631,318	\$152.37	747	\$313.29	6,963	\$0.51	1,380,557	\$1.37	1,352,000
1998	\$2.89	2,012,067	\$10.88	381,219	\$31.10	777,066	\$33.16	25,768	\$277.25	27,217	\$0.49	3,894,321	\$1.03	11,044,000
1999	\$3.79	3,340,657	\$11.21	771,540	\$28.54	2,244,177	\$36.43	104,901	\$323.92	31,775	\$0.45	4,796,081	\$1.12	1,444,000
2000	\$3.98	1,243,116	\$11.57	326,081	\$31.69	1,362,950	\$103.02	50,543	\$279.99	20,320	\$0.51	2,544,716	\$1.15	0
2001	\$2.81	5,030,996	\$11.08	704,391	\$32.01	1,938,378	\$117.65	24,233	\$359.38	24,836	\$0.41	7,973,186	\$1.17	9,170,000
2002	\$5.53	809,083	\$10.45	333,687	\$33.51	1,204,308	\$106.89	13,872	\$326.47	8,999	\$0.54	1,485,535	\$0.94	5,842,000
2003	\$5.39	1,924,839	\$10.26	739,709	\$34.78	1,823,518	\$87.75	132,901	\$380.84	47,445	\$0.50	7,536,245	\$1.13	5,478,400
2004	\$7.23	1,719,277	\$12.78	486,830	\$40.59	1,284,000	\$132.02	18,714	\$328.12	15,141	\$0.86	1,979,940	\$1.31	145,600
2005	\$5.61	4,155,185	\$12.82	663,167	\$42.64	1,558,151	\$118.36	108,956	\$419.25	38,012	\$0.91	5,105,718	\$1.50	4,300,380
2006	\$6.10	2,235,753	\$12.49	448,026	\$57.12	1,050,210	\$279.28	7,612	\$475.88	14,737	\$0.98	5,208,579	\$2.67	236,000
2007	\$6.31	1,717,938	\$15.15	737,708	\$61.36	1,212,649	\$140.65	66,559	\$567.75	20,553	\$1.15	5,313,761	\$1.70	1,800,000
2008	\$8.85	5,354,342	\$13.61	1,158,940	\$66.08	1,309,501	\$206.33	38,370	\$497.33	39,501	\$1.11	6,683,180	\$2.73	6,976,400
2009	\$5.86	304,473	\$14.82	238,248	\$74.31	332,458	\$246.15	1,695	\$587.52	9,610	\$0.77	982,336	\$2.73	0

The quantities shown in this table represent only quantities of the standard items used to calculate the Construction Cost Index and are not intended to represent the overall quantities of items awarded yearly by WSDOT  
 Unit bid prices for years when an item was not awarded were calculated by averaging the unit bid price of the year before and the year after  
 Note: WSDOT 2003 and 2004 CCI data points adjusted to correct for spiking bid prices on structural steel



For more information, please call the WSDOT Construction Office at (360) 705-7822  
 or visit <http://www.wsdot.wa.gov/biz/construction>

# WSDOT Asphalt, Crude Oil & Diesel Fuel Indices



BASE 2002 = 100

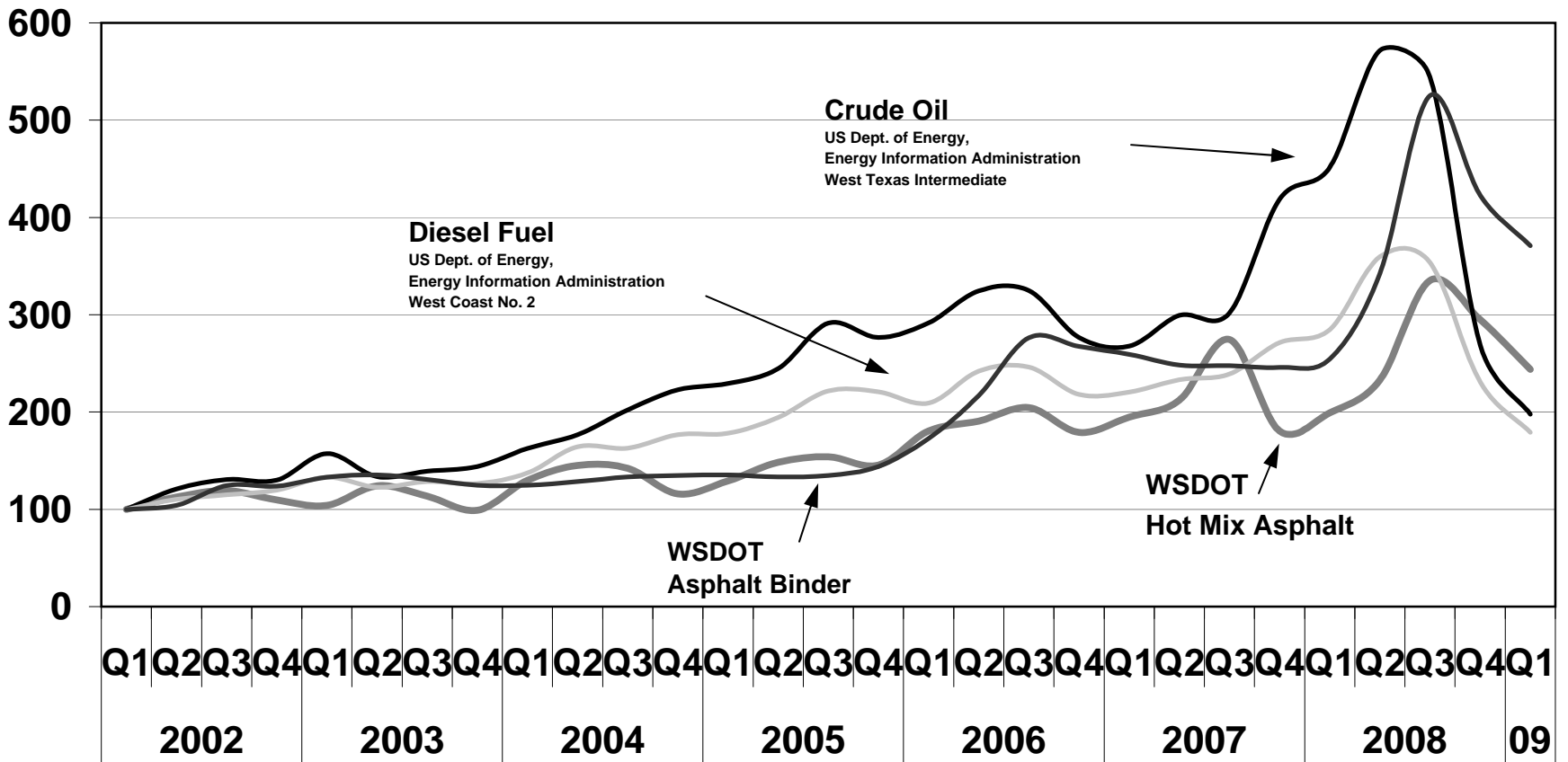


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BASE 2002 = 100

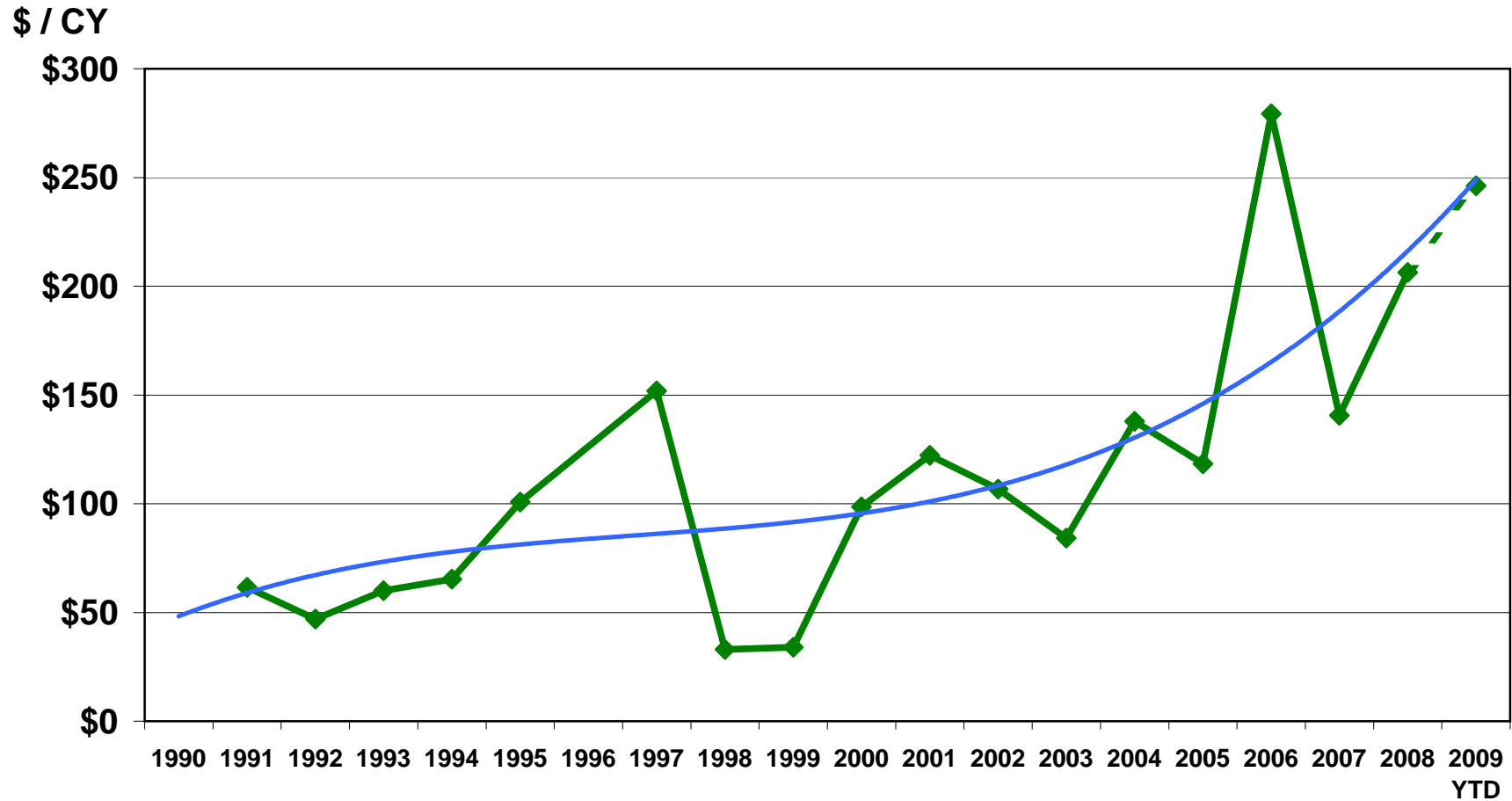


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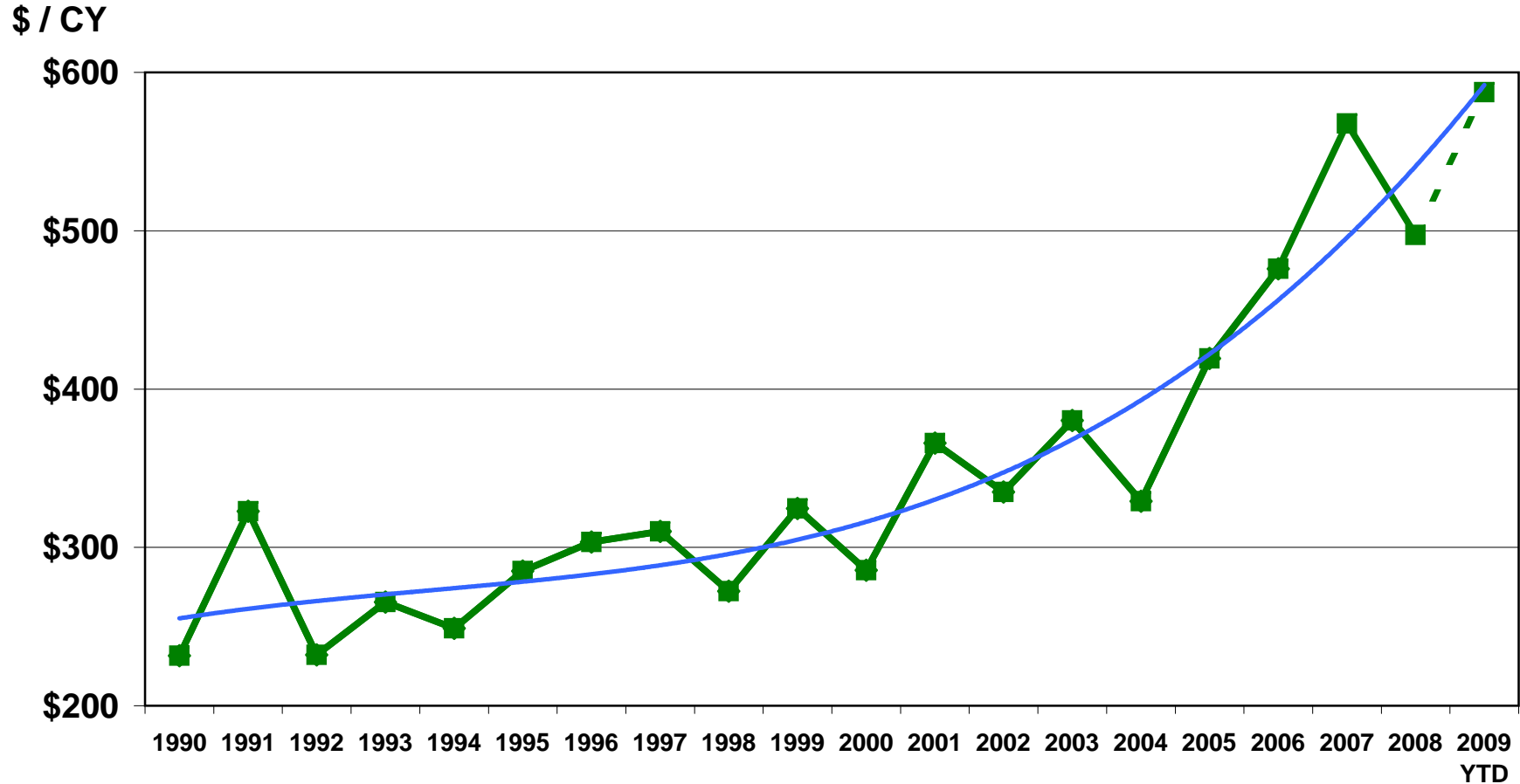
# CONCRETE PAVEMENT UNIT BID PRICE



For more information, please call the WSDOT Construction Office at (360) 705-7822  
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# STRUCTURAL CONCRETE

## UNIT BID PRICE

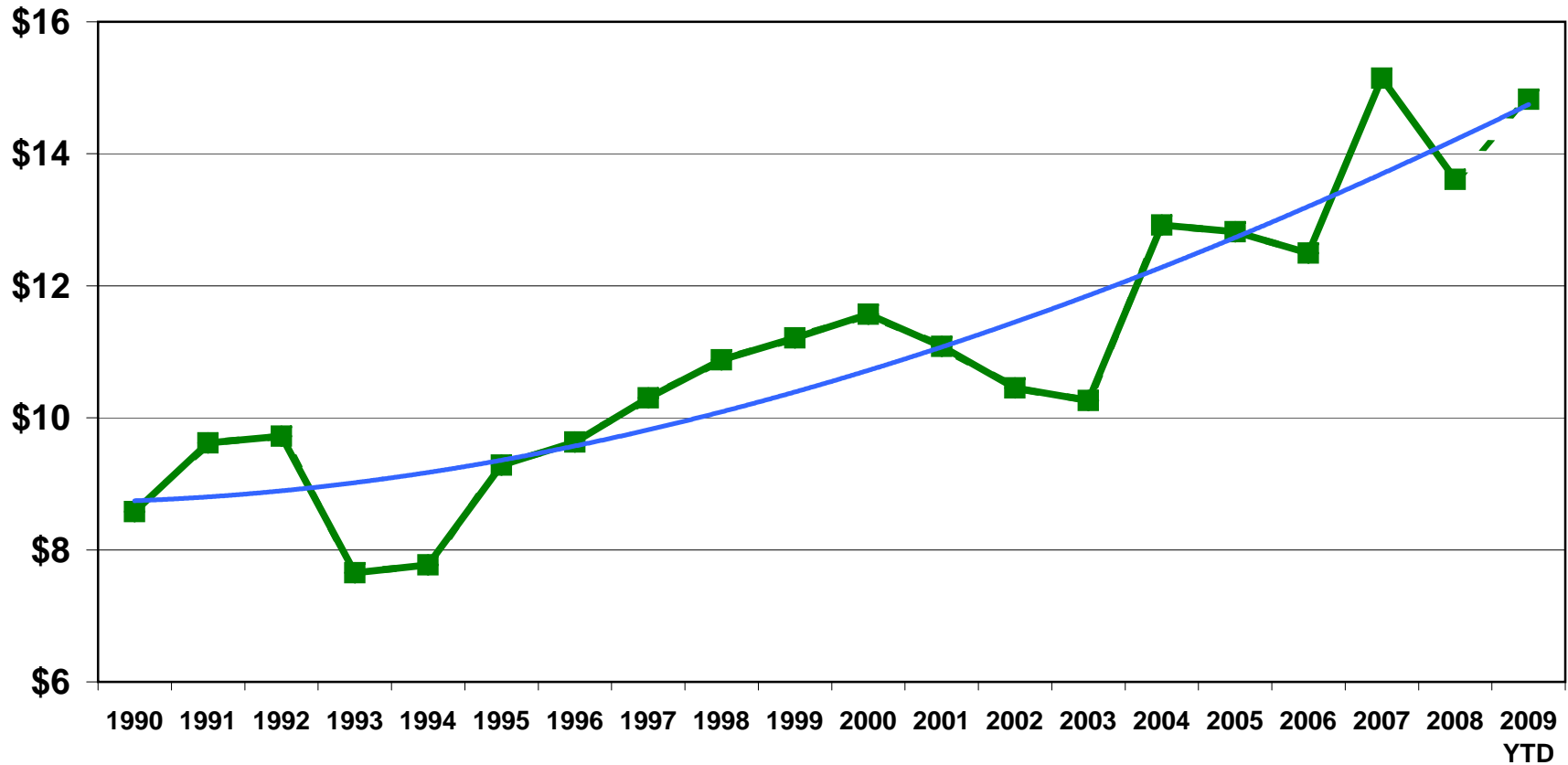


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# CRUSHED SURFACING

## UNIT BID PRICE

\$ / TON



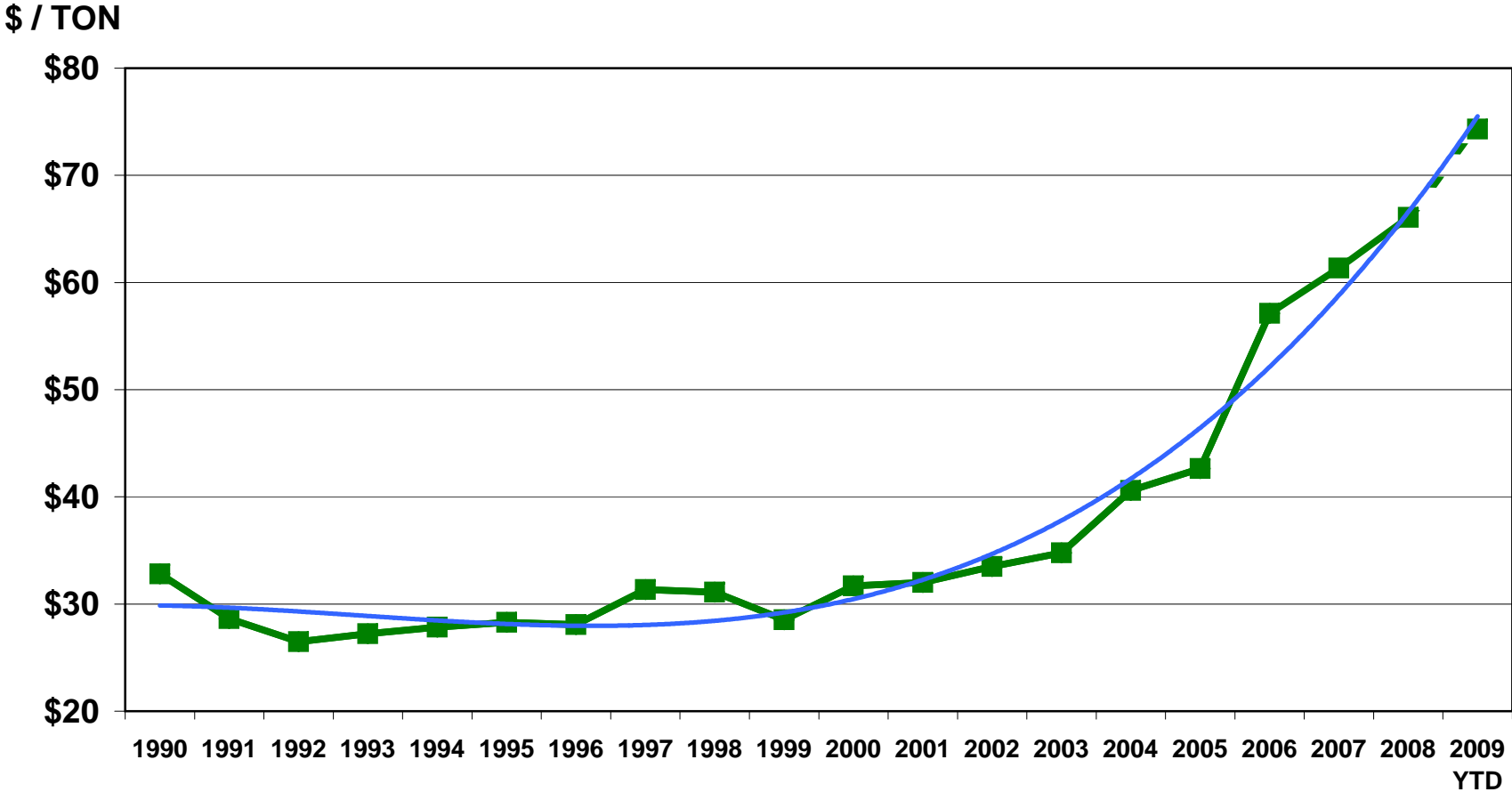
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# HOT MIX ASPHALT

## UNIT BID PRICE

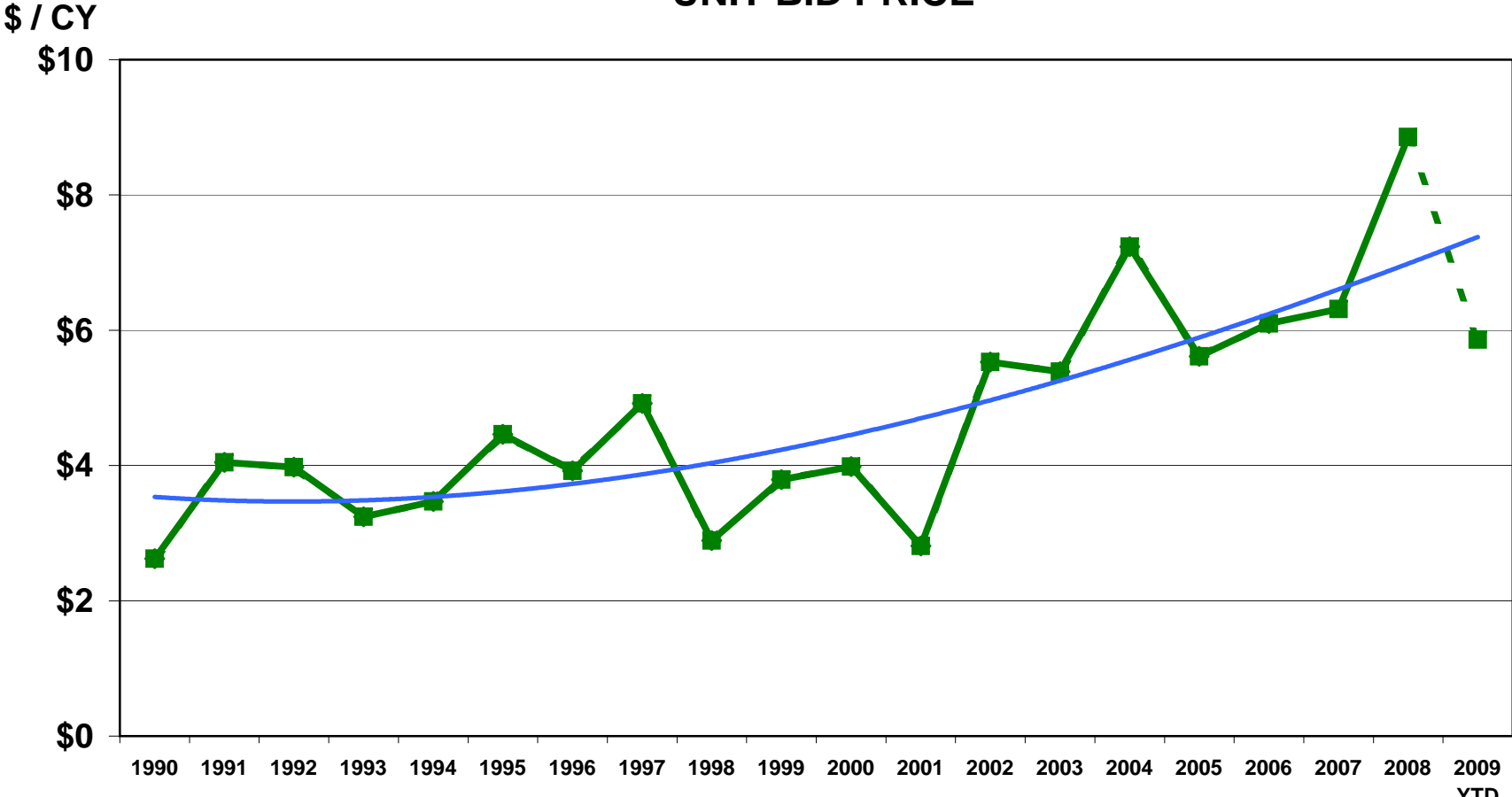


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# ROADWAY EXCAVATION

## UNIT BID PRICE



NOTE: IN 2008 WSDOT AWARDED 2.6 MILLION C.Y. DURING 2008 A VERY LOW PRICE. THIS DATA HAS BEEN EXCLUDED FROM THE GRAPH ABOVE TO PROVIDE A BETTER PICTURE OF OVERALL PRICING DURING 2008.



For more information, please call the WSDOT Construction Office at (360) 705-7822 or visit <http://www.wsdot.wa.gov/biz/construction>

# STEEL REINFORCING BAR

## UNIT BID PRICE

\$ / LB

\$1.50

\$1.25

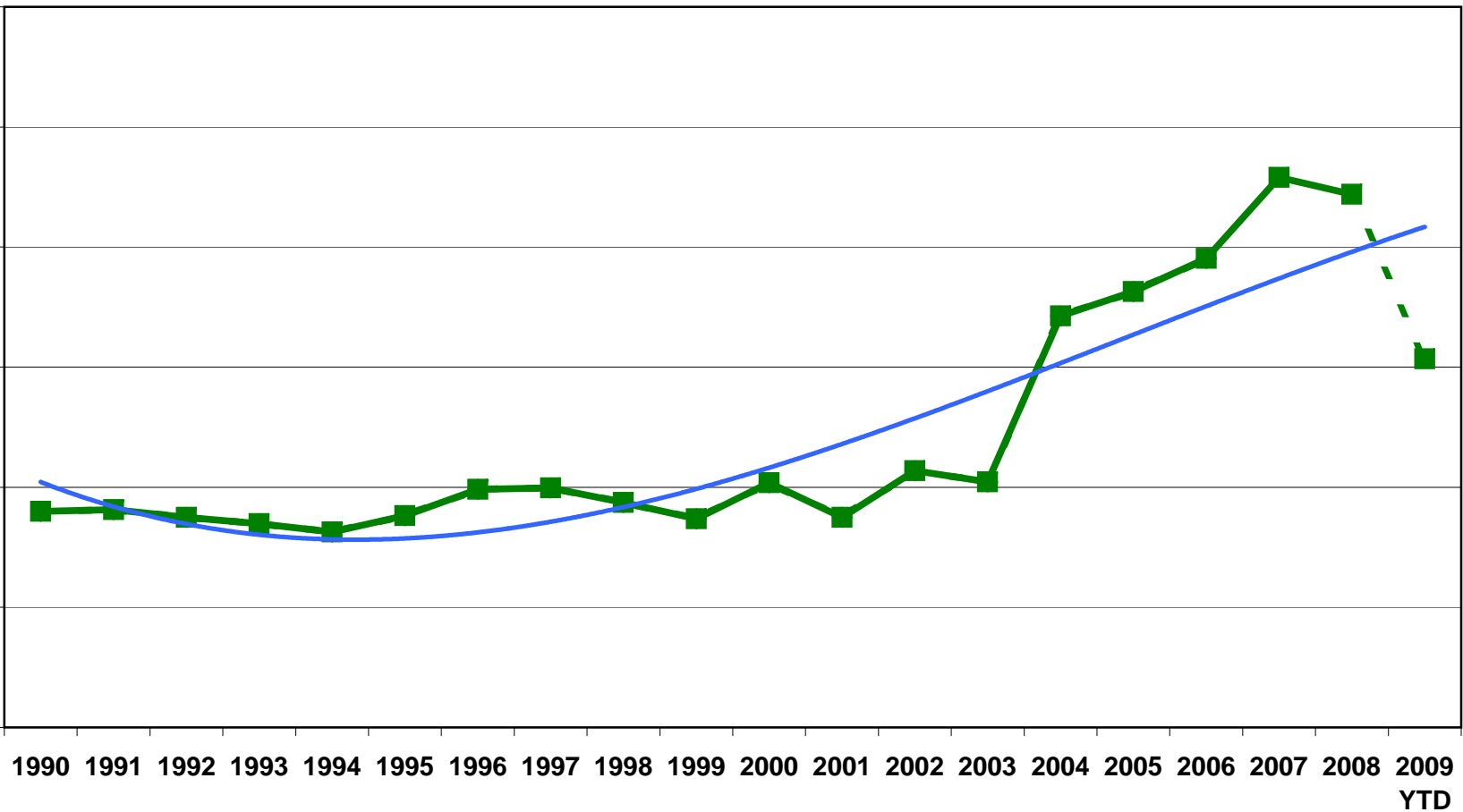
\$1.00

\$0.75

\$0.50

\$0.25

\$0.00



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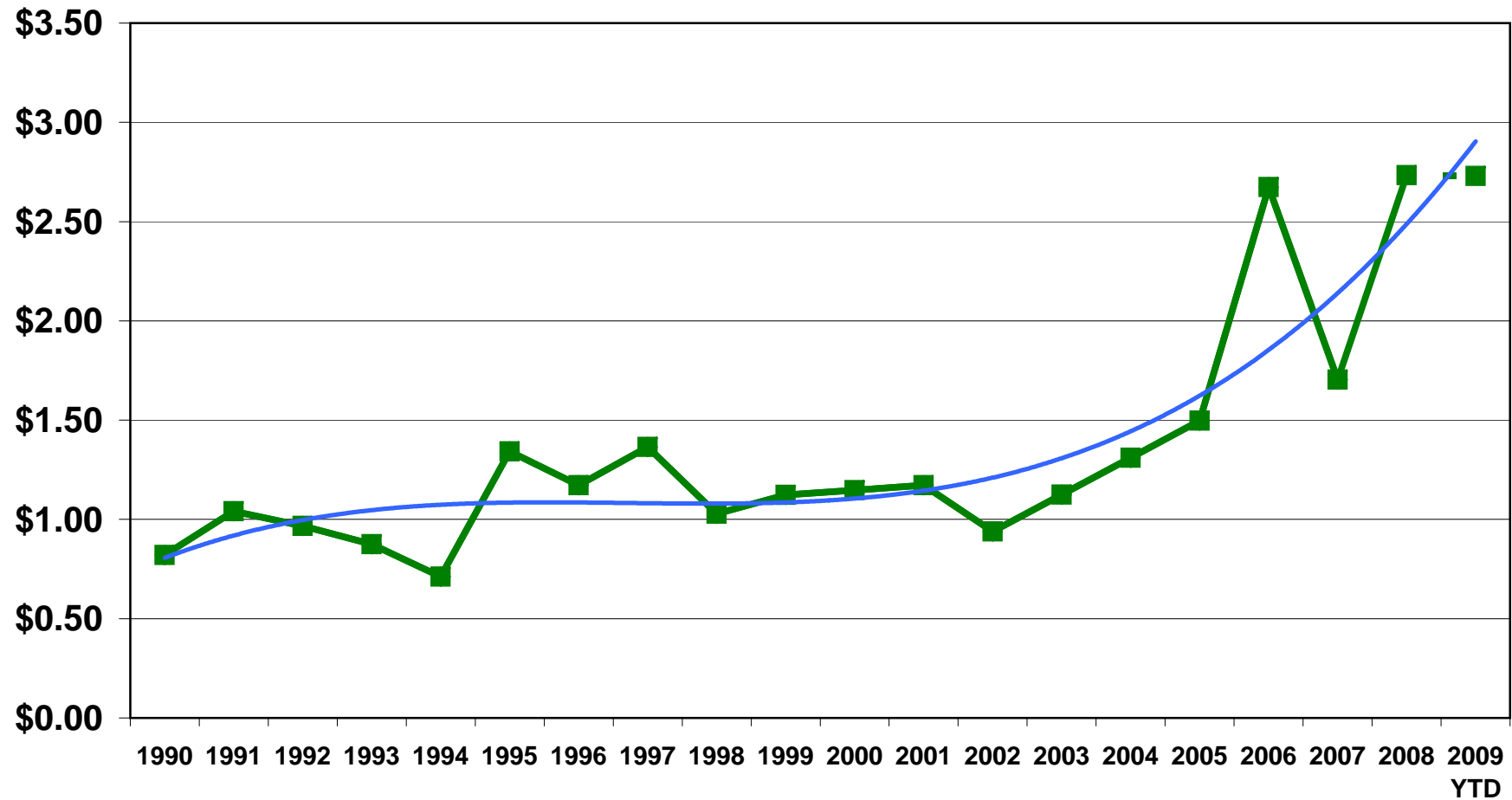
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# STRUCTURAL STEEL

## UNIT BID PRICE

\$ / LB



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