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FOR RELEASE 10:00 AM EDT, MONDAY, JUNE 3, 2002
CB02-66

APRIL 2002 CONSTRUCTION AT \$871.9 BILLION ANNUAL RATE

Construction put in place during April 2002 was estimated at a seasonally adjusted annual rate of \$871.9 billion, nearly the same (± 5 percent) as the revised March estimate of \$870.5 billion, according to the U.S. Commerce Department's Census Bureau. The April figure is nearly the same (± 5 percent) as April 2001.

During the first 4 months of this year \$251.5 billion of construction was put in place, nearly the same (± 5 percent) as the \$250.3 billion for the same period in 2001.

In constant (1996) dollars, the April annual rate was \$719.4 billion, nearly the same (± 5 percent) as the revised estimate of \$719.3 billion for March.

PRIVATE CONSTRUCTION

Spending on new residential housing units was at a seasonally adjusted annual rate of \$296.4 billion in April, nearly the same (± 2 percent) as the revised March estimate of \$294.9 billion. Nonresidential building construction was at a rate of \$185.6 billion, 2 (± 3) percent above the revised March estimate of \$182.7 billion.

PUBLIC CONSTRUCTION

In April, the estimated seasonally adjusted annual rate of public construction put in place was \$206.5 billion, 1 (± 5) percent below the revised March estimate of \$208.8 billion.

May 2002 data will be released on July 1, 2002 at 10:00 AM EDT.

EXPLANATORY NOTES

In interpreting changes in the statistics in this release, note that month-to-month changes in seasonally adjusted statistics often show movements which may be irregular. It may take 2 months to establish an underlying trend for total construction and as long as 8 months for specific categories of construction.

The statistics in this release are estimated from several sources and surveys and are subject to sampling variability as well as nonsampling errors including bias and variance from response, nonreporting, and undercoverage. Estimates of the standard errors are provided in Table 4 for selected types of construction. Whenever a statement such as "2 (± 3) percent above" appears in the text, this indicates the range (-1 to +5 percent) in which the actual percent change is likely to have occurred. All ranges given are 90 percent confidence intervals. If the range contains zero, it is uncertain whether there was an increase or decrease; that is, the change was not statistically significant. For any comparison cited without a confidence interval, the change is statistically significant. Statistics for the current month are preliminary estimates subject to revision in following months as additional data become available. The average absolute percent changes from preliminary estimate to first revision for the major seasonally adjusted components are as follows: total construction, 0.5 percent; private construction, 0.6 percent; private residential construction, 0.5 percent; private nonresidential construction, 1.1 percent; and public construction, 1.4 percent.

More detailed data will appear in Current Construction Reports, C30/02-4, to be issued later this month. A discussion of sources and reliability of the data appears in Current Construction Reports, C30/01-5.

Our internet address is: <http://www.census.gov/const/www/c30index.html>

In the May 2002 press release, normal revisions to unadjusted and seasonally adjusted data will revise back to January 1998.

This press release is available the day of issue through the Commerce Department's on-line Economic Bulletin Board. For information, call (202) 482-1986.

Beginning in July, new monthly detailed types of construction data for 2002 will be presented at:

<http://www.census.gov/const/C30/newtc.html>

Table 1. Value of Construction Put in Place in the United States, Seasonally Adjusted Annual Rate

[Billions of dollars. Detail may not add to total due to rounding. Percent changes based on unrounded figures]

Type of construction	Apr ^P 2002	Mar ^r 2002	Feb ^r 2002	Jan 2002	Dec 2001	Nov 2001	Oct 2001	Apr 2001	Percent change Apr 2002 from—	
									Mar 2002	Apr 2001
Current dollars										
Total construction	871.9	870.5	881.1	875.1	862.6	856.0	856.1	870.8	(Z)	(Z)
Private construction ¹	665.5	661.7	662.4	658.9	654.3	651.5	656.9	677.4	1	- 2
Residential buildings ²	425.5	422.4	418.1	411.4	399.2	396.5	400.1	392.2	1	9
New housing units.....	296.4	294.9	293.8	286.9	281.2	280.0	280.3	274.7	(Z)	8
1 unit.....	260.8	260.8	259.4	251.0	246.6	247.9	248.9	244.8	(Z)	7
2 units or more.....	35.6	34.2	34.4	35.9	34.7	32.1	31.5	29.9	4	19
Nonresidential buildings.....	185.6	182.7	187.7	191.7	190.8	193.0	198.1	220.6	2	- 16
Industrial.....	19.6	19.4	20.5	22.5	23.9	23.9	26.1	34.7	1	- 43
Office.....	42.9	42.3	42.4	44.7	46.2	48.0	50.5	58.8	1	- 27
Hotels, motels.....	11.2	11.2	12.1	12.8	13.1	14.0	14.2	14.9	- 1	- 25
Other commercial.....	63.0	62.4	64.5	63.6	60.5	61.0	61.3	66.1	1	- 5
Religious.....	8.6	8.8	8.6	8.6	8.4	8.4	8.2	8.4	- 3	2
Educational.....	14.7	13.9	14.0	14.2	14.1	13.9	13.7	12.4	5	18
Hospital and institutional.....	16.7	16.2	16.4	15.9	15.3	14.3	15.0	15.3	3	9
Miscellaneous buildings.....	8.9	8.4	9.2	9.2	9.4	9.3	9.1	10.0	6	- 10
Telecommunications.....	(NA)	18.4	19.7	17.5	21.9	20.6	19.0	22.8	(NA)	(NA)
All other private.....	3.2	3.0	3.1	2.9	3.0	2.9	2.9	2.7	5	17
Public construction	206.5	208.8	218.6	216.2	208.3	204.4	199.2	193.4	- 1	7
Housing and redevelopment.....	7.6	7.3	7.1	7.0	7.6	6.8	6.7	6.2	4	21
Industrial.....	1.4	1.9	2.3	1.5	2.4	1.4	1.1	1.6	- 23	- 10
Educational.....	56.7	54.6	56.8	53.6	52.2	52.7	53.5	47.8	4	19
Hospital.....	5.1	5.2	5.2	5.4	4.6	4.4	4.2	3.8	- 1	35
Other public buildings.....	32.8	35.1	35.2	35.2	34.0	34.2	33.9	32.2	- 7	2
Highways and streets.....	56.8	56.2	61.7	66.0	59.8	58.7	56.0	57.7	1	- 2
Military facilities.....	2.4	2.3	2.4	2.2	2.2	2.4	2.3	2.5	2	- 6
Conservation and development ..	8.0	8.7	8.9	8.7	7.5	7.4	7.5	6.3	- 9	26
Sewer systems.....	10.6	11.1	11.8	10.9	10.6	10.8	10.0	11.0	- 4	- 4
Water supply facilities.....	8.0	7.8	8.2	8.3	8.5	8.2	7.7	8.7	2	- 8
Miscellaneous public.....	17.1	18.6	19.1	17.2	18.8	17.4	16.3	15.6	- 8	10
1996 dollars										
Total construction	719.4	719.3	726.2	722.8	713.9	710.5	711.6	736.0	(Z)	- 2
Private construction ¹	548.7	545.9	545.3	543.3	540.9	539.3	544.6	572.0	1	- 4
Residential buildings ²	348.8	345.7	341.6	336.4	327.0	325.0	329.3	329.0	1	6
New housing units.....	242.9	241.4	240.0	234.6	230.3	229.5	230.7	230.5	1	5
1 unit.....	213.7	213.4	211.9	205.2	201.9	203.2	204.8	205.4	(Z)	4
2 units or more.....	29.2	28.0	28.1	29.3	28.4	26.3	25.9	25.1	4	17
Nonresidential buildings.....	151.8	150.0	153.6	157.2	156.6	158.7	163.0	184.3	1	- 18
Industrial.....	16.0	16.0	16.8	18.5	19.6	19.7	21.5	29.0	1	- 45
Office.....	35.1	34.7	34.7	36.7	37.9	39.5	41.6	49.2	1	- 29
Hotels, motels.....	9.1	9.2	9.9	10.5	10.7	11.5	11.7	12.4	- 1	- 27
Other commercial.....	51.6	51.3	52.8	52.2	49.7	50.1	50.4	55.2	1	- 7
Religious.....	7.0	7.2	7.1	7.1	6.9	6.9	6.8	7.0	- 3	(Z)
Educational.....	12.0	11.4	11.4	11.7	11.5	11.5	11.3	10.4	5	15
Hospital and institutional.....	13.7	13.3	13.4	13.1	12.6	11.8	12.3	12.8	3	7
Miscellaneous buildings.....	7.3	6.9	7.5	7.5	7.7	7.7	7.5	8.3	6	- 12
Telecommunications.....	(NA)	17.1	18.3	16.3	20.4	19.4	17.8	21.7	(NA)	(NA)
All other private.....	2.7	2.6	2.6	2.5	2.5	2.5	2.5	2.4	5	14
Public construction	170.6	173.4	180.9	179.5	173.1	171.2	167.0	164.0	- 2	4
Housing and redevelopment.....	6.2	5.9	5.8	5.8	6.2	5.6	5.5	5.2	4	18
Industrial.....	1.2	1.5	1.9	1.2	2.0	1.2	0.9	1.3	- 23	- 12
Educational.....	46.4	44.8	46.5	44.0	42.8	43.3	44.1	39.9	4	16
Hospital.....	4.2	4.2	4.2	4.5	3.8	3.6	3.4	3.2	- 1	32
Other public buildings.....	26.8	28.8	28.8	28.8	27.9	28.1	27.9	26.9	- 7	(Z)
Highways and streets.....	46.4	46.2	50.5	54.3	49.3	49.1	47.1	48.7	(Z)	- 5
Military facilities.....	1.9	1.9	2.0	1.8	1.8	2.0	2.0	2.1	1	- 9
Conservation and development ..	7.0	7.7	7.8	7.7	6.7	6.6	6.7	5.7	- 9	22
Sewer systems.....	9.3	9.7	10.3	9.7	9.3	9.6	8.9	9.9	- 4	- 6
Water supply facilities.....	6.7	6.6	6.9	7.1	7.2	7.0	6.5	7.5	2	- 11
Miscellaneous public.....	14.5	15.8	16.2	14.7	16.1	15.1	14.1	13.6	- 9	7

NA Not available. ^PPreliminary. ^rRevised. Z Less than 0.5 percent.

¹Includes the following categories of private construction not shown separately: residential improvements, railroads, electric light and power, gas, petroleum pipelines, and farm nonresidential. ²Includes improvements.

Table 2. Value of Construction Put in Place in the United States, Not Seasonally Adjusted in Current Dollars

[Billions of dollars. Detail may not add to total due to rounding. Percent changes based on unrounded figures]

Type of construction	Apr ^P 2002	Mar ^r 2002	Feb ^f 2002	Jan 2002	Dec 2001	Nov 2001	Oct 2001	Apr 2001	Year to date		
									Apr 2002	Apr 2001	Percent change
Total construction	69.4	64.5	57.8	59.7	64.1	73.3	79.1	69.3	251.5	250.3	(Z)
Private construction ¹	53.5	50.2	44.0	45.9	49.2	56.2	60.4	54.5	193.6	199.4	- 3
Residential buildings ²	33.8	31.5	25.9	27.8	28.5	34.3	37.3	31.1	119.1	111.4	7
New housing units.....	24.0	22.7	19.2	19.7	20.9	24.2	25.3	22.2	85.6	79.9	7
1 unit.....	21.0	20.0	16.7	17.0	18.2	21.5	22.6	19.7	74.7	70.6	6
2 units or more.....	2.9	2.7	2.5	2.7	2.7	2.7	2.7	2.5	10.9	9.2	18
Nonresidential buildings.....	15.2	14.3	13.9	14.3	15.3	16.6	17.7	18.0	57.7	68.9	- 16
Industrial.....	1.6	1.5	1.5	1.7	2.0	2.1	2.4	2.8	6.3	10.7	- 41
Office.....	3.6	3.4	3.3	3.5	3.7	4.1	4.4	4.9	13.7	19.2	- 29
Hotels, motels.....	0.9	0.9	0.9	1.0	1.1	1.2	1.2	1.2	3.8	5.0	- 24
Other commercial.....	5.0	4.8	4.6	4.5	4.7	5.3	5.6	5.3	18.8	19.5	- 4
Religious.....	0.7	0.7	0.6	0.7	0.7	0.8	0.8	0.7	2.7	2.5	6
Educational.....	1.2	1.0	1.0	1.0	1.0	1.1	1.2	1.0	4.2	3.6	15
Hospital and institutional.....	1.4	1.3	1.3	1.2	1.3	1.2	1.3	1.3	5.3	5.1	4
Miscellaneous buildings.....	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.9	2.9	3.3	- 13
Telecommunications.....	(NA)	1.5	1.4	1.2	1.9	1.8	1.8	1.8	(NA)	6.8	(NA)
All other private.....	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.9	0.8	12
Public construction	15.9	14.3	13.8	13.8	14.9	17.1	18.6	14.9	57.8	50.9	14
Housing and redevelopment.....	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.5	2.2	1.8	26
Industrial.....	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.6	0.5	19
Educational.....	4.3	3.9	3.8	3.7	3.8	4.2	4.7	3.6	15.8	13.1	21
Hospital.....	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	1.7	1.2	36
Other public buildings.....	2.7	2.7	2.6	2.6	2.7	3.0	3.0	2.7	10.7	9.5	12
Highways and streets.....	4.0	3.0	2.9	3.2	3.5	4.9	6.0	4.2	13.2	12.5	6
Military facilities.....	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7	0.7	1
Conservation and development ..	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.5	2.5	2.1	19
Sewer systems.....	0.8	0.8	0.8	0.8	0.8	1.0	1.0	0.9	3.2	3.0	8
Water supply facilities.....	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	2.3	2.3	3
Miscellaneous public.....	1.3	1.3	1.3	1.1	1.4	1.5	1.5	1.2	5.1	4.4	15

NA Not available. ^PPreliminary. ^rRevised. Z Less than 0.5 percent.

¹Includes the following categories of private construction not shown separately: residential improvements, railroads, electric light and power, gas, petroleum pipelines, and farm nonresidential. ²Includes improvements.

Table 3. U.S. Census Bureau Composite Fixed-Weighted (1996 Weights) Price Index and Implicit Price Deflator

[1996 = 100]

Period	Fixed-Weighted Index			Implicit Price Deflator		
	2000	2001	2002	2000	2001	2002
January.....	113.9	117.8	121.4	114.0	117.4	121.1
February.....	114.1	118.3	^r 121.6	114.1	117.7	^r 121.2
March.....	114.0	118.8	^r 121.2	113.9	118.5	^r 121.0
April.....	114.5	118.7	^P 121.1	114.4	118.3	^P 121.2
May.....	114.8	118.9		114.8	118.6	
June.....	115.0	119.2		115.1	119.0	
July.....	115.6	119.1		115.7	118.8	
August.....	115.7	119.4		115.8	119.2	
September.....	116.1	119.6		115.9	119.4	
October.....	116.4	120.4		116.3	120.3	
November.....	116.7	120.8		116.6	120.5	
December.....	117.1	121.2		116.9	120.7	
Annual.....	115.3	119.4		115.4	119.1	

^PPreliminary. ^rRevised.

Note: The fixed-weighted price index is a weighted average of the individual price index series used to deflate the Value of Construction Put in Place (VIP) series. In calculating the index, the weights (the composition of current dollar VIP in 1996 by category of construction) are held constant. Consequently, the index reflects only changes in prices. The implicit price deflator is a derived ratio of total current to constant dollar VIP (multiplied by 100). It is the average of the individual price indexes used in the deflation of VIP, but the prices are weighted by the composition of VIP each period. As a result, the implicit price deflator reflects not only changes in prices, but also changes in the composition of VIP, and its use as a measure of price change is discouraged.

Table 4. **Relative Standard Errors and Coefficients for Standard Errors of Changes**

Type of construction	Relative standard error (percent)			Coefficient for changes	
	Monthly estimate	Year-to-date estimate	Annual estimate	Month-to-month change (k1)	Year-to-date change (k2)
Total construction	2	2	1	.03	.03
Private construction	3	2	1	.04	.03
Residential buildings	5	4	2	.06	.05
New housing units	2	2	1	.01	.02
1 unit	2	2	2	.01	.02
2 units or more	4	4	3	.03	.04
Nonresidential buildings	2	2	1	.02	.03
Industrial	3	3	2	.04	.04
Office	4	3	2	.05	.04
Hotels, motels	7	6	5	.09	.08
Other commercial	5	3	2	.06	.04
Religious	9	8	5	.12	.11
Educational	7	6	5	.10	.09
Hospital and institutional	6	6	5	.07	.08
Miscellaneous buildings	7	6	4	.09	.09
Public construction	2	1	1	.03	.01
Housing and redevelopment	8	5	4	.11	.07
Industrial	(NA)	(NA)	(NA)	(NA)	(NA)
Educational	3	3	2	.04	.04
Hospital	6	6	4	.08	.09
Other public buildings	3	2	2	.04	.03
Highways and streets	4	3	2	.05	.04
Military facilities	(NA)	(NA)	(NA)	(NA)	(NA)
Conservation and development	4	3	2	.06	.04
Sewer systems	6	4	3	.08	.06
Water supply facilities	8	5	3	.11	.07
Miscellaneous public	8	5	4	.11	.07

NA Not available.

Note: All statistics are based upon 2001 data. The coefficient (k1) for the month-to-month change is applicable to change from the previous month and change from the same month a year ago.

The standard errors (SE) for month-to-month and year-to-date changes may be approximated by the following formula with the appropriate coefficient shown in Table 4:

$$SE(\text{change}) = (k1 \text{ or } k2) (100 + \% \text{ change shown in table}).$$

For example, Table 1 shows that private 'office' construction increased 1 percent from last month. The standard error of the 1 percent increase is about equal to 5 percentage points:

$$SE(1\% \text{ increase}) = (.05)(100+1) = (.05)(101) = 5\%$$

Once the standard error is available, one can construct a 90 percent confidence interval of the change by multiplying the standard error by 1.6. In the above example, an approximate 90 percent confidence interval of the 1 percent increase for private 'office' construction would be between:

$$9 \text{ and } -7 \text{ percent } (1\% \text{ plus or minus } 8\% (5\% \times 1.6)).$$

