

# **The Economic Contribution of Colorado's Green Industry:**

## **A 2008 Update**

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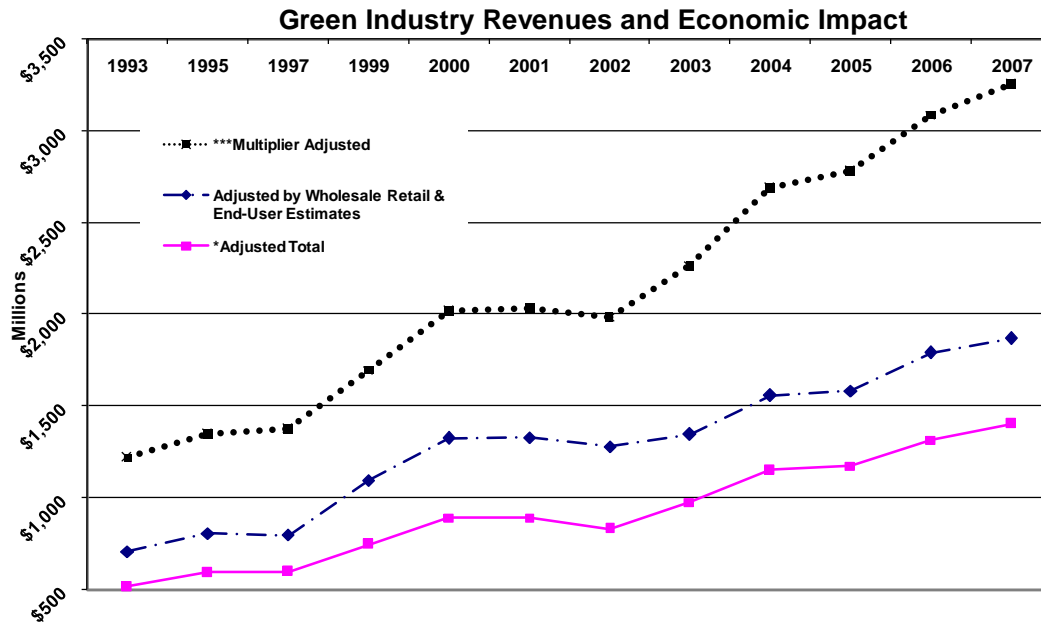
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**Executive Summary:**  
**The 2007 Economic Contributions of Colorado's Green Industry**  
Dawn Thilmany,\* Jessica Hernandez, Anita Alves Pena and Phil Watson

- Colorado household and business expenditures on a broader set of garden, landscape and lawn products and services (including linkage industries such as irrigation systems, botanical gardens, lawn and garden equipment and maintenance services) have followed a similar trajectory, averaging almost 10% annual growth since 1993, for a 2007 total of \$1.8 billion.
  - The only setback in this growth was a small decline in revenue levels during the Colorado drought years of 2001 and 2002 (Figure 1).
- Through 2007, the green industry in Colorado has seen sustained growth: the \$1.8 billion directly contributed increases to \$3.3 billion when you consider its impact on broader economic activity and employment generation in the Colorado economy.
  - Based on multipliers generated through the IMPLAN input/output model, total economic contributions of Colorado's green industry total:
  - \$2.4 billion (using a Type I multiplier that includes indirect activity with other local businesses including linkages to lawn, garden and irrigation equipment as well as broader linkages to real estate, finance, retail and government services), to
  - \$3.3 billion dollars (using a type II multiplier that includes indirect activity and expenditures from wage payments to households in Colorado).
- Total green industry employment has increased to over 35,000 jobs, and for every million dollars in green industry revenues/economy activity, the industry generates between 20 and 40 jobs, depending on which multiplier was used.
- Assuming total direct green industry output of \$1.8 billion, 38% of industry spending goes to intermediate inputs and 62% is value added (including payments to labor and management), which is the basis for the relatively high multiplier to statewide economic activity.

- It appears the industry made an almost complete recovery from the drought restrictions and economic downturn in the early 2000's but it is not yet clear how the industry will weather the current housing downturn.
- The green industry provides over 35,000 jobs, an increase of 12,000 jobs since 1994 (tripling in size in less than 15 years), with \$1.2 billion in payroll (up \$750 million from 1994).
  - These increases are indicative of the demand for green services and the ability to hire workers on a more year-round basis (resulting in greater earnings per worker)
  - The average wage earned has also increased to an average of \$35,318 annually, up from \$26,159 in 2001
  - An increase of over 30% in 6 years, far outpacing increases in cost of living.
- This study's definition of Green Industries includes: (see Figure 2 for industry shares)
  - Plant, tree and sod production, wholesale and retail sales;
  - Linked input sectors including garden supplies, irrigation equipment and lawn and garden equipment;
  - and, The design, installation and care of trees (arboriculture), gardens, home and business landscapes including golf courses, cemeteries and botanical gardens.
- For two adjustments to the Colorado revenue data, this study extrapolated from studies, including:
  - A Texas study that found mass merchants and retail stores added about 42% in additional green industry sales, so this study made a 35% adjustment for sales lost to mass retailers.
  - An Illinois study found that out-of-sector, end-user payrolls suggest a 17% undercounting, so this study adjusts landscaping sector activity upwards by 20%.
- Most green sectors show growth for the years 1993 to 2007 (Table 1)
  - The highest growth sectors during the 1990's and early 2000's were wholesale nursery, tree and sod production, landscape design, installation and maintenance, public and private golf courses, and nursery/garden centers.

**Figure 1: Colorado's Allied Green Industry Economic Indicators**



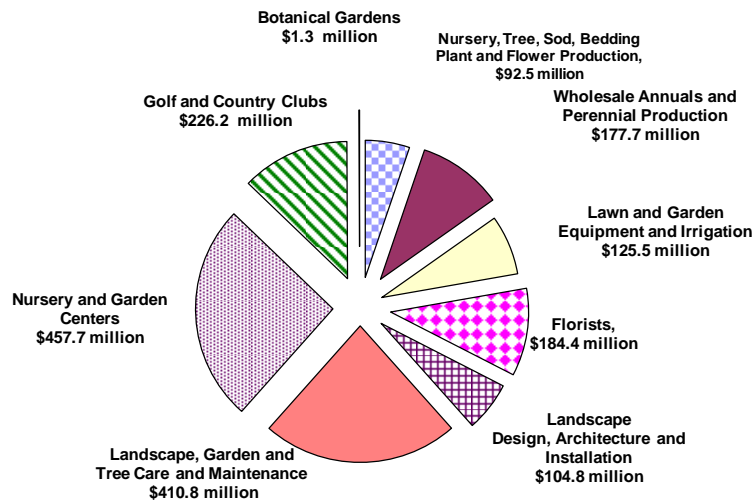
\*Direct Total was Adjusted to account for estimated shares in certain industry codes (irrigation, outdoor equipment, design).

\*\*The Expanded estimates account for retail sales made through mass merchandisers, home improvement stores and groceries, as well end-user provided services allied

\*\*\*The Multiplier impact includes direct revenues attributable to the industry as well as indirect economic activity fueled by the direct impact.

**Figure 2:**

**Share of Green Industry Revenues, 2007**  
 Total Revenues \$1.78 Billion,  
 Wholesale, Retail and End-User Adjusted, No Multipliers



Footnote on Data: This data was compiled from Secondary Colorado Tax Revenue data, so should be interpreted with care. For wholesale categories, some adjustments were made for sales that would not be reported, and multi-activity firms may report in one of several sectors that represent their operation.

**Table 1: Allied Green Industry Revenues, Selected Years 1993-2007**

<b>Sector</b>	<b>1993</b>	<b>1997</b>	<b>2000</b>	<b>2003</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>Wholesale Annual/Perennial Production</b>	\$ 1,523,959	\$ 7,745,014	\$ 17,853,063	\$ 100,987,384	\$ 237,190,000	\$ 194,478,000	\$ 115,511,600
<b>Nursery, Sod and Tree Production</b>	\$ 16,977,826	\$ 24,733,083	\$ 39,777,860	\$ 30,294,076	\$ 40,354,000	\$ 50,442,500	\$ 69,916,250
<b>Landscape Design, Architecture and Installation</b>	\$ 5,819,269	\$ 13,800,220	\$ 41,754,801	\$ 47,973,975	\$ 65,467,000	\$ 83,973,000	\$ 83,813,100
<b>Flower, Bedding Plant and Potted Plant Production</b>	\$ 26,744,093	\$ 12,336,677	\$ 18,753,424	\$ 3,375,334	\$ 3,695,000	\$ 3,953,000	\$ 4,095,900
<b>Landscape, Garden and Tree Care and Maintenance</b>	\$ 100,275,658	\$ 145,355,370	\$ 234,304,166	\$ 221,492,132	\$ 229,811,000	\$ 312,012,000	\$ 360,965,376
<b>Nursery &amp; Garden Centers</b>	\$ 195,517,566	\$ 211,439,397	\$ 200,167,806	\$ 224,435,561	\$ 210,065,000	\$ 258,593,000	\$ 297,517,900
<b>Golf &amp; Country Clubs</b>	\$ 66,905,935	\$ 65,398,761	\$ 157,909,650	\$ 174,550,910	\$ 180,190,000	\$ 152,503,000	\$ 226,164,500
<b>Florists</b>	\$ 92,946,537	\$ 99,256,039	\$ 151,309,724	\$ 107,464,307	\$ 108,329,000	\$ 117,219,000	\$ 119,850,000
<b>Botanical Gardens</b>	\$ 529,050	\$ 306,638	\$ 346,758	\$ 1,616,732	\$ 1,054,000	\$ 1,110,000	\$ 1,305,400
<b>Linkage Industries: Supported by Core Green Industries</b>							
<b>Lawn and Garden Equipment Sales and Maintenance</b>	\$ 7,909,378	\$ 15,308,138	\$ 23,344,694	\$ 25,205,889	\$ 51,703,000	\$ 73,554,000	\$ 77,572,900
<b>Irrigation and Water Distribution Systems</b>	\$ 620,058	\$ 836,289	\$ 5,905,599	\$ 19,540,273	\$ 23,395,000	\$ 33,351,500	\$ 22,851,400
	<b>1993</b>	<b>1997</b>	<b>2000</b>	<b>2003</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>*Adjusted Total</b>	\$ 515,769,329	\$ 596,515,625	\$ 891,427,545	\$ 1,346,991,568	\$ 1,581,923,047	\$ 1,790,785,785	\$ 1,869,071,301
<b>**Expanded by Retail &amp; End-Users</b>	\$ 665,671,009	\$ 751,736,476	\$ 1,103,466,113	\$ 1,761,202,111	\$ 2,089,239,172	\$ 2,282,695,097	\$ 2,360,256,929
<b>***Multiplier Adjusted</b>	\$ 1,218,177,946	\$ 1,375,677,751	\$ 2,019,342,987	\$ 2,465,682,955	\$ 2,924,934,840	\$ 3,195,773,136	\$ 3,304,359,701

**Note:** There are several ways to measure the size of the industry. In this table, the core green industry sectors are presented, along with some linkage industries that are part of the indirect activity fueled by the primary industry activities. The multiplier adjusted numbers take these linkages, in addition to a broader set of linkages (utilities, retail stores, government) that the businesses and their employees have with the Colorado economy, into account.

**Note on Data Sources:** This data is compiled from secondary data collected by the Colorado Department of Revenue, and should be interpreted with caution since there may inconsistency with how some multi-activity firms report their sales data. However, the total, aggregate economic activity does provide a consistent measure of industry growth.