

# The Economic Benefits of the Cherry Creek School District

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*Dedicated to Excellence*  
Cherry Creek Schools

Prepared By:



Development  
Research Partners

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The Cherry Creek School District is the fourth largest school district in Colorado, with about 54,700 students in 60 schools as of fall 2015. The Cherry Creek School District serves residents across seven municipalities in Arapahoe County including Aurora, Centennial, Cherry Hills Village, Englewood, Foxfield, Glendale, and Greenwood Village.

The Cherry Creek School District consists of strong neighborhood schools that serve the students who live in each community. The district has been named a District of Distinction for “Innovative STEM Teaching and Learning” by *District Administration* magazine. Further, the district has one of the lowest classroom teacher turnover rates in the metro Denver region and the third-most National Board Certified Teachers in Colorado. These schools not only utilize flexible and innovative strategies to meet the learning needs of each child, they connect neighbors and contribute to stronger communities.

Strong neighborhood schools can positively influence the economy in many ways. A strong, successful school district attracts businesses and residents to a community, positively influencing property values and employment opportunities. According to a recent Bank of America survey, more than 75 percent of parents say their child’s education is an important part of finding a new home, with 53 percent buying a new home in a specific neighborhood to get into a better school. A Realtor.com survey found homebuyers are willing to pay between 6 and 10 percent more for the right school.

More than 100,000 students have graduated from the Cherry Creek School District since the first graduating class in 1955. District students have earned more than \$200 million in college scholarships in the past four years, positively influencing the budgets of affected families. In addition, numerous studies have found positive economic benefits associated with education. For example, 2015 data from the U.S. Bureau of Labor Statistics indicated that the unemployment rate of high school graduates was 2.6 percentage points lower and average annual earnings were 38 percent higher than those without a diploma.

In addition to the societal benefits, the Cherry Creek School District has a significant economic impact in the metro Denver region. The district is one of the largest employers in metro Denver, providing millions of dollars in earnings to its teachers and staff and supporting the business community with its local purchases of goods and services. The intent of this study is to estimate the economic and fiscal benefits the Cherry Creek School District has in metro Denver through its on-going operations and construction activities based on the district’s operations during the 2014/2015 fiscal year.

## *Economic and Fiscal Benefits of Annual Operations*

### **Economic Benefits**

The Cherry Creek School District’s operations support a wide range of industries throughout the metro Denver region on an annual basis. It is estimated that over 70 percent of the district’s spending is transacted with metro Denver based vendors, suppliers, and residents, driving the district’s large economic impact.

Employee compensation comprises about two-thirds of the district’s operating expenditures. In FY 2014/15, Cherry Creek School District employed about 7,910 teachers and staff, all of whom were residents of the metro Denver region. The teachers and staff received about \$450 million in wages and benefits, and nearly \$419 million represented dollars that could be spent locally on housing, goods, and services. When employees of the district spent their paychecks at local businesses, these local businesses provided payroll to their employees, made purchases from other vendors, and so on, creating the multiplier benefits.

In addition, the Cherry Creek School District spent about \$233 million on utilities, professional and technical services, wholesale and retail trade, construction, building support services, financial services, and maintenance. When these dollars were spent at local businesses, these local businesses provided payroll to their employees, made purchases from other vendors, and so on, creating another stream of multiplier benefits.

In total, the direct economic benefit of the district was \$682.8 million produced by 7,910 employees. Through the multiplier effects of this direct spending, Cherry Creek School District likely supported an additional \$693.4 million of output in all industries in the metro Denver region, produced by 5,975 indirect workers earning \$210.6 million. Therefore, the total economic benefit of the Cherry Creek School District in the metro Denver region was an estimated \$1.4 billion, which was produced by 13,885 workers in all industries earning \$629.2 million.

**The CCSD provided a total economic benefit of \$1.4 billion in the metro Denver region in FY 2014/15 and supported the employment of 13,885 workers earning \$629 million.**

## **Fiscal Benefits**

While the Cherry Creek School District is exempt from major forms of taxation, employees of the Cherry Creek School District contribute a large amount of annual tax revenue to state and local governments and tax districts in the metro Denver region as they spend their earnings on taxable retail purchases and housing.

**Employees of the CCSD generated an estimated \$17.5 million in property, sales, and occupational privilege taxes during FY 2014/15.**

Based on employee earnings, employee spending generated an estimated \$17.5 million in tax revenue through property, sales, and occupational privilege taxes during FY 2014/15. More specifically, the tax revenue consisted of an estimated \$2.2 million in state sales tax,

\$6 million for county and city governments, \$7.9 million for local schools, and \$1.4 million for other property and sales tax districts.

## ***Economic Benefits of Construction Activity***

Construction spending by the Cherry Creek School District varies each year based on financing, ballot measures, and district needs. The voters in the school district approved a \$125 million bond measure in 2012 for new school construction, school expansions and additions, technological upgrades, and STEM classrooms. Nearly 80 percent of the funds raised were spent in fiscal years 2013/14 and 2014/15, with the remaining funds budgeted for the next two fiscal years.

**The total economic benefit of the construction activity supported by the CCSD 2012 bond measure was an estimated \$178.5 million produced by 1,000 workers earning \$58 million.**

The Cherry Creek School District utilizes many local firms, project management, contractors, materials, and labor for its construction and maintenance. Indeed, an estimated 70 percent of the construction spending was transacted with regionally based suppliers, contractors, and laborers, directly benefiting the metro Denver economy. The local spending has significant, but temporary, multiplicative impacts in the metro Denver region.

The direct economic benefit of construction activity in the metro Denver region from the district's \$125 million bond issuance was an estimated \$88 million. This local spending supported the employment of 543 direct full-time equivalent construction workers earning \$35.2 million during the four-year construction period. Through the multiplier effects of this direct spending, the district's construction activity likely supported an additional \$90.5 million in output in all industries in the region, produced by 458 indirect workers earning \$22.7 million. Therefore, the total economic benefit in the metro Denver region of the construction and investment activity funded by Cherry Creek School District's 2012 bond measure was an estimated \$178.5 million in total output produced by 1,001 workers earning \$57.9 million.

The Cherry Creek School District is the fourth largest school district in Colorado, with about 54,700 students in 60 schools as of fall 2015. The Cherry Creek School District serves residents across seven municipalities in Arapahoe County including Aurora, Centennial, Cherry Hills Village, Englewood, Foxfield, Glendale, and Greenwood Village. There are more than 301,000 people living within the district boundaries. Cherry Creek School District is recognized at the state and local levels with 14 of its schools receiving Colorado's John Irwin Schools of Excellence award in 2014, awarded to schools with consistent academic achievement and performance.

**Cherry Creek School District is the 4th largest in the state with about 54,700 students in 60 schools**

The Cherry Creek School District has a significant economic impact in the metro Denver region. The district is one of the largest employers in metro Denver with about 7,910 employees. The district spends a high percentage of its budget locally, hiring

contractors and suppliers from within the metro Denver region. In addition, employees of the district provide the state, counties, and local communities in the region with tax revenue that bolsters governmental services and contributes to the community. This report details the ways in which the Cherry Creek School District benefits the metro Denver economy through its on-going operations and construction activities.

## ECONOMIC AND FISCAL BENEFITS DEFINED

### *Economic Benefits*

Economic impact analysis is the analytical approach used to assess the measurable direct and indirect benefits resulting from a project over a specific period. Only those benefits that can be measured or quantified are included. Intangible benefits, such as enhancement of community character or diversification of the job base, are not included. Further, economic impact analysis highlights that activity which occurs within a specified geographic area. This analysis estimates the benefits of the Cherry Creek School District in the metro Denver region, defined as a seven-county region consisting of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties.

The spending patterns associated with investment and business operations have spin-off effects or multiplicative impacts in the county, region, and state. Therefore, multiplier analysis is used to trace the impacts on businesses, organizations, and individuals affected by the construction activity and on-going operations.

The multiplicative impacts are discussed in terms of "indirect" and "induced" economic benefits (often collectively referred to as simply indirect benefits). For example, when the district purchases supplies from a local vendor, that local vendor provides payroll to its employees and makes purchases from other vendors. These other vendors in turn provide payroll to their employees and make purchases from other vendors and so on, providing the indirect benefit of the initial dollar spent. On a separate but similar spending track, when employees of the district spend their paychecks at local businesses, these local businesses provide payroll to their employees, make purchases from other vendors, and so on, creating the induced benefit.

As a result, the initial dollars spent by the district for construction, capital investment, business purchases, and employee compensation will be circulated throughout the local economy a number of times. The number of times that the initial dollars are circulated throughout the local economy may be estimated using economic multipliers. An economic multiplier summarizes the total impact that can be expected within a specific geographic area due to a given industry's level of business activity. Generally, larger multipliers are associated with industries that (1) spend more dollars locally, (2) pay high salaries, and/or (3) sell their goods and services outside of the local area.

The indirect and induced jobs and income flows generated by the direct local spending patterns are estimated using the Regional Input-Output Modeling System II (RIMS II) multipliers developed by the Bureau of Economic Analysis of the U.S. Department of Commerce. The RIMS II multipliers are the most widely used and respected for economic impact analysis. These multipliers are geographic and industry specific, and are used to estimate the total benefits of a project.

Three types of economic benefits are derived from the RIMS II multipliers. First, the direct and indirect impact of the district on the gross output of the region is estimated. This is the total value produced by local firms and residents resulting from the value of the output produced by an industry directly. Gross output consists of the value of both intermediate goods and final products, so this is a larger value than gross domestic product (GDP). Second, the total direct and indirect employment needed in the region to produce this level of output is determined. These employees may be full-time or part-time, local or non-local workers. Further, the indirect employment supported might represent fractions of jobs, added to reflect whole positions. Third, the analysis presents an estimate for the typical direct and indirect earnings associated with this level of production.

## *Fiscal Benefits*

Fiscal impact analysis estimates the direct public revenues and public costs resulting from a project over a specific time period. A project may generate a broad array of public revenues ranging from sales tax, use tax, property tax, franchise fees, licenses and permits, other charges for services, and governmental transfers. In turn, state and local governments and special districts provide a variety of public services such as police and fire protection, public works, community social and recreational programs, education, and water and sanitation services, to name a few.

A comprehensive fiscal impact analysis includes estimates for all sources of public revenues and all governmental service costs for all governmental taxing entities serving the area or project being analyzed. A comprehensive fiscal impact analysis is beyond the scope of this project. Rather, this report includes estimates of the impact of employee spending on public revenue generated from sales tax, property tax, and occupational privilege tax only as these are the main sources of governmental revenue given the nature of the district and its related activities. The analysis demonstrates that even "tax exempt" institutions may generate significant amounts of revenue to support the community in which they operate. The sales tax revenue estimates are based on current sales and use tax rates and tax policies in the metro Denver region. Property tax estimates are based on the value of real and personal property and current tax policies.

## METHODOLOGY

### *Geographic Selection*

This analysis estimates the benefits of the Cherry Creek School District in the metro Denver region. All of the district's employees reside in metro Denver and the region captures many of the district's business transactions and contracts. The total output, employment, and earnings attributed to the district are estimated using the RIMS II multipliers for the seven-county metro Denver region.

The fiscal benefits reported in this study are narrower in concept. Tax estimates are discrete to the level of government or tax district specified. For instance, property tax revenues benefit several taxing entities that provide services to the district and employees. While any property tax received by a city benefits its residents who are also residents of a county and of the greater metro Denver region, city tax revenue is only counted as a direct fiscal benefit to the city, not the county or region as a whole. Thus, the fiscal benefits estimated in this study should specify the particular governmental entity when reported.

## *Project Parameters and Study Variables*

Development Research Partners estimated the economic and fiscal benefits described in this report based on primary data provided by the district and when necessary, data from a variety of secondary sources including data from the U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis, and state and local governments. Development Research Partners made every attempt to collect necessary additional or missing information and believe the information used in this report is from sources deemed reliable but is not guaranteed.

Some numbers in the study may not add exactly due to rounding. In general, numbers reported in the text of the report are rounded to the nearest hundred thousand if over \$1 million. Figures that are less than \$1 million are rounded to the nearest thousand. This analysis estimates the economic and fiscal benefits of the district for the 2014-2015 fiscal year (FY 2014/15), or the year ended June 30, 2015. Construction impacts are for actual spending in fiscal years 2013-2014 and 2014-2015, and budgeted estimates for fiscal years 2015-2016 and 2016-2017.

## **REPORT ORGANIZATION**

Following the introduction, sections two and three describe the economic benefits of the Cherry Creek School District by spending category. Section two describes the economic benefits of the district's annual, on-going operations. Section three describes the benefit to metro Denver of construction spending associated with the district's \$125 million bond issue in November 2012. On a regular basis, the district spends significant amounts of money to maintain, expand, and upgrade its schools and facilities. Section four of the report details fiscal benefits associated with the Cherry Creek School District including benefits from employee spending activity in communities across metro Denver. The economic and fiscal benefits are combined and summarized in the Summary chapter of the report.

## II. SCHOOL DISTRICT OPERATIONS

The Cherry Creek School District is one of the largest employers in the metro Denver region. In 2016, the Cherry Creek School District ranked as the eighth largest public sector employer in metro Denver and the 11th largest among both public and private employers with about 7,910 employees. The vast majority of the

**With about 7,910 employees, CCSD is one of the largest employers in metro Denver**

district's expenditures are spent in the metro Denver region, boosting the regional and local economies. All of the district's employees reside in the metro Denver region, generating income for many businesses and industries, contributing to local tax bases, and boosting the region through community involvement and citizenry.

**Table 1: Largest Non-Retail Employers  
Metro Denver, 2016**

Rank	Company	Product/Service	Metro Denver Employees
1	U.S. Government	Public	39,900
2	State of Colorado	Public	31,470
3	University of Colorado System	Public	19,630
4	Denver Public Schools	Public	14,790
5	HealthONE Corporation	Healthcare	11,960
6	City & County of Denver	Public	11,680
7	Jefferson County Public Schools	Public	11,370
8	Centura Health	Healthcare	9,450
9	SCL Health System	Healthcare	9,060
10	Douglas County School District	Public	8,000
<b>11</b>	<b>Cherry Creek School District</b>	<b>Public</b>	<b>7,910</b>
12	Lockheed Martin Corporation	Aerospace & Defense	7,460
13	UCHealth	Healthcare, Research	6,770
14	Comcast Corporation	Telecommunications	6,760
15	Kaiser Permanente	Healthcare	6,420
16	Children's Hospital Colorado	Healthcare	6,100
17	Aurora Public Schools	Public	6,090
18	Denver Health	Public	6,060
19	CenturyLink	Telecommunications	5,840
20	United Airlines	Airline	5,500

*Sources: Metro Denver EDC, Largest Employers 2016; Cherry Creek School District.*

The district's large economic impact in the region is driven in part by strong local spending. Over 70 percent of the district's spending was transacted with metro Denver based vendors, suppliers, and residents based on estimates for the 2014-2015 fiscal year. This spending contributed to the district's multiplier benefits, supporting regional output, earnings, and employment.

**Over 70 percent of CCSD's spending was transacted with metro Denver based vendors and residents**

The district benefits the regional economy both directly and indirectly. For instance, high quality school districts correlate strongly with home price premiums, indirectly boosting the economy of the local communities within the district and tax bases. According to a recent Bank of America survey, more than 75 percent of parents say their child's

## II. SCHOOL DISTRICT OPERATIONS

education is an important part of finding a new home, with 53 percent buying a new home in a specific neighborhood to get into a better school. A Realtor.com survey found homebuyers are willing to pay between 6 and 10 percent more for the right school. This is corroborated by empirical research finding premiums within the same range for high quality school districts.<sup>1</sup>

The direct economic and fiscal benefits of the Cherry Creek School District were estimated based on the district's operating expenditures, which totaled \$682.8 million in FY 2014/15.

### ANNUAL DIRECT ECONOMIC BENEFITS

- In FY 2014/15, Cherry Creek School District's operating expenditures, excluding employee compensation, totaled \$232.6 million. These operating expenditures supported industries including utilities, professional and technical services, wholesale and retail trade, construction, building support services, financial services, and maintenance.
- Most of the value of education comes from teaching and district employment. Employee compensation comprised the majority of the district's operating expenditures. Compensation includes wages and salaries for the district's employees plus employee benefits such as paid leave, supplemental pay, insurance benefits, retirement, and legally required benefits. Employee compensation in FY 2014/15 was \$450.1 million.
- Cherry Creek School District employed about 7,910 teachers and staff for FY 2014/15. These employees represent the direct employment benefit of the district.
- In total, the estimated direct economic benefit of the Cherry Creek School District was \$682.8 million including \$450.1 million in compensation for 7,910 employees.

**Table 2: Direct Economic Benefit of Cherry Creek School District Operations in Metro Denver, FY 2014/2015**

Operating Expenditures (except employee compensation)	\$232,647,000
Employee Compensation	\$450,147,000
Total	\$682,794,000
Employment	7,910

<sup>1</sup> Chiodo, Hernandez-Murillo, and Owyang, "Nonlinear Effects of School Quality on House Prices," Federal Reserve Bank of St. Louis Review, May/June 2010. <https://research.stlouisfed.org/publications/review/10/05/Chiodo.pdf>

### ANNUAL DIRECT, INDIRECT, AND INDUCED BENEFITS

#### *Local Spending*

Multiplier benefits for the Cherry Creek School District were boosted in part by strong local spending activity. An analysis of local spending by industry was applied to multipliers for the metro Denver region, developed by the U.S. Bureau of Economic Analysis, to estimate the total benefit of the school district, comprised of direct, indirect, and induced benefits. In FY 2014/15, local spending for the district was as high as 86 percent for funds associated with building and construction activity, whereas estimated local spending for the general fund was around 66 percent.

#### Contribution to Regional Output

- Based on an analysis of vendors for the Cherry Creek School District during FY 2014/15, an estimated 43 percent of the district's \$232.6 million in operational expenditures were transacted with metro Denver companies and suppliers. Therefore, the district's operations contributed to an estimated \$99.2 million in local spending activity.

Local spending activity was further adjusted to reflect retail and wholesale margins for purchases of supplies and materials. Retail and wholesale margins represent the percentage of spending that actually goes towards local wages and indirect business purchases. The remaining dollars received by the businesses represent the cost of goods sold, dollars that generally exit the region as retailers and wholesalers pay for their inventory.

Overall, the district's multiplier impacts were derived from an estimated \$78.3 million of spending activity associated with operations, excluding employee compensation.

#### Contribution to Regional Earnings and Employment

- Cherry Creek School District employee compensation was \$450.1 million in FY 2014/15. However, not all of the employee benefits represent a direct earnings benefit to metro Denver. Employee benefits were adjusted to include only that spending that benefits the local economy directly. Employee benefits that affected metro Denver included such items as paid leave and supplemental pay, and a portion of health insurance, retirement, and legally required benefits. Some benefits are excluded from metro Denver impacts including portions of unemployment insurance, retirement, and workers compensation. Based on data from the U.S. Bureau of Labor Statistics, National Compensation Survey, an estimated 68 percent of employee benefit spending was considered a direct economic benefit to metro Denver. Adjusting compensation to reflect those earnings that will likely benefit the local economy, the direct earnings benefit of employee compensation in metro Denver was an estimated \$418.6 million.

## II. SCHOOL DISTRICT OPERATIONS

**Table 3: Estimated Local Spending from Cherry Creek School District Operations in Metro Denver, FY 2014/2015**

	Total Direct Benefit	Estimated Local Spending
Operating Expenditures (except employee compensation)*	\$232,647,000	\$78,349,000
Employee Compensation	\$450,147,000	\$418,599,000
<b>Total</b>	<b>\$682,794,000</b>	<b>\$496,948,000</b>

*\*Reflects benefit of operating expenditures excluding the cost of goods sold. Based on spending on supplies and materials of about \$23 million.*

### *Multiplier Benefits*

- Value of Output:** The Cherry Creek School District utilized \$682.8 million of inputs such as labor, supplies, and equipment to generate its output in FY 2014/15, services to students and district residents. This impact analysis assumed that the value of the district's output was equal to its expenditures, and it was this value that was used to determine the multiplier benefits of the district. Additionally, RIMS II multipliers are not available for governmental/public services. The standard approach for governmental services is to estimate the multiplier impacts for each industry benefiting from spending by the district, or a bill-of-goods approach. Based on the RIMS II multipliers for industries that benefited from the district's spending, Cherry Creek School District likely supported \$693.4 million in additional output in all industries throughout metro Denver. This consisted of the value of the local spending of the employees (the induced benefit) and regional-based supplier companies and their employees (the indirect benefit). Therefore, the total direct and indirect benefit of the district's operations was about \$1.4 billion in total output (\$682.8 million direct output + \$693.4 million indirect and induced output), as shown in Table 4.
- Employment:** Cherry Creek School District provided employment for 7,910 direct workers in FY 2014/15. Based on the RIMS II multipliers, the production of the \$693.4 million in indirect and induced output in all industries throughout metro Denver required about 5,975 employees. Therefore, the district supported employment of an estimated 13,885 workers (7,910 direct employees + 5,975 indirect and induced employees).
- Earnings:** The direct economic benefit in metro Denver of Cherry Creek School District's employee earnings was an estimated \$418.6 million for FY 2014/15. Based on the relationships revealed through the RIMS II multipliers, the 5,975 indirect employees that produced the \$693.4 million in indirect and induced output had associated earnings of about \$210.6 million. In total, the direct and indirect employees had estimated earnings of \$629.2 million (\$418.6 million direct earnings + \$210.6 million indirect and induced earnings). All earnings values are included in the total value of output; earnings are not in addition to the value of output.

## II. SCHOOL DISTRICT OPERATIONS

**Table 4: Total Economic Benefit of Cherry Creek School District in Metro Denver, FY 2014/2015**

	Direct Impact	Indirect & Induced Impact	Total Impact
<b>School District Operations</b>			
Value of Output (\$M)	\$682.8	\$693.4	\$1,376.2
Earnings (\$M)	\$418.6	\$210.6	\$629.2
Employment	7,910	5,975	13,885

*Source: Development Research Partners, based on multipliers for metro Denver region from the U.S.*

*Department of Commerce, Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II), 2007 U.S. Benchmark I-O Data and 2013 Regional Data.*

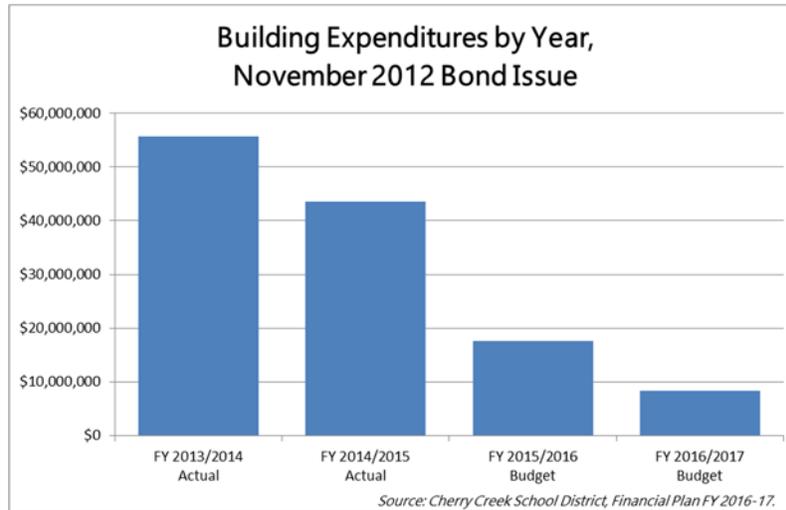
*Calculation Note: Direct + Indirect & Induced = Total Impact*

*Numbers may not add exactly due to rounding.*

### III. CONSTRUCTION ACTIVITY

Construction has a significant, but temporary, economic benefit. Construction spending for the Cherry Creek School District varies based on financing, ballot measures, and district needs. This analysis estimates the economic benefits of the district's \$125 million bond issue in 2012. This spending resulted in new school construction, school expansions and additions, technological upgrades, and STEM classrooms. The Cherry Creek School District utilizes many local firms, project management, contractors, materials, and labor for its construction and maintenance. The local spending has multiplicative impacts in the metro Denver region.

Nearly 80 percent of the funds raised through the bond issue were spent in fiscal years 2013/14 and 2014/15. The remaining funds are budgeted for the next two fiscal years.



### DIRECT ECONOMIC BENEFITS

- Construction materials comprised an estimated 50 percent of Cherry Creek School District's construction spending. However, not all of this spending was transacted with metro Denver based suppliers. Based on an analysis of Hoover's data for likely regional sales, businesses, and employment, metro Denver based suppliers and vendors likely captured an estimated 63 percent of the district's spending for construction materials and equipment. Therefore, the direct economic benefit in metro Denver of construction materials was an estimated \$39.6 million.
- Soft costs, such as project management, building design, and engineering, comprised an estimated 15 percent of the district's construction spending, or about \$18.8 million. Based on an analysis of regional companies, employment, and sales, metro Denver based companies captured an estimated 70.5 percent of spending on project soft costs. Therefore, the estimated direct economic benefit in metro Denver was \$13.2 million.
- Compensation for construction workers was an estimated 35 percent of the district's construction spending. Metro Denver has a large supply of construction firms and contractors and this analysis assumed the region captured 100 percent of the construction labor. However, not all of the employee benefits represent a direct economic benefit. Employee benefits were adjusted to identify only that spending that benefits the local economy directly. Data from the U.S. Bureau of Labor Statistics, National Compensation Survey indicate employee benefits represent about 30 percent of compensation for construction labor. An estimated 65 percent of employee benefits were paid to organizations outside of the area, so those dollars did not benefit the metro Denver economy. Overall, the direct benefit of construction earnings in metro Denver was an estimated \$35.2 million.

### III. CONSTRUCTION ACTIVITY

- Based on estimated wages and salaries for construction workers involved in Cherry Creek School District projects and the average annual wage of construction workers from the Colorado Department of Labor and Employment, Cherry Creek School District construction supported an estimated 543 full-time equivalent construction workers. A full-time equivalent worker is defined as one worker working full time for one year.
- The total direct economic benefit of Cherry Creek School District construction activity in metro Denver from the November 2012 bond issue was an estimated \$88 million supporting 543 full-time equivalent workers with local earnings of \$35.2 million.

**Table 5: Direct Economic Benefit of Cherry Creek School District Construction Activity in Metro Denver, FY 2013/14 - FY 2016/17**

	<b>Total Direct Benefit</b>	
Construction Materials	\$62,500,000	\$39,563,000
Soft Costs	\$18,750,000	\$13,219,000
Employee Compensation		
Wages and Salaries	\$30,625,000	\$30,625,000
Employee Benefits	\$13,125,000	\$4,594,000
<b>Total</b>	<b>\$125,000,000</b>	<b>\$88,001,000</b>
Employment	543	543

*Note: Represents construction activity associated with the November 2012 bond issue.*

### DIRECT, INDIRECT, AND INDUCED BENEFITS

- **Value of Output:** Cherry Creek School District’s construction activity contributed a direct economic benefit in metro Denver of \$88 million. Based on the RIMS II multipliers for the construction industry in the region, construction activity likely supported \$90.5 million in additional output in all industries throughout metro Denver. This consisted of the value of the local spending of the employees (the induced benefit) and regional-based supplier companies and their employees (the indirect benefit). Therefore, the total direct and indirect benefit of construction was \$178.5 million in total output (\$88 million direct output + \$90.5 million indirect and induced output), as shown in Table 6.
- **Employment:** Cherry Creek School District’s construction spending supported an estimated 543 full-time equivalent workers. Based on the RIMS II multipliers, the production of the \$90.5 million in indirect and induced output in all industries throughout metro Denver required about 458 employees. Therefore, construction activity supported estimated employment of 1,001 workers (543 direct employees + 458 indirect and induced employees).
- **Earnings:** The direct construction workers had estimated earnings of \$35.2 million. This included the value of wages and salaries for the employees as well as a portion of employee benefits. Based on the relationships revealed through the RIMS II multipliers, the 458 indirect employees that produced the \$90.5 million in indirect and induced output had associated earnings of about \$22.7 million. In total, the direct and indirect employees supported by construction activity had estimated earnings of \$57.9 million (\$35.2 million direct earnings + \$22.7 million indirect and induced earnings). All earnings values are included in the total value of output; earnings are not in addition to the value of output.

### III. CONSTRUCTION ACTIVITY

**Table 6: Total Benefit of Cherry Creek School District  
Construction Activity in Metro Denver, FY 2013/14 - FY 2016/17**

	Direct Impact	Multiplier	Indirect & Induced Impact	Total Impact
Value of Output (\$M)	\$88.0	2.0283	\$90.5	\$178.5
Earnings (\$M)	\$35.2	1.6443	\$22.7	\$57.9
Employment	543	1.8435	458	1,001

*Source: Development Research Partners, based on multipliers for metro Denver region from the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMS II), 2007 U.S. Benchmark I-O Data and 2013 Regional Data.*

*Calculation Note: Direct x Multiplier = Total Impact  
Total Impact - Direct Impact = Indirect & Induced Impact  
Numbers may not add exactly due to rounding.*

### FISCAL BENEFITS OF EMPLOYEE SPENDING

Spending activity generates fiscal benefits, or state and local government tax revenue, in the metro Denver region. The school district itself is exempt from taxes. However, district employees generate sales and property tax revenue for state and regional jurisdictions as they spend their earnings on taxable retail purchases and housing.

- All of Cherry Creek School District's employees are residents of the metro Denver region. Employee spending generates income for many businesses and industries in the region. Wage and salary income for the district's employees and the value of employee benefits totaled \$450.1 million in FY 2014/15. Of this, wage and salary income was \$350.5 million.
- Based on data from the U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, the average household spends between 27 percent and 34 percent of their income on sales taxable purchases in state and local tax districts. Based on retail sales data from the Colorado Department of Revenue, retail capture rates were estimated for state taxable purchases, local county and municipal based purchases, and for the Regional Transportation District (RTD) and the Scientific and Cultural Facilities District (SCFD). Retail capture rates ranged from 80 percent for state sales taxable purchases to as low as 30 percent for some small municipalities with limited retail options.
- Based on employee locations provided by Cherry Creek School District and sales tax rates and structure for communities throughout the metro Denver region, employees likely paid more than \$5.6 million in sales tax to the various taxing entities. The state benefited from an estimated \$2.2 million in sales tax from employee spending. Local city and county sales tax districts in the metro Denver region benefited from an estimated \$2.6 million. In addition, the fiscal benefit to RTD was an estimated \$754,000 and \$75,000 for the SCFD.
- Employees generate property tax revenue for local districts directly through home ownership, or indirectly through renting. Property tax was determined by the value of housing occupied by district employees. Based on wages for district employees and their location in metro Denver, a home affordability analysis was conducted to determine estimated home values. Home affordability was determined using factors such as average percent of income spent on housing, average interest rates, local mill levies, and insurance premiums.<sup>2</sup>
- Based on where district employees lived during calendar year 2015, local mill levies, and data from the Colorado Division of Property Taxation, employees likely paid a total of \$11.7 million in property tax to the various taxing entities for FY 2014/15. Property tax paid to counties in the metro Denver region was an estimated \$1.9 million. The fiscal benefit to municipalities in the metro Denver region was an estimated \$1.4 million. School districts in the region received an estimated \$7.9 million and other special districts received \$566,000.
- Cherry Creek School District has facilities and employees in Aurora and Greenwood Village, both of which impose an occupational privilege tax on employees who work in the cities. The tax rate for both municipalities is \$2 per person per month. Based on district data for FY 2014/15, Aurora benefited from about \$77,000 in occupational privilege tax and Greenwood Village benefited from about \$27,000.
- In total, spending by employees of Cherry Creek School District generated nearly \$17.5 million in tax revenue for state and local jurisdictions in FY 2014/15.

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<sup>2</sup> Home affordability based on 33 percent of income spent on housing, a 5 percent down payment, a 30-year loan term, 4 percent annual interest rate, an annual insurance premium as a percent of home value of 0.5 percent, and total mill levy estimated for each employee location. The residential assessment rate is 7.96 percent.

## IV. FISCAL BENEFITS

**Table 7: Direct Fiscal Benefits of Cherry Creek School District Employee  
Spending Activity, FY 2014/2015**

	County	City*	School	Other Special Districts	Total
Property Tax	\$1,865,000	\$1,392,000	\$7,909,000	\$566,000	\$11,732,000
	State	Local**	RTD	SCFD	Total
Sales Tax	\$2,188,000	\$2,625,000	\$754,000	\$75,000	\$5,642,000
			Aurora	Greenwood Village	Total
Occupational Privilege Tax			\$77,000	\$27,000	\$104,000

*Note: Other local improvement tax districts likely receive revenue from employee spending;  
however, the fiscal benefit to these districts is not estimated.*

*\*City and County of Denver and Broomfield revenue estimates included in city rather than county estimates.*

*\*\*Local includes city and county sales tax for metro Denver communities.*

### *Economic Benefits*

- The Cherry Creek School District significantly contributes to the economy of the metro Denver region on an annual basis. Based on the 2014-2015 fiscal year, the direct economic benefit of the district was \$682.8 million produced by 7,910 employees earning \$418.6 million. Through the multiplier effects of this direct spending, Cherry Creek School District likely supported an additional \$693.4 million of output in all industries in the metro Denver region, produced by 5,975 indirect workers earning \$210.6 million. Therefore, **the total economic benefit of the Cherry Creek School District in the metro Denver region was an estimated \$1.4 billion in total output produced by 13,885 workers earning \$629.2 million.**

**The CCSD provided a total economic benefit of \$1.4 billion in the metro Denver region in FY 2014/15 and supported the employment of 13,885 workers in all industries earning \$629 million.**

- The Cherry Creek School District's construction activities regularly boost local jobs and spending. The direct economic benefit of construction activity in the metro Denver region from the district's \$125 million 2012 bond issue was an estimated \$88 million, supporting 543 direct full-time equivalent construction workers earning \$35.2 million. Through the multiplier effects of this direct spending, the district's construction activity likely supported an additional \$90.5 million in output in all industries in the region, produced by 458 indirect workers earning \$22.7 million. Therefore, the total economic benefit in the metro Denver region of the construction and investment activity funded by Cherry Creek School District's 2012 bond measure was an estimated \$178.5 million in total output produced by 1,001 workers earning \$57.9 million.

**The total economic benefit of the construction activity supported by the CCSD 2012 bond measure was an estimated \$178.5 million produced by 1,000 workers earning \$58 million.**

### *Fiscal Benefits*

- Employees of the Cherry Creek School District contribute a large amount of annual tax revenue for state and local governments and tax districts in the metro Denver region as they spend their earnings on taxable retail purchases and housing. Based on employee earnings in FY 2014/15, employee spending generated an estimated \$17.5 million in tax revenue through property, sales, and occupational privilege taxes, including an estimated \$2.2 million in state sales tax, \$6 million for county and city governments, \$7.9 million for local schools, and \$1.4 million for other property and sales tax districts.

**Employees of the Cherry Creek School District generated an estimated \$17.5 million in tax revenue through property, sales, and occupational privilege taxes during FY 2014/15.**

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