

Capital improvement projections for Colorado counties and municipalities: Executive Summary

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Introduction

The demand for capital investment in public infrastructure in Colorado will continue to rise with increases in population, wealth and commercial activity. Colorado has seen a statewide population increase of over 30% between 1990 and 2000, and corresponding statewide increases in county and municipal capital outlays of 152% and 136%, respectively, controlling for inflation.

In order to project capital investment in public infrastructure for 2012, 2017 and 2027 historical data was analyzed using two approaches. The first analyzed county and municipal capital expenditures independently and the second combined the expenditures. Since county and municipal capital investments within a county jurisdiction are likely complementary, this combined approach allowed for a larger pool of data to analyze. Both approaches were based on historical capital improvement expenditures (1974 to 2003), population forecasts, household income, economic drivers, regional location, surveys and state agency reports. Please refer to the final page for a more complete explanation of the methodology.

Special district capital expenditures were not included in the analysis and therefore not included in the results. Special districts are growing in number and take on many capital projects across the state, but unfortunately very little data is available on what the magnitudes of these outlays are, creating persistent challenges in formal or informal estimates of the size of the investment.

Results

The estimated capital outlay projections for counties and municipalities are found in Table 1 and are expressed in 2007 dollars. Estimated capital outlay projection for combined counties and municipalities is found in Table 2. The two estimation approaches result in very consistent estimates of capital outlays, differing by less than \$10 million, or less than 0.5%, of predicted expenditures in 2027. Chart 1 and 2 on the following page illustrates these findings.

Table 1: County, Municipality and Denver Capital Outlay Forecasts (\$2007)

Year	County Forecasts	Muni Forecasts	Denver Forecasts ¹	Aggregate Outlay Estimates
2007	\$403,989,417	\$724,383,406	\$475,000,000	\$1,603,372,823
2012	\$454,550,821	\$804,081,799	\$675,000,000	\$1,933,632,619
2017	\$507,123,326	\$883,358,455	\$830,000,000	\$2,220,481,781
2027	\$609,140,433	\$1,038,873,133	\$1,200,000,000	\$2,848,013,566

¹ Since Denver's capital outlay is so atypical (high) relative to all other county or municipal governments in Colorado, a cross sectional regression analysis will not adequately describe or predict its capital investments. Here a traditional trend line analysis of Denver's historical capital outlays was used to predict its future outlays.

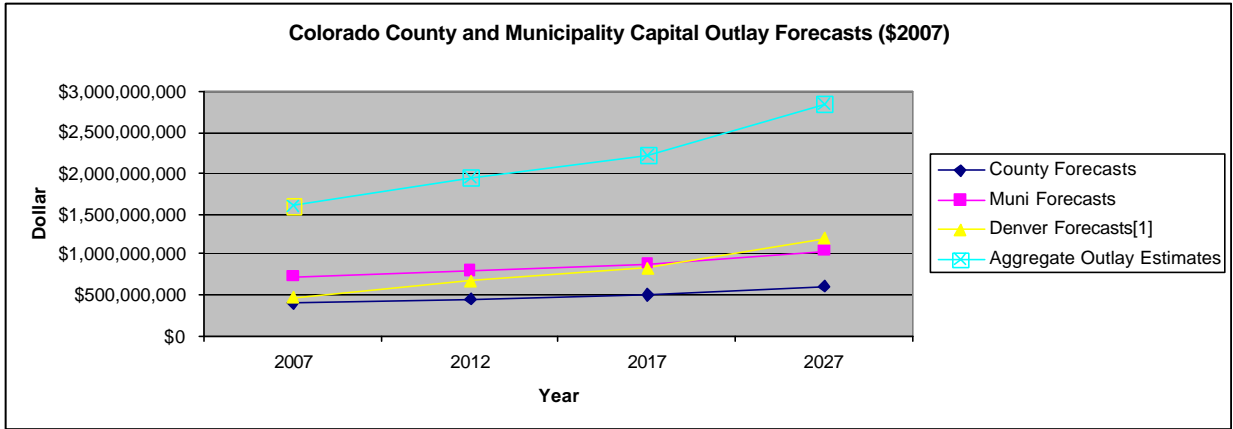
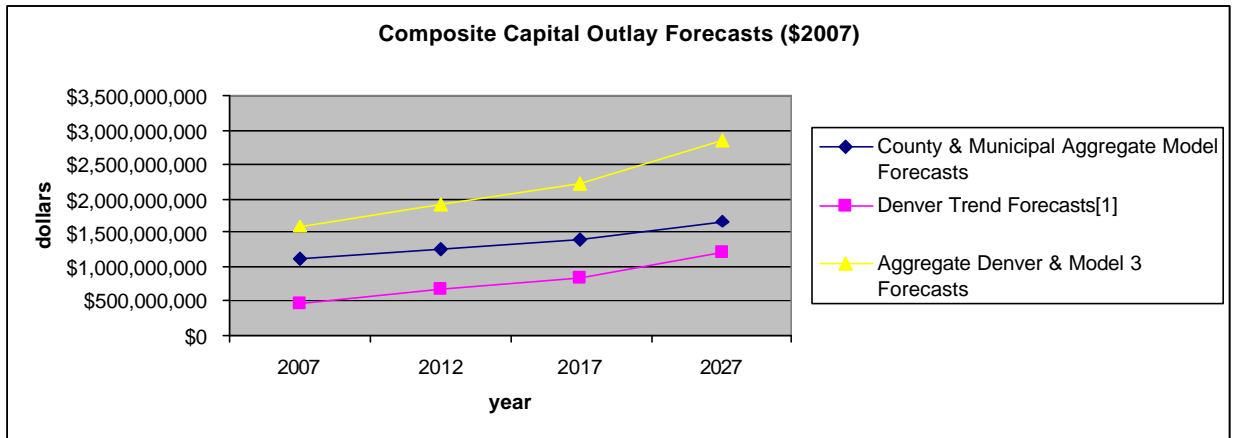


Table 2: Composite Capital Outlay Forecasts and Denver (\$2007)

Year	County & Municipal Aggregate Model Forecasts	Denver Trend Forecasts ²	Aggregate Denver & Model 3 Forecasts
2007	\$1,115,014,360	\$475,000,000	\$1,590,014,360
2012	\$1,250,755,281	\$675,000,000	\$1,925,755,281
2017	\$1,388,931,675	\$830,000,000	\$2,218,931,675
2027	\$1,657,948,597	\$1,200,000,000	\$2,857,948,597



Using the results from the DOLA March 2007 Capital Needs Survey and historical data, counties can anticipate that roads and streets, public facilities and law enforcement are likely to figure prominently in their capital improvement budgets. Mountain counties, dependent on tourism and mining, can expect to spend more per capita on airports, workforce housing, water infrastructure and recreation and less on law enforcement relative to otherwise comparable counties.

Eastern Plains and San Luis Valley municipalities invest similarly to the Front Range, while Western Slope and Central Mountain municipalities invest more per capita in capital outlays relative to other portions of the state. Municipalities can generally expect a large proportion of their capital improvement budgets to be spent on roads and streets, water, sewer and public facilities. Western Slope communities have higher recreation and law enforcement per capita expenditures relative to the state average. Mountain communities spend more per capita on recreation, fire, water and sewer relative to the average municipality.

Methodology³

² See #1

In order to project capital needs of Colorado municipalities and counties five, ten and twenty years into the future three econometric models and the Denver capital outlay trend analysis are used. The first model predicts county capital improvement expenditures and the second predicts municipal expenditures. The third model aggregates all municipal capital outlays with their respective county capital outlays, as these expenditures are complementary. The econometric and trend estimates are compared and contrasted with information reported by individual jurisdictions in response to the March 2007 DOLA Capital Needs Survey and/or as made available to the public by the jurisdictions themselves.

Denver provides a special case when trying to estimate future capital outlays using regression analysis. Since Denver's capital outlay is so atypical (high) relative to all other county or municipal governments in Colorado, a cross sectional regression analysis will not adequately describe or predict its capital investments. Moreover, the inclusion of Denver skews the results such that the models also generate biased results for the other Colorado counties and municipalities. However, Denver is such an important part of the Colorado economy that some prediction of future capital outlays in Denver is needed to generate a reasonable expectation of state level capital expenditures. Here we use traditional trend line analysis of Denver's historical capital outlays to predict its future outlays.

The models used historical data that were likely to predict local government capital outlay expenditures including: population, income, land use, economic drivers and regional attributes. Colorado Department of Local Affairs (DOLA) population forecasts for the next two decades were then used in these models to forecast future capital investment expenditures. It is reasoned that capital improvement expenditures will increase with increases in population, income, developable acreage, and relative dependence on tourism and/or mining as an economic driver. Regional designations provide proxies for these last three variables in the municipal model, due to a lack of more detailed municipal scale data. A three year average of total capital expenditures is the dependent variable in all three cases, reasoning that a single year may be biased, but that an average over more than three years is likely to underestimate the longer term trajectory of the state.

The three econometric models explained the variation in capital outlay fairly well with the county model explaining 80.84% of the variation in capital outlay, the municipal model explaining 73.82% of the variation in capital outlay and the composite model explaining 87.56% of the variation in capital outlay. This research indicates that population and income are strong predictors of local governmental capital investments. In addition the results imply that different economic development drivers imply different public costs. Regional location also influences per capita capital investments. Roads and streets are by far the largest capital expenditure for local governments ranging from 70% of the total expenditures for small (<999) localities to 30% for the largest local governments.

³ The full report provides a complete explanation of the methodologies used. It can be obtained by going to <http://dare.agsci.colostate.edu/csuaecon/extension/pubstools.htm#EconDev>