

Economic Contributions of the E-470 Tollway

Economic & Planning Systems (EPS) with subcontractor Felsburg, Holt & Ullevig (FHU) were contracted to complete an economic impact study for the E-470 Public Highway Authority (PHA).

The following are the major findings of that analysis within the E-470's context of the 6-County Denver Metropolitan Statistical Area (MSA) for 2015.

1. Since 1986, E-470 has catalyzed \$38.4 billion in real estate valuation along its corridor.

Using boundaries consistent with those drawn in initial 1986 economic forecast documents, EPS estimates that E-470 has catalyzed \$10.5 billion more in real estate development than originally projected 30 years ago. As a result, the Impact Area (illustrated below) contributes \$467 million in property taxes annually to regional governments, \$290 million more than initially projected.

2. The Impact Area is home to 407,000 people and 132,000 jobs.

The Impact Area's population represents 15 percent of the MSA's population and is 154,000 higher than projected in 1986 economic forecasts. While those original forecasts projected more jobs by 2015, total employment in the Impact Area accounts for 10 percent of the MSA's wage and salary jobs (i.e. excluding sole proprietors).

3. Spending by businesses and households in the E-470 Impact Area accounts for 12 percent of the MSA's annual economic activity.

The direct spending associated with labor and business-to-business purchases (i.e. output) in the E-470 Impact

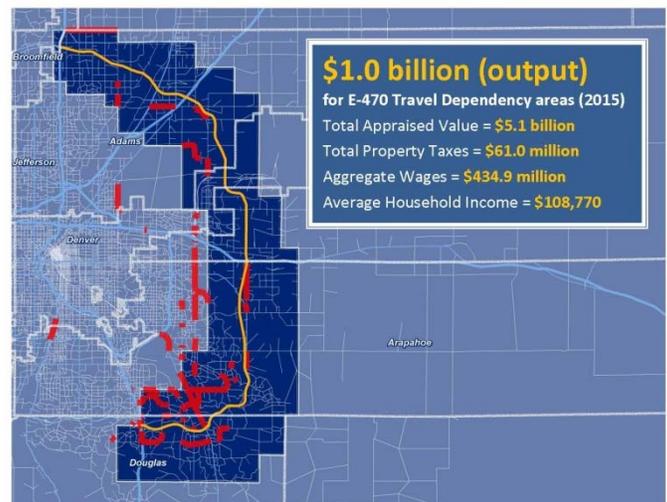
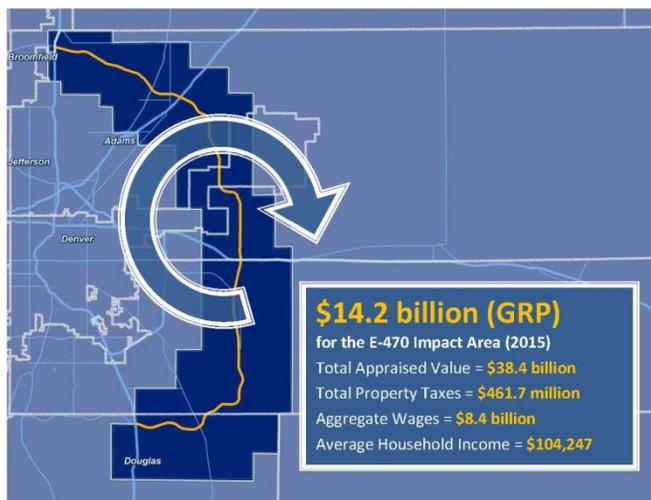
Area is \$25 billion per year, which accounts for 12 percent of the MSA's direct output. Direct value-added, a metric commonly characterized as Gross Regional Product (GRP), within the Impact Area is \$14.2 billion, also 12 percent of the MSA's GRP.

4. Average wages and household incomes are higher among workers and households in the Impact Area.

Average wages of workers employed in the E-470 Impact Area are \$63,860, which is 5 percent higher than average wages in the MSA (\$60,720). Average incomes of households living in the Impact Area are \$104,250, which is 20 percent higher than the MSA average (\$86,550).

5. More than 21,000 households and 7,800 workers are dependent on E-470 for their travel needs.

Using DRCOG's Compass 4.0 travel demand model (TDM), it is estimated that without E-470, this magnitude of additional population and jobs would push surrounding road networks beyond failure points. That is, the analysis was used to simulate the magnitude of jobs, population, and households within the E-470 Impact Area who are dependent on E-470 for their travel needs.



The economic contributions can be characterized in similar terms. The presence of these households and jobs in the Impact Area account for \$5.1 billion of the total Impact Area real estate valuation (13.2 percent of the Impact Area), contribute \$1.0 billion in total business-to-business spending, and contribute \$608 million GRP (both approximately four percent of the Impact Area).

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6. E-470 saves MSA residents from an additional 14.8 million hours of driving per year, translating to \$26.1 million in annual travel time savings.

More time spent driving translates to lost productivity and lower quality of life. The TDM analysis completed as a part of this study found that residents and workers of the 6-County MSA generated approximately 800.4 million vehicle hours traveled (VHT) under existing conditions. By removing E-470 from the travel demand model, however, it was estimated that VHT increased by 14.8 million hours, totaling 815.2 million VHT.

Using industry standard value of time factors, the 14.8 million hours that E-470 saves drivers translates to a \$199.1 million in annual time savings. This calculation uses 2013 factors (adjusted for inflation) recommended by the U.S. Department of Transportation for economic analysis of the value of time spent driving for personal and business travel. Adjusted by the Consumer Price Index, which increased by 4.0 percent between 2013 and 2015, the value of time factor for all purposes is \$13.50 per hour in local travel settings.

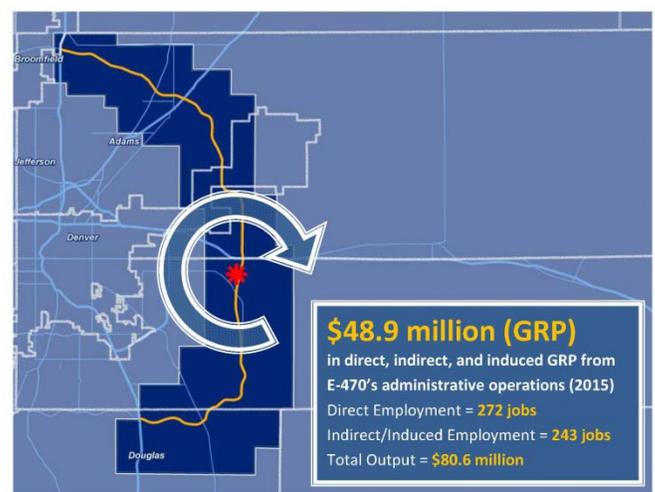
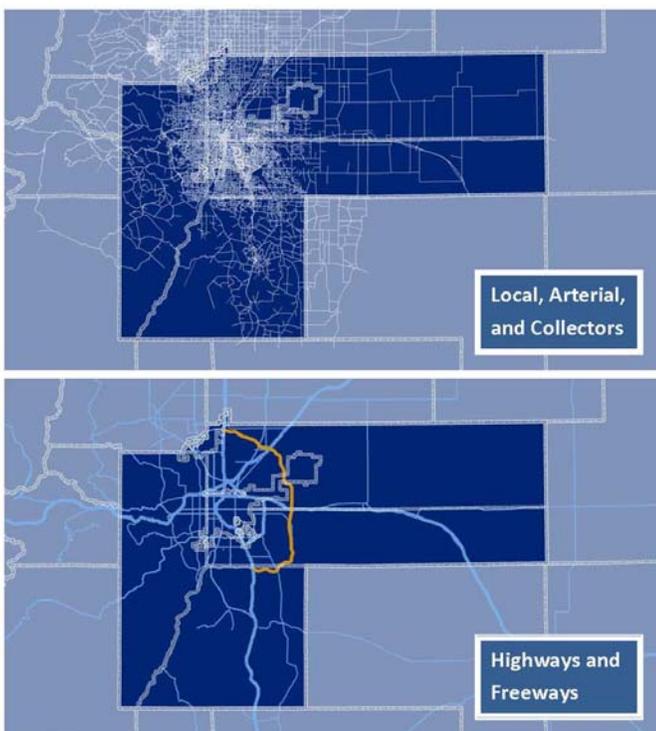
Because drivers in this scenario without E-470 are shifted from the tollway to un-tolled roadway networks, total toll revenues for 2015 (\$173.0 million) are netted out of the gross travel time savings. As a result, the net economic impact to MSA drivers is an estimated \$26.1 million in annual time savings.

7. E-470 also provides unseen economic benefit in terms of avoided traffic incidents.

Because it moves traffic to a safer roadway type (i.e. a divided highway), E-470 is also responsible for the avoidance of an estimated \$24 million in accidents, injuries, and fatalities per year. According to research at the federal and state levels, incidents of accidents, property damage, and fatality are lower on divided roadways, such as highways, freeways, and expressways, than they are on collectors, arterials, and local roads. Using the TDM, it was also possible to calculate total annual vehicle miles traveled (VMT) on the roadway network under current conditions and without E-470 disaggregated by roadway type, such as freeways, expressways, principal arterials, minor arterials, and collectors. Traffic incident data from the CDOT is used to estimate the number of traffic incidents occurring under each network scenario. Statistical values associated with each incident type from the USDOT were then used to estimate the total difference in costs associate with incidents under the different network scenarios.

8. The operation of E-470 also ripples through the regional economy.

E-470 employs or contracts 272 full- and part-time workers. Annually, its operations contribute approximately \$25.1 million in GRP to the MSA, inducing an additional \$23.8 million in GRP contributions. Its operations also support the purchase of \$41.6 million in goods and services in the process of its own service delivery, inducing an additional \$39.0 million in spending in the MSA.



For questions, please contact:

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