

Economic Impact of
**DAVE LYLE
BOULEVARD
EXTENSION**



**Economic Impact of the
Dave Lyle Boulevard Extension
York and Lancaster Counties, South
Carolina**

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Table of Contents

Executive Summary	3
Introduction.....	3
DLBE Expanded Trade Area	4
DLBE Economic Development Opportunities.....	5
DLB Corridor Office Demand Projections	6
DLB Corridor Residential Demand Projections	9
DLB Corridor Retail Demand.....	10
Economic Impacts.....	10
Economic Impact Analysis Overview.....	10
Construction Impacts of the DLBE.....	11
DLB Corridor Construction Impacts of New Office Facilities	13
DLB Corridor Construction Impacts of New Residences	14
DLB Corridor Ongoing Impacts from Annual Operations of New Office Facilities.....	15
DLB Corridor Ongoing Impacts from Local Spending of New Residents	16
Fiscal Benefits.....	17
Conclusion	19
GENERAL AND LIMITING CONDITIONS	21
Table 1: Charlotte MSA Office Employment Projections	7
Table 2: Charlotte MSA Office Demand in Square Feet	7
Table 3: DLB Corridor Office Market Share	8
Table 4: DLB Corridor Office Land Allocation in Acres	8
Table 5: Charlotte MSA and York and Lancaster Counties Population Projections	9
Table 6: DLB Corridor Residential Market Share	9
Table 7: DLBE Construction Cost.....	12
Table 8: DLBE Construction Employment Impact.....	12
Table 9: DLBE Construction Labor Income Impact.....	13

Table 10: DLBE Construction Output Impact	13
Table 11: DLB Corridor Construction Cost of New Office Facilities	13
Table 12: DLB Corridor New Office Annual Construction Impacts	14
Table 13: DLB Corridor New Office 25-Year Construction Impacts.....	14
Table 14: DLB Corridor Annual Construction Costs of New Residences.....	14
Table 15: DLB Corridor New Residences Annual Construction Impacts	15
Table 16: DLB Corridor New Residences 25-Year Construction Impacts	15
Table 17: DLB Corridor New Office Employment Industry Sector Distribution.....	16
Table 18: DLB Corridor New Office Annual Ongoing Economic Impacts (Year 2040)	16
Table 19: DLB Corridor New Annual Household Income (Year 2040).....	17
Table 20: DLB Corridor New Annual Household Spending Economic Impacts (Year 2040).....	17
Table 21: Top 10 Industries in York and Lancaster Counties Affected by New Household Spending (Year 2040)	17
Table 22: DLB Corridor New Office Real Property Ad Valorem Taxes.....	18
Table 23: DLB Corridor New Residential Real Property and Motor Vehicle Ad Valorem Property Taxes	19
Table 24: DLB Corridor Economic and Fiscal Benefits	20

Executive Summary

Completion of the Dave Lyle Boulevard from its current terminus to Highway 521, and the development it would create and enable represents an unparalleled economic opportunity for York and Lancaster Counties. As explained in detail in the analysis that follows, the construction phase of the project would create an average of over 1,000 jobs per year and cumulative economic output of over \$3.0 billion. Economic impacts in the Dave Lyle Boulevard corridor after construction would attract over 20,000 new jobs and generate almost \$2.4 billion in total economic output each year.

Over the next 25-years, the cumulative fiscal impacts would be over \$45 million in revenue to York County, over \$48 million to Lancaster County, and \$1.3 billion in sales tax revenue to the State of South Carolina, much of which would otherwise be lost to North Carolina.

These economic and fiscal benefits represent only a portion of the potential impacts as additional retail, distribution, and perhaps high-tech manufacturing and research uses are also likely to occur along the corridor.

For all of these reasons, completion of the Dave Lyle Boulevard would greatly enhance the economic health of both York and Lancaster Counties.

Introduction

The Winthrop University report titled “DLB Extension Market Analysis” analyzed the DLB Extension (DLBE), a proposed east/west connector between two dominant north/south commuter routes, I-77 and Highway 521, and discussed how the expansion of the trade area (the area in which consumers do business within a 20-minute driving time) directly impacts (1) the retail sales potential, and therefore (2) sales tax revenue, and (3) employers’ access to a greater workforce within a 20 minute commute. Assuming projected natural growth (that is, no new future projects being developed along the route of the road), the report concluded that if the road had been constructed in 2010, by 2020 the expanded trade area would include the following additional resources over what would otherwise be within the current trade area for economic activity without the completion of the DLBE:

- 58,681 residents (17,702 households) with
- \$1.2 billion in aggregate income, and
- \$427 million in retail sales potential,
- 740 employers, and
- 5,780 employees

The report also projected that in 30 years, the expansion of the trade area created by the DLBE will cumulatively increase consumer and retail spending/expenditures for goods and services by \$23.3 billion,

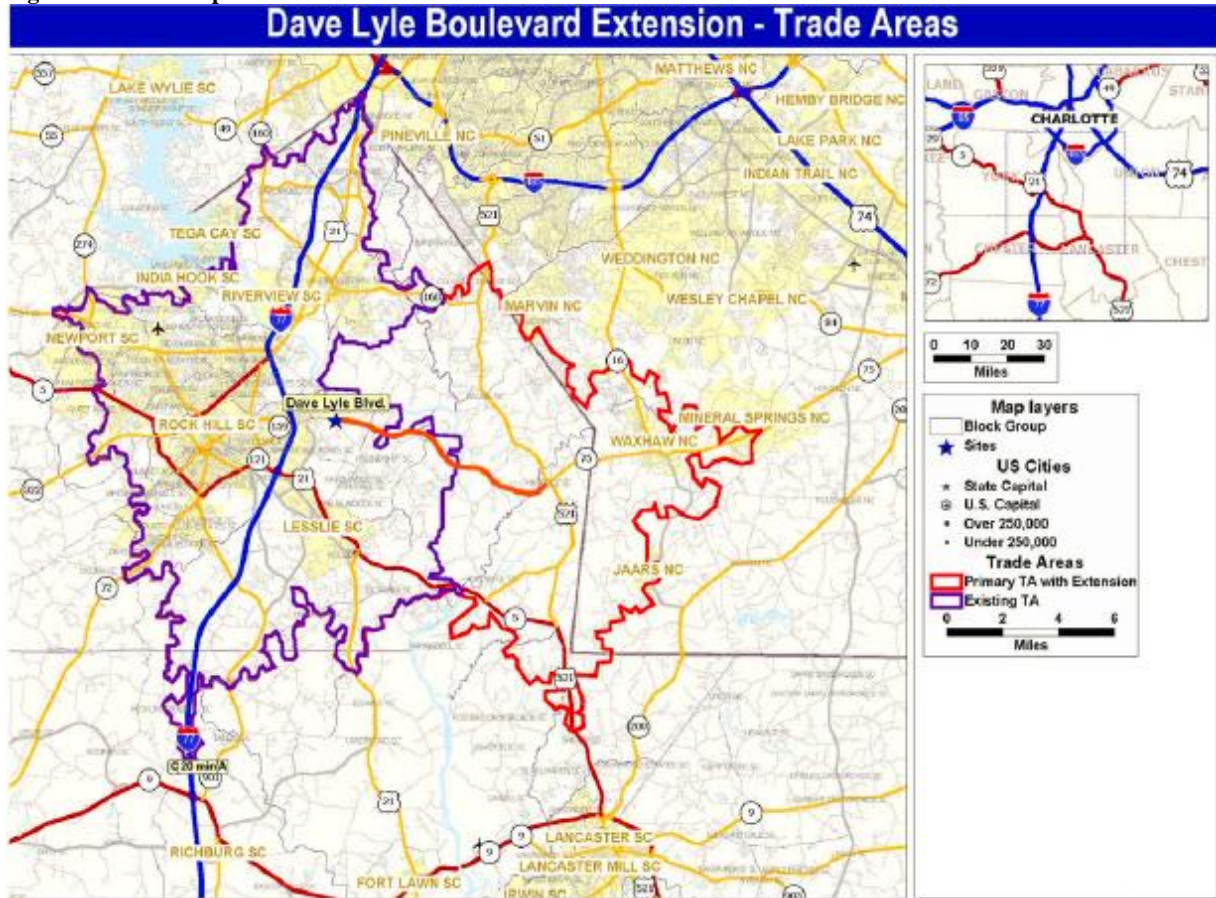
thereby profoundly affecting sales tax collections by the State of South Carolina (State) as well as York and Lancaster Counties. The 30-year cumulative gain in State sales tax revenues would be \$1.3 billion whereas the cumulative gain in one cent sales tax for public education would be \$212.5 million. Additionally, the 30-year cumulative one cent sales tax gains for Local Capital Projects in York and Lancaster Counties would be \$196.7 million. Without the construction of the DLBE, much of this sales tax revenue will be lost to North Carolina as consumers instead do business in southern Mecklenburg County, especially in the Ballantyne area, as well as fast-growing southwestern Union County, North Carolina.

This companion report is intended to describe the economic impacts the DLBE could produce for York and Lancaster Counties, in terms of jobs and income, through construction of the roadway improvements and the expansion of residential housing, commercial development, and other new economic activity along the corridor. Combined, these reports provide a comprehensive and compelling account of the economic and fiscal benefits that the DLBE will bring to York and Lancaster Counties.

DLBE Expanded Trade Area

The map in Figure 1 depicts how the DLBE will extend the primary trade area as far north as the Mecklenburg County line bordering Ballantyne, as far east as Waxhaw, and further south along Hwy 521. All of this area would be within a twenty minute estimated drive time of the current terminus of Dave Lyle Boulevard if the extension was in place. The purple line shows the existing boundaries and the red line shows the expanded trade area. Currently, access is severely restricted to the north and east of DLB because of limited road connectivity. Although DLB, at Exit 79 off I-77, is a commercial destination that complements downtown Rock Hill, the area is at a disadvantage for reaching its full retail potential because it is disconnected from Hwy 521 and the eastern route to Ballantyne.

Figure 1: DLBE Expanded Trade Area



Although York and Lancaster Counties expect to realize numerous benefits from the DLBE, the most significant benefit would be the promotion of economic development. However, the roadway improvements will also enhance mobility and safety of travelers and improve the quality of life and general welfare of the public. The regional economic impacts of the DLBE will be driven by construction activity, expanded market access, transportation efficiency/safety, and higher value land uses. The previously published Winthrop University report focused on expanding market access. This report describes the economic impacts related to construction activity and changes in land uses associated with economic development opportunities along the DLB corridor.

DLBE Economic Development Opportunities

This section of the report quantifies the economic development opportunity within the DLB corridor by estimating the demand for office space and new personal residences.

DLB Corridor Office Demand Projections

Demand for office space in the DLB corridor is emerging as a result of population growth both to the east in Lancaster County and to the west in York County. To date, development in York and Lancaster County office and business parks has been primarily north-to-south along I-77 and US-521. Along I-77, office development has progressed from Charlotte to Rock Hill. However, office development along US-521 in Lancaster County has been more limited, due in part to the lack of access across the Catawba River north of SC-9. Most of the major road network built in the Charlotte region over the last several years runs north-to-south, with a current need for east-to-west linkages.

Fort Mill, South Carolina is becoming a key player for any corporate headquarters project moving to the Charlotte Region. Recent announcements by LPL Financial and the Lash Group, discussed in the following section, are transforming Fort Mill into a regional player in office development. The aforementioned companies are moving from office parks near the Charlotte Douglas International Airport. In the past, Charlotte has generally been victorious in the regional “border war” for expanding and relocating companies with incentive packages and emphasis on quality of life and airport access. However, South Carolina’s recent big wins in the Charlotte Region demonstrate the competitiveness of the State’s incentive packages. The southward progression of the Charlotte Region’s expansion underscores the need for and importance of the DBLE in the terms of economic development for York and Lancaster Counties.

Employment Projections

Office demand in this report is based on projections of “office employment” within the Charlotte-Concord-Gastonia, NC-SC Metropolitan Statistical Area (Charlotte MSA)¹. The projected office employment in Table 1 was obtained by multiplying Charlotte MSA industry sector employment projections, prepared by Woods & Poole, Inc.², by the applicable office-using occupation allocation. The approach used in developing these allocations is similar to the methodology described in the National Center for Real Estate Research January, 2007 publication, “Who are Your Future Tenants: Office Employment in the United States 2004-2014.”

¹ The Charlotte-Concord-Gastonia, NC-SC Metropolitan Statistical Area includes the following counties in North Carolina: Cabarrus, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, and Union and the following counties in South Carolina: Chester, Lancaster and York.

² Woods & Poole, Economics, Inc. (W&P) is nationally recognized for their long-term county economic and demographic projections. W&P’s database for every county in the U.S. contains projections through 2050 for more than 900 variables.

Table 1: Charlotte MSA Office Employment Projections

Industry	Office-Occupy	Office Occupying Percentage Applied to Employment Projections					
	Percentage	2015	2020	2025	2030	2035	2040
Forestry, Fishing, Related, and Other	0.2732	486	512	539	567	595	623
Mining	0.2872	428	446	463	479	495	509
Utilities	0.4867	2,731	2,783	2,831	2,868	2,901	2,924
Construction	0.1950	14,306	15,571	16,899	18,289	19,739	21,246
Manufacturing	0.2983	27,502	26,281	25,056	23,834	22,621	21,424
Wholesale Trade	0.5676	36,574	38,724	40,907	43,119	45,352	47,606
Retail Trade	0.2299	32,159	35,327	38,680	42,213	45,922	49,801
Transportation and Warehousing	0.2595	11,976	13,129	14,361	15,675	17,073	18,555
Information	0.6933	19,403	19,737	20,039	20,311	20,552	20,761
Finance and insurance	0.9635	94,384	106,760	120,386	135,337	151,699	169,547
Real estate, rental, and leasing	0.4574	28,851	32,000	35,409	39,092	43,062	47,335
Professional and technical services	0.8908	79,709	89,290	99,770	111,203	123,650	137,172
Management of companies and enterprises	0.8384	31,051	34,327	37,847	41,620	45,649	49,938
Administrative and Waste Services	0.3515	40,873	46,685	53,202	60,494	68,641	77,728
Educational Services	0.5671	15,649	18,785	22,485	26,840	31,952	37,937
Healthcare and social assistance	0.4796	57,405	68,687	81,862	97,193	114,970	135,512
Arts, Entertainment, and Recreation	0.1705	20,410	24,421	29,106	34,556	40,877	48,180
Acomodation and Food Services	0.0743	2,684	3,061	3,480	3,947	4,465	5,040
Other Services, Except Public Administration	0.4013	39,280	43,923	48,968	54,436	60,345	66,715
Charlotte MSA Office Employment		557,876	622,469	694,315	774,103	862,595	960,593

Source: Woods & Poole Economics, Inc., National Center for Real Estate Research, DPFPG, 2015

Charlotte MSA Office Demand

Based on current trends in office worker space requirements, an assignable area of 125 square feet per worker was assumed. To convert the assignable area per worker to interior gross area per worker, a 1.37 conversion factor was applied.³ The interior gross area square footage of 171 per worker (125 square feet times 1.37 = 171 square feet) was then divided the 2014 Charlotte MSA occupancy rate of 90 percent⁴ to yield overall gross interior area square footage of approximately 190 per worker. Based on projected growth of office employment over time, we estimate total office demand in the Charlotte MSA as follows:

Table 2: Charlotte MSA Office Demand in Square Feet

Charlotte MSA Office Demand	2015	2020	2025	2030	2035	2040
Charlotte MSA Employment	557,876	622,469	694,315	774,103	862,595	960,593
Interior Gross SF Per Employee	190	190	190	190	190	190
Charlotte MSA Office Demand (SF)	105,996,000	118,269,000	131,920,000	147,080,000	163,893,000	182,513,000

Source: DTZ, DPFPG, 2015

DLB Corridor Office Market Share

For purposes of this analysis, a capture rate of 2.75 percent of the Charlotte MSA office market is assumed based on several key market factors, including the performance of various submarkets within the

³ Assignable Area is defined by the International Facility Management Association (IFMA) as the portion of the plannable area on a floor that can be assigned to occupant groups or functions. Interior Gross Area is defined as the portion of the floor that is totally enclosed within the dominant portion, generally the inside finished survey of the permanent outer building wall. The interior gross area conversion factor is based on the IFMA Research Report #34, "Space and Project Management Benchmarks."

⁴ The DTZ Fourth Quarter 2014 Charlotte Office Market Snapshot published by DTZ reported an overall vacancy rate of 9.9 percent vacancy rate.

Charlotte MSA. This rate appears reasonable, and perhaps conservative, in light of the recent press releases by LPL⁵ Financial and the Lash Group⁶ who have announced new regional or headquarter buildings of 450,000 square feet and 250,000 square feet, respectively, to be developed in Fort Mill (York County), immediately north of and across the Catawba River from the DLB corridor. In Lancaster County, Movement Mortgage is planning a 104,000 square foot headquarters on Hwy-160, a few miles south of the Ballantyne area. These announcements alone represent 17 percent of the total office demand projected for the DLB corridor over the next 25-years based on the methodology above. Corridor office market demand (occupancy) is projected as follows.

Table 3: DLB Corridor Office Market Share

	5 Years	10 Years	15 Years	20 Years	25 Years
DLB Corridor Office Capture	2020	2025	2030	2035	2040
Charlotte MSA Office Demand (SF)	118,269,000	131,920,000	147,080,000	163,893,000	182,513,000
Capture Rate	2.75%	2.75%	2.75%	2.75%	2.75%
DLB Corridor Office Capture (SF)	3,252,000	3,628,000	4,045,000	4,507,000	5,019,000
DLB Corridor Incremental Office SF Demand Capture	337,000	376,000	417,000	462,000	512,000
DLB Corridor Cumulative Office SF Demand Capture	337,000	713,000	1,130,000	1,592,000	2,104,000
DLB Corridor Office Employment Capture	1,774	3,753	5,947	8,379	11,074

Source: DPFPG, 2015

Office Land Allocation

Floor area ratio (FAR) is used to measure the amount of land utilized per square foot of floor area. The Vision 2020 Comprehensive Plan for Rock Hill assumes an aggregate FAR of 0.30 for suburban office planning purposes. The 450,000 square foot LPL Financial Carolina campus will be housed in two buildings on 27.90 acres, for an FAR of 0.37. Development acreage required to support projected office demand, based on the 2 percent capture rate, at various levels of FAR is as follows.

Table 4: DLB Corridor Office Land Allocation in Acres

FAR	2020	2025	2030	2035	2040
0.20	38.68	81.84	129.71	182.74	241.51
0.25	30.95	65.47	103.76	146.19	193.20
0.30	25.79	54.56	86.47	121.82	161.00
0.50	15.47	32.74	51.88	73.09	96.60

Source: DPFPG, 2015

No meaningful office demand exists along the corridor without the extension of DLB across the Catawba River; therefore, 100 percent of the projected office demand is directly attributable to the DBLE.

⁵ Press Release: LPL Financial: Charlotte, N.C. - Feb. 26, 2015: LPL Financial Breaks Ground On Its New Carolinas Campus

⁶ Lash Group will move HQ to Fort Mill, grow to 2,400 employees, Charlotte Business Journal, June 16, 2014

DLB Corridor Residential Demand Projections

Estimates of area population over the next 25 years, as projected by Woods & Poole Economics, Inc., are provided in Table 5 and are used in this analysis to project DLBE induced residential demand.

Table 5: Charlotte MSA and York and Lancaster Counties Population Projections

Population	2015	2020	2025	2030	2035	2040
Charlotte MSA	2,431,660	2,665,195	2,914,245	3,176,312	3,450,949	3,740,170
Lancaster County, SC	82,199	87,737	93,343	98,901	104,369	109,777
York County, SC	243,416	260,070	276,959	293,739	310,280	326,680
York and Lancaster Counties	325,615	347,807	370,302	392,640	414,649	436,457

Source: Woods & Poole Economics, Inc., DPGF 2015

A “Dave Lyle Boulevard Extension Land Use Study” dated April 30, 2009 was prepared by Ryan M. Perkl, James B. London, and Subha Pradhan of Clemson University. The study projected residential population growth and housing within a study area comprising the 12,199 acres within approximately 1-mile of the DLB corridor in York and Lancaster Counties under two alternative scenarios. The first was based on 10 percent of projected growth in York and Lancaster Counties being captured within the study area. The second scenario reflected 15 percent capture of the projected countywide growth. Based on 2.55 occupants per household⁷ and current projections of population growth, estimates of housing demand within the DLB corridor are shown in Table 6.

Table 6: DLB Corridor Residential Market Share

Dwelling Unit Demand	2015	2020	2025	2030	2035	2040
Population:						
Charlotte MSA	2,431,660	2,665,195	2,914,245	3,176,312	3,450,949	3,740,170
York & Lancaster Counties	325,615	347,807	370,302	392,640	414,649	436,457
York & Lancaster population growth from 2015		22,192	44,687	67,025	89,034	110,842
DLB Corridor - 10 percent capture		2,219	4,469	6,703	8,903	11,084
Dwelling Unit Demand (occupants per unit)	2.55	870	1,752	2,628	3,492	4,347
DLB Corridor - 15 percent capture		3,329	6,703	10,054	13,355	16,626
Dwelling Unit Demand (occupants per unit)	2.55	1,305	2,629	3,943	5,237	6,520
DLB Corridor - 12.5 percent capture		2,774	5,586	8,378	11,129	13,855
Dwelling Unit Demand (occupants per unit)	2.55	1,088	2,191	3,286	4,364	5,433

Source: Woods & Poole Economics, Inc., DPGF 2015

The 10 percent sub-market capture rate would require average annual residential absorption of approximately 174 units over 25-years (4,347 units divided by 25 equals 174 units). At a 15 percent capture rate, the DLB corridor would absorb an average of 261 units per year over the period (6,520 units divided by 25 equals 261 units). For purposes of this analysis, a 12.5 percent capture rate (5,433 units

⁷ According to Woods & Poole Economics, Inc., the average occupants per household in York County, South Carolina is expected to be 2.55 over the next 25 years.

divided by 25 years equals annual absorption of 217 units) is used and considers the Bowater project, a mixed-use master planned community proposed for development by Newland Communities on 1,806 acres of land, within the DLB corridor, commonly referred to as the Bowater tract. The Bowater project includes approximately 2,770 residential dwelling units – 2,500 single-family homes and 270 multi-family homes of varying sizes and levels of affordability.

DLB Corridor Retail Demand

As explained in the Introduction to this report, market accessibility generated by the DLBE will spur significant growth in retail spending within the expanded trade area. New retail dollars will be captured by existing as well as new retail establishments. The Bowater project includes 250,000 square feet of neighborhood retail which will capture a portion of the new demand. It is beyond the scope of this study to project square footage associated with new retail establishments and whether those new establishments would occur within the DLB corridor or elsewhere in York or Lancaster Counties.

Economic Impacts

Economic Impact Analysis Overview

The impact of an economic stimulus can be broken into three components: direct effects, indirect effects, and induced effects. The investment in constructing the new homes in Bowater is used to illustrate each of these concepts.

- **Direct effects** represent the immediate impact of an economic change on the industry directly involved. In the Bowater example, direct effects would include gross revenues earned by the construction contractors working on the project.
- **Indirect effects** represent the changes in inter-industry purchases as the economy responds to the new demands of the directly affected industries. Following the same example, local suppliers of construction materials would increase their economic activities in order to meet new demand by the contractors.
- **Induced effects** represent the changes in spending from households as income increases due to the changes in production. In this example, construction workers would receive additional wages by working on the Bowater project. These workers would then spend a portion of those wages on consumer goods, such as food, clothing, and entertainment, from businesses within the study area.

The sum of the direct, indirect, and induced impacts is the total economic impact.

The study area for this report includes York and Lancaster Counties, and the direct effects analyzed include the following:

- Construction of the DLBE
- Construction of the new office facilities and the new residences in the DLB corridor
- Ongoing output generated by the new office establishments in the DLB corridor

- Ongoing local spending by the new residents living in the DLB corridor

The *construction phase* is a one-time, temporary impact that creates economic activity during the building process, but then goes away once construction is complete. The buildout of the DLB corridor will create construction phase benefits over a sustained period of time, especially given the need to construct a bridge over the Catawba River. Because construction is a vital component of many local economies (as validated during the recent recession), the construction activity associated with the DLBE and the DLB corridor will be an important sustained economic contributor to York and Lancaster Counties.

The *operations phase* generates an ongoing impact that creates economic activity during each year of business operations at the project site. If the businesses maintain the level of activity as projected, the operations phase has a recurring impact. Both phases are modeled as direct positive stimulants that help grow and develop the study area's economy.

All amounts in this report are presented in constant 2015 dollars, and a 25-year study period is assumed (Years 2016 to 2040).

Sources for the direct effects are described in subsequent sections of this report. The IMPLAN economic modeling system was used to estimate the indirect and induced effects. The IMPLAN model is a method for estimating local economic multipliers, including those pertaining to production, value-added, employment, wage, and supplier data. IMPLAN differentiates its software and datasets between 536 sectors that are recognized by the United States Department of Commerce. Multipliers are available for all states, counties, and zip codes and are derived from production, employment, and trade data from a variety of national, regional, state and local resources such as the United States Census Bureau, County Business Patterns, Annual Survey of Government Employment, Annual Survey of Retail Trade, United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Consumer Expenditure Survey; United States Department of Labor, Office of Management and Budget, United States Department of Commerce, and the Internal Revenue Service. IMPLAN is widely accepted as the industry standard when estimating impacts from a one-time or sustained increase in economic activity in a particular region.

Construction Impacts of the DLBE

The estimated cost of constructing the DLBE was estimated to be \$132.4 million (2011 dollars) in the 2011 Amendment to Application to the South Carolina State Infrastructure Bank. Using the National Highway Construction Cost Index published by the U.S. Department of Transportation Federal Highway Administration, this figure was brought forward to 2015 dollars. Table 7 reflects the estimated total cost

of the project in 2015 dollars, \$138.2 million, and the annual spending over the construction period.

Table 7: DLBE Construction Cost

DLBE Construction	Year 1	Year 2	Year 3	Year 4	Year 5
Environmental	\$ 1,340,000	\$ 555,000	\$ -	\$ -	\$ -
Design	3,265,000	2,537,000	1,448,000	-	-
Right-of-Way	-	11,555,000	3,852,000	-	-
Construction	-	-	-	18,590,000	12,393,000
Total	\$ 4,605,000	\$ 14,647,000	\$ 5,300,000	\$ 18,590,000	\$ 12,393,000

	Year 6	Year 7	Year 8	Year 9	Total
Environmental	\$ -	\$ -	\$ -	\$ -	\$ 1,895,000
Design	-	-	-	-	7,251,000
Right-of-Way	-	-	-	-	15,407,000
Construction	36,677,000	24,451,000	12,895,000	8,625,000	113,632,000
Total	\$ 36,677,000	\$ 24,451,000	\$ 12,895,000	\$ 8,625,000	\$ 138,183,000

Source: 2011 Amendment to Application to the SC State Transportation Infrastructure Bank, National Highway Construction Cost Index, DPF, 2015

All DLBE construction costs, except right-of-way acquisition, were considered direct effects to the study area.

Table 8 shows the estimated impact on employment from constructing the DLBE. Years 4-8 reflect the greatest impact on annual local employment due to the peak levels of construction activity (see Table 7).

Table 8: DLBE Construction Employment Impact

Employment	Year 1	Year 2	Year 3	Year 4	Year 5
Direct Effect	38.9	25.8	11.8	168.0	112.0
Indirect Effect	9.9	6.8	3.3	42.0	28.0
Induced Effect	15.0	9.9	4.5	41.2	27.5
Total Effect	63.8	42.5	19.6	251.2	167.5

	Year 6	Year 7	Year 8	Year 9	Total
Direct Effect	331.4	220.9	116.5	77.9	1,103.2
Indirect Effect	82.9	55.2	29.1	19.5	276.7
Induced Effect	81.3	54.2	28.6	19.1	281.3
Total Effect	495.6	330.3	174.2	116.5	1,661.2

Source: IMPLAN, DPF, 2015

Constructing the DLBE will generate \$72.5 million in total labor income for York and Lancaster Counties. Of this total, \$47.6 million is directly associated with the construction of the DLBE; whereas \$14.9 million is generated by indirect and \$9.9 million by induced effects.

Table 9: DLBE Construction Labor Income Impact

Labor Income	Year 1	Year 2	Year 3	Year 4	Year 5
Direct Effect	\$ 2,917,000	\$ 1,919,000	\$ 869,000	\$ 6,853,000	\$ 4,568,000
Indirect Effect	409,000	281,000	137,000	2,316,000	1,544,000
Induced Effect	528,000	349,000	159,000	1,452,000	968,000
Total Effect	\$ 3,854,000	\$ 2,549,000	\$ 1,165,000	\$ 10,621,000	\$ 7,080,000
	Year 6	Year 7	Year 8	Year 9	Total
Direct Effect	\$ 13,520,000	\$ 9,013,000	\$ 4,753,000	\$ 3,179,000	\$ 47,591,000
Indirect Effect	4,569,000	3,046,000	1,606,000	1,074,000	14,982,000
Induced Effect	2,865,000	1,910,000	1,008,000	674,000	9,913,000
Total Effect	\$ 20,954,000	\$ 13,969,000	\$ 7,367,000	\$ 4,927,000	\$ 72,486,000

Source: IMPLAN, DPFPG, 2015

Table 10 presents the total output of \$187.7 million generated by the construction of the DLBE.

Table 10: DLBE Construction Output Impact

Output	Year 1	Year 2	Year 3	Year 4	Year 5
Direct Effect	\$ 4,605,000	\$ 3,092,000	\$ 1,448,000	\$ 18,590,000	\$ 12,393,000
Indirect Effect	942,000	650,000	318,000	5,296,000	3,531,000
Induced Effect	1,630,000	1,078,000	493,000	4,487,000	2,991,000
Total Effect	\$ 7,177,000	\$ 4,820,000	\$ 2,259,000	\$ 28,373,000	\$ 18,915,000
	Year 6	Year 7	Year 8	Year 9	Total
Direct Effect	\$ 36,677,000	\$ 24,451,000	\$ 12,895,000	\$ 8,625,000	\$ 122,776,000
Indirect Effect	10,448,000	6,965,000	3,674,000	2,457,000	34,281,000
Induced Effect	8,853,000	5,902,000	3,112,000	2,082,000	30,628,000
Total Effect	\$ 55,978,000	\$ 37,318,000	\$ 19,681,000	\$ 13,164,000	\$ 187,685,000

Source: IMPLAN, DPFPG, 2015

DLB Corridor Construction Impacts of New Office Facilities

The estimated cost of constructing the 2.1 million square feet of new office facilities is presented in Table 11. The average construction cost per square foot of \$208 was obtained from R.S. Means, “*Square Foot Costs*,” 36th Edition, 2015. The average annual construction cost of \$17.53 million was assumed as the direct effect of the new office construction activity.

Table 11: DLB Corridor Construction Cost of New Office Facilities

	2020	2025	2030	2035	2040
DLB Corridor Cumulative Office SF Demand Capture	337,000	713,000	1,130,000	1,592,000	2,104,000
Construction Cost per Square Foot	\$ 208	\$ 208	\$ 208	\$ 208	\$ 208
Cumulative Office Demand Construction Cost	\$ 70,096,000	\$ 148,304,000	\$ 235,040,000	\$ 331,136,000	\$ 437,632,000
	Construction Period				25
	Average Annual Construction Cost				\$ 17,505,000

Source: R.S. Means, “*Square Foot Costs*,” 36th Edition, 2015, DPFPG, 2015

On average, 238 annual jobs producing labor income of \$9.8 million will be generated by constructing the new office facilities in the DLB corridor.

Table 12: DLB Corridor New Office Annual Construction Impacts

Construction Impacts	Employment	Labor Income	Output
Direct Effect	169.5	\$ 6,746,000	\$ 17,505,000
Indirect Effect	30.8	1,704,000	4,027,000
Induced Effect	38.0	1,339,000	4,136,000
Total Effect	238.3	\$ 9,789,000	\$ 25,668,000

Source: IMPLAN, DFPFG, 2015

Over the 25 year study period, the construction of the 2.1 million square feet of new office facilities will generate labor income of \$244.7 million for York and Lancaster Counties and increase output by \$641.7 million. (Because construction jobs are temporary, they are best evaluated in an annual context rather than cumulatively.)

Table 13: DLB Corridor New Office 25-Year Construction Impacts

Construction Impacts	Labor Income	Output
Direct Effect	\$ 168,650,000	\$ 437,622,000
Indirect Effect	42,600,000	100,675,000
Induced Effect	33,475,000	103,400,000
Total Effect	\$ 244,725,000	\$ 641,697,000

Source: IMPLAN, DFPFG, 2015

DLB Corridor Construction Impacts of New Residences

The direct economic effect of constructing the new residences in the DLB corridor includes not only the construction cost itself but also the corresponding real estate commission related to the sales of new homes. On average, 217 residential units will be constructed annually at a total construction cost of \$56.9 million. Construction cost estimates were obtained from 2013-2015 York County building permit data and considered other national statistics and sources. Market values were imputed from these sources and were evaluated in conjunction with 2014-2015 new home sales statistics for the study area.

Table 14: DLB Corridor Annual Construction Costs of New Residences

Average Annual Residential Units	217
Construction Cost Per Unit	\$ 262,000
Average Annual Residential Construction Cost	\$ 56,854,000
Average Annual Residential Units	217
Market Value Per Unit	\$ 308,000
Average Annual Residential Sales	\$ 66,836,000
Real Estate Commission	6%
Average Annual Residential Real Estate Commission	\$ 4,010,000

Source: U.S. Census 2013-2015 York County Building Permits, NAHB, buildingadvisor.com, nccharlottehomes.com (SC MLS), realtor.com, DFPFG, 2015

On average, 635 annual jobs producing labor income of over \$29.1 million will be generated by constructing the new residential units in the DLB corridor.

Table 15: DLB Corridor New Residences Annual Construction Impacts

Construction Impacts	Employment	Labor Income	Output
Direct Effect	362.5	\$ 18,021,000	\$ 60,864,000
Indirect Effect	159.5	7,147,000	17,282,000
Induced Effect	113.1	3,983,000	12,304,000
Total Effect	635.1	\$ 29,151,000	\$ 90,450,000

Source: IMPLAN, DPFPG, 2015

Over the 25 year study period, the construction of the 5,433 new residences will generate labor income of \$728.8 million for York and Lancaster Counties and increase output by \$2.3 billion.

Table 16: DLB Corridor New Residences 25-Year Construction Impacts

Construction Impacts	Labor Income	Output
Direct Effect	\$ 450,525,000	\$ 1,521,600,000
Indirect Effect	178,675,000	432,050,000
Induced Effect	99,575,000	307,600,000
Total Effect	\$ 728,775,000	\$ 2,261,250,000

Source: IMPLAN, DPFPG, 2015

DLB Corridor Ongoing Impacts from Annual Operations of New Office Facilities

The economic impact from the annual operations of the new office facilities were modeled using Industry Change, which is the increase or decrease in economic activity due to the expansion or change in production of new businesses. Instead of value of production or value added, new employment by industry sector was used as a proxy for production changes.

Because the future tenants of the new office facilities are not yet known, the 11,074 new employees (Table 3) were distributed in Table 17 across the existing office occupying sectors based on current study area employment. The square feet per employee methodology used to estimate employment is based on full-time equivalent employment. The IMPLAN model considers both full-time and part-time employees so an appropriate conversion was made in Table 17 to properly define the direct effect of the new office ongoing activities.

Table 17: DLB Corridor New Office Employment Industry Sector Distribution

Study Area Sector	DLBE Corridor		IMPLAN Conversion Factor	Total DLBE Corridor		Select IMPLAN Office Sectors
	Office FTE	Employment		Office	Employment	
962.8	3%	340	0.96929492	351	Monetary authorities and depository credit intermediation	
4,105.9	13%	1,450	0.96929492	1,496	Nondepository credit intermediation and related activities	
644.6	2%	228	0.97001153	235	Securities and commodity contracts intermediation and brokerage	
518.8	2%	183	0.96906355	189	Insurance carriers	
443.8	1%	157	0.96906355	108	Insurance agencies, brokerages, and related activities	
301.4	1%	106	0.75000000	141	Funds, trusts, and other financial vehicles	
5,647.3	18%	1,994	0.91281374	2,184	Real estate	
676.0	2%	239	0.94947735	252	Legal services	
534.3	2%	189	0.94942143	199	Accounting, tax preparation, bookkeeping, and payroll services	
1,375.0	4%	485	0.94942143	511	Architectural, engineering, and related services	
56.9	0%	20	0.94942143	21	Specialized design services	
675.4	2%	238	0.96906355	246	Custom computer programming services	
406.1	1%	143	0.94915254	151	Computer systems design services	
24.0	0%	8	0.94915254	8	Other computer related services, including facilities management	
1,723.8	5%	608	0.94942143	640	Management consulting services	
74.5	0%	26	0.94942143	27	Environmental and other technical consulting services	
40.3	0%	14	0.94942143	15	Scientific research and development services	
1,750.8	6%	618	0.94942143	651	Advertising, public relations, and related services	
155.9	0%	55	0.94942143	58	Photographic services	
362.6	1%	128	0.94942143	135	Veterinary services	
568.0	2%	200	0.94636015	211	Management of companies and enterprises	
4,558.7	15%	1,610	0.91018414	1,769	Employment services	
32.5	0%	11	0.91018414	12	Travel arrangement and reservation services	
646.4	2%	228	0.91018414	250	Office administrative services	
77.5	0%	27	0.91018414	30	Facilities support services	
1,737.0	6%	613	0.91018414	673	Business support services	
3,271.7	10%	1,156	0.89697063	1,289	Offices of physicians, dentists, and other health practitioners	
31,372.0		11,074		11,852		

Source: IMPLAN, DPFPG, 2015

Upon completion of the 2.1 million square feet of office facilities in the DLB corridor (Year 2040), 11,852 direct jobs will be generated, and 17,425 total jobs will be generated. Total annual labor income generated will exceed \$791.3 million for York and Lancaster Counties.

Table 18: DLB Corridor New Office Annual Ongoing Economic Impacts (Year 2040)

Ongoing Impacts	Employment	Labor Income	Output
Direct Effect	11,852.0	\$ 583,368,000	\$ 1,433,943,000
Indirect Effect	2,500.8	99,643,000	279,953,000
Induced Effect	3,072.6	108,366,000	334,803,000
Total Effect	17,425.4	\$ 791,377,000	\$ 2,048,699,000

Source: IMPLAN, DPFPG, 2015

DLB Corridor Ongoing Impacts from Local Spending of New Residents

Household Income Change was used to model the economic impact of the new residents on York and Lancaster Counties. New household income upon completion of the 5,433 new residential units is

projected to exceed \$557.8 million annually.

Table 19: DLB Corridor New Annual Household Income (Year 2040)

\$ 308,000	Average Residential Value
3.00	Household Value to Household Income Ratio
\$ 102,667	Average Household Income
5,433	New Residential Units
\$ 557,832,000	New Household Income

Source: 2013 Federal Reserve Board Survey of Consumer Finances, DPF, 2015

Although some portion of the new residents will be employed by the new businesses in the DLB corridor, induced impacts are not considered double-counted because the assumed annual absorption of new residential units captured in the DLB corridor are only a minor portion (approximately 6 percent) of historical annual new housing demand in York and Lancaster Counties. Furthermore, the population projections used to project the demand for new housing were based on trends which did not consider the potential catalytic effect of the DLB corridor's development.

The economic impact generated by the new household spending is shown in Table 20. Over 2,963 new jobs and \$105.4 million in annual labor income for York and Lancaster Counties are projected.

Table 20: DLB Corridor New Annual Household Spending Economic Impacts (Year 2040)

Ongoing Impacts	Employment	Labor Income	Output
Direct Effect			
Indirect Effect			
Induced Effect	2,963.8	105,372,000	328,819,000
Total Effect	2,963.8	\$ 105,372,000	\$ 328,819,000

Source: IMPLAN, DPF, 2015

Table 21 describes the impact on the top 10 industries affected by this annual new household spending.

Table 21: Top 10 Industries in York and Lancaster Counties Affected by New Household Spending (Year 2040)

Industry	Employment	Labor Income	Output
Food services and drinking places	400.2	\$ 7,366,000	\$ 22,205,000
Private household operations	308.4	\$ 475,000	\$ 479,000
Offices of physicians, dentists, and other health practitioners	159.4	\$ 13,564,000	\$ 21,368,000
Retail Stores - General merchandise	130	\$ 4,428,000	\$ 8,266,000
Nursing and residential care facilities	127.8	\$ 4,455,000	\$ 7,849,000
Retail Stores - Food and beverage	125.2	\$ 3,628,000	\$ 7,120,000
Private hospitals	123.8	\$ 8,499,000	\$ 17,521,000
Real estate establishments	122.4	\$ 1,130,000	\$ 15,305,000
Retail Stores - Motor vehicle and parts	76	\$ 5,178,000	\$ 8,140,000
Civic, social, professional, and similar organizations	64.3	\$ 2,479,000	\$ 3,257,000

Source: IMPLAN, DPF, 2015

Fiscal Benefits

This section of the report summarizes the fiscal benefits for York and Lancaster Counties as a result of the

DLB corridor’s new office facilities and new residences. For purposes of this report, the fiscal benefits are expressed as increases in real property and motor vehicle ad valorem taxes. (Impacts on sales taxes are described in the Introduction to this report). Other direct revenues will be generated, but the aforementioned revenues are the most significant. Millage rates of the school districts are not included in the fiscal analysis as the focus of this report is the fiscal impacts of the DLB corridor on York County and Lancaster County rather than the impact the DLBE would have on local school districts.

The “Dave Lyle Boulevard Extension Land Use Study” estimated approximately 50 percent of the DLB corridor development could occur in York County and the remaining 50 percent in Lancaster County under the 15 percent capture scenario. Those percentages have been applied in this report to estimate the potential fiscal benefits to each county.

Estimates of the annual and 25-year cumulative new office real property ad valorem property taxes are shown in Table 22. The \$225 per square foot market value considered not only construction costs described above but also comparable sales in the study area. In 2040, annual real property ad valorem tax revenue of \$1.1 million is expected for York County, and \$1.5 million is expected for Lancaster County. Over the 25-year study period, cumulative real property ad valorem tax revenue of \$11.5 million is expected for York County, and \$15.4 million is expected for Lancaster County.

Table 22: DLB Corridor New Office Real Property Ad Valorem Taxes

	2020	2025	2030	2035	2040	25-Year Cumulative
DLB Corridor Cumulative Office SF Demand Capture	337,000	713,000	1,130,000	1,592,000	2,104,000	
Market Value per Square Foot	\$ 225	\$ 225	\$ 225	\$ 225	\$ 225	
DLB Corridor Office Market Value	\$ 75,825,000	\$ 160,425,000	\$ 254,250,000	\$ 358,200,000	\$ 473,400,000	
Applicable Assessment Percentage	6.0%	6.0%	6.0%	6.0%	6.0%	
Taxable Value	\$ 4,550,000	\$ 9,626,000	\$ 15,255,000	\$ 21,492,000	\$ 28,404,000	
Assume 50% Taxable Value in York County	\$ 2,275,000	\$ 4,813,000	\$ 7,628,000	\$ 10,746,000	\$ 14,202,000	
York County Unincorporated 2015 Millage	78.1	78.1	78.1	78.1	78.1	
DLB Corridor Office York County Real Property Tax	\$ 178,000	\$ 376,000	\$ 596,000	\$ 839,000	\$ 1,109,000	\$ 11,541,000
Assume 50% Taxable Value in Lancaster County	\$ 2,275,000	\$ 4,813,000	\$ 7,628,000	\$ 10,746,000	\$ 14,202,000	
Lancaster County Unincorporated 2015 Millage	92.8	92.8	92.8	92.8	92.8	
DLB Corridor Office Lancaster County Real Property Tax	\$ 211,000	\$ 447,000	\$ 708,000	\$ 997,000	\$ 1,318,000	
Less Local Option Sales Tax Credit	0.000704 (27,000)	(56,000)	(89,000)	(126,000)	(167,000)	
DLB Corridor Office Lancaster County Real Property Tax	\$ 238,000	\$ 503,000	\$ 797,000	\$ 1,123,000	\$ 1,485,000	\$ 15,437,000

Source: York County, Lancaster County, DPF, 2015

Estimates of the annual and 25-year cumulative new residential real property and motor vehicle ad valorem property taxes are shown in Table 23. In 2040, annual real property ad valorem tax revenue of \$2.9 million is expected for York County, and \$2.8 million is expected for Lancaster County. Over the 25-year study period, cumulative real property ad valorem tax revenue of \$34.1 million is expected for York County, and \$33.1 million is expected for Lancaster County.

Table 23: DLB Corridor New Residential Real Property and Motor Vehicle Ad Valorem Property Taxes

Residential Real Property Ad Valorem Tax	2020	2025	2030	2035	2040	25-Year Cumulative
DLB Corridor -12.5% Residential Capture, in Units	1,088	2,191	3,286	4,364	5,433	
Market Value per Unit	\$ 308,000	\$ 308,000	\$ 308,000	\$ 308,000	\$ 308,000	
New Residential Market Value	\$ 335,056,000	\$ 674,686,000	\$ 1,011,946,000	\$ 1,344,239,000	\$ 1,673,497,000	
4 Percent Owner Occupied Assessment	4.0%	4.0%	4.0%	4.0%	4.0%	
Taxable Value	\$ 13,402,000	\$ 26,987,000	\$ 40,478,000	\$ 53,770,000	\$ 66,940,000	
Assume 50% Taxable Value in York County	\$ 6,701,000	\$ 13,494,000	\$ 20,239,000	\$ 26,885,000	\$ 33,470,000	
York County Unincorporated 2015 Millage	78.1	78.1	78.1	78.1	78.1	
York County Residential Real Property Tax	\$ 523,000	\$ 1,054,000	\$ 1,581,000	\$ 2,100,000	\$ 2,614,000	\$ 31,056,000
2014 York County Motor Vehicle Taxable Value	\$ 116,387,000	\$ 116,387,000	\$ 116,387,000	\$ 116,387,000	\$ 116,387,000	
2014 York County Housing Units	96,954	96,954	96,954	96,954	96,954	
Motor Vehicle Taxable Value per Unit	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	
Assume 50% Motor Vehicle Taxable Value in York County	544	1,095	1,643	2,182	2,717	
York County Motor Vehicle Taxable Value	\$ 653,000	\$ 1,314,000	\$ 1,972,000	\$ 2,619,000	\$ 3,262,000	
York County Unincorporated 2015 Millage	78.1	78.1	78.1	78.1	78.1	
York County Motor Vehicle Ad Valorem Taxes	\$ 51,000	\$ 103,000	\$ 154,000	\$ 205,000	\$ 255,000	\$ 3,029,000
York County Residential Ad Valorem Tax Revenues	\$ 574,000	\$ 1,157,000	\$ 1,735,000	\$ 2,305,000	\$ 2,869,000	\$ 34,085,000
Assume 50% Real Property Taxable Value in Lancaster County	\$ 6,701,000	\$ 13,494,000	\$ 20,239,000	\$ 26,885,000	\$ 33,470,000	
Lancaster County Unincorporated 2015 Millage	92.8	92.8	92.8	92.8	92.8	
Lancaster County Residential Real Property Tax Before LOST Credit	\$ 622,000	\$ 1,252,000	\$ 1,878,000	\$ 2,495,000	\$ 3,106,000	
Less Local Option Sales Tax Credit 0.000704	(118,000)	(237,000)	(356,000)	(473,000)	(589,000)	
Lancaster County Residential Real Property Tax	\$ 504,000	\$ 1,015,000	\$ 1,522,000	\$ 2,022,000	\$ 2,517,000	\$ 29,903,000
Assume 50% Motor Vehicle Taxable Value in Lancaster County	\$ 653,000	\$ 1,314,000	\$ 1,972,000	\$ 2,619,000	\$ 3,262,000	
Lancaster County Unincorporated 2015 Millage	92.8	92.8	92.8	92.8	92.8	
Lancaster County Motor Vehicle Tax Before LOST Credit	\$ 61,000	\$ 122,000	\$ 183,000	\$ 243,000	\$ 303,000	
Less Local Option Sales Tax Credit 0.000704	(8,000)	(15,000)	(23,000)	(31,000)	(38,000)	
Lancaster County Motor Vehicle Ad Valorem Taxes	\$ 53,000	\$ 107,000	\$ 160,000	\$ 212,000	\$ 265,000	\$ 3,147,000
Lancaster County Residential Ad Valorem Tax Revenues	\$ 557,000	\$ 1,122,000	\$ 1,682,000	\$ 2,234,000	\$ 2,782,000	\$ 33,050,000

Source: York County, Lancaster County, DPF, 2015

Conclusion

The completion of the DLB extension from its current terminus to Highway 521 and the development it would create and enable represents an unparalleled economic opportunity for York and Lancaster Counties. The economic and fiscal benefits are summarized in Table 24 and illustrate only a portion of the potential impacts as retail, distribution, and perhaps high-tech manufacturing uses are also likely to occur along the corridor.

Table 24: DLB Corridor Economic and Fiscal Benefits*Construction Phase Economic Impacts*

Average Annual	Employment	Labor Income	Output
DLBE	184.6	\$ 8,054,000	\$ 20,853,889
DLB Corridor - New Offices	238.3	\$ 9,789,000	\$ 25,668,000
DLB Corridor - New Residences	635.1	\$ 29,151,000	\$ 90,450,000
Cumulative	Labor Income	Output	
DLBE	\$ 72,486,000	\$ 187,685,000	
DLB Corridor - New Offices	\$ 244,725,000	\$ 641,697,000	
DLB Corridor - New Residences	\$ 728,775,000	\$ 2,261,250,000	

Annual Ongoing Economic Impacts

Average Annual	Employment	Labor Income	Output
DLB Corridor - New Offices	17,425.4	\$ 791,377,000	\$ 2,048,699,000
DLB Corridor - New Residences	2,963.8	\$ 105,372,000	\$ 328,819,000

Fiscal Impacts

Annual Property Taxes	York County	Lancaster County	Total
New Offices	\$ 1,109,000	\$ 1,485,000	\$ 2,594,000
New Residences	2,869,000	2,782,000	5,651,000
Total	\$ 3,978,000	\$ 4,267,000	\$ 8,245,000

25-Year Cumulative

Property Taxes	York County	Lancaster County	Total
New Offices	\$ 11,541,000	\$ 15,437,000	\$ 26,978,000
New Residences	34,085,000	33,050,000	67,135,000
Total	\$ 45,626,000	\$ 48,487,000	\$ 94,113,000

Cumulative

	2015	2020	2030	2040
New Retail Spending	\$1.5 billion	\$3.3 billion	\$9.9 billion	\$23.3 billion
SC Sales Tax Revenue	\$75 million	\$172 million	\$524 million	\$1,275 million
One Cent Sales Tax for Public Education	\$12.5 million	\$28.6 million	\$87.3 million	\$212.5 million
One Cent Local Option Sales Tax for Capital Projects	\$11.6 million	\$26.5 million	\$80.8 million	\$196.7 million

Source: DPGF, 2015

GENERAL AND LIMITING CONDITIONS

Every reasonable effort has been made to ensure that the data contained in this report are accurate as of the date of this study; however, factors exist that are outside the control of Winthrop University that may affect the estimates and/or projections noted herein. This study is based on estimates, assumptions and other information developed by Winthrop University from its independent research effort, general knowledge of the industry, and information provided by and consultations with the client and the client's representatives. No responsibility is assumed for inaccuracies in reporting by the client, the client's agent and representatives, or any other data source used in preparing or presenting this study.

This report is based on information that was current as of June 2015, and Winthrop University has not undertaken any update of its research effort since such date.

Because future events and circumstances, many of which are not known as of the date of this study, may affect the estimates contained therein, no warranty or representation is made by Winthrop University that any of the projected values or results contained in this study will actually be achieved.

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