MVP Southgate Project

Docket No. CP19-XX-000

Resource Report 5 – Socioeconomics

November 2018

MVP Southgate Project
Resource Report 5 – Socioeconomics

Resource Report 5 – Filing Requirements	
Information	**Location in Resource Report**
Minimum Filing Requirements	
1. Describe socioeconomic conditions within the Project area. (§ 380.12(g)(1))	Section 5.3
2. Evaluate impact of any substantial immigration of people on governmental facilities and services and describe plans to reduce the impact on the local infrastructure. (§ 380.12(g)(2))	Section 5.4
3. Describe on-site manpower requirements and payroll during construction and operation including number of construction personnel who currently reside within the impact area, would commute daily to the site from outside the impact area, or would relocate temporarily within the impact area. (§ 380.12(g)(3))	Section 5.4.1, 5.4.2, 5.4.5
4. Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population. (§ 380.12(g)(4))	Section 5.4.3
5. Describe number and types of residences and businesses that would be displaced by the Project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments. (§ 380.12(g)(5))	Section 5.4.3
6. Conduct a fiscal impact analysis evaluating incremental local government expenditures in relation to incremental local government revenues that would result from construction of the Project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs. (§ 380.12(g)(6))	Section 5.4.2 Appendix 5-A
Additional Information Often Missing and Resulting in Data Requests	
7. Estimate total worker payroll and material purchases during construction and operation.	Section 5.4.2 Table 5.4-1 Appendix 5-A
8. Estimate project-related ad valorem and local tax revenues.	Section 5.4.2 Table 5.4-2 Appendix 5-A
9. Describe impacts on local traffic due to construction- and operation-related traffic and worker commuting. Address impacts on marine traffic where applicable (e.g., LNG import/export facilities).	Section 5.4.5
10. Evaluate the effects of the project on minority and low income populations in consideration of Executive Order 12898. (59 Fed. Reg. 7629 (Feb. 16, 1994)).	Section 5.3.8, 5.4.8

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SOCIOECONOMICS

LIST OF ACRONYMS AND ABBREVIATIONS

ACEJ	Advisory Council on Environmental Justice
CFR	Code of Federal Regulations
CSA	combined statistical area
EJ	Environmental Justice
EJ Act	Environmental Justice Act
EJ Board	Secretary's Environmental Justice and Equity Advisory Board
EJSCREEN	EPA's Environmental Justice Screening and Mapping Tool
EPA	U.S. Environmental Protection Agency
FERC or Commission	Federal Energy Regulatory Commission
FTI	FTI Consulting Inc.
I-40	Interstate 40
INGAA	Interstate Natural Gas Association of America
HDD	horizontal directional drill
I-40/85	I-40 and I-85
I-85	Interstate 85
Mountain Valley	Mountain Valley Pipeline, LLC
MP	milepost
MSA	metropolitan statistical areas
MVP	Mountain Valley Pipeline, LLC
NCDEQ	North Carolina's Department of Environmental Quality
Project or Southgate Project	MVP Southgate Project
RV	recreational vehicle
SR 87	State Route 87
U.S.	United States

RESOURCE REPORT 5
SOCIOECONOMICS

5.1 INTRODUCTION

Mountain Valley Pipeline, LLC ("Mountain Valley") is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission ("FERC" or "Commission") pursuant to Section 7(c) of the Natural Gas Act to construct and operate the MVP Southgate Project ("Southgate Project" or "Project"). The Southgate Project facilities will be located in Pittsylvania County, Virginia and Rockingham and Alamance counties, North Carolina. See Resource Report 1 (General Project Description) for additional Project information.

5.1.1 Environmental Resource Report Organization

Resource Report 5 is prepared and organized according to the FERC *Guidance Manual for Environmental Report Preparation* (February 2017). Section 5.2 describes the analysis area for the socioeconomic assessment. Section 5.3 describes existing socioeconomic conditions, including population, economic conditions, housing, community services, transportation, tax revenues, and environmental justice. Section 5.4 describes how the existing socioeconomic conditions could be affected during construction and operation of the Project. References used in the development of Resource Report 5 are listed in Section 5.5.

5.2 ANALYSIS AREA

The socioeconomic analysis area (Project area) for the Southgate Project focuses on the counties where the Project facilities will be constructed and operated. The Project is in Pittsylvania County, Virginia, and Rockingham and Alamance counties, North Carolina. Approximately two-thirds of the pipeline (47 miles) will be located in North Carolina (Table 5.2-1). Aboveground facilities include the construction of one new compressor station, four new meter (interconnect) stations, pig launchers and receivers, and mainline valves that will be installed at various locations along the pipeline route.

The Project counties are located in urbanized areas that are defined by the U.S. Census Bureau as areas of 50,000 or more people (U.S. Census Bureau, 2010a). The Project counties include one combined statistical area ("CSA[1]"), two metropolitan statistical areas ("MSA[2]"), and one micropolitan statistical area[3] that provide large labor pools consisting of highly skilled and well-educated workers, access to a wide range of equipment, materials, services, and sufficient temporary housing to accommodate the Project workforce. These populated areas are within the direct impact areas, and therefore, construction and operation impacts from the Project to surrounding communities and municipalities are not anticipated.

[1] CSAs consist of two or more adjacent metropolitan and micropolitan statistical areas that have substantial employment interchange. The MSA that combine to create a CSA retain separate identities within the larger CSA (U.S. Census Glossary, 2018).

[2] MSAs are Core Based Statistical Areas ("CBSAs") associated with at least one urbanized area that has a population of at least 50,000. The MSA comprises the central county or counties or equivalent entities containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county or counties as measured through commuting (U.S. Census Glossary, 2018).

[3] Micropolitan statistical areas are CBSAs associated with at least one urban cluster that has a population of at least 10,000 but less than 50,000. The micropolitan statistical area comprises the central county or counties or equivalent entities containing the core, plus adjacent outlying counties having a high degree of social and economic integration with the central county or counties as measured through commuting (U.S. Census Glossary, 2018).

Table 5.2-1 Construction Schedule for the MVP Southgate Project				
Facility	**County/State**	**Milepost**		**Miles**
		From	**To**	
H-605 Pipeline				
Spread 1	Pittsylvania, Virginia	0.0	0.4	0.4
H-650 Pipeline				
Spread 1	Pittsylvania, Virginia	0.0	26.1	26.1
	Rockingham, North Carolina	26.1	30.4	4.3
Spread 2	Rockingham, North Carolina	30.4	52.6	22.2
	Alamance, North Carolina	52.6	73.1	20.5
			Total	**73.1**
Facility				
Lambert Compressor Station /Lambert Interconnect Delivery / MLV 1	Pittsylvania, Virginia	0.0	NA	NA
LN 3600 Interconnect Delivery	Rockingham, North Carolina	28.2	NA	NA
T-15 Dan River Interconnect Delivery / MLV 4	Rockingham, North Carolina	30.4	NA	NA
T-21 Haw River Interconnect Delivery / MLV 8	Alamance, North Carolina	73.1	NA	NA
N/A = Not Applicable				

Pittsylvania County, Virginia

Approximately 26 miles of the pipeline, one compressor station and one interconnect will be in Pittsylvania County. Total land area in Pittsylvania County is 978.18 square miles and includes 9.23 square miles of water (U.S. Census, 2010b). The county is home to three towns and several other unincorporated communities with several major highways that cross through it (Pittsylvania County, 2018). Pittsylvania County is also included in the Danville micropolitan statistical area. For the purposes of this analysis, the City of Danville is not included as part of Pittsylvania County because it is an independent city bounded by Pittsylvania County and the North Carolina border and is located approximately 2.5 miles at its closest point to the Southgate Project. With respect to Environmental Justice ("EJ") areas, Pittsylvania County contains 16 census tracts, 9 of which are crossed by the Project and of that amount one census tract is a potential EJ communities (less than 1 percent). See Section 5.3.8 for more details on EJ.

Rockingham County, North Carolina

Approximately 26 miles of the pipeline and two interconnects will be in Rockingham County. Total land area in Rockingham County is 572.71 square miles and includes 7.15 square miles of water (U.S. Census, 2010b). There is one public-use airport and several major highways that cross through the county. Rockingham County is included in the Greensboro-High Point MSA which is part of the Greensboro-Winston-Salem-High Point CSA. The county is home to two cities, four towns, and 10 townships (Rockingham County, 2018). With respect to EJ communities, Rockingham County contains 21 census

tracts, 10 of which are crossed by the Project and of that amount four census tracts are potential EJ communities (less than 1 percent). See Section 5.3.8 for more details on EJ.

Alamance County, North Carolina

Approximately 21.1 miles of the pipeline and one interconnect will be in Alamance County. Total land area in Alamance County is 434.74 square miles and includes 10.79 square miles of water (U.S. Census, 2010b). Alamance County is centrally located in North Carolina, linking the Research Triangle and the Piedmont Triad metropolitan regions. The county is home to three cities, six towns, and many other smaller unincorporated communities and villages (Alamance County, 2018). Alamance County is included in the Burlington MSA which is part of the Greensboro-Winston-Salem-High Point CSA. With respect to EJ communities, Alamance County contains 36 census tracts, nine of which are crossed by the Project and of that amount two census tracts are potential EJ communities (less than 1 percent). See Section 5.3.8 for more details on EJ.

5.3 EXISTING SOCIOECONOMIC CONDITIONS

The socioeconomic data used in this evaluation were obtained from the most recent U.S. Department of Commerce, Bureau of the Census, and Bureau of Labor Statistics online databases. Additional information on community public services and available housing, hotel lodging, and rental units was obtained from publicly available online sources.

5.3.1 Population

Population data and trends including population density for the Project area are provided in Table 5.3-1. The three counties in the Project area had a total combined population of 314,598 in 2017, with 80 percent of this total located in the North Carolina counties. Population by county ranged from 162,391 in Alamance County to 61,258 in Pittsylvania County.

Population densities by county in 2017 ranged from 63.21 persons per square mile (persons/square mile) in Pittsylvania County to 383.00 persons/square mile in Alamance County. The corresponding statewide densities were approximately the same averaging around 212 persons/square mile.

Table 5.3-1
Population by State and County for the MVP Southgate Project

State/County	2017 Population	2017 Population Density (persons/square mile)	Population Change (Percent)	
			2000 to 2010	2010 to 2017
Virginia	**8,470,020**	**214.5**	**13.0**	**5.9**
Pittsylvania	61,258	63.21	2.9	-3.5
North Carolina	**10,273,419**	**211.31**	**18.5**	**7.7**
Rockingham	90,949	160.68	1.9	-2.9
Alamance	162,391	383.00	15.5	7.5

Source: U.S. Census Bureau, 2000, 2010, 2017 Census.

Population increased in all three counties in the Project area between 2000 and 2010. Alamance County experienced the greatest population increase, 15.5 percent. Pittsylvania and Rockingham counties had population increases of 2.9 and 1.9 percent, respectively. Alamance County continued to experience a

population growth of 7.5 percent between 2010 and 2017 while Pittsylvania and Rockingham counties experienced declines.

5.3.2 Employment and the Economy

Table 5.3-2 provides information on the economy and employment in the Project area. Per capita annual income was approximately equivalent among the Project counties with only an approximate $1,300 difference between the highest and lowest. The unemployment rates for the Pittsylvania and Rockingham counties were slightly above their respective state rates while Alamance County was equal at 4.3 percent. The civilian workforce estimates for 2017 for the Project counties include: 29,542 workers in Pittsylvania County; 41,106 workers in Rockingham County; and 79,767 workers in Alamance County. The total civilian workforce for all of the Project counties is 150,415 workers. Within the Project area, the major occupations are in the fields of educational, health and social services", "manufacturing", and "retail trade" (U.S. Census, 2016). Other top industries in the Project area include professional, scientific, and technical services, arts and entertainment, and construction.

Table 5.3-2
Existing Socioeconomic Conditions in the MVP Southgate Project Area

State/County	Per Capita Income (U.S. Dollars) a/	Civilian Labor Force (persons) b/, c/	Unemployment Rate b/, c/	Top Five Major Industries a/
Virginia	**$34,967**	**4,338,619**	**3.2**	**A, E, P, Pu, R**
Pittsylvania County	$22,650	29,542	4.5	C, E, M, P, R
North Carolina	**$26,779**	**4,987,865**	**4.3**	**A, E, M, P, R**
Rockingham County	$21,298	41,106	5.2	A, E, M, P, R
Alamance County	$23,989	79,767	4.3	C, E, M, P, R

Sources:
a/ U.S. Census Bureau, American Fact Finder, Selected Economic Characteristics 2012-2016 American Community Survey 5 – year estimates.
b/ Bureau of Labor Statistics, Table 1. Civilian Labor Force (May 2018 preliminary) for states.
c/ Bureau of Labor Statistics, Labor Force Data by County, 2017 Annual Averages for counties (number of unemployed people as a percentage of the labor force).

Industries:
A = Arts, entertainment, and recreation, and accommodation and food services.
Ag = Agriculture, forestry, fishing and hunting, and mining.
C = Construction.
E = Educational, health and social services.
F = Finance and insurance, and real estate and rental and leasing.
M = Manufacturing.
O = Other services, except public administration.
P = Professional, scientific, management, administrative and waste management services.
Pu = Public administration.
R = Retail trade.
T = Transportation and warehousing, and utilities.

5.3.3 Housing

Table 5.3-3 provides select housing data from the Project counties. Data on housing units are estimates for 2016 prepared by the U.S. Census Bureau, 2012-2016 American Community Survey 5 – year estimates (U.S. Census Bureau, 2012-2016). The number of total housing units varies across the impact area, largely based on the county population and the presence of the MSA, CSA, or micropolitan statistical area. In 2016, Pittsylvania County (with the lowest population) had the fewest housing units (31,334 units) while Alamance County, with the highest population, had the most housing units (68,211 units). Rockingham County possessed the highest rental vacancy rate of 8.9 percent while Pittsylvania County possessed the lowest rate of 3.6 percent. Each of the three counties had over 5,000 vacant housing units available (17,253 total). Based on available online resources, there are approximately 44 hotels and motels within the Project counties, as well as 12 campgrounds and recreational vehicle ("RV") parks providing hundreds of rental units.

Table 5.3-3
Housing by State and County for the MVP Southgate Project

State/County	Housing Units 2016 a/			Hotels and Motels b/	Campgrounds & RV Parks c/
	Total	Vacant Housing Units	Rental Vacancy Rate (%)	# of Facilities/ Rooms	# of Facilities/ sites
Virginia	**3,445,357**	**355,179**	**10.3**	**NA**	**NA**
Pittsylvania	31,334	5,007	3.6	3/160	5/172
North Carolina	**4,453,767**	**638,375**	**7.2**	**NA**	**NA**
Rockingham	43,591	6,088	8.9	15/603	4/147
Alamance	68,211	6,158	7.5	26/1,355	3/88

Sources:
a/ U.S. Census Bureau, 2012-2016. Selected Economic Characteristics 2012-2016 American Community Survey 5 – year estimates
b/ HotelMotels.info. 2018; Bing Maps, 2018; Experience Danville Pittsylvania County, 2018; Visit Rockingham County, 2018; Visit Alamance County, 2018.
c/ Go Camping America, 2018; RV Clubs, 2018; Experience Danville Pittsylvania County, 2018; Visit Rockingham County, 2018; Visit Alamance County, 2018.
N/A = Not Applicable

5.3.3.1 Existing RV and Campground Facilities

Table 5.3-4 lists existing RV and campground facilities that would be located within commuting distance of the Southgate Project.

Table 5.3-4
Existing RV and Campground Facilities in the MVP Southgate Project Counties

Existing RV And Campground Facilities	Description / Amenities
Virginia	
Pittsylvania County	
Elkhorn Lake Campground and ATV Trails 2500 Elkhorn Road, Java	• 560+ acre recreation area with private 110-acre lake and family campground • Opened year round, gated • 60 RV sites onsite • Full hookups for electric service • 8.7 miles away from closest point of pipeline centerline at MP 0.5 • Rustic cabins, picnic pavilions, fishing and boat ramp, swimming pool and water slide • Band events and entertainment • 31 miles of ATV trails and motorcycle Enduro track
Leesville Lake Campground 3129 Gallows Road, Gretna	• 40-acre campground site • Opened year round, pet friendly • 9.0 miles away from closest point of pipeline centerline at MP 0.0 • 12 spacious full hookup campsites • Swimming pool • Large wooded areas • Old road-bed trails • Access to a 17-mile long lake providing fishing, boating, kayaking, canoeing, and other water sports and activities • Access to boat ramps, floating docks, and paved parking areas with boat trailer spaces
Paradise Lake and Campground 593 Keeling Drive, Keeling	• Opened year round, pet friendly • 17 large and 40 small RV sites with full hookups • 7 miles away from closest point of pipeline centerline at MP 11.0 • Rustic cabins and tent sites • Bath and laundry facilities • Swimming pool • Snack bar • Outdoor activities • Access to Paradise Lake providing fishing, paddle and jon boating
Smith Mountain Campground 155 Liberty Road, Penhook	• Opened year round, pet friendly • Located adjacent to pond and 4 miles from Smith Mountain Lake with public boat landing • 20 large wooded and level RV sites with four pull through sites; all with electric service • 17 miles away from closest point of pipeline centerline at MP 0.0 • 10 tent sites available • Bath house and pavilion • Walking trails, outdoor activities
Running Cedar RV Resort 3129 Gallows Road Post Office Box 556, Gretna	• Located steps from the 17-mile long Leesville Lake • 23 large wooded and level campsites with water and electric service • 18 miles away from closest point of pipeline centerline at MP 0.0 • Access to public lake front picnic area with public boat ramp, fishing • Clubhouse with lounge area and game room, private outdoor pool, walking trails

Table 5.3-4 Existing RV and Campground Facilities in the MVP Southgate Project Counties	
Existing RV And Campground Facilities	**Description / Amenities**
North Carolina	
Rockingham County	
Lake Reidsville 630 Water Works Road, Reidsville	• Multipurpose recreation facility with a campground located on a 750-acre lake and park providing outdoor activities • Opened year round, every day • 46 wooded sites with water and electricity with 28 having full hookups • 5 miles away from closest point of pipeline centerline at MP 46.5 • Swimming is not allowed since Lake Reidsville is a municipal water source
Dan River Campground 724 Webster Road, Stoneville	• Small family owned and operated tent and RV campground site • Located on the Dan River about 20 miles from the Martinsville Speedway • Opened April 1 through October 31, pet friendly • 53 RV sites (20 that have water, electric and sewer hookup; 13 that have water and electric hookup that are available for RV camping) • 4 tent sites have electric and water and 5 sites are tent only with no hookups • 12.4 miles away from closest point of pipeline centerline at MP 36.0 • River activities include more than 30 canoes and kayaks and over 100 float tubes available
	• Swimming, outdoor activities, walking trails
Humphrey's Ridge Marine and Campground, Belews Lake 548 Shelton Road, Stokesdale	• Located on Belews Lake which is a 3,864 acre lake with an 88-mile shoreline • Opened early April through early September • 36 RV sites • 22 miles away from closest point of pipeline centerline at MP 41.0
Lisa's RV Landing 3440 US 311, Madison	• Opened year round • 12 RV sites • 22 miles away from closest point of pipeline centerline at MP 40.0 • Can accommodate all types of campers from the smallest tent to the biggest 5th wheel and motorhomes with slide-outs • Electric hook ups
Alamance County	
Jones Station RV Park 2710 Jones Drive, Mebane	• 25-acre privately owned RV park and campground park • 56 deluxe camp sites • Opened year round • Full hookups on all sites as well as RV Storage • Bathhouse and several other modern day amenities • Park can accommodate large pull-throughs • 4.4 miles away from closest point of pipeline centerline at MP 73.11
Hidden Lake Park 4460 South NC Highway 54, Hidden Lake Road, Graham	• Opened year-round for camping (RV hookups and tent) • 12 RV sites • Swimming and water slide • Concessions with picnic area • Two bath houses • 5.0 miles away from closest point of pipeline centerline at MP 73.11

Table 5.3-4 Existing RV and Campground Facilities in the MVP Southgate Project Counties	
Existing RV And Campground Facilities	**Description / Amenities**
Crane Creek Campground & RV Park 1256 Longest Acre Road, Snow Camp	• 80 wooded acres sitting on the Cane Creek mountain range • Opened year round • 20 hookups (water and electric) and additional sites with no hookups • Can accommodate all types of campers from the smallest tent to the biggest 5th wheel and motorhomes with slide-outs • 22 miles away from closest point of pipeline centerline at MP 40.0
Sources: Experience Danville Pittsylvania County, 2018; Visit Rockingham County, 2018; Visit Alamance County, 2018.	

5.3.4 Travel and Tourism

Table 5.3-5 provides domestic travel-related economic impacts for the Project area in 2016. The Southgate Project counties each account for less than 1 percent in travel-related expenditures compared to their state totals (VATC, 2016; VisitNC, 2016). However, preliminary data for year 2017 for both states indicate increases in all areas of domestic travel-related economics ranging from a low of 1.1 percent to a high of 7.1 percent (U.S. Travel Association, 2018).

Virginia

The Southgate Project area is located in the southern region of Virginia known for its six speedways, history and heritage, rolling countryside, and outdoor activities (Virginia, 2018). Domestic and international travelers to Virginia spent nearly $25 billion in 2016 that supported 234,670 jobs and provided $3.4 billion in state and local taxes and the travel industry was the fourth largest private employer in the state (U.S. Travel Association, 2016).

Among the 95 counties in Virginia, Pittsylvania County ranked 55th with respect to economic impacts resulting from domestic travel in 2016 (VATC, 2016). Domestic travelers spent approximately $73 million in Pittsylvania County in 2016, which represents less than 1 percent of the states total. The travel and tourism industry generated $14 million in payroll in Pittsylvania County and resulted in approximately $4 million in state tax revenue and $2 million in local tax revenue in 2016 (Table 5.3-5).

North Carolina

The Southgate Project area is located in the Greensboro and Winston-Salem region known for having the nation's largest natural-habitat zoo, being the furniture capital of the world, and the nation's largest pottery community (VisitNC, 2018). Domestic and international travelers to North Carolina spent nearly $24 billion in 2016 that supported 229,530 jobs and provided $3.7 billion in state and local taxes and the travel industry was the sixth largest private employer in the state (U.S. Travel Association, 2016).

In 2016, domestic traveler expenditures in Rockingham County were approximately $71 million, representing less than 1 percent of the state total (VisitNC, 2016). The travel and tourism industry generated $12 million in payroll in Rockingham County and resulted in approximately $3.8 million in state tax revenue and $1.7 million in local tax revenue in 2016 (Table 5.3-5).

Domestic traveler expenditures in Alamance County were more than double that of Rockingham County at $180 million, but still only representing less than 1 percent of the state total (VisitNC, 2016). The travel

and tourism industry generated $29 million in payroll in Alamance County and resulted in approximately $11 million in state tax revenue and $3 million in local tax revenue in 2016 (Table 5.3-5).

Table 5.3-5
Domestic Travel-Related Economic Impacts in the MVP Southgate Project Counties, 2016

State/County	Travel-Related Expenditures $(millions)	Travel-Related Payroll $(millions)	Travel-Related Employment (thousands)	Travel-Related State Tax Receipts $(millions)	Travel-Related Local Tax Receipts $(millions)
Virginia	**$23,699.81**	**$5,624.41**	**229.26**	**$1,014.41**	**$663.39**
Pittsylvania	$73.27	$14.04	0.66	$3.98	$2.14
North Carolina	**$23,021.47**	**$5,558.72**	**219.70**	**$1,187.24**	**$699.49**
Rockingham	$70.91	$12.01	0.57	$3.79	$1.71
Alamance	$179.95	$29.58	1.40	$10.66	$3.13

Source:

2016 Impact of Travel on Virginia (VATC, 2016).
2016 Impact of Travel on North Carolina (VisitNC, 2016).

5.3.5 Public Services

Public services and facilities are available in the Southgate Project area, including full-service law enforcement, hospitals, career and volunteer fire departments, and public schools. Select public service information is provided in Table 5.3-6.

5.3.5.1 Education

The total number of public schools are summarized by county in Table 5.3-6. There are 80 public schools in the Project counties consisting of elementary, middle, and high schools. The parking lot of one public school will be crossed by the Southgate Project pipeline at approximately milepost ("MP") 71.3. Refer to Resource Report 8 for further details.

5.3.5.2 Police and Fire Services

Summary data for law enforcement and fire departments are presented by county in Table 5.3-6. These data provide a general overview of resources available in each county. In general, the number of police and fire departments is directly related to the overall size and population of the county, as well as the number of communities. Multiple law enforcement agencies and providers exist in the potentially affected counties of the Project, including state patrol, county sheriffs, and local police departments. In many cases, mutual aid agreements allow agencies to support one another in emergency situations.

The Southgate Project counties have full service law enforcement agencies that are each staffed by one sheriff's office that employs, on average, 140 full and part-time deputies and officers who provide services in the areas of corrections, operations, investigations, and administration (Table 5.3-6). In addition, there are hundreds of state troopers in the corresponding states (approximately 675 in Virginia and over 1,600 in North Carolina) that provide similar services as the counties (VSP, 2015; NCDPS, 2015).

Multiple fire departments provide fire protection, rescue, and suppression services in the Southgate Project counties. Many of these fire departments are at least staffed with a few full-time paid fire-fighter and several part-time volunteers. Several of the fire stations in the Southgate Project counties also provide

combined medical services. For instance, Pittsylvania County has 21 fire stations, four of which have combined emergency medical services (Pittsylvania County, 2018).

5.3.5.3 Medical Facilities

Medical facility summaries are presented by county in Table 5.3-6. There are only four hospitals in the Southgate Project counties with over 600 beds; however, the area has numerous outpatient clinics providing emergency services, general care, eye and dental, onsite pharmaceuticals, and other specialty services (Open Door Clinic, 2018; Piedmont Health, 2018). Pittsylvania County also has approximately 12 emergency transport agencies that provide emergency ambulance services to surrounding communities (Pittsylvania County, 2018).

Table 5.3-6
Public Services in the MVP Southgate Project Area

County/State	Number of Public Schools a/	Number of Police Departments b/	Number of Fire and Rescue Departments c/	Number of Hospitals d/	Number of Hospital Beds d/
Pittsylvania, Virginia	19	3	21	1	50
Rockingham, North Carolina	25	6	16	2	339
Alamance, North Carolina	36	6	8	1	238
TOTAL	**80**	**15**	**45**	**4**	**627**

Sources:
a/ Pittsylvania County Schools, 2018; Rockingham County Schools, 2018; Alamance County Schools, 2018.
b/ Pittsylvania County Sheriff, 2018; Rockingham County Sheriff, 2018; Alamance County Sheriff, 2018.
c/ USA Fire & Rescue. 2018; Carolinas Fire Page, 2018; Pittsylvania County GIS, 2018; Pittsylvania County, 2018.
d/ AHD (American Hospital Director), 2018.

5.3.6 Transportation

The Southgate Project area will mainly be accessed by use of existing highways. Major routes crossed by the pipeline alignment in Pittsylvania County, Virginia include U.S. Route 29 and U.S. Route 58. U.S. Route 29 extends north/south for approximately 1,036 miles from Pensacola, Florida to the western suburbs of Baltimore, Maryland. It will be crossed twice by the pipeline, near MP 4.5 in Pittsylvania County, Virginia and again near MP 41.7 in Rockingham County, North Carolina. U.S. Route 29 bisects Virginia, entering the state at Danville and passing through several towns before leaving the state in Arlington County and entering the District of Columbia (AARoads, 2018). U.S. Route 58 is an east/west highway that extends for approximately 508 miles from just northwest of Harrogate, Tennessee to U.S. Route 60 in Virginia Beach, Virginia and will be crossed by the Southgate Project pipeline near MP 20.0. Major routes and that will be crossed by the Project are identified in Table 5.3-7.

Other major routes that will be crossed by the pipeline alignment include State Route 87 ("SR 87"), Interstate 40 ("I-40"), Interstate 85 ("I-85"), and U.S. 70. SR 87 is a primary state highway in Virginia that extends approximately 4 miles from the North Carolina state line north to U.S. Route 220 in Henry County, Virginia. It parallels the majority of the pipeline route through Alamance and Rockingham counties in North Carolina and will also cross the pipeline near MPs 49.2 and 55.8 in Alamance County. I-40 and I-85 ("I-40/85") are major east-west interstate highways traversing through the southcentral/southeastern portions of the U.S. I-40 travels through North Carolina for approximately 421 miles and intersects (shares)

with I-85 east of downtown Greensboro. In Alamance County, the pipeline will cross the shared I-40/85 near MP 70.9. U.S. 70 (Haw River Bypass) is a primary corridor that extends east/west through North Carolina connecting Raleigh, Smithfield, Goldsboro, Kinston, Havelock and the Port of Morehead City that is a major hurricane evacuation route. The pipeline alignment will cross U.S. 70 at MP 68.5.

Table 5.3-7
Major Interstates and Highways Crossed by the MVP Southgate Project

Approximate Milepost	Highway	County	State
4.5	U.S. Route 29	Pittsylvania	Virginia
20.0	U.S. Route 58 (Martinsville Highway)	Pittsylvania	Virginia
41.7	U.S. Route 29	Rockingham	North Carolina
42.2	U.S. 158 West	Rockingham	North Carolina
49.2	SR 87	Alamance	North Carolina
55.8	SR 87	Alamance	North Carolina
68.5	Highway 70 (Haw River Bypass)	Alamance	North Carolina
70.9	Interstate 40/85	Alamance	North Carolina

Optional transportation available in the region include train and airline resources. North Carolina has more than 3,200 miles of railroad track serving 22 states in the eastern half of the country. North Carolina also has four international airports, 11 regional airports and two major deep-water seaports (EDPNC, 2018). The Amtrak National provides daily round-trip service throughout the majority of the Project area (Amtrak, 2018). The Burlington-Alamance and Danville Regional Airports provide regional air service to many major cities, internal and external to Virginia and North Carolina. The Piedmont Triad International Airport in Greensboro, North Carolina is approximately 25 miles away from the closest point of the pipeline at MP 54 (WPPDC, 2018).

5.3.7 Tax Revenues

5.3.7.1 Sales and Use Taxes

The general sales and use tax rate for Virginia is 5.3 percent (4.3 percent state tax and 1 percent local tax), Table 5.3-8. Additional state tax is imposed in the Northern Virginia and Hampton Roads regions, neither of which is crossed by the Project (Virginia State Tax Division, 2017).

The general sales and use tax rate for North Carolina is 6.75 or 7.00 percent (4.75 percent state tax plus applicable local rates at 2.00 or 2.25 percent tax), (North Carolina Department of Revenue, 2017)).

Table 5.3-8
Sales and Use Tax Rates by Location

State/County	County Tax Rate (%)	State Tax Rate (%)	Total Tax Rate (%)
Virginia			
Pittsylvania	1.00	4.3	5.3
North Carolina			
Rockingham	2.00	4.75	6.75
Alamance	2.00	4.75	6.75

5.3.8 Environmental Justice

Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994) was issued to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. The order requires each federal agency to identify and address as appropriate the disproportionately high and adverse effects of its programs, policies and activities on minority populations and low-income populations. It also provides minority and low-income communities access to public information and public participation.

5.3.8.1 Federal Environmental Screening

To determine potential impacts on minority and low-income populations, the Southgate Project used the Environmental Protection Agency's ("EPA") Environmental Justice Screening and Mapping Tool ("EJSCREEN") demographic index (EPA, 2017a), in accordance with FERC *Guidance Manual for Environmental Report Preparation*. EJSCREEN's demographic index is a block group which exceeds 50 percent minority population and/or exceeds 50 percent population whose household income is below twice the federally defined poverty threshold (EPA, 2017b). Block groups and census tracts of potential EJ communities where the Project facilities cross or are in are included in Tables 5.3-9 and 5.3.10 and displayed on Figure 5.3-1. Data in Table 5.3-9 was taken from the U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates which is what the EJSCREEN uses. Discussions on the results are provided in the following sections.

EPA's Environmental Justice Showcase Communities

The Southgate Project also conducted a review of EPA's Environmental Justice Showcase Communities for Regions 3 and 4 and determined that none of the Project facilities are located in these communities (EPA, 2017c).

Tribal Consultation

On July 24, 2014, the EPA issued its Policy on Environmental Justice for Working with Federally Recognized Tribes and Indigenous Peoples. The Policy focuses on EPA's work with federally recognized tribes, state recognized tribes, tribal members, indigenous community-based/grassroots organizations, Native Hawaiians, individual Native Americans, and others living in Indian country. The Policy also discusses EPA's work with other federal agencies, state agencies, and other interested groups (EPA, 2014).

The Southgate Project is actively coordinating with federal tribes that are cooperating agencies in the FERC process (see Resource Report 4 for more details). In addition, the Project has conducted outreach with state tribes and has been actively coordinating with interested tribal representatives.

In addition to federal guidance, the Southgate Project also assessed state level EJ policies, as applicable, which are further discussed in the following sections (see Section 5.3.8.2 below).

Table 5.3-9
EJ Block Group and Census Tracts for Counties Crossed by the MVP Southgate Project

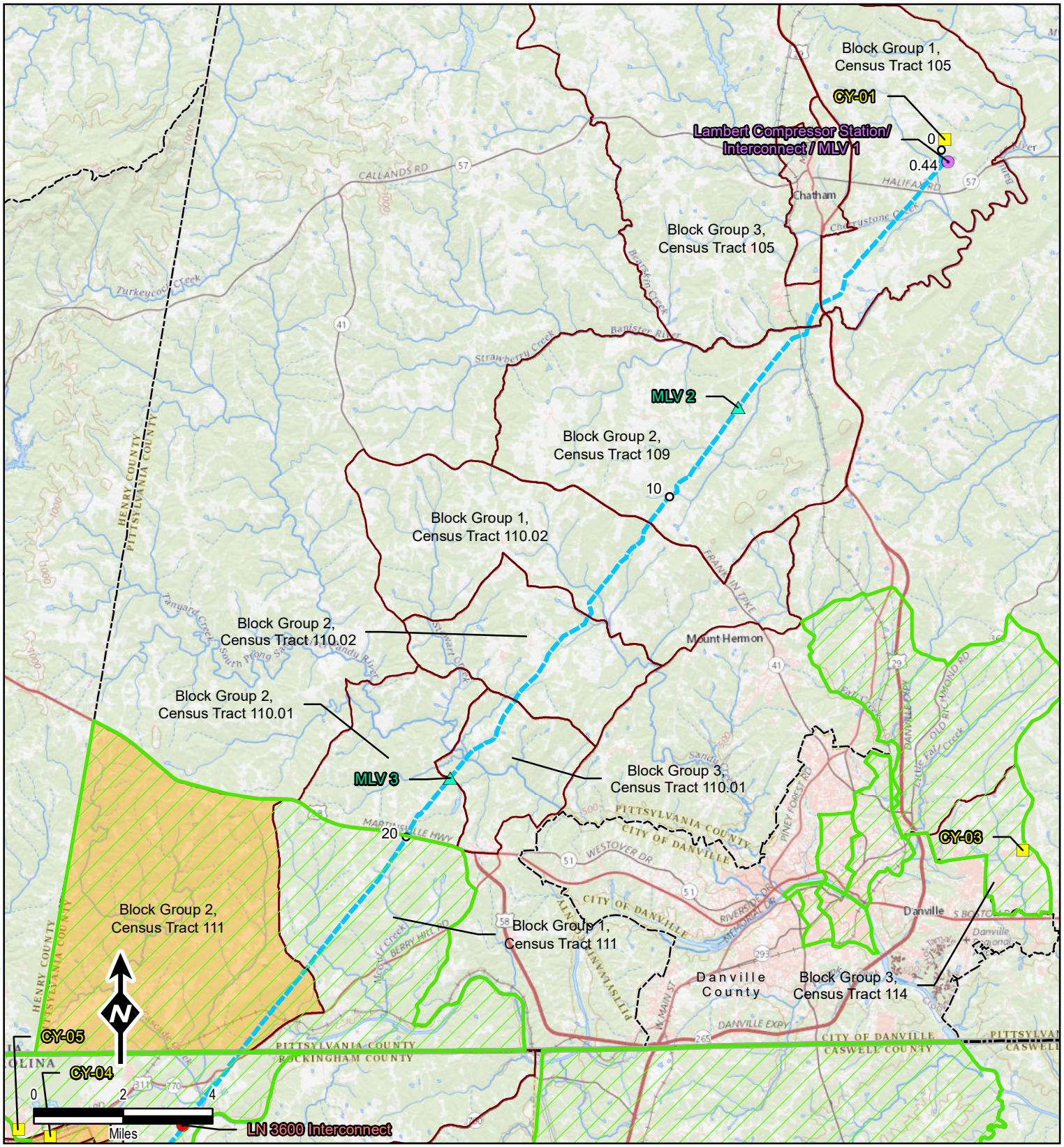
State/County Block Group/Census Tract	Total Population	Median Household Income (U.S. Dollars)	Percent												
			White	African American	Native American & Alaskan Native	Asian	Native Hawaiian & Pacific Islander	Other Race	Hispanic or Latino Origin	Children (5 and under)	Elderly (over 65)	Non- English at Home a/	Less Than High School Education	Minority Population b/	Households Below Poverty b/
Virginia	**8,310,301**	**$66,149**	**68.7**	**19.2**	**0.3**	**6.1**	**0.1**	**2.3**	**8.7**	**6.1**	**13.8**	**15.5**	NA	NA	NA
Pittsylvania County	***62,392***	***$43,087***	***74.9***	***21.2***	***0.1***	***0.4***	***0.0***	***1.7***	***2.4***	***4.5***	***19.8***	***3.7***	NA	NA	NA
Block Group 1, Census Tract 105	1,423	NA	79.4	18.1	0.0	0.0	0.0	.5	2.5	5	19	5	2	20.6	29.2
Block Group 3, Census Tract 105	2,011	NA	52.5	44.3	0.0	1.0	0.0	1.0	1.0	2	13	5	4	47.5	48.5
Block Group 2, Census Tract 109	1,450	NA	82.7	11.7	0.0	0.0	0.0	3.5	2.9	3	20	3	5	17.3	35.3
Block Group 1, Census Tract 110.02	3,513	NA	87.3	12.3	0.2	0.0	0.0	0.0	0.0	4	17	4	4	12.7	25.2
Block Group 2, Census Tract 110.02	1,325	NA	86.8	12.4	0.0	0.0	0.8	0.0	0.0	6	16	4	7	13.2	41.1
Block Group 3, Census Tract 110.01	1,122	NA	91.4	8.6	0.0	0.0	0.0	0.0	0.0	6	17	2	2	8.6	40.6
Block Group 2, Census Tract 110.01	746	NA	91.8	6.7	0.0	0.0	0.0	0.0	0.0	1	24	2	8	8.2	29.4
Block Group 1, Census Tract 111	1,366	NA	84.8	15.2	0.0	0.0	0.0	0.0	3.0	2	20	6	3	18.2	39.5
Block Group 2, Census Tract 111	1,575	NA	48.9	38.3	0.0	0.0	0.0	12.3	12.8	7	13	6	6	**51.1**	32.6
North Carolina	**9,940,828**	**$48,256**	**69.2**	**21.5**	**1.2**	**2.6**	**0.1**	**3.0**	**8.9**	**6.1**	**14.7**	**11.3**	NA	NA	NA
Rockingham County	***93,643***	***$40,003***	***75.7***	***18.9***	***0.4***	***0.5***	***0.1***	***2.8***	***5.5***	***5.2***	***18.3***	***5.6***	NA	NA	NA
Block Group 1, Census Tract 402	1,000	NA	92.7	6.3	0.0	1	0.0	0.0	1.1	2	23	16	7	8.4	45.5
Block Group 1, Census Tract 401.01	756	NA	90.3	9.7	0.0	0.0	0.0	0.4	0.0	0	15	5	5	10.1	42.1
Block Group 1, Census Tract 411	681	NA	78.6	21.4	0.0	0.0	0.0	0.0	0.0	0	21	1	2	21.4	**57.9**
Block Group 3, Census Tract 401.01	1,295	NA	71.1	15.8	0.0	0.0	0.0	14.1	13.2	9	22	9	7	31.0	38.8
Block Group 2, Census Tract 401.01	1,875	NA	75.9	20.1	1.7	0.0	0.0	1.0	1	2	20	4	6	24.1	45.8
Block Group 2, Census Tract 401.02	1,130	NA	51.2	48.8	0.0	0.0	0.0	2.8	3	13	10	2	2	**51.7**	**67.3**
Block Group 3, Census Tract 401.02	846	NA	73.0	13.7	0.0	0.0	0.0	0.0	0.0	6	22	0	4	27.0	**45.7**
Block Group 1, Census Tract 413	1,977	NA	80.9	14.7	0.0	0.7	0.0	0.9	1	7	18	2	10	19.1	**54.3**
Block Group 4, Census Tract 413	1,033	NA	61.0	34.1	0.0	0.0	0.0	0.7	11.9	7	21	17	4	**50.2**	45.4
Block Group 2, Census Tract 413	1,214	NA	72.0	25.3	2.7	0.0	0.0	0.0	0.0	1	25	0	3	28.0	35.1
Alamance County	***156,372***	***$43,209***	***70.7***	***18.6***	***0.4***	***1.5***	***0.1***	***6.0***	***12.1***	***5.9***	***16.0***	***12.6***	NA	NA	NA
Block Group 2, Census Tract 215	1,366	NA	82.4	10.8	0.0	0.0	0.0	6.2	6.2	6	13	6	3	17.6	21.7
Block Group 1, Census Tract 215	1,313	NA	83.5	10.3	0.0	0.0	0.0	6.2	6.2	9	17	8	2	16.5	29.6
Block Group 4, Census Tract 215	1,362	NA	89.0	6.5	0.0	0.0	0.0	4.0	4.0	5	18	2	0	11.0	35.2
Block Group 3, Census Tract 215	729	NA	95.5	1.6	0.0	0.0	0.0	2.9	4.5	10	12	2	3	6.2	25.1
Block Group 1, Census Tract 214	1,703	NA	94.5	1.1	0.0	0.4	0.0	0.0	3.9	5	22	5	3	9.5	35.4
Block Group 5, Census Tract 213	891	NA	58.2	34.8	0.2	0.0	0.0	3.9	6.1	5	22	5	6	42.4	47.7
Block Group 2, Census Tract 212.01	1,783	NA	68.3	20.0	0.0	0.0	0.0	8.1	13.6	6	14	10	10	36.2	**54**
Block Group 3, Census Tract 212.01	1,151	NA	84.4	8.5	0.0	0.0	0.0	7.0	7.0	1	10	9	7	15.6	**57**
Block Group 1, Census Tract 220.01	1,404	NA	82.1	14.9	0.0	2	0.0	0.0	5	5.0	19	5	6	22.6	17.8

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.
a/ Percent is only for non-English population age 5 years and over. **b/** Data fields are shaded for those census block groups with more than 50 percent of minority population and/or households below the poverty level.
N/A = Not applicable.

Table 5.3-10
EJ Block Group and Census Tracts for Counties Crossed by the MVP Southgate Project by Milepost

State/*County* Block Group/Census Tract	Milepost Enter	Milepost Exit	Total Distance (Miles) b/	Collocation Distance (Miles)
Virginia/*Pittsylvania County*				
Block Group 1, Census Tract 105 a/	0.00	0.44	0.44	0.44
Block Group 1, Census Tract 105	0.00	4.33	4.33	3.29
Block Group 3, Census Tract 105	4.33	4.94	0.62	.054
Block Group 2, Census Tract 109	4.94	10.74	5.80	4.99
Block Group 1, Census Tract 110.02	10.74	13.38	2.63	1.67
Block Group 2, Census Tract 110.02	13.38	15.93	2.55	0.90
Block Group 3, Census Tract 110.01	15.93	18.26	2.33	1.31
Block Group 2, Census Tract 110.01	18.26	19.96	1.71	1.71
Block Group 1, Census Tract 111	19.96	23.70	3.73	3.73
Block Group 2, Census Tract 111	23.70	26.09	2.39*	2.39*
North Carolina/*Rockingham County*				
Block Group 1, Census Tract 402	26.09	30.08	3.99	3.31
Block Group 1, Census Tract 401.01	30.08	30.48	0.40	0.40
Block Group 1, Census Tract 411	30.48	36.28	5.80*	3.35*
Block Group 3, Census Tract 401.01	36.28	38.82	2.54	0.25
Block Group 2, Census Tract 401.01	38.82	39.68	0.86	.017
Block Group 2, Census Tract 401.02	39.68	40.34	0.66*	0.00*
Block Group 3, Census Tract 401.02	40.34	42.19	1.84	1.00
Block Group 1, Census Tract 413	42.19	43.16	0.97	0.40
Block Group 4, Census Tract 413	43.16	44.90	1.74*	0.70*
Block Group 1, Census Tract 413	44.90	48.41	3.51	0.19
Block Group 2, Census Tract 413	48.41	52.63	4.22	3.24
North Carolina/*Alamance County*				
Block Group 2, Census Tract 215	52.63	55.07	2.43	1.92
Block Group 1, Census Tract 215	55.07	57.86	2.79	1.89
Block Group 4, Census Tract 215	57.86	60.26	2.40	0.73
Block Group 3, Census Tract 215	60.26	61.37	1.11	0.00
Block Group 1, Census Tract 214	61.37	66.08	4.71	0.00
Block Group 5, Census Tract 213	66.08	66.39	0.30	0.00
Block Group 2, Census Tract 212.01	66.39	69.65	3.26*	0.00*
Block Group 3, Census Tract 212.01	69.65	72.92	3.27*	0.00*
Block Group 1, Census Tract 220.01	72.92	73.11	0.19	0.00

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.
a/ Southgate Lateral (H605 Pipeline).
b/ Totals may be off slightly due to rounding of numbers.
* Potential EJ Community.



Legend

- Compressor Station
- Contractor Yard
- Meter Station
- Valve Site
- Mileposts
- Proposed Pipeline Route
- Not a Potential Environmental Justice Area
- Potential Environmental Justice Area
- Opportunity Zones
- State Boundary
- County Boundary

Note: A Potential Environmental Justice Area is a block group which exceeds 50% minority population and/or exceeds 50% population whose household income is below twice the federally-defined poverty threshold.

Percentage of Route Within Potential Environmental Justice Area: 29%

Percentage of Route Not Within Potential Environmental Justice Area: 71%

Data Sources: ESRI, USGS, TRC, EQT, Census Bureau ACS 2012-2016

1 inch = 3 miles
When Printed 8.5x11

Mountain Valley PIPELINE LLC

Figure 5.3-1
Page 1 of 2

Environmental Justice Areas Map
Virginia

TRC
Results you can rely on

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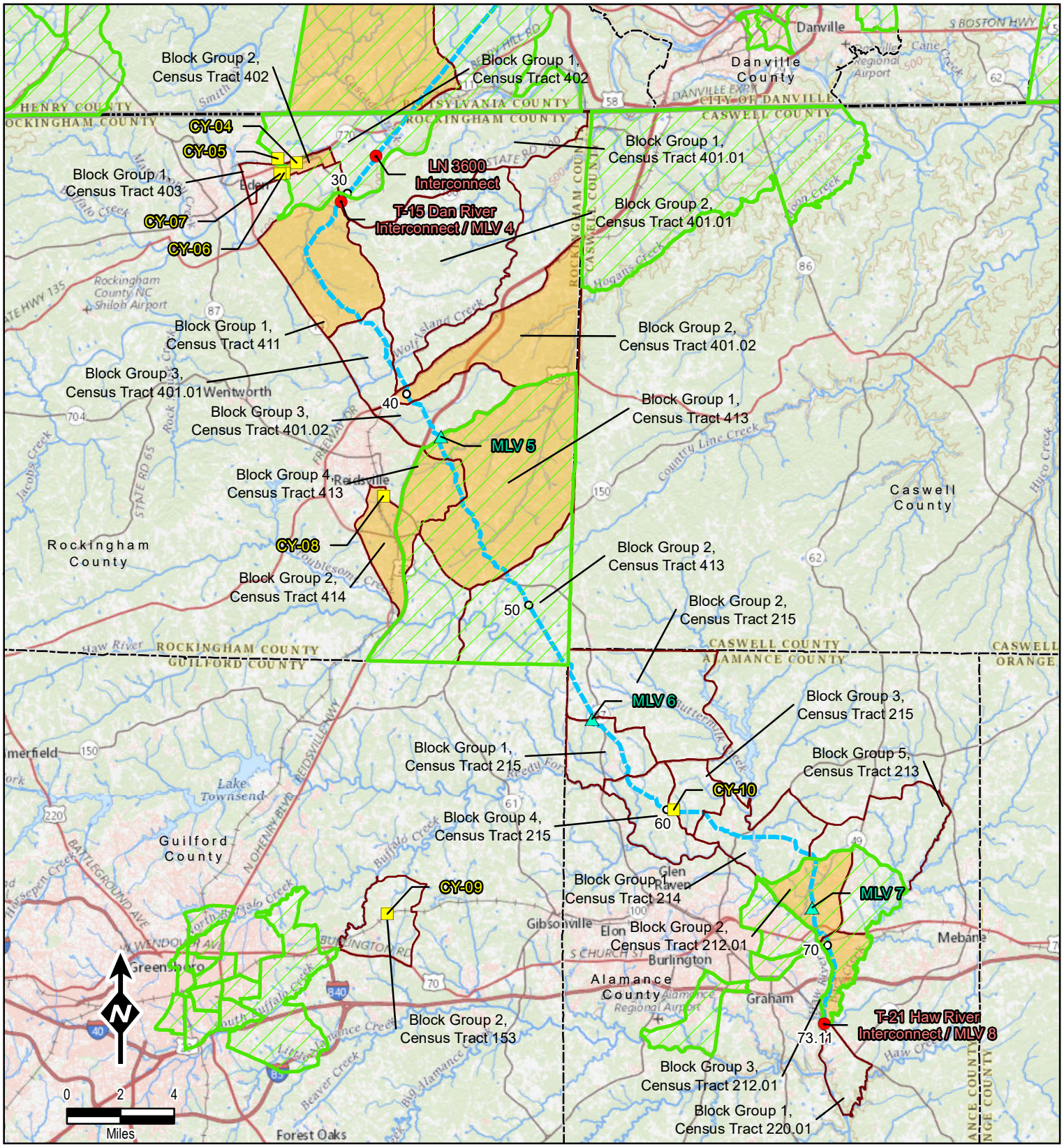

Legend

- Contractor Yard
- Meter Station
- Valve Site
- Mileposts
- Proposed Pipeline Route
- Not a Potential Environmental Justice Area
- Potential Environmental Justice Area
- Opportunity Zones
- State Boundary
- County Boundary

Note: A Potential Environmental Justice Area is a block group which exceeds 50% minority population and/or exceeds 50% population whose household income is below twice the federally-defined poverty threshold.

Percentage of Route Within Potential Environmental Justice Area: 29%

Percentage of Route Not Within Potential Environmental Justice Area: 71%

Data Sources: ESRI, USGS, TRC, EQT, Census Bureau ACS 2012-2016

1 inch = 5 miles
When Printed 8.5x11

Mountain Valley PIPELINE LLC

Figure 5.3-1
Page 2 of 2

Environmental Justice Areas Map
North Carolina

TRC Results you can rely on

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Opportunity Zones

Opportunity Zones[1] are a new community development program established by Congress in the Tax Cuts and Jobs Act of 2017 to encourage long-term investments in low-income urban and rural communities nationwide. The Opportunity Zones program provides a tax incentive for investors to re-invest their unrealized capital gains into Opportunity Funds that are dedicated to investing into Opportunity Zones designated by the chief executives of every U.S. state and territory (EIG, 2018).

North Carolina Opportunity Zones will offer qualified investors certain tax benefits when they invest unrealized capital gains into these areas. Investments made by qualified entities known as Opportunity Funds into certified Opportunity Zones will receive three key federal tax incentives to encourage investment in low-income communities.

The federal law allows each state to designate up to 25 percent of its total low-income census tracts as Opportunity Zones candidates. North Carolina has just over 1,000 of these tracts, so only 252 census tracts could be selected as Opportunity Zones (NC Commerce, 2018). Opportunity Zones for the Project counties are displayed on Figure 5.3-1. Many of these zones correspond to the block groups and census tracks of potential EJ communities where the Project facilities are located or cross.

Minority and Low-Income

A total of seven block groups out of 28 crossed by the Southgate Project exceeded the national averages of minority populations and/or low income populations where the Project facilities cross or are in (Table 5.3-9 and Figure 5.3-1). These seven block groups of potential EJ communities represent approximately 17.12 miles of the total Project route (23 percent), (Table 5.3-10 and Figure 5.3-1). While the Southgate Project pipeline route crosses EJ communities, it is collocated with existing infrastructure for approximately 34 percent (6.44 miles) of the alignment within the EJ census tracts. These existing facilities have been in operation for decades within these communities. With respect to demographic indexes, one block group in Pittsylvania County exceeded the 50 percent threshold of the minority population of the national average by approximately 1 percent and one block group in Rockingham County exceeded the threshold by approximately 2 percent and one block group was equal to the threshold. Low income populations for five block groups (three in Rockingham County and two in Alamance) were reported to be above the national averages by approximately 4 and 5 percent, and one at 17 percent. One block group in Rockingham County exceeded the 50 percent threshold of both demographic indexes.

Racial/Ethnic Composition

Table 5.3-9 provides the percentages of the general racial/ethnic compositions for the Project counties and block groups crossed by the Project. Racial/ethnic compositions for the Southgate Project area is predominantly white with six block groups over 90 percent, 10 block groups at or over 80 percent, two counties and six block groups over 70 percent, once county and five block groups approximately 51 to 70 percent and one block group at 49 percent followed by the African American racial/ethnic composition with two block groups averaging approximately 46 percent, two block groups approximately 30 to 40 percent,

[1] An Opportunity Zone is an economically-distressed community where new investments, under certain conditions, may be eligible for preferential tax treatment. Localities qualify as Opportunity Zones if they have been nominated for that designation by the state and that nomination has been certified by the Secretary of the U.S. Treasury via his delegation authority to the Internal Revenue Service (IRS, 2018).

14 block groups between 10 and 25 percent and the remaining block groups under 10 percent while the Project counties averaged approximately 20 percent.

Non-English Speaking Groups

Data was taken from the U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates for language spoken at home (S1601), (U.S. Census Bureau, 2012-2016). According to the Census, language spoken at home is defined as the language currently used by respondents at home that is either "English only" or a non-English language used in addition to English or in place of English.

Alamance County was approximately 1.3 percent higher than North Carolina's estimate for percentages of non-English speaking populations age 5 and over in the Project area, while Pittsylvania and Rockingham counties each were less than their respective state estimates by 12 and 6 percent (Table 5.3-9). Of the seven block groups of potential EJ communities, only two had percentages of non-English speaking populations age 5 and over that averaged 3 percent.

Children and Elderly

According to the U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates, two of the Project counties have less people age 5 and under living in the Project area compared to their respective state estimates by more than 1 percent (and one was equal), and average 5.2 percent of the state population. However, for the elderly living in the Project area, each of the Project counties exceed their respective state estimates by more than 3 percent, and average approximately 18 percent of the state population (Table 5.3-9). With respect to the block groups, the highest and lowest percent of people age 5 and under and people age 65 and over living in the Project area are located in Rockingham County. Section 5.4.8 provides a discussion on human health and protective standards including children and the elderly.

Public Outreach

To facilitate public involvement and outreach, the Southgate Project has developed a Public, Stakeholder, and Agency Participation Plan (see Resource Report 1, Appendix 1-L). This plan outlines a commitment to engage actively with stakeholders throughout the life cycle of the Project and provides the steps the Southgate Project has identified to ensure successful ongoing communication with stakeholders, including establishing a Project website (www.mvpsouthgate.com), a toll-free phone line (833-MV-SOUTH), and e-mail mail@mvpsouthgate.com. The Southgate Project will continue to meet with stakeholders to discuss the ongoing efforts associated with the Project.

5.3.8.2 State Environmental Screening

The states of Virginia and North Carolina have recently established EJ councils and / or policies that appear to be under development, as described further below; however, neither state currently has data or policies available for the counties in the Southgate Project area.

Virginia

Virginia's Executive Order 73 (effective October 31, 2017) established the Advisory Council on Environmental Justice ("ACEJ"). The ACEJ provides independent advice and recommendations to the Executive Branch on integrating environmental justice considerations throughout Virginia's programs, regulations, policies, and procedures, among other goals. The ACEJ focuses on strategic, scientific, technological, regulatory, community engagement, and economic issues related to environmental justice

throughout Virginia and interacts with several groups (Virginia Natural Resources, 2018). The Southgate Project will continue to coordinate with the ACEJ as it develops state polices and guidelines to address EJ.

North Carolina

North Carolina's Department of Environmental Quality ("NCDEQ") recently formed the Secretary's Environmental Justice and Equity Advisory Board ("EJ Board"). The scope of the EJ Board is to assist the NCDEQ in achieving and maintaining the fair and equal treatment and meaningful involvement of North Carolinians regardless of where they live, their race, religion or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Board members will work directly with NCDEQ staff to help elevate the voices of the underserved and underrepresented as the NCDEQ work to protect the public's health and natural resources (NCDEQ, 2018).

The NCDEQ also committed to new policies to ensure compliance with federal civil rights laws, including a language access program and the development of an EJ tool to examine demographic, health, and environmental characteristics of communities impacted by NCDEQ policies (NCEJN, 2018). The Southgate Project will continue to coordinate with the NCDEQ as it develops state polices and guidelines to address EJ.

5.4 ECONOMIC EFFECTS AND MITIGATION

Construction impacts from the Project will be short-term and localized, due primarily to the short construction period and small composition of the labor force. Potential effects associated with construction of the Project could result in minor temporary increases in the local population, demand for temporary housing, and use of temporary public services such as police, fire, and medical services. However, sufficient public services exist within the Project area to support the needs of the construction crew and personnel associated with construction of the Project. In addition, construction activities will be in large CSA/MSA areas that have sufficient capability and capacity to manage the temporary influx of personnel without affecting the level of service provided to the current population. Revenues from construction employment, local expenditures by the construction companies for construction materials, and non-local construction workers for temporary housing, food, and entertainment will temporarily benefit the local economy.

5.4.1 Population and Employment

Overall construction of the pipeline and associated facilities of the Project is expected to take 10-12 months, with a proposed construction start date in the first quarter of 2020. Based on current discussions with qualified construction contractors, the Southgate Project estimates that local workers will account for approximately 55 percent of construction jobs for each spread for the duration of the Project. The remaining 45 percent of the construction workforce will consist of non-local workers. Local workers are defined here as those who normally reside within daily commuting distance of the work sites.

Non-local workers will temporarily relocate to the Project vicinity for the duration of their employment; some workers will possibly commute home on weekends, depending on the location of their primary residence. Individual non-local workers may also relocate along the length of the Southgate Project and between segments depending on their assignment. Very few of the non-local workers employed during the construction phase of each spread are expected to be accompanied by family members or permanently relocate to the affected areas. If a larger than anticipated percentage of non-local construction personnel is

required to meet peak workforce requirements, sufficient workers should be available in the labor pool in the surrounding areas since the Project is located within large CSA/MSA areas.

Table 1.4-1 compares the projected average and peak numbers of non-local workers with existing population by construction spread. These estimates illustrate the numbers of non-local workers expected to be present during construction. Non-local workers seeking temporary accommodation would reside in daily commuting distance of their work sites. Some non-local workers would likely reside in the counties within which they are working; others may locate in larger communities in adjacent or nearby communities. This is discussed further in Section 5.4.3.

The Southgate Project expects approximately four new jobs will also be required for operations and maintenance of the Project facilities.

Impacts to the local population in the Southgate Project area from non-local construction activities would be temporary and minimal. Non-local construction personnel will typically disperse following completion of specialized construction activities. Therefore, no long-term population impacts will result from construction of the Project.

5.4.2 Economy and Tax Revenue

5.4.2.1 Construction-Related Tax Revenues

The Southgate Project has conducted an economic analysis of the Project and is evaluating the results. A report and summary of the conclusions for Project construction and operation in Virginia and North Carolina will be provided upon completion.

The Southgate Project estimates that it will spend approximately $464 million on labor, equipment, materials, acquisition, and other services to develop and construct the project facilities, of which $68 million is expected to be spent directly in Virginia and $113 million is expected to be spent directly in North Carolina. These expenditures will generate economic activity and support employment and income elsewhere in the economy through the multiplier effect, as initial changes in demand "ripple" through the local economy and support indirect and induced impacts. During peak construction in 2020, the Southgate Project estimates that the Project would generate and support an estimated 570 total (direct, indirect, and induced) jobs in Virginia during Project construction, and an estimated 1,130 total jobs in North Carolina. A detailed economic report for the Project is included in Appendix 5-A. *[Note: Appendix 5-A to be provided in a supplemental filing expected to be filed in early 2019.]*

Table 5.4-1 below shows the tax revenue that the Southgate Project will generate over the pre-construction and construction periods from 2018 to 2020. The Southgate Project estimates that it will generate $4.1 million and $6.3 million in tax revenue in Virginia and North Carolina, respectively, with the largest impact from property taxes. The property tax value is conservative in that it excludes estimated property taxes for materials that are on-site but not yet installed.

Table 5.4-1
Estimated State and Local Tax Revenues Generated During Construction for the MVP Southgate Project

Type of Tax	Virginia ($ million) a/, b/	North Carolina ($ million) a/, b/
Sales and Use Tax	$1.2	$2.3
Income Tax	$0.9	$1.5
Property Tax c/	$1.5	$1.6
Other Personal	$0.1	$0.4
Other Business	$0.4	$0.5
Total	**$4.1**	**$6.3**

a/ Estimated tax revenues are presented in millions of dollars.
b/ These estimates are aggregate totals for the entire construction period.
c/ Taxes generated by induced economic activity during construction; numbers conservatively do not include property taxes paid directly by the Southgate Project during construction.

Sources: FTI Consulting 2018.

5.4.2.2 Ad Valorem Tax Revenues

Estimated ad valorem taxes that will be paid once the pipeline is in service are presented by county and state in Table 5.4-2 (FTI Consulting 2018). Estimated ad valorem tax revenues as a share of general fund total revenues in the Project counties will range from 0.4 percent (Alamance County) to 1.8 percent (Pittsylvania County).

The Project will also generate an additional $1.7 million for municipalities in North Carolina. Table 5.4-2 below does not include this figure, however, as neither Rockingham nor Alamance counties receive these funds.

Table 5.4-2
Estimated Annual Ad Valorem Tax Revenues During Operation by County for the MVP Southgate Project

County/State	General Fund Total Revenues (dollars) a/	Annual Ad Valorem Taxes (dollars) a/	Percent of General Fund Total Revenues
Pittsylvania	$67,227,000	$1,212,000	1.8%
Virginia Subtotal	**$67,227,000**	**$1,212,000**	1.8%
Rockingham	$90,031,000	$1,038,000	1.2%
Alamance	$152,280,000	$681,000	0.4%
North Carolina Subtotal	$242,311,000	**$1,719,000**	0.7%
Total	**$309,538,000**	**$2,931,000**	

a/ Numbers are presented in 1,000s.
Sources: FTI Consulting 2018.

5.4.3 Housing

During construction of the Project, the presence of construction workers immigrating to the Southgate Project area will increase the demand for temporary short-term housing. The majority of construction workers will likely temporarily relocate to the vicinity of the Project area for the duration of their employment, possibly commuting home on weekends, depending on the location of their primary residence.

Non-local construction workers are most likely to use available temporary housing such as area campgrounds/RV parks and hotel/motels in the Southgate Project area and possibly adjacent towns or counties that are within a reasonable daily commuting distance of the Project. Non-local construction workers are also most likely to provide their own housing units (e.g. travel trailers or RV campers). The Southgate Project estimates approximately 45 percent of the construction workers would be non-local and of that amount approximately 25 percent would bring their own travel trailers or RV campers. At peak construction, approximately 290 non-local workers that would utilize existing RV camping facilities for temporary housing. As listed in Section 5.3.3.1, there are 12 RV and campground facilities located in the Project counties providing over 400 individual RV sites; the majority of which are open year round.

Given the large number of available vacant housing units (over 5,000 in each Project county, totaling 17,253), the number of potential hotel rooms available in each Project county (totaling over 2,000, Table 5.3-3), plus the 400 individual RV sites, the Southgate Project does not expect a conflict with hotels, RV parks, or other temporary housing in the Project counties during the tourism season. The anticipated migration of non-local construction workers to the Project area represents less than 1 percent of the total temporary housing (rental housing, hotel and motel rooms, and RV hookups) and therefore, the temporary demand for these facilities is unlikely to displace permanent residents or adversely affect housing prices or cause any conflicts with tourism.

5.4.3.1 Travel and Tourism

The Southgate Project counties provide mainly outdoor recreation tourist attractions, but also provide arts, music, historical structures and districts, dining, museums, sporting events, and shopping opportunities. The high tourist season in the Project area typically peaks during summer vacation season between May and October and in October for viewing fall foliage. Travel-related expenditures for the Project counties each accounted for less than 1 percent in 2016 compared to their state totals (VATC, 2016) and are only expected to increase by small percentages annually; therefore, construction of the Project is not anticipated to adversely impact the tourist season in the region. However, short-term impacts, including temporary increases in dust, noise, and traffic from construction is expected but are not anticipated to adversely impact tourism in the region. If any potential conflicts are identified with tourism, mitigation measures will be evaluated, which may include timing of construction to avoid peak use periods, maintaining access to businesses at all times, and expediting construction through the areas frequented by tourists. The Project will coordinate directly with affected stakeholders on an individual basis to further reduce potential adverse effects. Potential impacts to recreational resources, and visual impacts on recreation and other sensitive resources are addressed in Resource Report 8.

5.4.3.2 Displacement of Residences and Businesses

The Southgate Project has no plans to displace or relocate any businesses as a result of construction or operation of the Project.

5.4.4 Property Values

Several studies have examined the effects of gas pipelines on sales and property values. A study on "The Effect of Natural Gas Pipeline on Residential Value" performed by Diskin et al. (2011) could "not identify a systematic relationship between proximity to [a] pipeline and sale price or value." A study conducted by Integra Realty Resources for the Interstate Natural Gas Association of America ("INGAA") Foundation in 2016 found that "There is no measurable impact on the sales price of properties located along or in

proximity to a natural gas pipeline versus properties which are not located along or in proximity to the same pipeline." (INGAA, 2016)

The 2016 INGAA Foundation study reviewed underground FERC-regulated natural gas transmission pipelines in residential areas in the Midwest, Northeast, Mid-Atlantic and Southeast. In addition, a study by Gnarus Advisors LLC (2012) examined whether proximity to pipelines, with a focus on natural gas pipelines, has an effect on residential property values. The study contains a literature review specific to pipelines and property values, with a focus on actual sales data. The authors conclude that there is "no credible evidence based on actual sales data that proximity to pipelines reduces property values." Further, they found that "hypothetical surveys of actual or potential market participants should not be used as a substitute for the systematic analysis of market data, as they may overstate the effects, if any, of proximity to disamenities, including pipelines, on property values."

In addition, FERC, the lead federal agency on the construction of pipelines, researched pipelines' effect on property values and reported the results in an Environmental Impact Statement and Environmental Assessments issued 2018, 2012 and 2013. The Environmental Impact Statement and Environmental Assessments found that there was no pipeline-related impact on property value. Further, with respect to compressor stations, the Commission Staff has found that various nuisance effects are prominent, such as noise, aesthetics or air emissions could potentially affect property values in the same way as homes near major roads might be devalued. However, when noise and visual impacts are sufficiently mitigated, a compressor station will not significantly impact property values.[2]

Additionally, the compressor station will meet emission standards (see Resource Report 9 for more details). Therefore, it is unlikely that the compressor station will significantly reduce property values or resale values.

5.4.5 Community Infrastructure

The Southgate Project counties have numerous medical facilities and emergency response services to temporarily accommodate the construction workforce (Table 5.3-6). The temporary immigration of construction workers to local communities will be short term and is not expected to affect the levels of service provided by existing law and fire protection personnel or burden medical facilities. Local police assistance will likely be required to facilitate traffic flows during construction at some road crossings and permits will be required for vehicle load and width limits for some of the vehicles delivering Project materials and supplies. The Project will work directly with local law enforcement, fire departments, and emergency medical services to coordinate for effective emergency response. Furthermore, in accordance with 49 Code of Federal Regulations ("CFR") 192.615, The Project is currently preparing an Emergency Response Plan for construction and operation of the pipeline and associated facilities (see Resource Report 11).

[2] Environmental Impacts Statement for Midship Pipeline Company, LLC, Midcontinent Supply Header Interstate Pipeline Project at pp. 4-118 & 4-119, Docket No. CP17-458-000 (June 2018). Environmental Assessment for Millennium Pipeline Co, LLC's Hancock Compressor Project at pp. 42-43, Docket No. CP13-14-000 (Feb. 28, 2013). Environmental Assessment for Millennium Pipeline Co, LLC's Minisink Compressor Project at pp. 22-23, Docket No. CP11-515-000 (Feb. 29, 2012).

Very few, if any, of the non-local workers employed during the construction phase of each spread are expected to be accompanied by family members. As a result, the number of school age of children expected to relocate is very limited and unlikely to noticeably affect school enrollment in the Project area.

5.4.6 Transportation and Traffic

Resource Report 8 (Table 8.2-4) provides a complete list of public road crossings for the Southgate Project. Major state and federal transportation routes and highways that will be crossed by the pipeline are also identified in Table 5.3-7. To the extent feasible, existing public and private roads in the Project area will be used to access the Project facilities.

Construction of the Southgate Project will result in minor, short-term effects on the transportation system in the Project area. Construction will be scheduled for work within roadways and specific crossings so as to avoid commuter traffic and schedules for school buses and local city transit buses to the greatest extent practical.

The Southgate Project will incorporate measures to maintain safety, minimize traffic disruption, and ensure that construction activities will not prevent the passage of emergency vehicles. Measures may include the creation of temporary travel lanes during construction or the placement of steel plate bridges to allow continued traffic flow during open trenching. Traffic lanes and residential access will be maintained, except for the temporary periods essential for pipeline installation. Provisions will be made to allow passage of emergency vehicles at all times. In areas where traffic volumes are high or other circumstances (e.g., congested areas) exist, the Project will employ a police detail to ensure traffic flow and the safety of pedestrians and vehicles. All necessary permits for public road crossings or work within public road rights-of-way, including from the Virginia Department of Transportation and the North Carolina Department of Transportation will be obtained. The Project will also require its construction contractors to ensure enforcement of local vehicle weight restrictions and limitations by its vehicles and to remove any soil that is left on the road surface by the crossing of construction equipment. When necessary for equipment to cross roads, mats or other appropriate measures, such as sweeping, will be used to reduce deposition of mud. In the event that construction traffic causes damage to any roads, the Project will immediately repair the road in accordance with the requirements set forth by the landowner or agency having jurisdiction over the road.

In addition to the traffic impacts caused by road crossings, the temporary movement of construction equipment and materials and the daily commuting of employees to and from the construction work areas will add to existing traffic volumes on local roads. Construction activities will be spaced over two construction spreads, with each spread responsible for all construction activities within a specific milepost range along the pipeline (Table 5.2-1). These activities will include grading, trenching, pipe stringing, welding, lowering-in, backfilling, regrading, and restoration described more fully in Resource Report 1. Construction activities at each spread will proceed in sequence in an assembly-line fashion along the right-of-way, with one crew following the next from clearing until final clean-up. As a result, construction workers and equipment will not only be divided between two spreads, but will also be distributed at different locations within each spread.

Equipment and materials will be transported from various laydown areas and storage yards within the vicinity of the pipeline. Most construction equipment will remain on site during construction. Several construction-related trips will be made each day (to and from the job site) on each of the construction

spreads. This level of traffic will remain consistent throughout the construction period and will typically occur during the early morning hours (from 5:00 to 6:00 a.m.) and evening hours (after 6:00 p.m.). Typically, the pipeline construction work week is 6 days, sometimes extending to 7 days as required by the workload and construction schedule. However, some work, such as stream crossings may be conducted on a 24-hour basis until that particular task is complete.

Construction crews would commute to the Southgate Project work areas in their personal or company vehicles. Workers will be deployed in various locations along each spread, thereby reducing the potential for congestion in any one area. Pipeline construction work is typically scheduled to take advantage of daylight hours and involves long work days (at least 10 hours). With typical start and finish times of 7:00 a.m. and 7:00 p.m., most workers will commute to and from the construction right-of-way during off-peak hours. Some discrete activities (e.g. hydrostatic testing, HDD, tie-ins, stream crossings, purge and packing the pipeline facilities) may occur beyond these timeframes. Because construction is expected to move sequentially along the pipeline route, traffic flow impacts that do arise will be temporary on any given section of roadway. Refer to Appendix 5-B – MVP Southgate Project Traffic Management Plan for more details.

Construction vehicles can pose concern when school buses are traveling their established routes. Communities expect for their children to have safe and timely travel to and from school. The Southgate Project will work with the governing School Districts or the School Transportation Departments in the Project area to identify school bus routes and times. The Project will avoid school bus routes to the extent practicable.

The Southgate Project does not anticipate substantive impacts on transportation infrastructure and traffic patterns along the pipeline route during construction or operation of the Project facilities.

5.4.7 Agriculture

In Virginia, agriculture is the largest private industry, contributing $70 billion annually and providing more than 334,000 jobs in Virginia (VDACS, 2017a). According to a 2017 economic impact study, production agriculture employs nearly 54,000 farmers and workers in Virginia and generates approximately $3.8 billion in total output (VDACS, 2017b). Land in farms accounted for 30.3 percent of the total land area in Virginia in 2012 (Table 5.4-3). However, the number of farms in Pittsylvania County accounted for approximately 2.9 percent (1,354 farms) of the total number of farms in Virginia, which is 46,030 farms.

In North Carolina, agriculture is expected to see modest declines between 2014 and 2024 and agricultural employment is likely to follow the national projected trend and drop 5.3 percent during the same period. This decrease will most likely be driven by employment declines in crop production and animal production (LEAD, 2016). Land in farms accounted for 26 percent of the total land area in North Carolina in 2012. The Project counties in North Carolina accounted for an average of 3.2 percent (1,634 farms) of the total farms in North Carolina (50,218) and represented approximately 0.1 percent of agricultural market value compared to that of the state (Table 5.4-3).

Table 5.4-3 Summary of Agriculture by County and State, 2012 for the MVP Southgate Project							
County/State	Number of Farms	Land in Farms (acres)	% of Total Land Area	Average Farm Size (acres)	Market Value of Agriculture Products Sold	Total Market Value of Agriculture Products Sold	
						Crops (%)	Livestock, Poultry, and Products (%)
Virginia	**46,030**	**8,302,444**	**30.3**	**180**	**$3,753,287,000**	**36**	**64**
Pittsylvania	1,354	287,262	46.3	212	$86,942,000	42	58
North Carolina	**50,218**	**8,414,756**	**26.0**	**168**	**$12,588,142,000**	**34**	**66**
Rockingham	902	112,166	30.9	124	$32,804,000	74	26
Alamance	732	83,551	30.7	114	$32,930,000	47	53
Source: USDA, 2012.							

Agricultural land accounted for approximately 14 percent of total land area where the Southgate Project facilities will be located. Of that amount, 266.3 acres will be impacted during construction and operation of the Project (200 temporary, 66.2 permanent). Therefore, the Project is unlikely to noticeably affect overall agricultural production and employment in any of the Project counties. Refer to Resource Report 8 for further discussions.

5.4.8 Environmental Justice

5.4.8.1 Disproportionate High and Adverse Effects on Minority or Low Income Populations

As discussed in Section 5.3.8, assessing the potential for disproportionately high and adverse impacts on minority and/or low income populations typically involves two steps: first, identifying whether minority and/or low-income communities are present, and, then, if these types of communities are present, evaluating whether high and adverse human health or environmental effects will disproportionately affect the identified community or communities. As indicated in the above discussion, review of census data suggests the presence of low income, and, to a much lesser extent, minority communities. As indicated in Table 5.3-9, the six block groups total population is 7,297 (2.3 percent) of the total population in EJ compared to that of the Southgate Project counties total population of 308,280. However, construction of the Southgate Project is not expected to result in adverse and disproportionate human health or environmental effects to these communities, as discussed below.

The Southgate Project facilities will be designed in compliance with the national ambient air quality standards, which are protective of human health, including children, the elderly, and sensitive populations. Construction of the Project is not expected to have high and adverse human health or environmental effects on any nearby communities. Adverse construction-related impacts will likely include increases in local traffic and noise, as well as fugitive dust, and could result in temporary delays at some highway crossings. These impacts will be temporary, localized, and are not expected to be significant. The Project will implement a variety of measures that will minimize potential impacts on nearby communities, including environmental justice communities. For instance, the Project will employ proven construction-related practices to control fugitive dust, such as application of water or other commercially approved dust control

applications on unpaved areas subject to frequent vehicle traffic. Similarly, noise control measures will be implemented during project construction. See Resource Report 9 for more detail and discussions on noise and air quality impacts.

The presence of existing infrastructure must be considered when evaluating relevant Project impacts, including environmental justice and opportunity zones. When collocated with existing infrastructure or utility corridors, the incremental impacts of an additional pipeline are significantly less compared to routing through a greenfield area. Collocation minimizes potential impacts on the general population and environmental justice communities alike. Mountain Valley developed the Southgate Project pipeline route to collocate to the maximum extent practicable and avoid unnecessary greenfield impacts. Within environment justice communities, the Project pipeline route is collocated for 7.4 miles, resulting in 7.4 fewer miles of greenfield impacts, including greenfield impacts on environmental justice communities. Many of these environmental justice communities are also located within opportunity zones along the route (See Figure 5.3-1).

Construction could also increase demand for health care and municipal services, as well as potentially increase demand for police and fire protection services. However, these impacts are expected to be temporary and are not expected to measurably affect the quality of services currently received by local communities and residents.

The Southgate Project facilities will also be designed, constructed, operated, and maintained in accordance with or to exceed the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration minimum federal safety standards in 49 CFR 192 (see Resource Report 11 for more details). These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, apply to all areas along the pipeline routes regardless of the presence or absence of minority or low income populations.

The Southgate Project will continue to update its stand alone, interactive Project web site to provide the public with the most recent information, including a Project overview, map of the facilities, list of frequently asked questions, list of the Project contacts and announcements of public meetings on the Project. The Project intends to continue its efforts to keep landowners, public officials, and the relevant permitting agencies fully informed of developments on the Project.

Revenues from construction employment, local expenditures by the construction companies for construction materials, and non-local construction workers for temporary housing, food, and entertainment will temporarily benefit the local economy. The increased property tax base during Project operation will be beneficial in the long-term. Local communities will benefit from ad valorem taxes paid annually by the Southgate Project over the life of the Project. Refer to Resource Reports 1.1.2 and 10 for further discussions on the "Purpose and Need" of the Project and additional benefits the Project is expected to provide.

In conclusion, the construction and operation of the Southgate Project would not cause a disproportionate share of adverse environmental or socioeconomic impacts on any racial, ethnic, or socioeconomic group, or on block groups that meet the environmental justice criteria.

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MVP Southgate Project

Docket No. CP19-XX-000

Resource Report 5

Appendix 5-A

Economic Benefits of the MVP Southgate Project in Virginia and North Carolina

[To be provided in a supplemental filing expected to be filed in early 2019.]

MVP Southgate Project

Docket No. CP19-XX-000

Resource Report 5

Appendix 5-B

MVP Southgate Project
Traffic Management Plan

MVP Southgate Project

Traffic and Transportation Management Plan

November 2018

TABLE OF CONTENTS

1.0 INTRODUCTION

Mountain Valley Pipeline, LLC ("Mountain Valley") has developed this Traffic and Transportation Management Plan to describe the measures the MVP Southgate Project ("Project" or "Southgate Project") and their Contractors will take to minimize potential impacts on state and local roadways during the construction of the Project. This plan outlines traffic impact minimization measures, noxious weed control measures, and dust control methods that will be used on the Project to reduce impacts during construction.

Operations and maintenance activities will be conducted with light vehicles at very few occasions that should have no impact to roadways and traffic once the project is in-service.

1.1 Traffic Impacts

Prior to construction, the Southgate Project will obtain applicable Federal, State/Commonwealth, and local road use and crossing permits, as required. The Project personnel will comply with all permit requirements and conditions to provide for public safety and minimize impacts on public roads. Copies of this *Traffic and Transportation Management Plan* and applicable road use and crossing permits will be provided to the appropriate personnel and maintained at each Contractors' field office.

The Southgate Project's Traffic Coordinator will consult with State and local agencies regarding detour routes, speed/load limits, and other use limitations, conditions, or restrictions on the roads that will be utilized during construction. Before the start of construction, the Project will work with these agencies to obtain the most up-to-date traffic information for the roadways in the Project area as well as ongoing road reconstruction or improvement projects in the vicinity of the pipeline route and facilities area. Where local, private roadways will be affected, the Project will coordinate with landowners and lessees of properties to mitigate potential impacts on those roads. Similarly, where roads on public lands will be affected, the Project will coordinate with the appropriate managing agency to mitigate potential impacts on roads or implement required traffic and transportation procedures. As discussed further in the following sections, the Project will place and maintain traffic control measures, such as flag persons, warning signs, lights, and/or barriers, as appropriate, to ensure the safety of construction workers and the public and to minimize traffic congestion. The Project will maintain traffic flow and emergency vehicle access on roadways with traffic control personnel or detour signs, where necessary. The Project's Traffic Coordinator will work with local law enforcement, fire departments, and emergency medical services to coordinate access for effective emergency response during construction. Contractors will be directed to comply with local weight limitations and restrictions on area roadways.

The Southgate Project strives to mitigate the increase in construction-related truck traffic on local roads shared with community and school buses in suburban and more densely populated rural areas. Key components to a successful community partnership include:

- Central point of command for construction traffic route plan. The Project will have a Traffic Coordinator reporting to the Safety Program Manager or Construction Manager responsible for maintaining traffic related plans, procedures, records, and documents.
- School bus curfews. Often times construction vehicles can pose concern when school buses are traveling their established routes. The community expects for their children to have safe and timely travel to and from school. The Project will work with the governing School Districts or the School Transportation Department in the project area to identify the bus routes and times. To the extent practicable, construction traffic will be limited or refrained during the bus route times with a published school bus route curfew time period.
- Speed enforcement. In more rural areas, law enforcement is often not staffed to handle a sudden increase in traffic. Establishing a third-party contractor to assist in monitoring the speed of the route not only keeps contractor and the public safe but lends accountability to the Project. Inevitably, contractors will end up off of bonded routes. The Traffic Coordinator will be able to actively monitor these issues and reduce unbonded travel that can become costly if damage occurs. The Coordinator can also be useful in diffusing potential hostile situations with neighbors and landowners.

All impacts shall be within the guidelines of all applicable agencies, as well as approval from landowners. A list of state and county contacts is provided in the table below. Once construction is complete, the Project will restore all roads back to their original level of service or better, unless the Project is directed otherwise in writing by the landowner or regulatory agency. Pre-construction video will be used to document the roadway condition prior to Project usage.

Virginia County, State Requirements			
	Phone	**Website**	**Contact Name/Position**
State Agency			
Virginia Department of Transportation (VDOT)	(540) 381-7194	http://www.virginiadot.org/	Paul Brown, Area Land Use Engineer
Virginia County			
Pittsylvania	(434) 432-7974	http://pittsylvaniacountyva.gov/	Greg Sides, Assistant County Administrator

North Carolina County, State Requirements			
	Phone	**Website**	**Contact Name/Position**
State Agency			
North Carolina Department of Transportation (NCDOT)	(919) 707-2500 (336) 487-0000	https://www.ncdot.gov/Pages/default.aspx	Chief Engineer, Tim M. Little, PE. Mike Mills, PE, Division 7 Engineer
North Carolina County			
Rockingham	(336) 342-8101	https://www.co.rockingham.nc.us/	Lance L. Metzler, County Manager
Alamance	(336) 228-1312	https://www.alamance-nc.com/	Bryan Hagood, County Manager

2.0 PIPELINE ROAD CROSSINGS

The Southgate Project will construct road and highway crossings in accordance with the permit requirements and the construction drawings for the crossing. No work on any such crossing shall be started before obtaining all applicable permits from the regulatory agencies. At a minimum, the Project will maintain single lane traffic on all roads and shall provide flagmen, road signs and all other signaling required by the governing authority to supervise the flow of traffic. The Project will provide barricades, warning signs, flares, lanterns, flagmen and such other protective measures required to maintain traffic and to safeguard the public at all times.

Any damage to paved or blacktop roads shall be repaired per specifications provided by the regulatory agencies. Road surfaces other than hard surface roads (e.g., paved, blacktop, or concrete) shall be backfilled in well-tamped 6-inch layers and shall be finished with a well-tamped surface matching the existing road. If flowable fill is used, it will be in accordance with the appropriate mix per agency specifications. For all types of crossings, additional or other limitations may be provided by the governing municipality and must prevail.

At the end of each workday, the Southgate Project will make passable any open-cut driveways for ingress and egress. This may be accomplished by using steel plates. Any and all steel plates used for such purposes shall be properly pinned (i.e., secured in place) and ramped on each end to allow traffic flow. The backfilling road crossings shall be performed immediately after the pipe is installed and in accordance with requirements established by the applicable permit.

3.0 CONSTRUCTION TRAFFIC

An increase in traffic to local and state roads will be expected throughout the day between the hours of 6:00 a.m. and 7:00 p.m. or sunset, whichever is later. Emergencies or other designated construction activities may necessitate nighttime work. The temporary traffic will include transportation for construction workers in light and heavy duty trucks, as well as tractor trailers hauling machinery and materials. Impacts are expected to be minor and short term because construction spreads and personnel will be geographically dispersed and personnel will commute to and from work areas in early morning and late evening during nonpeak traffic hours. Traffic will be entering and leaving off-site locations such as laydown yards, right-of-way and additional temporary workspace for the purpose of pipeline construction, hauling material and roadway maintenance. Once the material and heavy equipment are placed on the right-of-way, construction equipment will move in a linear manner along the right-of-way as work progresses, minimizing traffic on local roads. The amount of equipment moved by hauling from site to site will be reduced due to the accessibility created by the construction right-of-way.

The Southgate Project may make road improvements at areas that are not conducive to heavy hauling and large traffic volume, in addition to maintaining all bonded roads during construction, and finally returning the roads back to their original or better level of service, meaning their original width and length, unless the Project is directed otherwise in writing by the landowner or state agency.

4.0 NOXIOUS WEEDS

To prevent noxious weeds from transporting along roadways, the Southgate Project developed the following measures:

- The prompt seeding and revegetation of areas of disturbed soils with certified weed-free seed.
- Encourage the cleaning of equipment and vehicles prior to entering or leaving each management area. (Pressure wash in a designated area only.)
- Minimize soil disturbance, where possible.
- Use certified weed-free mulch/straw for erosion control.

5.0 FUGITIVE DUST CONTROL

Dirt and gravel during construction periods in dry weather can create an inhospitable environment for neighbors and workers. The Southgate Project developed the following fugitive dust control measures to address this issue.

Implementation of construction and restoration best management practices and operational controls will be used to mitigate fugitive dust emissions. The project earth disturbance permit will outline specific practices that control fugitive dust, including a construction sequence; use of rock construction entrances; and temporary soil stabilization methods. Operational controls are also implemented, including the use of a reduced speed limit on unpaved access roads as well as sweeping/vacuuming paved roadways when Project-related soils are tracked out onto paved surfaces.

Wet suppression, using water, is the predominate method of suppressing fugitive dust on unpaved roads and gravel pads as it causes finer materials to adhere into larger particles. Increasing the moisture content of the finer materials may be accomplished either naturally or mechanically. Moisture content of unpaved road surfaces can be naturally increased through rainfall. Moisture content can also be increased mechanically through the application of water. The amount of water required to sufficiently control fugitive dust emissions is dependent on the characteristics of materials (e.g., surface moisture content), ambient conditions (e.g., rainfall, humidity, temperature), activities occurring in the area (e.g., vehicle traffic, vehicle weight, speeds).

The following measures will be taken to reduce fugitive dust from operations:

- Fugitive dust emissions from vegetation removal, clearing and grading, cutting and filling, topsoil removal, trenching, backfilling and stockpile storage will be controlled to a great extent by following the construction sequencing and disturbing limited areas at a time;

- Fugitive dust emissions generated by motorized equipment and miscellaneous vehicle traffic will be controlled by wet suppression as necessary;
- Fugitive dust emissions from paved roads will be controlled with a combination of water trucks, power washers, sweeping and/or vacuuming. If necessary, additional potential sources of water for dust control may include other municipal systems, groundwater supply wells, and/or approved surface waters;
- Track out of loose materials will be controlled using rock construction entrances on access roads that begin at a junction with paved roads; and
- When environmental conditions are dry, inspection of dust control measures will be conducted daily.

6.0 INSPECTION, MONITORING, AND RECORD KEEPING

The construction contractor will implement the dust control measures specified in this plan. All construction personnel will be informed of the measures in this plan. Environmental inspectors will have primary responsibility for monitoring and enforcing the implementation of dust control measures by the construction contractor. The inspectors will also be responsible for ensuring that these measures are effective and proper documentation is maintained. When environmental conditions are dry, inspection of dust control measures will be conducted daily, and the environmental inspectors will be responsible for recording the following information on a daily basis:

- weather conditions, including temperature, wind speed and wind direction;
- number of water trucks in use;
- incidents where dust concentration is such that special abatement measures must be implemented;
- condition of soils (e.g., damp, crusted, unstable) on the right-of-way and other construction sites;
- condition of soils (e.g., damp, crusted, unstable) on access roads;
- condition of track-out pads;
- overall status of dust control compliance.

This information will be incorporated into the environmental inspector's daily report, and significant instances of non-compliance with the plan will be reported to the Construction Manager as soon as they are discovered.