Union County
Route 1&9 Corridor Study
Appendices

June 2011

DEMOGRAPHIC ANALYSIS

Route 1&9 Corridor

Demographic, Labor, and Industry Trend Analysis

Prepared for the County of Union

November 10, 2010

4WARD PLANNING™

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METHODOLOGY

A comparative demographic trend analysis was performed using U.S. Census data and proprietary demographic analysis software (ScanUS), covering four geographies: the cities of Rahway, Linden, and Elizabeth; and the Newark-Union Micropolitan area (a U.S. Census recognized sub-set of the greater New York-New Jersey-Pennsylvania Consolidated Metropolitan Statistical Area (CMSA), comprised of Sussex, Essex, Union, Hunterdon and Morris Counties in New Jersey and Pike County in Pennsylvania). Demographic projections are underpinned by a proprietary data analysis process that examines annual household migration patterns at the micro-grid level (a geography representing 1/16th of a mile in area). Annual household data migration patterns are tracked utilizing postal carrier drop counts at the nine digit postal code level (precision to the street address) and then extrapolated to larger geographies – blocks, block groups, ZIP boundaries, counties, etc. This proprietary technique, developed and maintained by ScanUS, has been in existence for more than twenty years. Demographic data analyzed for all four geographies covered the 2000, 2010 (estimated) and 2015 (projected) time periods.

Data related to languages spoken at home, vehicle ownership, and commuting to work come from the U.S. Census Bureau's American Community Survey 2006-2008 three Year Estimates. Data are presented for the three municipalities (Linden, Rahway, and Elizabeth).

Industry and labor market data were collected for both a Work Area Profile Analysis (the distribution and characteristics of workers in a given geographic area) and a Labor Shed Analysis (the locations where workers live/commute from). The three geographies examined for the industry and labor market analysis include the Route 1&9 Corridor study area (extending approximately 2,000 feet on either side of Route 1&9 through the Cities of Linden, Rahway, and Elizabeth); aggregate industry and labor data for the Cities of Linden, Rahway, and Elizabeth; and the County of Union. These data cover the 2004 to 2008 (2008 being the most current data year available) time period and are based on reported U.S. Census and New Jersey Department of Labor Data.

DEMOGRAPHIC TREND ANALYSIS

HOUSEHOLD POPULATION

Population trends were examined for the four geographies under study: the Cities of Rahway, Linden, and Elizabeth; and the Newark-Union Micropolitan Statistical Area (MSA). Table A-1 exhibits population count estimates and projections for the years 2000, 2010 (estimated) and 2015 (projected) for all three geographies. Note that the "In Households" data category is the metric under examination, as it excludes institutional populations (college/university dormitories prisons/jails, hospitals, etc.) that are not of particular import for this study.

Table A-1: Population Trends

Elizabeth				Percentage Change	
	2000	2010	2015	2000-10	2010-15
Population	120,568	124,272	131,750	3.1%	6.0%
In Households	117,652	121,360	128,846	3.2%	6.2%
In Families	97,195	103,614	111,528	6.6%	7.6%
In Non-family Households	20,457	17,746	17,318	-13.3%	-2.4%

Linden				Percentage Change	
	2000	2010	2015	2000-10	2010-15
Population	39,394	39,512	40,751	0.3%	3.1%
In Households	39,141	39,260	40,499	0.3%	3.2%
In Families	32,409	33,514	34,854	3.4%	4.0%
In Non-family Households	6,732	5,746	5,645	-14.6%	-1.8%

Rahway				Percentage Change	
	2000	2010	2015	2000-10	2010-15
Population	26,500	26,821	27,515	1.2%	2.6%
In Households	26,340	26,661	27,355	1.2%	2.6%
In Families	21,767	22,643	23,434	4.0%	3.5%
In Non-family Households	4,573	4,018	3,921	-12.1%	-2.4%

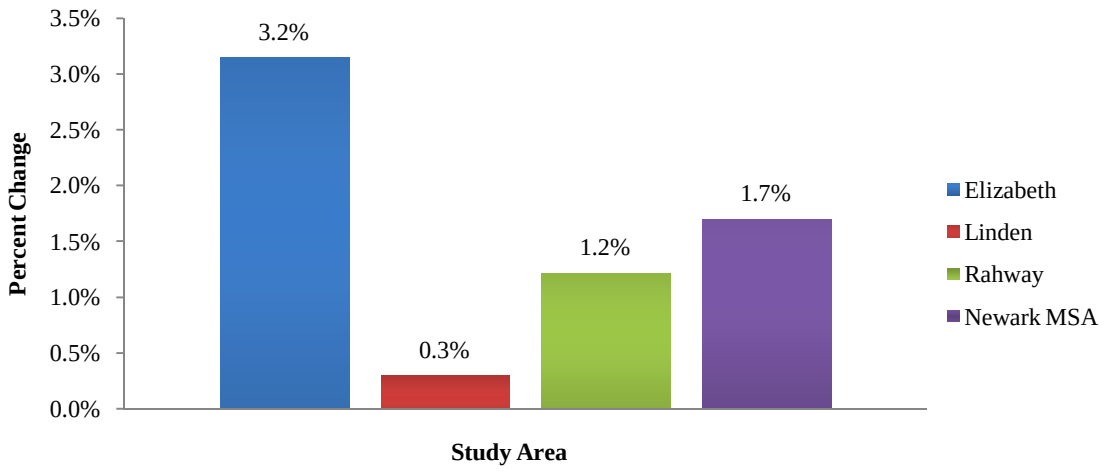
Newark MSA				Percentage Change	
	2000	2010	2015	2000-10	2010-15
Population	2,098,843	2,132,233	2,162,025	1.6%	1.4%
In Households	2,052,635	2,087,668	2,118,595	1.7%	1.5%
In Families	1,741,485	1,808,654	1,844,938	3.9%	2.0%
In Non-family Households	311,150	279,014	273,657	-10.3%	-1.9%

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

As exhibited in Table A-1 and Figure A, Elizabeth, which represents the largest of the three subject municipalities in terms of both population and land area, saw the largest change in household population from 2000 to 2010 (3.2 percent), followed by Rahway (1.2 percent) and Linden (0.3 percent). Only the

City of Elizabeth experienced greater population growth than that of the Newark MSA (1.7 percent) over the ten-year period 2000 to 2010. The percentage growth in household population between 2010 and 2015 is projected to increase for Elizabeth (6.2 percent), Linden (3.2 percent), and Rahway (2.6 percent), as compared to the Newark MSA's relative flat growth (1.5 percent) during the same five-year period.

Figure A: Percentage Change in Household Population, 2000-2010



Source: US Census Bureau; ScanUS; 4ward Planning, 2010

Additionally, all three of these municipalities exhibit relatively high population densities per square mile. The per square mile household population densities for Elizabeth, Linden, and Rahway in 2010 are 8,725, 3,573, and 6,599 people per square mile, respectively, as compared to 942 people per square mile for the Newark MSA. High density in the study area municipalities underscores the importance of the Route 1&9 Corridor to local residents; the expected acceleration of household population increase within these cities is important when considering future local needs and land use planning within the corridor.

HOUSEHOLD FORMATION

A household includes all persons who occupy a housing unit, such as an apartment, condominium or single-family house. Family households contain residents who are related either by blood, marriage, or legal adoption. Non-family households can contain one or more unrelated persons.

The examination of household numbers and characteristics (e.g., size, families vs. non-families, income, etc.) is perhaps the most quintessential task within demographic analyses, as households provide a standard measure from which important metrics such as incomes, consumer expenditures, and homeownership can be meaningfully compared. Presented in Table A-2 are household statistics covering the years 2000, 2010 (estimated) and 2015 (projected).

Table A-2: Household Formation Trends

Elizabeth							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	40,482	100.0%	40,757	100.0%	42,354	100.0%	0.7%	3.9%
Families	28,170	69.6%	27,534	67.6%	28,228	66.6%	-2.3%	2.5%
Families w/Children	16,689	41.2%	16,640	40.8%	17,192	40.6%	-0.3%	3.3%
Non-Families	12,312	30.4%	13,223	32.4%	14,126	33.4%	7.4%	6.8%
Non-Families w/Children	124	0.3%	189	0.5%	215	0.5%	52.4%	13.8%
Average Size HH	2.91		2.98		3.04		2.5%	2.2%

Linden							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	15,052	100.0%	14,772	100.0%	14,923	100.0%	-1.9%	1.0%
Families	10,087	67.0%	9,613	65.1%	9,562	64.1%	-4.7%	-0.5%
Families w/Children	4,954	32.9%	4,846	32.8%	4,873	32.7%	-2.2%	0.6%
Non-Families	4,965	33.0%	5,159	34.9%	5,361	35.9%	3.9%	3.9%
Non-Families w/Children	26	0.2%	44	0.3%	46	0.3%	69.2%	4.5%
Average Size HH	2.60		2.66		2.71		2.2%	2.1%

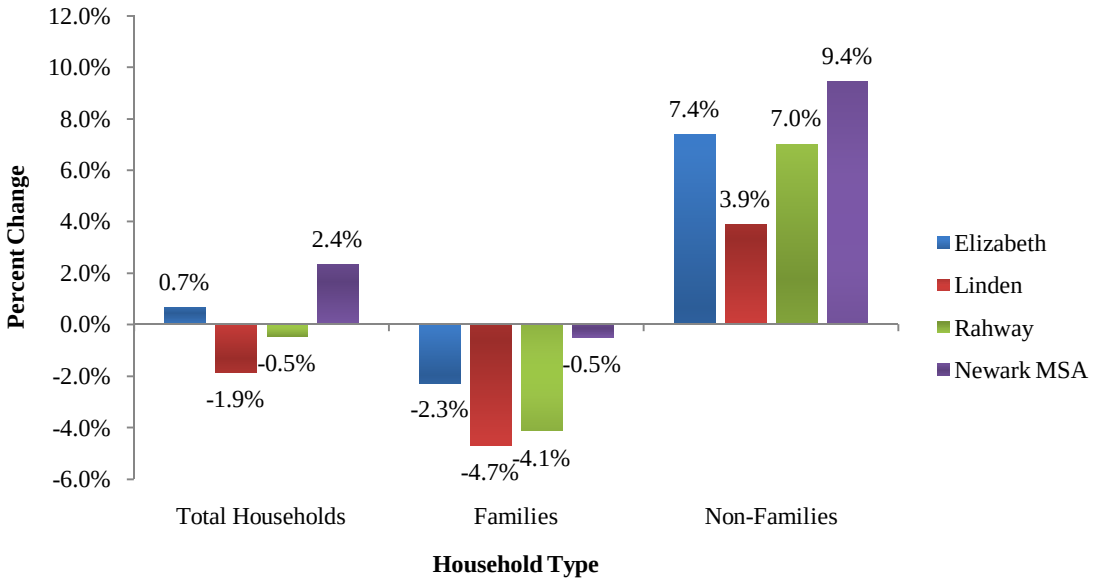
Rahway							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	10,028	100.0%	9,982	100.0%	10,048	100.0%	-0.5%	0.7%
Families	6,727	67.1%	6,449	64.6%	6,378	63.5%	-4.1%	-1.1%
Families w/Children	3,412	34.0%	3,378	33.8%	3,365	33.5%	-1.0%	-0.4%
Non-Families	3,301	32.9%	3,533	35.4%	3,670	36.5%	7.0%	3.9%
Non-Families w/Children	36	0.4%	53	0.5%	56	0.6%	47.2%	5.7%
Average Size HH	2.63		2.67		2.72		1.7%	1.9%

Newark MSA							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	751,513	100.0%	769,209	100.0%	779,760	100.0%	2.4%	1.4%
Families	536,425	71.4%	533,800	69.4%	533,465	68.4%	-0.5%	-0.1%
Families w/Children	286,447	38.1%	284,531	37.0%	284,127	36.4%	-0.7%	-0.1%
Non-Families	215,088	28.6%	235,409	30.6%	246,295	31.6%	9.4%	4.6%
Non-Families w/Children	1,909	0.3%	2,018	0.3%	2,076	0.3%	5.7%	2.9%
Average Size HH	2.73		2.71		2.72		-0.6%	0.1%

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

During the 2000 to 2010 period, household formation was mixed across all geographies examined. While the Newark MSA and City of Elizabeth saw relatively flat growth in household formation at 2.4 and 0.7 percent, respectively, over the ten-year period, the Cities of Linden (-1.9 percent) and Rahway (-0.5 percent) experienced modest declines in household formation over the same period. Declines in total household formation (Linden and Rahway) and the relatively flat growth in household formation (Newark MSA and Elizabeth) from 2000 to 2010 largely were driven by a decrease in family household formation – all four geographies showed declines in both family households and family households with children (a trend observed nationally, as well). However, these declines were offset by increases in non-family household formation in all geographies, as exhibited in Figure B.

Figure B: Percentage Change in Household Types, 2000-2010



Source: US Census Bureau; ScanUS; 4ward Planning, 2010

Household formation is projected to increase across all geographies examined, led by the City of Elizabeth's projected 3.9 percent growth in household formation. Growth in household formation is projected to be relatively flat in Rahway (0.7 percent) and Linden (1.0 percent) and below what is projected for the Newark MSA (1.4 percent). Similar to the trend observed over the 2000 to 2010 period, projected growth in household formation for all geographies will be most robust within non-family households, which typically are smaller in size than family households (one to two persons per non-family household versus two to four persons, on average, for family households).

HOUSING UNITS

Table A-3 exhibits the total number and category of housing units found within each of the geographies for 2000, 2010 (estimated) and 2015 (projected). The estimated percentage growth in total housing units over the 2000 to 2010 period was modest for all geographies. Among the three study area municipalities, Elizabeth experienced the largest percentage growth in housing units (4.3 percent), followed by Rahway (2.9 percent) and Linden (1.4 percent). Comparatively, the Newark MSA outpaced the cities with a 5.7 percent increase in housing units from 2000 to 2010 – reflective of an increase in household formation in suburban areas within the Newark MSA.

Table A-3: Housing Tenure Trends

Elizabeth							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Housing Units	42,838		44,667		46,440		4.3%	4.0%
Vacant	2,356	5.5%	3,910	8.8%	4,086	8.8%	66.0%	4.5%
Owner Occupied	12,033	28.1%	12,106	27.1%	12,863	27.7%	0.6%	6.3%
Rented	28,449	66.4%	28,651	64.1%	29,491	63.5%	0.7%	2.9%

Linden							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Housing Units	15,567		15,791		15,935		1.4%	0.9%
Vacant	515	3.3%	1,019	6.5%	1,012	6.4%	97.9%	-0.7%
Owner Occupied	8,839	56.8%	8,714	55.2%	8,840	55.5%	-1.4%	1.4%
Rented	6,213	39.9%	6,058	38.4%	6,083	38.2%	-2.5%	0.4%

Rahway							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Housing Units	10,381		10,684		10,747		2.9%	0.6%
Vacant	353	3.4%	702	6.6%	699	6.5%	98.9%	-0.4%
Owner Occupied	6,288	60.6%	6,164	57.7%	6,245	58.1%	-2.0%	1.3%
Rented	3,740	36.0%	3,818	35.7%	3,803	35.4%	2.1%	-0.4%

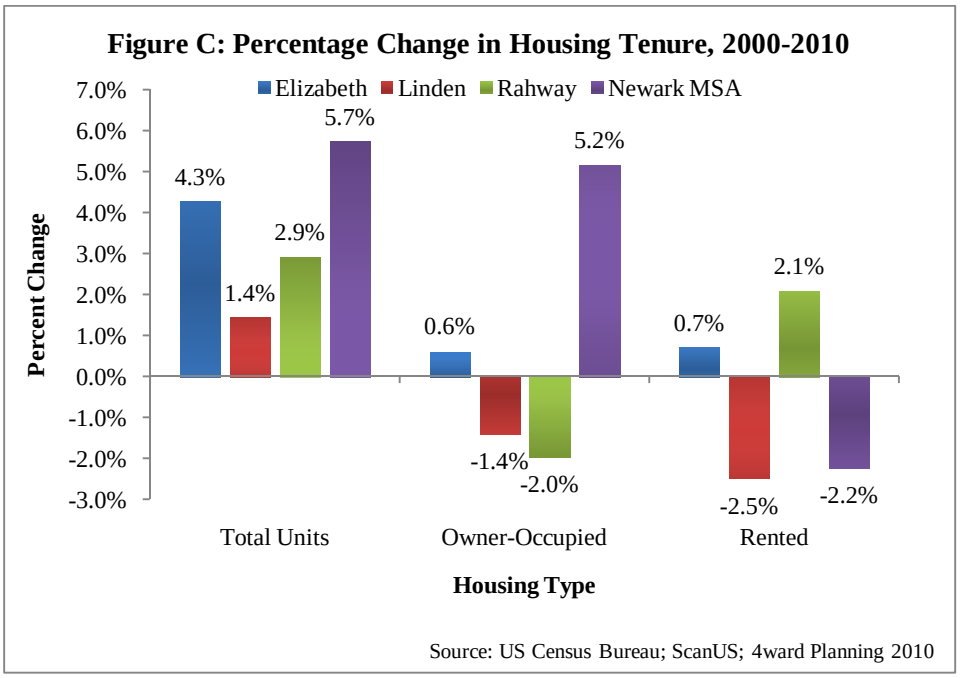
Newark MSA							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Housing Units	804,576		850,741		862,940		5.7%	1.4%
Vacant	53,063	6.6%	81,532	9.6%	83,180	9.6%	53.7%	2.0%
Owner Occupied	466,471	58.0%	490,523	57.7%	497,809	57.7%	5.2%	1.5%
Rented	285,042	35.4%	278,686	32.8%	281,951	32.7%	-2.2%	1.2%

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

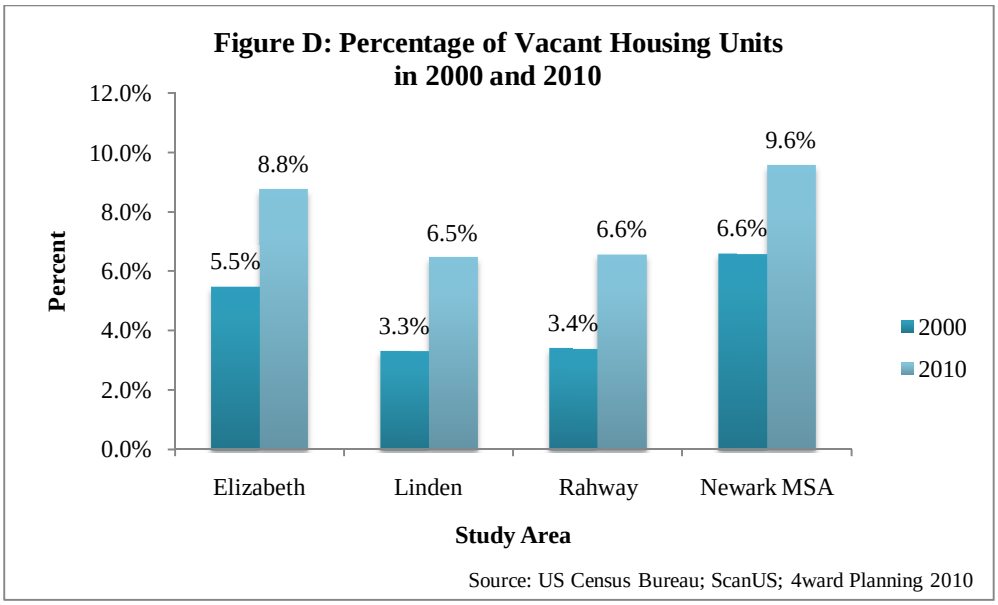
Housing tenure share, which refers to whether an occupied housing unit is either owned or rented, has been fairly consistent across all four geographies over the 2000 to 2010 time period. In each geography, shares of owner-occupied and rented units decreased slightly from 2000 to 2010, while the percentage share of vacant units increased – reflective of older, physically obsolescent units typically found in urban areas. In 2010, the MSA's housing units are estimated to be approximately 57.7 percent owner-occupied, the same proportion as Rahway's (57.7 percent) and slightly higher than Linden's (55.2 percent). Conversely, Elizabeth's owner occupied housing units represented only 27.1 percent of its total housing stock, while renter occupied units comprised 64.1 percent. The large share of rental housing stock in Elizabeth is reflective of the city's relatively young population and strong growth in non-family (small) households.

Figure C shows the percentage change of actual housing units from 2000 to 2010. Total units increased from 2000 to 2010 across all geographies, with all three cities experiencing slower growth in new units than the MSA (4.3, 1.4, and 2.9 percent for Elizabeth, Linden, and Rahway, respectively versus 5.7 percent for the MSA). While total housing unit inventory increased in all geographies, the percentages of

occupied units (both owner-occupied and rented) was not – again, reflective of older, physically obsolescent units remaining in the market. During the ten-year period from 2000 to 2010, Elizabeth saw minor increases in both renter (0.7 percent) and owner-occupied (0.6 percent) housing units, while Rahway's owner-occupied (2.9 percent) and renter- (2.1 percent) occupied units showed slightly more robust growth. In Linden, both owner-occupied (-1.4 percent) and renter-occupied (-2.5 percent) units decreased over the same analysis period. The MSA showed mixed growth in housing tenure, with a 5.2 percent increase in owner-occupied units and a 2.2 percent decrease in renter-occupied units over the decade.



All four geographies showed a spike not only in the share of total vacant units, but also in the percentage share of vacant units from 2000 to 2010 (Figure D).



The total inventory of housing units across all four geographies is projected to increase at a slower pace through 2015, with a leveling-off of the increase in vacant units and an increase in owner-occupied units in all four geographies. In terms of owner-occupied units, Rahway (1.3 percent) and Linden (1.4 percent) should see growth on par with the MSA (1.5 percent), while Elizabeth is projected to see robust growth in owner-occupied units (6.3 percent). Those vacant units which are not physically obsolescent and are generally marketable will cause a slight drag on the housing markets in all four geographies examined until they are absorbed either through lease or sale.

HOUSEHOLD INCOME

Observed household income within a given geography is the starting point for analyzing past, present and projected consumption patterns for a variety of goods and services.[1] Household income, conversely, provides a sound base upon which to gauge prospective consumer expenditures and taste preferences, as household units (e.g., family and non-family) feature greater uniformity and predictability than individuals, with respect to needs and wants for goods and services.

Table A-4 presents household income data for Elizabeth, Rahway, Linden, and the Newark MSA for 2000, 2010 (estimated) and 2015 (projected).

[1] While the per capita income measure sometimes used within market studies provides an average measure of income for each person within a given market area, its ability to accurately reflect expenditure patterns and consumption preferences for various market goods and services is weak, given the broad diversity of individual characteristics (e.g., age, sex, marital status, housing tenure, educational attainment, etc.).

Table A-4: Household Income Trends

Elizabeth							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	40,482		40,757		42,354		0.7%	3.9%
< $40,000	22,703	56.1%	21,370	52.4%	21,677	51.2%	-5.9%	1.4%
$40K to $74.9K	11,606	28.7%	11,470	28.1%	11,831	27.9%	-1.2%	3.1%
$75K to $99.9K	3,223	8.0%	3,614	8.9%	3,898	9.2%	12.1%	7.9%
$100K to $149.9K	2,114	5.2%	2,711	6.7%	3,005	7.1%	28.2%	10.8%
>$149.9K	836	2.1%	1,592	3.9%	1,943	4.6%	90.4%	22.0%
Median HH Income	$35,339		$37,999		$38,986		7.5%	2.6%
Percent of HH >75K		15.2%		19.4%		20.9%		

Linden							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	15,052		14,772		14,923		-1.9%	1.0%
< $40,000	6,229	41.4%	5,584	37.8%	5,463	36.6%	-10.4%	-2.2%
$40K to $74.9K	5,172	34.4%	4,806	32.5%	4,737	31.7%	-7.1%	-1.4%
$75K to $99.9K	1,951	13.0%	2,042	13.8%	2,126	14.2%	4.7%	4.1%
$100K to $149.9K	1,344	8.9%	1,669	11.3%	1,800	12.1%	24.2%	7.8%
>$149.9K	356	2.4%	671	4.5%	797	5.3%	88.5%	18.8%
Median HH Income	$46,672		$50,928		$52,467		9.1%	3.0%
Percent of HH >75K		24.3%		29.7%		31.6%		

Rahway							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	10,028		9,982		10,048		-0.5%	0.7%
< $40,000	3,834	38.2%	3,423	34.3%	3,283	32.7%	-10.7%	-4.1%
$40K to $74.9K	3,366	33.6%	3,115	31.2%	3,060	30.5%	-7.5%	-1.8%
$75K to $99.9K	1,473	14.7%	1,555	15.6%	1,594	15.9%	5.6%	2.5%
$100K to $149.9K	963	9.6%	1,167	11.7%	1,262	12.6%	21.2%	8.1%
>$149.9K	392	3.9%	722	7.2%	849	8.4%	84.2%	17.6%
Median HH Income	$51,525		$56,591		$59,108		9.8%	4.4%
Percent of HH >75K		28.2%		34.5%		36.9%		

Newark MSA							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Households	751,513		769,209		779,760		2.4%	1.4%
< $40,000	261,471	34.8%	227,454	29.6%	219,395	28.1%	-13.0%	-3.5%
$40K to $74.9K	205,987	27.4%	187,565	24.4%	182,389	23.4%	-8.9%	-2.8%
$75K to $99.9K	99,406	13.2%	99,879	13.0%	100,368	12.9%	0.5%	0.5%
$100K to $149.9K	101,898	13.6%	124,907	16.2%	133,394	17.1%	22.6%	6.8%
>$149.9K	82,751	11.0%	129,404	16.8%	144,214	18.5%	56.4%	11.4%
Median HH Income	$58,602		$70,156		$74,028		19.7%	5.5%
Percent of HH >75K		37.8%		46.0%		48.5%		

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

The City of Elizabeth exhibited the largest percentage share of households earning less than $40,000 annually in 2000 (56.1 percent) and in 2010 (52.4%), as compared to Linden (41.4 and 37.8 percent in 2000 and 2010, respectively), Rahway (38.2 and 34.3 percent in 2000 and 2010, respectively) and the Newark MSA (34.8 and 29.6 percent in 2000 to 2010, respectively) for those same periods. The relatively large share of low-income residents within the City of Elizabeth is reflective of a younger and lower-skilled workforce. Further, households earning less than $40,000 annually typically will have greater

reliance on public modes of transportation for accessing employment and shopping. Household income growth across all geographies, over the 2000 to 2010 ten-year period, was robust for income brackets beginning at $100,000 and higher, as exhibited in Table A-5. For example, while the City of Elizabeth exhibits a relatively large ratio of low-income households, as identified above, the number of Elizabeth households earning $100,000 to $149,999 (upper middle-income households) increased by 28.2 percent over the 2000 to 2010 period, followed by Linden (24.2 percent), the Newark MSA (22.2 percent) and Rahway (21.2 percent).

While upper income household growth was relatively significant between 2000 and 2010 in all geographies examined, the estimated 2010 median household income (the benchmark at which 50 percent of households earn below and 50 percent earn above the value) in the City of Elizabeth ($37,999) remains well below estimated 2010 median household income for the Newark MSA ($70,156) – reflective of lower socio-economic conditions within the City of Elizabeth. In fact, the estimated median household income percentage growth between 2000 and 2010 for the Cities of Elizabeth (7.5 percent), Linden (9.1 percent) and Rahway (9.8 percent) were all significantly lower than the estimated median household income percentage growth for the Newark MSA (19.7 percent) over the same period.

AGE

Exhibited within Table A-5 are age matrices associated with the subject geographies and covering the periods 2000, 2010 (estimated) and 2015 (projected). Figure E further helps to demonstrate comparative age cohort trends across geographies.

Table A-5: Population Age Trends

Elizabeth							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Population	120,568		124,272		131,750		3.1%	6.0%
< 5 Years	9,266	7.7%	9,080	7.3%	8,785	6.7%	-2.0%	-3.2%
5 to 19 Years	25,846	21.4%	26,815	21.6%	28,234	21.4%	3.7%	5.3%
20 to 34 Years	30,360	25.2%	28,535	23.0%	29,478	22.4%	-6.0%	3.3%
35 to 54 Years	33,772	28.0%	34,298	27.6%	34,160	25.9%	1.6%	-0.4%
55 to 74 Years	15,572	12.9%	19,850	16.0%	24,982	19.0%	27.5%	25.9%
> 74 Years	5,752	4.8%	5,694	4.6%	6,111	4.6%	-1.0%	7.3%
Median Age	32.6		33.7		34.7		3.7%	2.7%

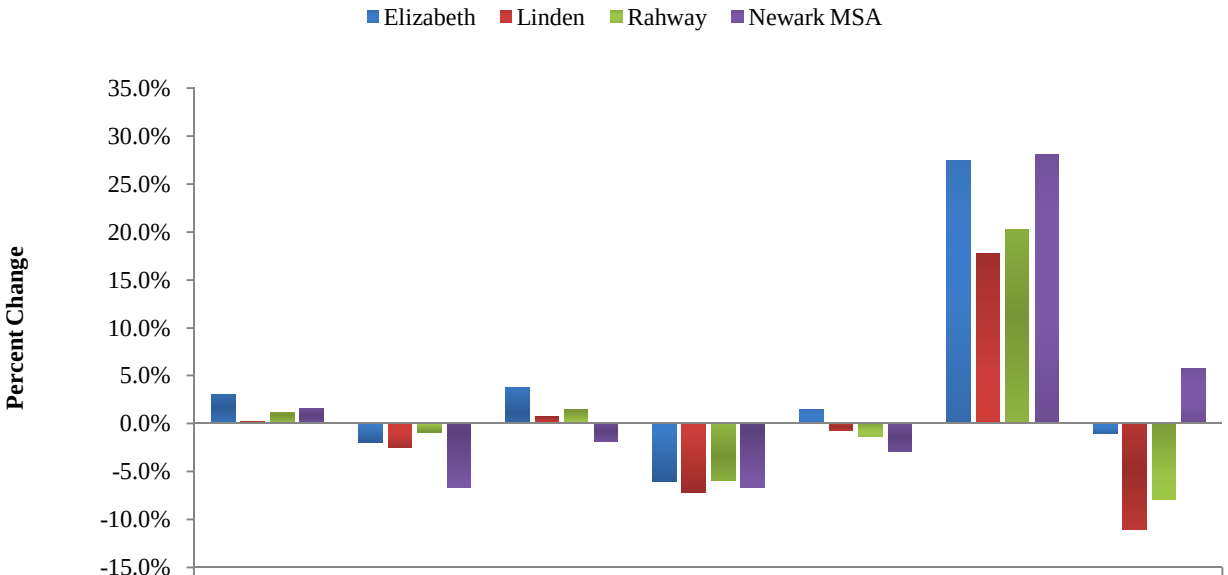
Linden							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Population	39,394		39,512		40,751		0.3%	3.1%
< 5 Years	2,345	6.0%	2,288	5.8%	2,160	5.3%	-2.4%	-5.6%
5 to 19 Years	7,423	18.8%	7,479	18.9%	7,614	18.7%	0.8%	1.8%
20 to 34 Years	8,050	20.4%	7,470	18.9%	7,525	18.5%	-7.2%	0.7%
35 to 54 Years	11,548	29.3%	11,468	29.0%	11,019	27.0%	-0.7%	-3.9%
55 to 74 Years	6,546	16.6%	7,709	19.5%	9,291	22.8%	17.8%	20.5%
> 74 Years	3,482	8.8%	3,098	7.8%	3,142	7.7%	-11.0%	1.4%
Median Age	38.0		39.8		41.2		4.6%	3.6%

Rahway							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Population	26,500		26,821		27,515		1.2%	2.6%
< 5 Years	1,660	6.3%	1,645	6.1%	1,550	5.6%	-0.9%	-5.8%
5 to 19 Years	5,234	19.8%	5,313	19.8%	5,352	19.5%	1.5%	0.7%
20 to 34 Years	5,404	20.4%	5,089	19.0%	5,115	18.6%	-5.8%	0.5%
35 to 54 Years	8,172	30.8%	8,065	30.1%	7,715	28.0%	-1.3%	-4.3%
55 to 74 Years	4,093	15.4%	4,926	18.4%	5,948	21.6%	20.4%	20.7%
> 74 Years	1,937	7.3%	1,783	6.6%	1,835	6.7%	-8.0%	2.9%
Median Age	37.0		38.5		39.8		3.9%	3.4%

Newark MSA							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Total Population	2,098,843		2,132,233		2,162,025		1.6%	1.4%
< 5 Years	147,928	7.0%	138,051	6.5%	136,696	6.3%	-6.7%	-1.0%
5 to 19 Years	437,605	20.8%	429,794	20.2%	419,691	19.4%	-1.8%	-2.4%
20 to 34 Years	410,660	19.6%	383,375	18.0%	396,149	18.3%	-6.6%	3.3%
35 to 54 Years	658,294	31.4%	638,861	30.0%	585,128	27.1%	-3.0%	-8.4%
55 to 74 Years	322,967	15.4%	413,765	19.4%	489,665	22.6%	28.1%	18.3%
> 74 Years	121,389	5.8%	128,387	6.0%	134,696	6.2%	5.8%	4.9%
Median Age	36.4		39.1		40.3		7.5%	3.2%

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

Figure E: Change in Population by Age Cohorts, 2000-2010



	Total Population	< 5 Years	5 to 19 Years	20 to 34 Years	35 to 54 Years	55 to 74 Years	> 74 Years
Elizabeth	3.1%	-2.0%	3.7%	-6.0%	1.6%	27.5%	-1.0%
Linden	0.3%	-2.4%	0.8%	-7.2%	-0.7%	17.8%	-11.0%
Rahway	1.2%	-0.9%	1.5%	-5.8%	-1.3%	20.4%	-8.0%
Newark MSA	1.6%	-6.7%	-1.8%	-6.6%	-3.0%	28.1%	5.8%

Age Cohort

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

Linden, Rahway and the Newark MSA, in 2000, exhibit similar age distributions, as reflected by a median age range of 36 to 38 years. Comparatively, the City of Elizabeth's median age of approximately 32.5 years in 2000 reflects a relatively younger populace. For example, in 2010 persons 34 and younger represent 43.6, 44.9 and 44.6 percent of the total population, as compared to approximately 52 percent for the City of Elizabeth for the same period. Some notable trends include:

- In 2000, the 20 to 34 age cohort (typically symbolic of young professionals with no children or one or two very young children) represented approximately 20 percent of the total population in Rahway, Linden, and the MSA and 25.2 percent of household population in the City of Elizabeth. This cohort is projected to see slight growth through 2015 in Elizabeth and the MSA (3.3 percent for both) but remain relatively flat in Linden (0.7 percent) and Rahway (0.5 percent) over the same five-year period.

- The 35 to 54 age cohort (typically representing the largest share of working persons and persons in stable careers) accounted for the largest share of population across geographies in 2000, representing approximately 30 percent of the total population. This age cohort experienced

modest declines in Linden (-0.7 percent), Rahway (-1.3 percent), and the Newark MSA (-3.0 percent) over the 2000 to 2010 period. Conversely, over the same span, Elizabeth saw relatively small growth (1.6 percent) in its population aged 35 to 54 years of age. The 35 to 54 year old cohort is projected to decline in Elizabeth (-0.4 percent), Linden (-3.9 percent), Rahway (-4.3 percent) and the Newark MSA (-8.4 percent) over the next five years. The marked declines in this age cohort for Linden, Rahway and the MSA, principally, owe to greater outmigration and persons aging out of this cohort in these geographies.

- The 55 to 74 age cohort, accounting for about 15 percent of the total household population in 2000 across all geographies, demonstrated robust growth over the 2000 to 2010 period within the MSA (28.1 percent), Elizabeth (27.5 percent), Linden (17.8 percent), and Rahway (20.4 percent). Growth of this age cohort in all four geographies suggests a large number of persons in this geography desiring to age in place, and, as US Census data suggest, a high degree of discretionary income (after tax income and primary financial obligations). A high degree of discretionary income bodes favorably for certain service businesses such as restaurants, specialty retailers and entertainment venues.

EDUCATIONAL ATTAINMENT

Trends concerning educational attainment for persons 25 and older living in the three subject geographic areas over the 2000 to 2010 (estimated) and 2010 to 2015 (projected) time intervals are exhibited in Table A-6. Observed educational attainment levels within a given geography provide an additional measure of likely consumer habits, lifestyle and income generating potential.

As exhibited in Table A-6, adult persons (25 years and older) possessing at least a bachelor's degree and living within the MSA in 2000 represented 32.3 percent of all adult persons within the geography. This percentage was significantly higher than Rahway (18.6 percent), Linden (14.2 percent), and Elizabeth (12.1 percent). The comparatively low 2000 educational attainment level within the three cities reflects the relatively high concentration of manufacturing, retail trade, and transportation and warehousing workers (industry employment typically not requiring four-year degrees or higher) in the municipalities that likely work locally.[2]

[2] In 2008, approximately 37.6 percent of workers residing in the Linden-Rahway-Elizabeth aggregate worked in Union County; 15.3 percent worked in Elizabeth.

Table A-6: Educational Attainment Trends

Elizabeth							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Population 25 and over	75,853		78,103		83,587		3.0%	7.0%
H.S. Diploma or less	53,370	70.4%	51,381	65.8%	53,461	64.0%	-3.7%	4.0%
Some College, no degree	10,588	14.0%	10,786	13.8%	11,353	13.6%	1.9%	5.3%
Associates	2,704	3.6%	3,417	4.4%	3,991	4.8%	26.4%	16.8%
Bachelors Degree	6,005	7.9%	8,029	10.3%	9,452	11.3%	33.7%	17.7%
Graduate Degree	3,186	4.2%	4,490	5.7%	5,330	6.4%	40.9%	18.7%

Linden							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Population 25 and over	27,324		27,292		28,364		-0.1%	3.9%
H.S. Diploma or less	17,081	62.5%	16,551	60.6%	17,028	60.0%	-3.1%	2.9%
Some College, no degree	4,946	18.1%	4,585	16.8%	4,564	16.1%	-7.3%	-0.5%
Associates	1,408	5.2%	1,584	5.8%	1,717	6.1%	12.5%	8.4%
Bachelors Degree	2,662	9.7%	3,080	11.3%	3,390	12.0%	15.7%	10.1%
Graduate Degree	1,227	4.5%	1,492	5.5%	1,665	5.9%	21.6%	11.6%

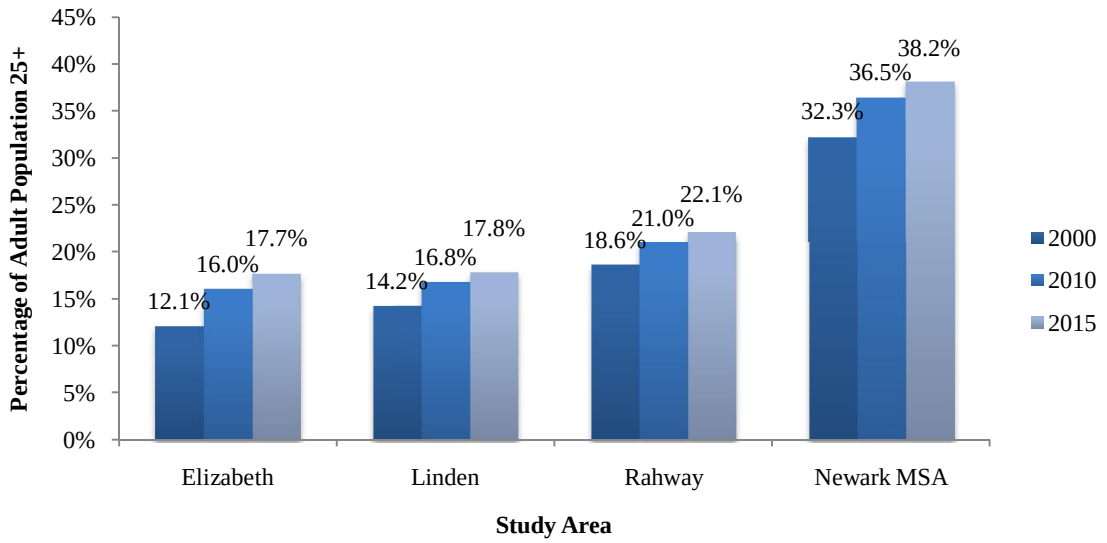
Rahway							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Population 25 and over	18,093		18,215		18,872		0.7%	3.6%
H.S. Diploma or less	10,014	55.3%	9,844	54.0%	10,111	53.6%	-1.7%	2.7%
Some College, no degree	3,601	19.9%	3,313	18.2%	3,255	17.2%	-8.0%	-1.8%
Associates	1,113	6.2%	1,235	6.8%	1,341	7.1%	11.0%	8.6%
Bachelors Degree	2,374	13.1%	2,640	14.5%	2,846	15.1%	11.2%	7.8%
Graduate Degree	991	5.5%	1,183	6.5%	1,319	7.0%	19.4%	11.5%

Newark MSA							Percentage Change	
	2000		2010		2015		2000-10	2010-15
Population 25 and over	1,396,868		1,431,292		1,463,860		2.5%	2.3%
H.S. Diploma or less	635,790	45.5%	604,239	42.2%	600,173	41.0%	-5.0%	-0.7%
Some College, no degree	240,469	17.2%	222,527	15.5%	215,219	14.7%	-7.5%	-3.3%
Associates	69,762	5.0%	82,369	5.8%	89,097	6.1%	18.1%	8.2%
Bachelors Degree	276,994	19.8%	318,828	22.3%	340,957	23.3%	15.1%	6.9%
Graduate Degree	173,853	12.4%	203,329	14.2%	218,414	14.9%	17.0%	7.4%

Source: US Census Bureau; ScanUS; 4ward Planning, 2010

Over the ten-year period from 2000 to 2010, adult persons possessing either a bachelors or graduate level degree increased across all geographies (see Figure F). Of the three cities, Elizabeth saw the largest overall change (3.9 percentage points), followed by Linden (2.6 percentage points), and Rahway (2.4 percentage points). None of the cities, however, experienced as large an increase in bachelors or graduate level degrees as the MSA (4.4 percentage points).

Figure F: Percentage of Adults 25+ With Bachelor's Degrees or Higher

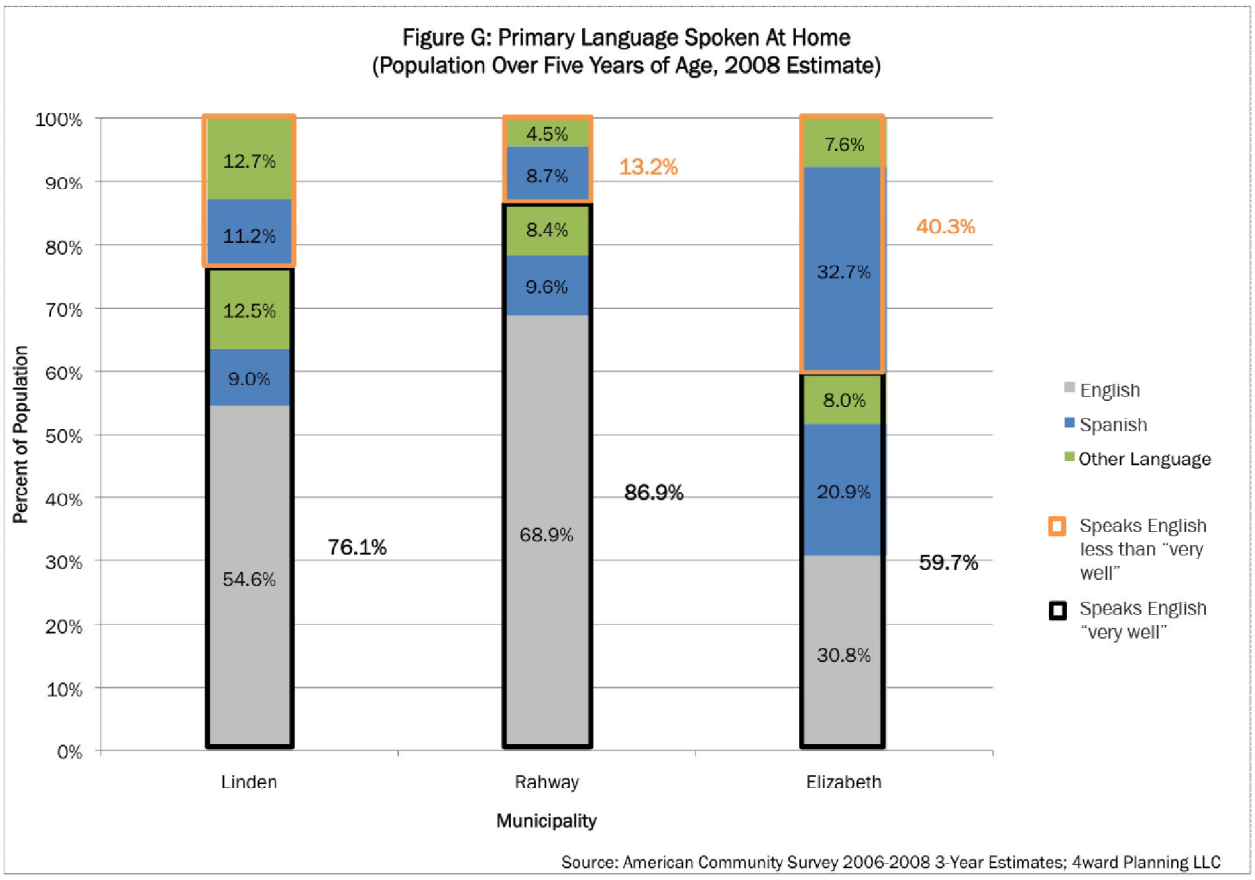


Source: US Census Bureau; ScanUS; 4ward Planning 2010

Through 2015, the City of Elizabeth is projected to catch up to the City of Linden in its percentage of adults with at least a bachelor's degree, while both are projected to have fewer such degreed persons than the City of Rahway. While the percentage share of adults possessing at least a bachelor's degree is projected to be lower within the three cities examined, relative to the MSA through 2015, the percentage growth in the number of adult persons possessing these degrees is projected to grow at a faster rate than that for the Newark MSA, as exhibited in Table A-6.

PRIMARY LANGUAGE SPOKEN

American Community Survey data related to the primary language spoken at home, vehicle ownership, and means of commuting to work were examined. Figure G shows the estimates of primary language spoken at home for the population over five years of age in Linden, Rahway, and Elizabeth. The data are further broken down by the proportions of the population that speak English "very well" (as identified by the black outline) and less than "very well" (as identified by the orange outline).



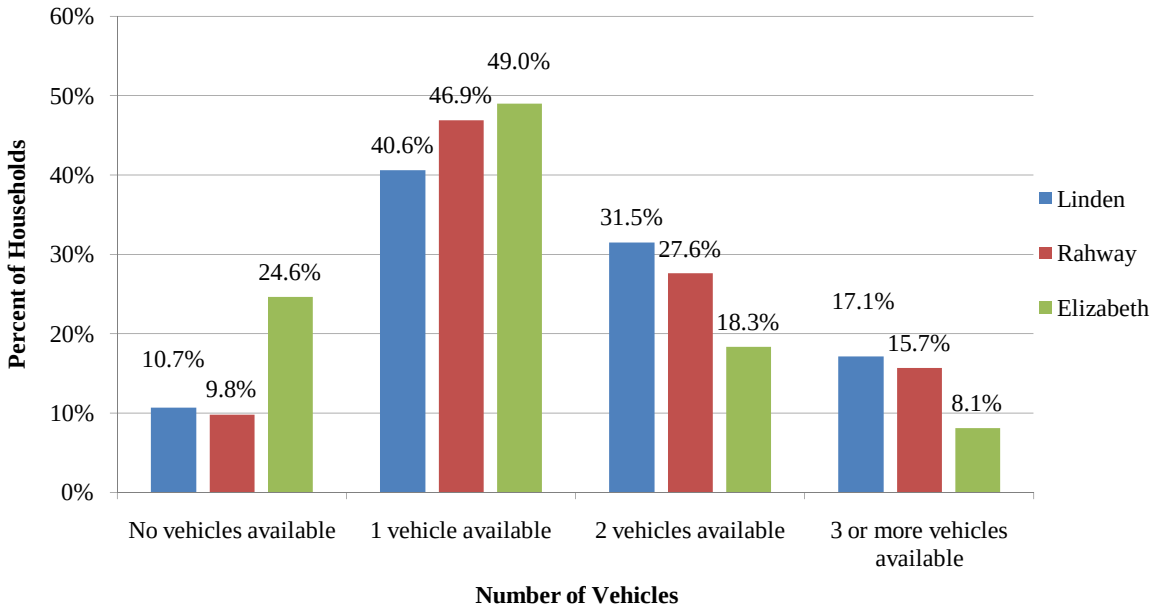
In both Linden and Rahway a plurality of people spoke English as their primary language, while in Elizabeth 53.6 percent of the population primarily spoke Spanish (with 30.8 percent speaking primarily English). Linden and Rahway had similar percentages of Spanish-speaking populations (20.2 percent and 18.3 percent, respectively), while Linden had a higher percentage of people who spoke another language (25.2 percent; mostly other Indo-European languages) than the other two cities (12.9 percent in Rahway and 15.6 percent in Elizabeth). Of the three cities, Elizabeth had the largest percentage of people who spoke English less than "very well" (40.3 percent), with more than half of the overall Spanish speakers falling into this category. Linden and Rahway both had significantly smaller percentages of the population that did not speak English very well (23.9 percent and 13.2 percent, respectively). The data suggest that language provisions may be most needed in Elizabeth, particularly for communication with its Spanish-speaking population.

Vehicle Ownership and Commuting to Work

Figure H demonstrates the estimated number of vehicles (cars, vans, or trucks) available to each household in Linden, Rahway, and Elizabeth in 2008. Linden and Rahway exhibited similar percentages of households without a vehicle (10.7 and 9.8 percent, respectively), while Linden tended to have slightly

more households with more than one vehicle than Rahway. Elizabeth had a significantly higher percentage of households with no vehicle (24.6 percent) than Linden and Rahway, and exhibited a greater difference in the percentages of households with one vehicle (49.0 percent) versus two or more vehicles.

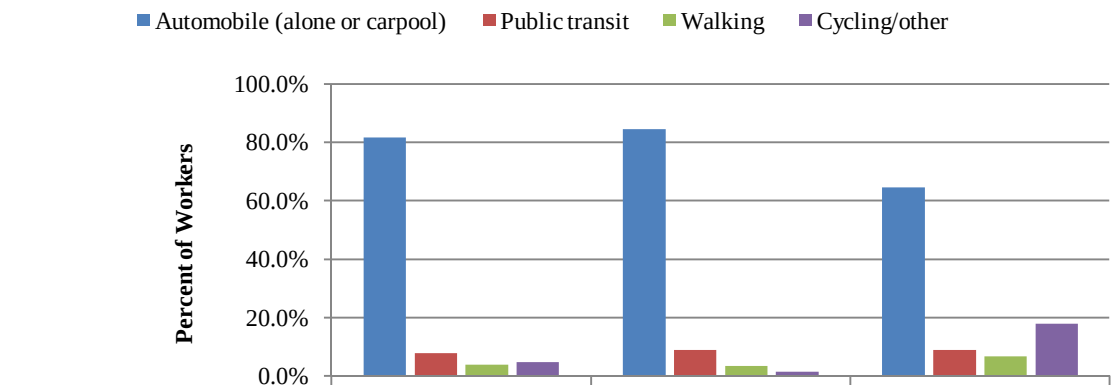
Figure H: Number of Vehicles Available to Households (All Households, 2008 Estimate)



Source: American Community Survey 2006-2008 3-Year Estimates; 4ward Planning 2010

Figure I shows 2008 estimates for the method of commuting to work of workers 16 and older (excluding those that work from home). All three cities exhibited a plurality of workers commuting via automobile (car, truck, or van) either alone or in a carpool, with higher percentages in Linden (81.6 percent) and Rahway (84.5 percent) than Elizabeth (64.5 percent). This follows logically from the smaller percentage of households in Elizabeth with access to vehicles outlined above. All three municipalities had similar percentages of the population that utilized public transit (7.8 percent for Linden, 8.9 percent for Rahway, and 9.0 percent for Elizabeth). Elizabeth demonstrated a significant percentage of workers who use bicycles or other means to commute (18.0 percent), while Linden (4.7 percent) and Rahway (1.5 percent) had much smaller percentages of workers that commuted by bicycle or other means. Not surprisingly, Elizabeth also had a higher percentage of workers who walked to work (6.8 percent versus 3.9 percent for Linden and 3.5 percent for Rahway).

Figure I: Commuting to Work
(Workers 16 and Older, Excluding "Work From Home", 2008 Estimate)



	Linden	Rahway	Elizabeth
Automobile (alone or carpool)	81.6%	84.5%	64.5%
Public transit	7.8%	8.9%	9.0%
Walking	3.9%	3.5%	6.8%
Cycling/other	4.7%	1.5%	18.0%

Municipality

Source: American Community Survey 2006-2008 3-Year Estimates; 4ward Planning 2010

DEMOGRAPHIC TREND ANALYSIS – SUMMARY

Household population growth is projected to grow at a faster rate in Elizabeth, Linden, and Rahway than for the Newark MSA through 2015. The 55 to 74 age cohort showed robust growth from 2000 to 2010 across all geographies (the only age cohort to do so), which bodes well for certain service sector industries.

All four geographies saw declines in family households from 2000 to 2010, mirroring national trends. These declines were mitigated by increases in non-family households.

An increase in the share of vacant housing units across all geographies likely is due to the number of physically obsolescent and deteriorating housing units in the urban areas.

Median household incomes in 2010 remained lower in all three cities than in the MSA after a decade of slower percentage growth than witnessed in the MSA.

The three cities lagged behind the MSA in educational attainment in 2000 and 2010 but should see continued growth in the share of adults with bachelor's degrees or higher through 2015.

Of the three cities, Elizabeth had the largest percentage of the population that spoke languages other than English (mostly Spanish), and also the smallest percentage that spoke English "very well". People in Elizabeth also were more likely not to have access to vehicle and, consequently, to commute to work via other means (public transit, walking, cycling, or other).

LABOR AND INDUSTRY TREND ANALYSIS

WORK AREA PROFILE ANALYSIS

Tables B-1 and B-2 exhibit key employment profile metrics for both the Route 1&9 Corridor and the County of Union, covering the years 2004, 2006, and 2008 (the most current available data year), as reported by the U.S. Census Bureau.

Table B-1: Routes 1&9 Corridor Employment Profile, 2004-2008

	2004		2006		2008		Percentage Change 2004-06	Percentage Change 2006-08
Total Primary Jobs	18,978		18,797		21,708		-1.0%	15.5%
Jobs by Worker Age								
29 or younger	4,127	21.7%	4,293	22.8%	5,054	23.3%	4.0%	17.7%
30 to 54	11,282	59.4%	10,763	57.3%	11,478	52.9%	-4.6%	6.6%
55 or older	3,569	18.8%	3,741	19.9%	5,176	23.8%	4.8%	38.4%
Jobs by Earnings								
$1,250 per month or less	4,097	21.6%	3,722	19.8%	3,837	17.7%	-9.2%	3.1%
$1,251 to $3,333 per month	7,123	37.5%	6,805	36.2%	6,998	32.2%	-4.5%	2.8%
More than $3,333 per month	7,758	40.9%	8,270	44.0%	10,873	50.1%	6.6%	31.5%

			Percentage Change 2004-06
Total Private Employers	913	991	8.5%
Total Private Employment	18,648	18,300	-1.9%
Average Employment/Firm	20.4	18.5	-9.6%

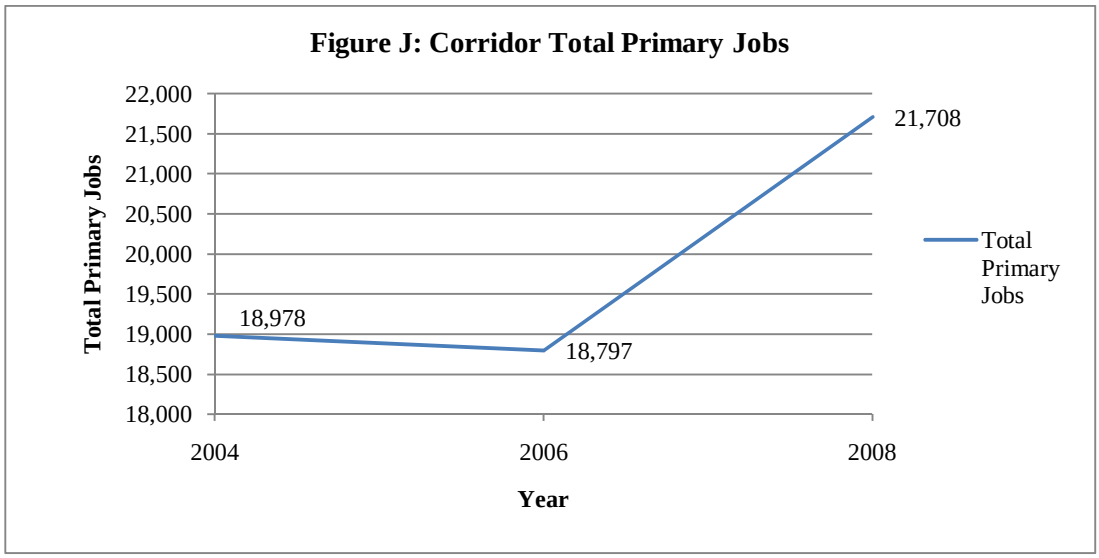
Source: U.S. Census Bureau; 4ward Planning LLC 2010

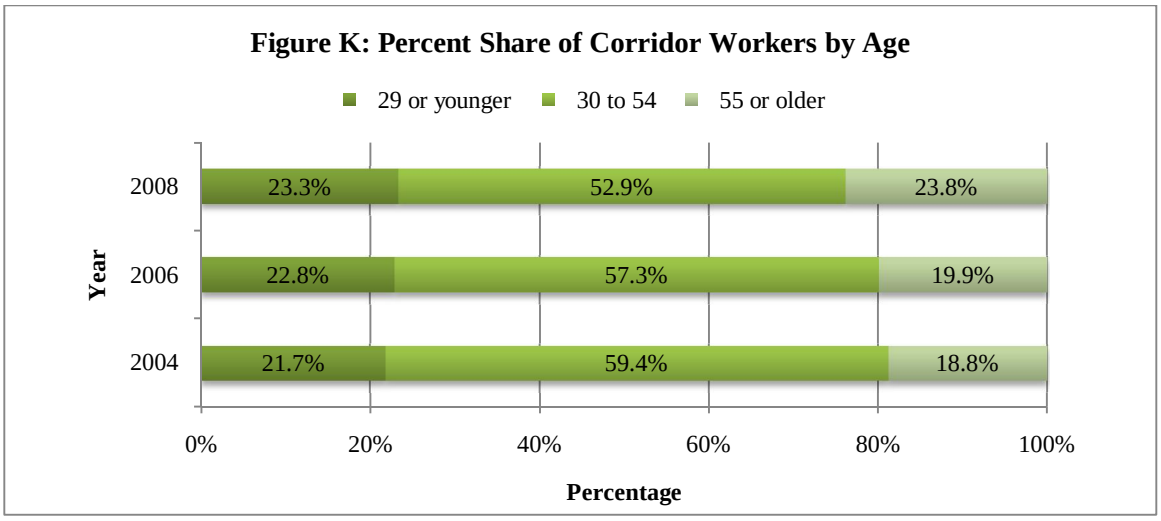
In 2004, total primary jobs in the Corridor (representing the principal full- and part-time employment for public and private sector employers) equaled 18,978. 98.3 percent of those primary jobs (18,648) were associated with private sector firms, which employed an average of 20.4 workers per firm. The majority of primary jobs (11,282 or 59.4 percent) were held by persons 31 to 54 years old (employees coming into or within their prime earning years, typically). During 2004, 40.9 percent of all primary jobs within the Route 1&9 Corridor earned more than $40,000 per annum.

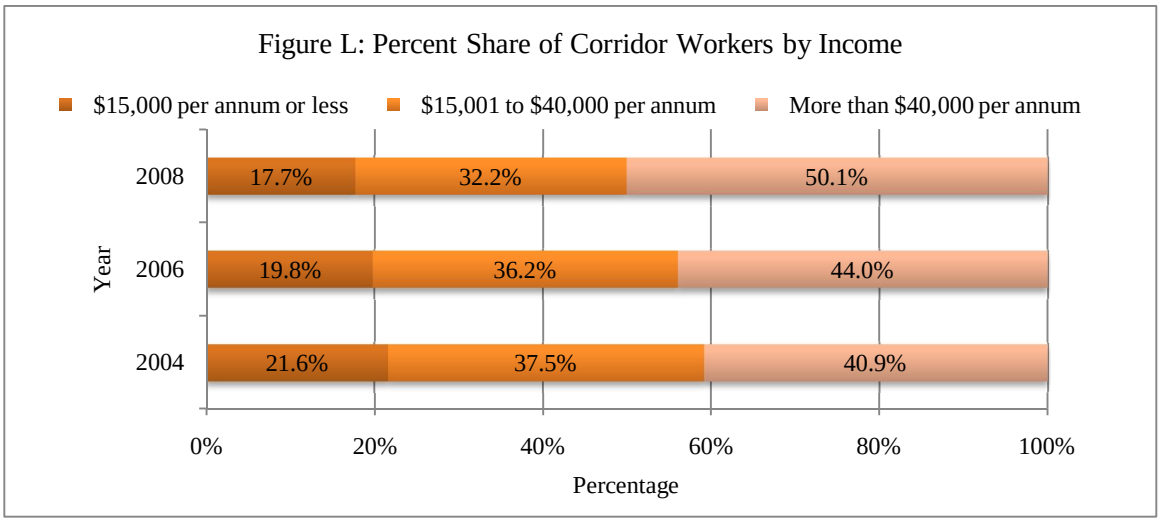
From 2004 to 2006, the total number of primary jobs decreased one percent, while a larger share of workers (44 percent) earned more than $40,000 per year. The share of workers aged both 29 or younger and 55 or older grew by 4.0 and 4.8 percent, respectively, while the 30 to 54 age

cohort shrank by 4.6 percent. One likely reason for the decline in jobs over the 2004 to 2006 period was the closing of the GM plant on Route 1&9 in Linden – affecting not only the workers at this plant, but also workers employed by supplier and related service companies within the vicinity of the plant. While employment decreased by slightly more than 4.5 percent for persons aged between 30 and 54 over the 2004 to 2006 period, employment gains of 4.0 and 4.8 percent were realized by the 29 and younger and 55 and older cohorts, respectively. Private employment as a percentage of the total employment dipped slightly over the two-year period (though still representing more than 95 percent of total employment) and the number of private employees per firm dropped from 20.4 to 18.5 – possibly attributable to gains in productivity per worker.

The Route 1&9 Corridor saw a rebound in employment from 2006 to 2008, adding 2,911 jobs and increasing total employment by 15.5 percent over the two-year period (Figure L). The largest gains in jobs occurred for workers 29 years of age and younger (17.7 percent) and workers 55 and older (38.4 percent). The 30 to 54 year old worker cohort, conversely, grew relatively slower (6.6 percent) over the same period.







Between 2004 and 2006, total primary employment within Union County grew by 2.3 percent (5,058 jobs), but abruptly shed 9,500 jobs from 2006 to 2008 (4.2 percent of its total primary jobs), as exhibited Figure M. Employment loss, as a percentage change, was greatest for workers aged 30 to 54 over the 2004 to 2008 period, while workers 55 years and older realized relatively strong increased employment shares over the same period.

Unlike the Route 1&9 Corridor, Union County had a smaller percentage of workers employed in the private sector in 2004 (84.2 percent versus 98.3 percent), and average employment per private firm was 14.2 workers versus 20.4 workers. The number of jobs earning less than $40,000 per year declined over the 2004 to 2008 time period, with the greatest job losses, percentage wise, concentrated in the $1,250 per month or less category – pay categories reflective of low-skilled service employment. Jobs paying greater than $40,000 per year saw

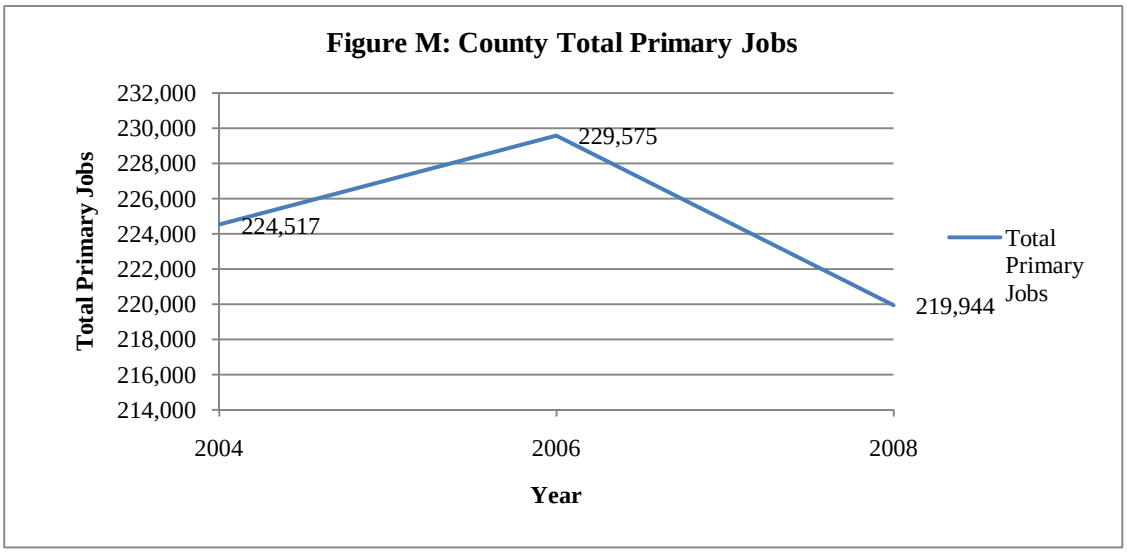
relatively significant growth (8.8 percent) over the 2004 to 2006 time period, before declining by three-percent over the 2006 to 2008 period – the 2004 to 2006 increase in higher wage jobs is consistent with an increase in professional service and manufacturing employment within Union County during the two-year period.

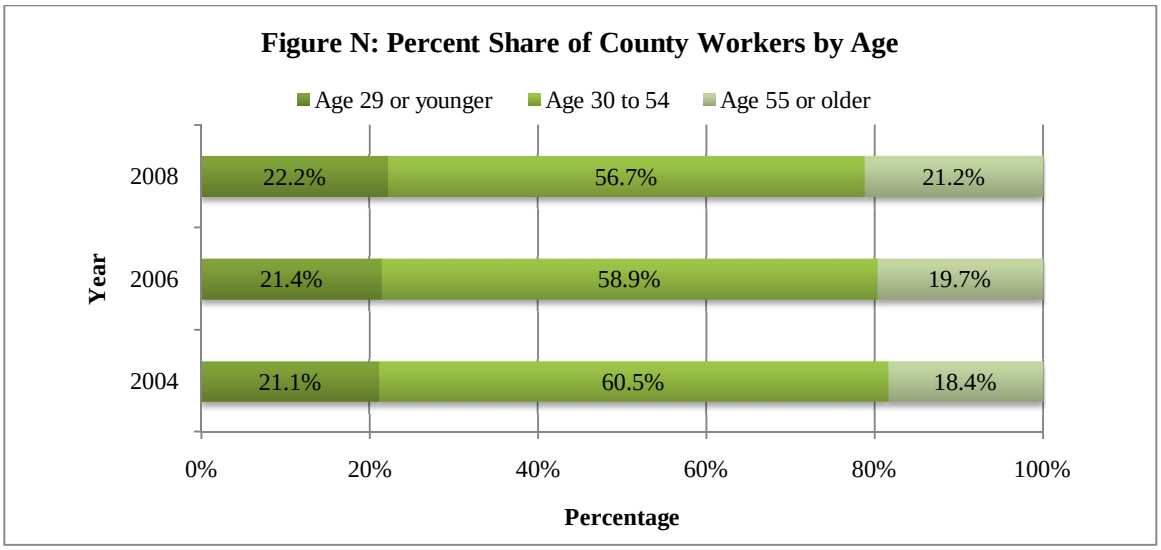
Figure B-2: Union County Employment Profile, 2004-2008

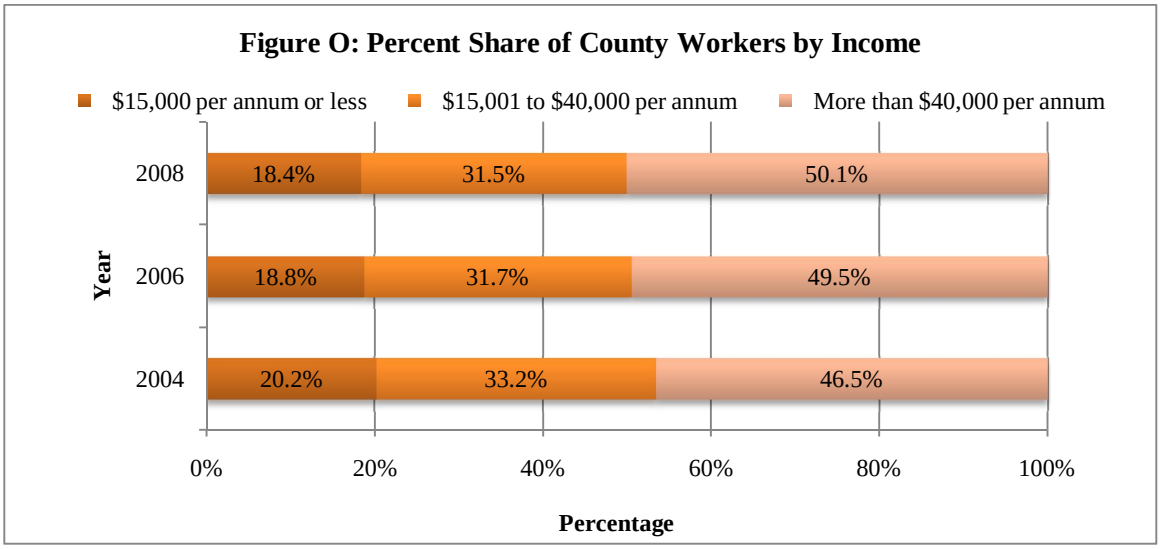
	2004		2006		2008		Percentage Change 2004-06	Percentage Change 2006-08
Total Primary Jobs	224,517		229,575		219,944		2.3%	-4.2%
Jobs by Worker Age								
29 or younger	47,347	21.1%	49,085	21.4%	48,725	22.2%	3.7%	-0.7%
30 to 54	135,850	60.5%	135,245	58.9%	124,639	56.7%	-0.4%	-7.8%
55 or older	41,320	18.4%	45,245	19.7%	46,580	21.2%	9.5%	3.0%
Jobs by Earnings								
$1,250 per month or less	45,452	20.2%	43,122	18.8%	40,550	18.4%	-5.1%	-6.0%
$1,251 to $3,333 per month	74,647	33.2%	72,806	31.7%	69,185	31.5%	-2.5%	-5.0%
More than $3,333 per month	104,418	46.5%	113,647	49.5%	110,209	50.1%	8.8%	-3.0%

			Percentage Change 2004-06
Total Private Employers	13,291	14,024	5.5%
Total Private Employment	189,006	194,327	2.8%
Average Employment/Firm	14.2	13.9	-2.6%

Source: U.S. Census Bureau; 4ward Planning LLC 2010







Tables B-3 and B-4 exhibit the top five PMA industries by employment for 2008 in both the Route 1&9 Corridor and Union County. In both geographies, manufacturing, retail trade, and health care and social assistance were three of the largest employment sectors in 2008. However, there were several differences between the two geographies, in terms of the 2008 industry makeup and employment trends from 2004 to 2008.

Table B-3: Routes 1&9 Corridor Top Employers by Sector, 2008

	2008		*2004*		Change
	Workers	Percent	*Workers*	*Percent*	2004-08
Manufacturing	4,791	22.1%	*3,291*	*17.3%*	45.6%
Retail Trade	3,142	14.5%	*3,066*	*16.2%*	2.5%
Health Care and Social Assistance	2,756	12.7%	*2,485*	*13.1%*	10.9%
Public Administration	2,382	11.0%	*2,501*	*13.2%*	-4.8%
Administration & Support, Waste Management and Remediation	1,610	7.4%	*915*	*4.8%*	76.0%

Source: U.S. Census Bureau; 4ward Planning LLC 2010

Table B-4: Union County Top Employers by Sector, 2008

	2008		*2004*		Change
	Workers	Percent	*Workers*	*Percent*	2004-08
Retail Trade	27,338	12.4%	*28,090*	*12.5%*	-2.7%
Health Care and Social Assistance	24,852	11.3%	*24,341*	*10.8%*	2.1%
Manufacturing	24,356	11.1%	*41,270*	*18.4%*	-41.0%
Educational Services	21,484	9.8%	*20,898*	*9.3%*	2.8%
Professional, Scientific, and Technical Services	15,222	6.9%	*15,417*	*6.9%*	-1.3%

Source: U.S. Census Bureau; 4ward Planning LLC 2010

For example, the manufacturing sector within the Route 1&9 Corridor was the top employer in both 2004 and 2008; and despite losing jobs from 2004 to 2006, the 2004 to 2008 period saw significant employment growth of 45.6 percent in this industry sector. Manufacturing's share of total employment in the Route 1&9 Corridor also increased over 2004 to 2008 time span from 17.3 to 22.1 percent. Union County, by comparison, experienced a 41.0 percent loss in manufacturing jobs from 2004 to 2008 and its percentage share of total employment decreased from 18.4 percent to 11.1 percent over the four-year period.

Other industry bright spots within the Route 1&9 Corridor over the 2004 to 2008 time period include:

- Healthcare and Social Assistance Employment (increasing by approximately 11 percent over the 2004 to 2008 period)
- Administration and Support, Waste Management Employment (increasing by 76 percent over the 2004 to 2008 time period)

Industry employment growth for Union County was greatest in Healthcare and Social Assistance (2.1 percent) and Educational Services (2.8 percent) over the 2004 to 2008 time period.

LABOR SHED ANALYSIS

Examining the geospatial relationship between workers' place of employment and their residences can provide critical insight for understanding prospective demand for housing, transportation, and consumer services. Due to its proximity to two major cities and centralized location in the heavily populated region, the Route 1&9 Corridor and Union County as a whole attract workers from a wide range of locations in New Jersey and surrounding states.

The U.S. Census Bureau's OnTheMap 4 program was utilized to identify area of residence for workers employed within the Route 1&9 Corridor and Union County. As illustrated by Table B-5, the majority of workers employed within the corridor (86.5 percent) reside within New Jersey. Not surprisingly, Union County is home to nearly 36 percent of workers who are employed in the corridor. New York City, which is split between several counties, is also home to a number of corridor workers: in 2008, 909 (4.1 percent) of workers in the corridor resided in one of New York City's five boroughs, according to U.S. Census and New Jersey Labor Data statistics. Additionally, 23.5 percent of workers in the Route 1&9 Corridor reside in one of the three study area cities – Elizabeth, Linden or Rahway.[3]

Table B-5: Routes 1&9 Corridor - Counties of Worker Residence, 2008

	Count	Share
Union County, NJ	7,801	35.9%
Middlesex County, NJ	3,277	15.1%
Essex County, NJ	2,321	10.7%
Hudson County, NJ	1,198	5.5%
Monmouth County, NJ	1,114	5.1%
Somerset County, NJ	800	3.7%
Ocean County, NJ	679	3.1%
Bergen County, NJ	654	3.0%
Morris County, NJ	523	2.4%
Passaic County, NJ	415	1.9%
All Other Locations	2,926	13.5%
Total	21,708	100.0%

Source: U.S. Census Bureau; 4ward Planning LLC 2010

Table B-6 shows the top ten counties of worker residence for Union County. The results here are very similar to those for the Route 1&9 Corridor. Residents of Elizabeth, Linden, and Rahway

[3] The labor shed data for the Linden-Rahway-Elizabeth aggregate were very similar to the data for the corridor in terms of the allocation of workers by county of residence. Therefore, an additional analysis for the three cities is not included here.

comprise a smaller percentage share (13.0 percent) of Union County workers than their share (35.9 percent) of corridor workers.

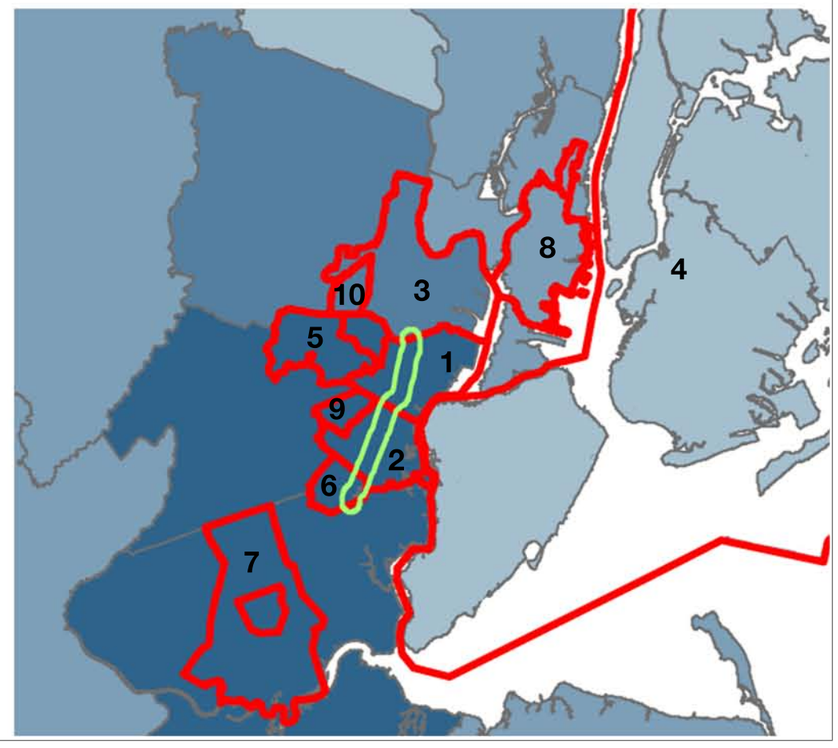
Table B-6: Union County - Counties of Worker Residence, 2008

	Count	Share
Union County, NJ	75,731	34.4%
Middlesex County, NJ	28,832	13.1%
Essex County, NJ	26,087	11.9%
Somerset County, NJ	11,938	5.4%
Morris County, NJ	11,235	5.1%
Hudson County, NJ	9,210	4.2%
Monmouth County, NJ	8,993	4.1%
Bergen County, NJ	7,119	3.2%
Ocean County, NJ	5,448	2.5%
Passaic County, NJ	5,237	2.4%
All Other Locations	30,114	13.7%
Total	219,944	100.0%

Source: U.S. Census Bureau; 4ward Planning LLC 2010

The following map shows the counties of residence for workers with jobs within the Routes 1&9 Corridor study area. Over 40 percent of workers live in one of the top ten municipalities of worker residence, which all are in close proximity to the study area. However, many workers commute to the 1&9 Corridor from all over New Jersey and elsewhere along the Northeast Corridor; the map illustrates the breadth of this geography.

Place	Count	Share
1 - Elizabeth, NJ	3,451	15.6%
2 - Linden, NJ	1,134	5.1%
3 - Newark, NJ	1,070	4.8%
4 - New York, NY	909	4.1%
5 - Union, NJ	514	2.3%
6 - Rahway, NJ	506	2.3%
7 - Edison, NJ	485	2.2%
8 - Jersey City, NJ	453	2.1%
9 - Roselle, NJ	375	1.7%
10 - Irvington, NJ	296	1.3%



Analysis area: Routes 1&9 Corridor

Top ten places by worker residence

Count of Workers

- 0 - 49
- 50 - 499
- 500 - 1,249
- 1,250 - 2,999
- 3,000 +

0 5 10 20 30 40 Miles

...

Labor Shed Analysis: Routes 1&9 Corridor Union County, New Jersey

Source: NJDEP, PENNDOT, NYS Office of Cyber Security, OnTheMap 4
Note: This map was developed using various data sources, but this secondary product has not been verified and is not State-authorized.

LABOR AND INDUSTRY TREND ANALYSIS – SUMMARY

Employment within the Route 1&9 Corridor study area seems to have rebounded well from losses sustained through the closing of the GM plant in Linden. The Corridor showed healthy job growth from 2006 to 2008 in contrast to net job losses for the whole of Union County over the same period.

The manufacturing sector shed nearly 17,000 jobs in Union County from 2004 to 2008—a decline of 41.0 percent—despite growth in the Corridor of 45.6 percent (1,500 jobs).

Both the 29-and-younger and 55-and-older cohorts increased their shares of total employment for both the Corridor and County from 2004 to 2008. Incomes generally increased for both geographies over the same period.

While most workers within the Corridor and the County live within Union and its neighboring Counties, the geographies attract workers from a wide range of places within New Jersey, New York, and Pennsylvania.

Memorandum

To: Jennifer Grenier, Parsons Brinckerhoff

From: Mark Bolen, Senior Analyst, 4ward Planning LLC

CC: Todd Poole, Managing Principal, 4ward Planning LLC

Date: June 1, 2011

Re: Highway Improvements and Economic Development

Recommendations

Based on the below research, 4ward Planning recommends that Union County officials, in collaboration with officials from the cities of Elizabeth, Linden, and Rahway, explore the ability to negotiate whole improvements with various developers along the seven-mile Route 1&9 Corridor, as a means of helping fund prospective urban design improvements along the corridor. Either the creation of a Transportation Development District or, less likely, establishing a Tax Increment Financing scheme is worthy of further consideration. However, the challenges to pursuing funding from these mechanisms may be too arduous to warrant their pursuit.

Background

Highway construction and improvements often impact economic development and real estate values. Sometimes the principal goal of highway improvements is to help spur economic development, while other times projects are more focused on safety and traffic alleviation. The planned highway improvements along the Route 1&9 Corridor in Union County, New Jersey fall into the latter category. They include several types of safety and traffic improvements, including:

- Intersection upgrades to target safety issues
- Lighting improvements
- Pedestrian safety and accessibility improvements
- Signal timing upgrades for capacity and safety
- Freight connectivity
- Overall corridor signing improvements (for freight and regional travelers)
- U-Turn/Directional signing
- Modifications to I-278/Morse Mill Road/ConacoPhillips Intersection

These proposed enhancements are not driven primarily by economic development goals. However, the roadway improvements still have the potential to create positive indirect and induced impacts in the surrounding area.

4ward Planning reviewed a number of studies on the link between highway improvements and local economic development and real estate values, as well as tools for assessing highway improvement impacts. We also performed a cursory analysis of existing businesses within the Route 1&9 Corridor to evaluate the potential impact of highway improvements to existing businesses on an order-of-magnitude scale. Finally, we reviewed two existing funding mechanisms in New Jersey, tax increment financing (TIF) and transportation district designation (TDD), as prospective funding sources for urban design improvements. What follows is a summary of our findings.

Highway Improvements and Economic Development

Overview

Benefits of Highway Improvements

Highway improvements have the potential to impart several measurable benefits for the local and/or regional economy. The Wisconsin Department of Transportation lists at least four major potential benefits[1]:

- Time savings (cost savings) realized by businesses and worker commuter trips,
- Safety and geometric improvements facilitate freight commodity flows and production schedules,
- Enhancing and promoting visitor and tourist travel experience to the state, and
- Local rehabilitation and maintenance projects improve access and traffic flow for local businesses and help to attract new business to the region

A summary of the literature on economic development and highway improvements also yields several other areas of benefit[2]:

- There is a correlation between highway access and higher employment and wage levels
- As highway stock improves, costs typically decrease for most industries
- Cost savings and lower per unit costs help businesses grow and may be passed on to consumers
- Highway improvements tend to increase adjacent property values and development densities

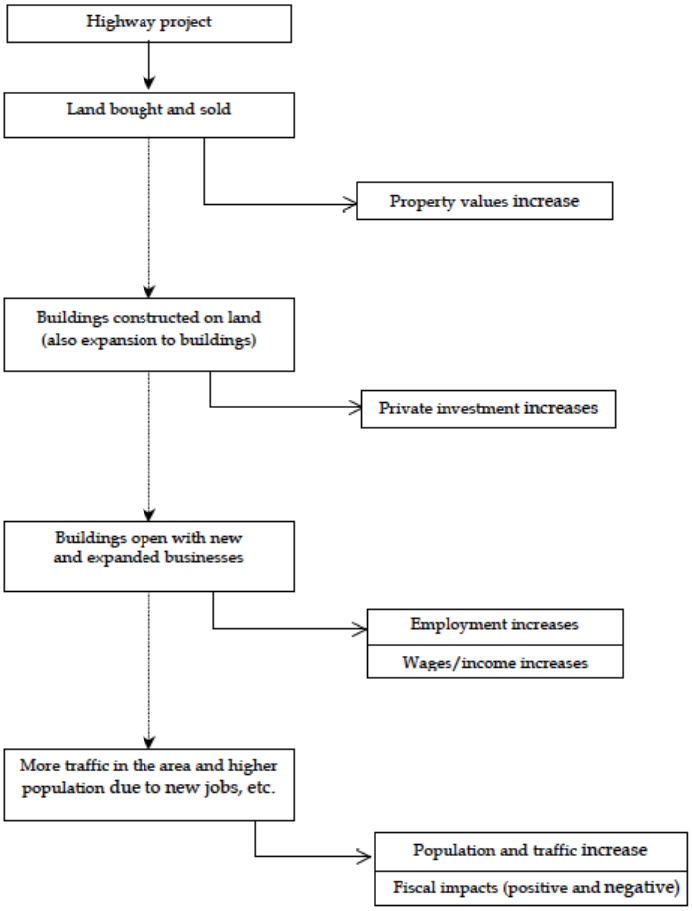
However, the literature suggests that the extent to which there are indirect and induced benefits from highway improvements is dependent on a number of variables and conditions. Put another way, not every highway improvement project will necessarily spur across-the-board, measurable economic development. For example, industries that are freight-intensive (such as retail and manufacturing) generally likely will benefit more from highway improvements than other industries. Highway development also can contribute to decentralization and lower density development patterns, which could negate some of the economic benefits.

Further, while there is a correlation between highway improvements and many of these benefits, it generally is more difficult to demonstrate causality (although the Federal Highway Administration's (FWHA) Highway Impact Methodology described below outlines how post-improvement analysis can help identify causal links between improvements and economic benefits). Finally, there is a consensus that highway improvements are sometimes necessary but not sufficient on their own to promoting economic development.

FHWA's Highway Corridor Analysis Methodology

The FHWA's 2001 report, "Using Empirical Information to Measure the Economic Impact of Highway Investments, Volume 2: Guidelines for Data Collection and Analysis"[3] outlines a fairly comprehensive methodology for evaluating impacts for three types of highway development: regional studies, highway corridor studies, and local studies.

The report breaks down impact assessment into three main parts: measuring gross change in economic growth, distinguishing net economic change from existing trends, and establishing causal relationship of the highway to economic changes. It also outlines several impact measures and their data sources (including property demand, private investment, and business growth metrics), as well as the time dimension for the evolution of the impacts. Figure 1 demonstrates the typical time dimension aspect of the economic impacts of a highway improvement project.



As mentioned above, the report also provides a methodology for establishing causal links between highway improvements and economic development. It outlines three important aspects to establishing causality:

- Gross Change Trends – Was there a change between pre-project economic growth and post-project economic growth?
- Net Impact Comparisons – Is the growth in the study area any different from what was happening in other comparable places?

- Behavioral Cause – Why is growth different after the project and different from other areas?

The assessment methods outlined in the FHWA report require data collection both before and after the improvements are completed in order to identify changes. They also require interviews and surveys with local business-owners and government and planning officials. In the future, if the county wishes to more fully evaluate the economic impacts of the improvements to the Route 1&9 Corridor, they may consider utilizing the methodology outlined for highway corridor studies in this report.

Software Tools for Assessing Highway Improvement Impacts

Iacono and Levinson (2009) examined several software tools that are used for estimating highway improvement impacts[4]. They include the following:

- MicroBENCOST
- SPASM (Sketch Planning Analysis Spreadsheet Model)
- STEAM (Surface Transportation Efficiency Analysis Model)
- SMITE (Spreadsheet Model for Induced Travel Estimation)
- SCRITS (Screening for Intelligent Transportation Systems)
- HERS (Highway Economic Requirements System)

The authors offer some caveats to the usefulness of these analysis methods. For one, while each tool offers a cost-benefit analysis for highway improvements of different kinds and at different scales, none capture the impact of infrastructure on actual economic development. Cost-benefit models also cannot truly capture all of the impacts of a particular project, and there is a significant amount of uncertainty, assumption, and risk underpinning the analyses. Nevertheless, one or more of these software tools may be useful for analyzing impacts of the improvements to the Route 1&9 Corridor.

Descriptions of these software tools are located in Appendix A.

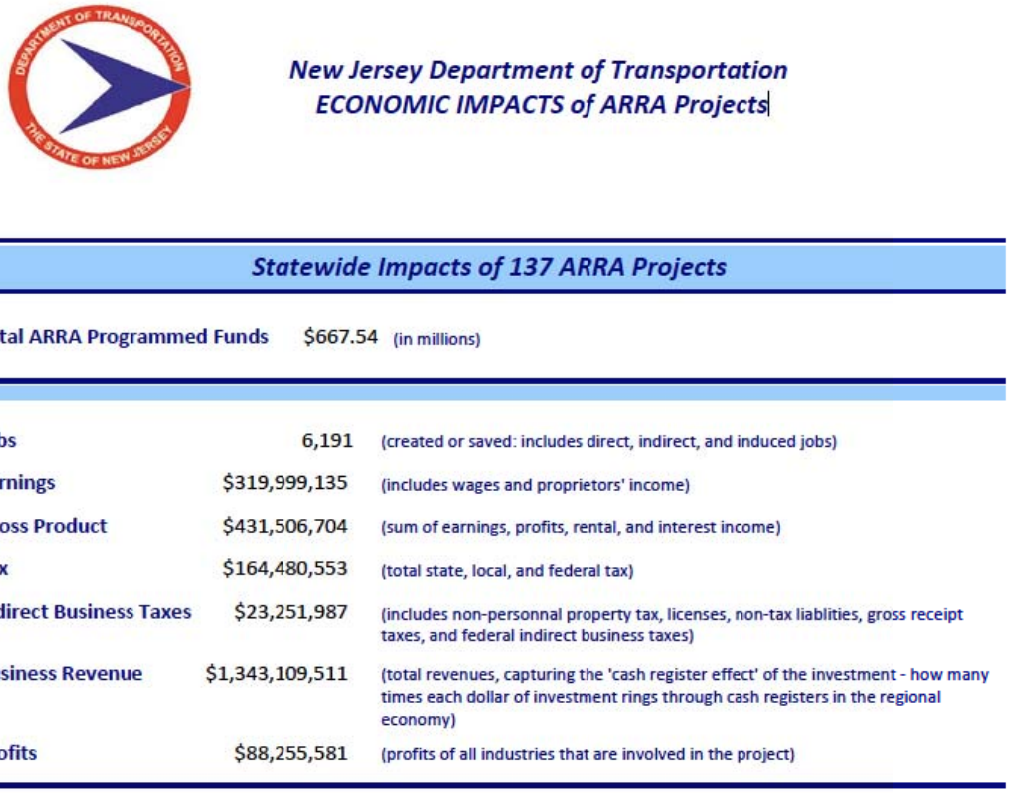
Potential Economic Impacts for the Route 1&9 Corridor

Without conducting a more detailed economic impact study, it is impossible to ascertain the true potential impacts of highway improvements on local economic development. However, analyzing modeled impact from other highway improvement projects and examining existing businesses in the study area can provide some insight into the potential economic impacts for the Route 1&9 Corridor.

Economic Impacts of ARRA Highway Projects in New Jersey

The American Recovery and Reinvestment Act (ARRA) of 2009 set aside billions of dollars in federal funding for infrastructure improvements across the country. Part of the requirements for obtaining ARRA funds includes an economic impact assessment.

The NJ DOT maintains economic impact data on all of the ARRA-funded projects throughout the state[5]. Many of these projects are small-scale roadway improvement projects, including road rehabilitation, repaving, pedestrian right-of-way improvements, and bridge improvements. Figure 2 contains the statewide economic impact summary for these projects.



New Jersey Department of Transportation
ECONOMIC IMPACTS of ARRA Projects

Statewide Impacts of 137 ARRA Projects		
Total ARRA Programmed Funds	$667.54	(in millions)
Jobs	6,191	(created or saved: includes direct, indirect, and induced jobs)
Earnings	$319,999,135	(includes wages and proprietors' income)
Gross Product	$431,506,704	(sum of earnings, profits, rental, and interest income)
Tax	$164,480,553	(total state, local, and federal tax)
Indirect Business Taxes	$23,251,987	(includes non-personnal property tax, licenses, non-tax liablities, gross receipt taxes, and federal indirect business taxes)
Business Revenue	$1,343,109,511	(total revenues, capturing the 'cash register effect' of the investment - how many times each dollar of investment rings through cash registers in the regional economy)
Profits	$88,255,581	(profits of all industries that are involved in the project)

Figure 2: New Jersey DOT: Economic Impacts of ARRA Highway Projects

(Source: NJ DOT; http://njdottelus.njit.edu/telus/images/ARRA%20Projects.pdf)

As of January 2010, there were 137 total ARRA-funded highway projects in the state. These projects created or maintained nearly 6,200 jobs, raised $187 million in direct taxes and indirect business taxes, and generated over $1.3 billion in business revenue throughout the state.

Each project, therefore, on average created or maintained 45 jobs, raised $1.4 million in taxes, and generated $9.8 million in business revenue. Given that the average ARRA-funded project was smaller in scale than the proposed Route 1&9 improvements, the economic benefits of the Route 1&9 improvements may in fact be substantial.

Corridor Business Assessment

U.S. Highways 1 and 9, which pass through the New Jersey cities of Linden, Rahway, and Elizabeth, currently serve a substantial number of commercial and industrial businesses along the corridor. Based on empirical research concerning highways, nationally, the safety, traffic, and access improvements proposed for along the corridor passing through Linden, Rahway and Elizabeth would likely yield meaningful local and regional economic benefits through increased efficiency, easier customer access, and decreased operating costs.

An analysis of existing businesses within the corridor was conducted using Infogroup's Sales Genie online proprietary business database which is the source for business listing data contained in the top web search engines (including Google) and most car navigation systems.[6]

4ward Planning defined a quarter-mile area or buffer around Route 1&9 between Randolph Avenue in Rahway and McLellan Street in Elizabeth (see Figure 3). It is reasonable to assume that most businesses located within the quarter-mile buffer area rely on the highway to some extent (shipment or receiving of goods, access by customers and employees, etc.), and, therefore, would likely benefit, to varying degrees, from the planned safety improvements.

The study area in Figure 3 contains an estimated 1,206 commercial and industrial businesses. As of May 2011, these businesses employed over 12,000 workers and generated estimated total local annual sales of approximately $2.5 billion (in 2011 dollars). Many of the most frequently found businesses within the buffer area, including full-service restaurants (63 businesses), supermarkets and grocery stores (26), automotive repair (25), used car dealers (21), and several others (Table 1), would likely benefit from proposed highway safety improvements. For example, if the gains in business efficiency, lower operating costs and increased accessibility resulting from proposed improvements along Routes 1 and 9 resulted in a five percent increase over current sales and employment metrics attributable to corridor businesses, an additional $1.25 million in annual sales (in 2011 dollars) and over 600 new jobs would be realized.

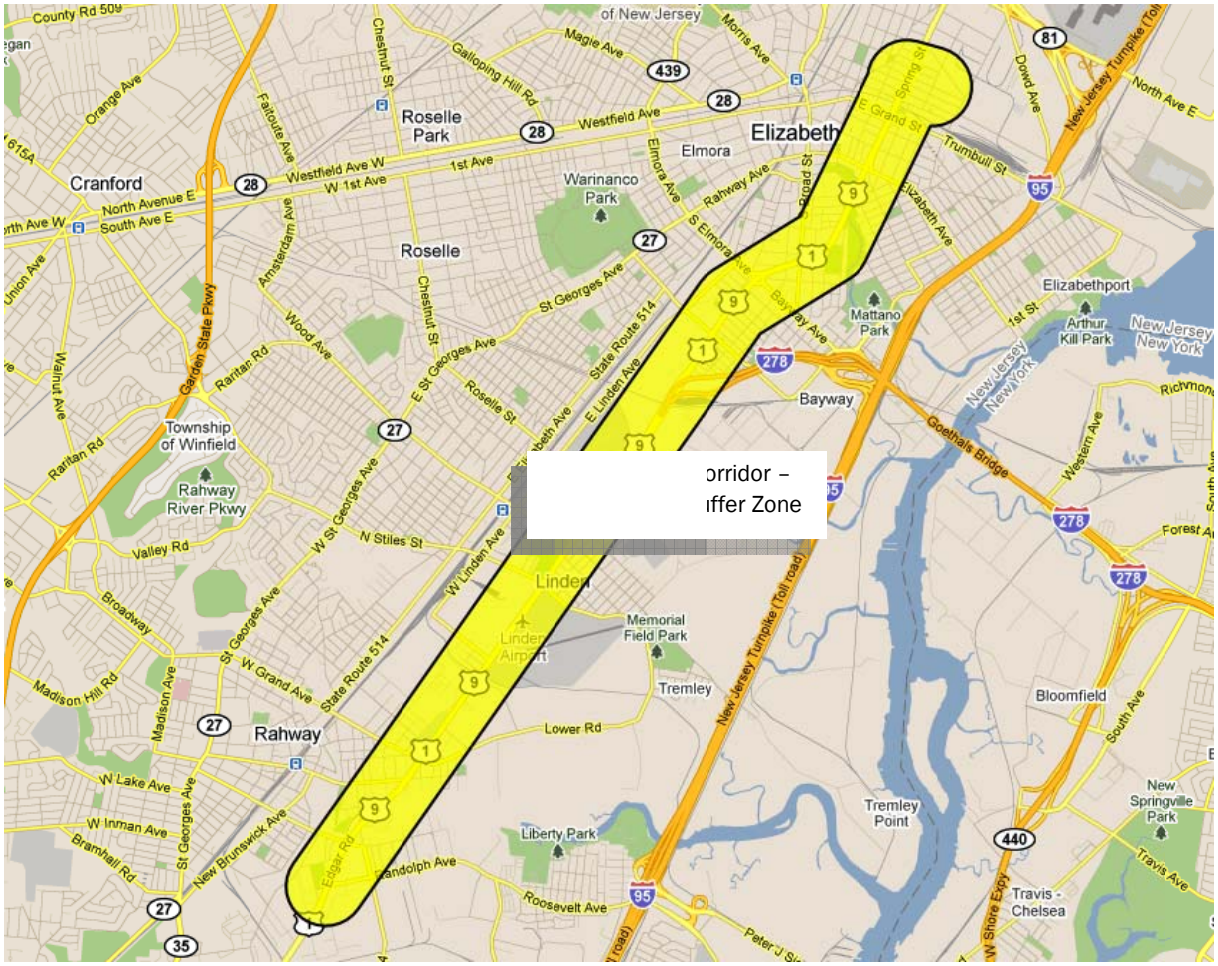


Figure 3: Corridor Business Assessment Study Area

(Source: Salesgenie.com; Google Maps; 4ward Planning LLC 2011)

Table 1: Most Frequently Found Businesses within Corridor Study Area

Business Type (NAICS Description)	Number of Businesses
Full-Service Restaurants	63
Religious Organizations	39
Unclassified Establishments	38
Beauty Salons	33
Supermarkets & Other Grocery Stores	26
General Automotive Repair	25
Used Car Dealers	21
Hotels & Motels Except Casino Hotels	20
Offices Of Real Estate Agents & Brokers	20
Plumbing & HVAC Contractors	20
New Single-Family General Contractors	19
Offices Of Physicians Except Mental Health	18
Offices Of Lawyers	17
Furniture Stores	16
Offices Of Dentists	15
Legislative Bodies	14
Other Specialized Trucking Long-Distance	14
Barber Shops	13
Limited-Service Restaurants	12
Beer Wine & Liquor Stores	11
Convenience Stores	11
Other Gasoline Stations	11

Source: Salesgenie.com; 4ward Planning LLC 2011

Case Studies

The difficult nature of estimating specific economic benefits from highway enhancements has limited much of the discussion to the time and safety considerations listed above. While a number of transportation researchers and agencies have worked and are working to develop frameworks for estimating economic development benefits, much of this work only has come about more recently.

In addition, many of the studies completed in this area focus on rural highway development as opposed to urban or suburban highway improvements. Accordingly, there is not a wealth of relevant case studies that demonstrate a clear relation of highway improvements to measured economic development. However, there are some instances where studies have demonstrated ways in which improved roadways (e.g., travel enhancements) explicitly improved local economic development. Below are three case study summaries concerning the linkage between highway improvements and economic development benefits.

The Revitalize Iowa's Sound Economy (RISE) Program

The "Revitalize Iowa's Sound Economy" (RISE) Program provides funding for highway projects that specifically have long-term development potential. The Iowa State University Institute for Transportation completed an assessment of 160 projects funded between 1986 and 1993. The typical project involved paving segments of existing roads, the average length of which was 0.8 miles. The assessment found that approximately 70 percent of projects met their development goals. Additionally, many of the projects experienced other economic benefits that were not part of the original development goals:

- New businesses have relocated to improvement sites
- Existing freight-dependent firms have experienced logistical savings
- Commuter travel has become more efficient
- Improvements have created alternate links to primary roads, benefiting firms away from the project site as well

The RISE Local Development Program case study demonstrates that even small-scale roadway improvements can be used to achieve development targets.[7]

Superstition Freeway (US-60) in Mesa, Arizona

A study on the Superstition Freeway (US-60) in Mesa, Arizona examined property values related to the freeway development.[8] The freeway was completed in 1985, and several improvements were added near the completion of the project:

> These include a vegetated right-of-way barrier between freeway and residential property lines, a barrier wall 8 to 10 ft high for noise mitigation and privacy for abutting residential locations, and pedestrian walkways connecting abutting neighborhood parks and school sites in some neighborhoods. During subsequent widening and improvements, the Arizona Department of Transportation adopted the policy of raising or reconstructing existing noise walls along the corridor, or adding new noise walls as necessary, to mitigate noise.

The authors used property sales data to estimate the net impact of the freeway development on the corridor. The study found that while freeway construction may have an adverse impact on some properties, in the aggregate property values tend to rise after the improvements. It also found that the freeway improvements generally increased the value of commercial and multi-family residential properties while decreasing the value of single-family residential homes.

Wisconsin State Highway 29

Highway 29 is a 182-mile four-lane highway running across the state. It was upgraded to mostly expressway from a two-lane road between 1988 and 2005. A full study titled, "Economic and Land Use Impacts of State Trunk Highway 29" was completed by the Wisconsin Department of Transportation (WisDOT) in 2004.[9]

While this project differs from the planned improvements to Route 1&9 in several obvious ways, there were several observed impacts from the development of the highway:

- Faster travel times and safer roadway conditions
- Accelerated planning efforts to expand industrial and commercial development by communities along the highway
- A 55 percent increase in the number of businesses along the highway from 1995 to 2003
- An 11.3 percent increase in employment from 1996 to 2001, higher than the statewide growth of 8.7 percent over the same period

WisDOT also compared changes along Highway 29 to the two-lane parallel Highway 10 from 1990 to 2003. While the comparative findings were somewhat underwhelming, they did demonstrate much faster growth in new businesses and a slightly faster rate of cumulative equalized property value increase along Highway 29 when compared to the smaller highway.

Prospective Funding Mechanisms

Tax Increment Financing (TIF)

For many local governments, tax increment financing (TIF) has become an integral part of funding various types of improvements. TIF allows development projects to be financed by future tax revenues raised by the development.

There is potential for urban design improvements along the corridor to stimulate both new commercial and residential development, and increased local property values. Based on the correlation between highway improvements and increased local property values (especially commercial properties), TIF could be explored as a potential financing source for urban design improvements along the Route 1&9 corridor, as future incremental tax dollars could be used to pay for the improvements.

TIF in New Jersey

The current TIF program in New Jersey was established in 2009, replacing the earlier, less accessible program originally enacted in 2002. Under the new TIF program, any public or private developer can apply to either the state or the municipality for funding for "qualifying economic redevelopment and growth grant incentive areas."

Draikiwicz and Galano of Gibbons P.C.[10] outline the requirements for qualifying projects in New Jersey:

> A developer must demonstrate a project financing gap in order to qualify for such grants. A project financing gap is demonstrated by a developer by certifying that additional capital cannot be raised from other sources, after the developer has contributed at least 20% of its own capital to the project and has made all good faith attempts to secure additional capital from investors and financial entities. Up to 75% of the projected annual incremental State and municipal revenues from the project may be pledged towards the redevelopment incentive grant. In either case, redevelopment incentive grants to a developer cannot exceed 20 years in duration. Furthermore, the combined amount of reimbursements under redevelopment incentive grant agreements between a developer and the State or municipality shall not exceed 20% of the total project costs.
>
> The process for obtaining a municipal redevelopment incentive grant begins with the submission of an application to the municipality which must receive final approval from the Local Finance Board in the New Jersey Division of Local Government Services. However, a municipality only may submit for final approval for municipal incentive grants for (i) the construction of infrastructure improvements in the public right-of-way, or (ii) publicly owned facilities. The Local Finance Board, in deciding whether or not to approve a municipal incentive grant will consider, among other factors: (i) the economic feasibility of the redevelopment project, (ii) the likelihood that the redevelopment project will, upon completion, be capable of generating new tax revenue in an amount in excess of the amount necessary to reimburse the developer for project costs incurred, and (iii) the degree to which the redevelopment project enhances and promotes job creation and economic development. Additionally, the chief financial officer of the municipality must make a finding that the incremental revenues to be realized from the redevelopment project will be in excess of the amount necessary to reimburse the developer for its project financing gap. Such a finding must be based upon appropriate documentation and calculations supporting the decision. Additionally, the developer must indicate on its application whether it is also applying for a State redevelopment incentive grant. Further, municipal redevelopment incentive grants are made directly to the developer and can be derived from the municipality's incremental property taxes, payments in lieu of taxes, payroll taxes, sales and excise taxes, parking taxes, hotel and motel taxes and other local taxes.

The process for obtaining a State redevelopment incentive grant begins with the submission of an application to the New Jersey Economic Development Authority (the "EDA"), which in conjunction with the State Treasurer, must make a finding that the State revenues to be realized from the redevelopment project will be in excess of the amount necessary to reimburse the developer for its project financing gap. Additionally, the EDA, in deciding whether or not to approve a State incentive grant will consider, among other factors: (i) the economic feasibility of the redevelopment project, (ii) the likelihood that the redevelopment project will, upon completion, be capable of generating new tax revenue in an amount in excess of the amount necessary to reimburse the developer for project costs incurred, and (iii) the degree to which the redevelopment project enhances and promotes job creation and economic development. Further, State redevelopment incentive grants are made directly to the developer and can be derived from the State's incremental income taxes, corporate business tax, public utility franchise tax, utility tax, sales and use taxes and certain other State taxes.

TIF Case Study: Traverse City, Michigan

Traverse City, located in northwest Michigan, completed a downtown redevelopment plan using a TIF financing scheme. The plan encompassed a number of both private and public development improvements, including new mixed use development, renovation of existing buildings, a new parking structure, landscaping and waterfront improvements, and streetscape enhancements.

The Traverse City Downtown Development Authority (DDA) provided TIF funds for the redevelopment project with the expectation of receiving payments from the future incremental tax revenues generated by the development. The TIF financing procedure[11] involved compiling both the current assessed values (as of 1997) of all real and personal property in the development area, as well as the projected assessed values of all improvements completed by 2027 (30 years from the start date).

Total assessed value in 1997 was $32.9 million; by 2027, it was projected to reach $160.6 million. Utilizing the captured value (the difference between the projected total assessed value for each year and the 1997 assessed value) was used to calculate the estimated annual tax increment revenue to be paid by the treasurer to the Downtown Development Authority. The incremental tax revenues are projected to total $57.3 million through 2027, which is expected to cover the development costs over the 30-year period.

Transportation Development District (TDD) Designation

Another potential funding option is the designation of the Route 1&9 Corridor as a Transportation Development District (TDD). TDDs were created under the New Jersey Transportation Development District Act of 1989. They provide for the establishment of public-private partnership to finance infrastructure improvements deemed necessary to keep pace with development.

A study by Kristine M. Williams of the Center for Urban Transportation Research in Tampa, FL titled, "Alternative Funding Strategies for Improving Transportation Facilities"[12] provides the following list of pros and cons for utilizing TDD:

Pros

- Broad authority and flexibility in achieving funding for a transportation project
- Equitable – both public and private sector contribute in the designated area and smaller developments pay their fair share as well
- Encourages collaboration across local governments in a region to achieve projects that could not be done individually
- Not limited to roadway improvements, could fund transit improvements and support transit oriented development around stations
- Can help "cut through" bureaucracy and accelerate transportation projects
- Allows for greater innovation by contractors with regard to design and construction than may be allowed under state specifications.

Cons

- Growth may not occur as planned; difficulty matching assessed revenues to project costs. Special assessments have been problematic in some areas.
- Growth may occur at a higher density or intensity than desired by the local community
- Cumbersome to form and administer
- Limited to high growth areas
- Public may not be adequately involved

TDD Case Study: I-95/295, Mercer County, NJ

The report by Williams also outlines the following case study for a TDD in Morris County, New Jersey:

> The I-95/295 Corridor in Mercer County, New Jersey was designated a Transportation Development District in 1990. The District encompasses parts of the Townships of Ewing, Lawrence and Hopewell. The TDD designation allows the County to assess development fees for transportation improvements in high growth areas. According to a 2000 study, only four counties in New Jersey have established a Transportation Development District and only the Mercer County TDD is currently operational under the provisions of the legislation.
>
> Mercer County initiated a comprehensive land use/transportation study designed to determine the appropriate development densities and infrastructure needs for its I-95/295 corridor within each of the municipalities. The study process involved a cooperative effort among the county, municipalities and land owners. Government and private-sector representatives took part in a joint planning process to determine a

fee structure, identify needed transportation improvements, and identify available public resources.

The adopted TDD plan identifies transportation infrastructure improvements within the designated district to support anticipated development. The TDD Plan was approved by NJ DOT in 1992 and approved a month later by the Mercer County Board of Chosen Freeholders.

The transportation goals of the TDD are to maintain acceptable traffic flow, protect quality of life for existing residents and make alternatives to single-occupancy automobiles more attractive. The TDD plan describes how these goals will be achieved, prioritizes improvements, and allocates a public and private sector share of the improvement costs. It also established a trip-based fee to be collected. The result, according to County officials, is that both the public and the development community have been sharing equally in the costs of needed improvements. Developers can meet their obligation by paying into a trust fund, donating right of way or constructing improvements.

Funding Recommendations

TIF could be explored as a potential financing source for urban design improvements along the Route 1&9 corridor, as future incremental tax dollars could be used to pay for the improvements. However, due to its dependency on a developer to initiate the redevelopment process, tax increment financing may not be the most appropriate funding mechanism to employ in this instance.

The creation of a TDD along the seven-mile Route 1&9 Corridor may be worth examining. However, there are several things to consider.[13] For one, although many TDDs have been attempted, there are very few operating in New Jersey. Most attempts at creating a TDD have faltered for various reasons. TDDs contain explicit growth criteria, and there are many procedural rules regarding planning and financing that may make the process unfeasible. Therefore, the county and/or municipalities should evaluate the costs and benefits of pursuing a TDD—as opposed to more conventional methods—before committing to the process.

Perhaps the most effective strategy would be conventional negotiation with local developers. Generally it might be more beneficial to negotiate with developers for whole improvements (e.g., improvements at a particular intersection near a redevelopment site) rather than seeking donations for the overall project. Donations only provide for partial improvements, and they come with deadline requirements for work to be completed. Whole improvements, on the other hand, will allow for many of the proposed improvements to occur incrementally and at a lower overall cost to the county and municipalities.

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[9] Leong, Dennis et al. (2004). Wisconsin Department of Transportation. "Economic and Land Use Impacts of State Trunk Highway 29".
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[11] Traverse City Downtown Development Authority. "Tax Increment Financing Plan #97."
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[13] James Lewis of the New Jersey Department of Transportation provided insight into TDD feasibility in the state.

Appendix A: Description of Software Analysis Tools

(Extracted from Iacono, Michael and Levinson, David (2009). "The Economic Impact of Upgrading Roads: Draft Final Report." University of Minnesota Department of Civil Engineering.)

2.1 Software Tools for Impact Analysis

The majority of economic impact studies for highway capacity projects are undertaken using conventional methods. These methods tend to focus on the direct user impacts of individual projects in terms of travel costs and outcomes, and compare sums of quantifiable, discounted benefits and costs. Inputs to benefit-cost analyses can typically be obtained from readily available data sources or model outputs (such as construction and maintenance costs, and before and after estimates of travel demand, by vehicle class, along with associated travel times). Valuation of changes in external, somewhat intangible costs of travel (e.g., air pollution and crash injury) can usually be accommodated by using *shadow price* estimates, such as obtained from FHWA-suggested values, based on recent empirical studies.

The primary benefits included in such studies are those related to reductions in user cost, such as travel time savings and vehicle operating costs (e.g. fuel costs, vehicle depreciation, etc.). Additional benefits may stem from reductions in crash rates, vehicle emissions, noise, and other costs associated with vehicle travel. Project costs are typically confined to expenditures on capital investment, along with ongoing operations and maintenance costs.

A number of economic analysis tools have been developed under the auspices of the Federal Highway Administration (FHWA) permitting different forms of benefit-cost analysis for different types of projects, at different levels of evaluation. Several of these tools are prevalent in past impact analyses, and are described here. However, none identifies the effects of infrastructure on the economy and development.

2.1.1 MicroBENCOST

MicroBENCOST (McTrans, 2007) is a sketch planning tool for estimating basic benefits and costs of a range of highway improvement projects, including capacity addition projects. In each type of project, attention is focused on corridor traffic conditions and their resulting impact on motorist costs with and without a proposed improvement. This type of approach may be appropriate for situations where projects have relatively isolated impacts and do not require regional modeling.

2.1.2 SPASM

The Sketch Planning Analysis Spreadsheet Model (SPASM) is a benefit-cost tool designed for "screening" level analysis. It outputs estimates of project costs, cost-effectiveness, benefits, and energy and air quality impacts. SPASM is designed to allow for comparison among multiple modes and non-modal alternatives, such as travel demand management scenarios. The model is comprised of three modules (worksheets) relating to public agency costs, characteristics of facilities and trips, and a travel demand component. Induced traffic is dealt with through the use of elasticity-based methods, where an elasticity of vehicle-miles of travel (VMT) with respect to travel time is defined and applied. Vehicle emissions are estimated based on calcuations of VMT, trip length and speeds, and assumed shares of travel occuring in cold start, hot start, and hot stabilized conditions. Analysis is confined to a corridor level, with all trips having the same origin, destination and length. This feature is appropriate for analysis of linear transportation corridors, but also greatly limits the ability to deal with traffic drawn to or diverted from outside the corridor. DeCorla-Souza et al. (1996) describe the model and its application to a freeway corridor in Salt Lake City, Utah.

2.1.7 Summary of Software Tools

Many analytical tools, like those described above, are favored due to their relative ease of use and employment of readily available or easily acquired data. However, several characteristics limit their effectiveness in evaluating the effects of new highway capacity. First, they are almost always insufficient to describe the full range of impacts of new highway capacity. Such methods deliberately reduce economic analysis to the most important components, resorting to several simplifying assumptions. If a project adds capacity to a particularly important link in the transportation network, its effects on travel patterns may be felt outside the immediate area. Also, the effects of induced travel, in terms of either route switching or longer trips, may not be accounted for in travel models based on a static, equilibrum assignment of traffic. In the longer term, added highway capacity may lead to the spatial reorganization of activities as a result of changes in regional accessibility. These types of changes cannot typically be accounted for in analysis methods.

Second, there is the general criticism of methods based on benefit-cost analysis that they cannot account for all possible impacts of a project. Benefit-cost methods deliberately reduce economic analysis to the most important components and often must make simplifying assumptions. The project-based methods described here generally do not describe the economic effects of a project on different user or non-user groups. Winners and losers from a new capacity project cannot be effectively identified and differentiated.

Third, a significant amount of uncertainty and risk is involved in the employment of project-based methods. Methods that use benefit-cost techniques to calculate B/C ratios, rates of return, and/or net present values are often sensitive to certain assumptions and inputs. With transportation infrastructure projects, the choice of discount rate is often critical, due to the long life of projects and large, up-front costs. Also, the presumed value of travel time savings is often pivotal, since it typically reflects the majority of project benefits. Valuations of travel time savings vary dramatically across the traveler population, as a function of trip purpose, traveler wage, household income, and time of day. It is useful to test several plausible values.

Assessment procedures in the UK and other parts of Europe have moved towards a multi-criteria approach, where economic development is only one of several appraisal criteria. Environmental, equity, safety, and the overall integration with other policy sectors are examined in a transparent framework for decision makers. In the UK, the Guidance on the Methodologies for Multi-Modal Studies provides such a framework (Department of Transport and the Environment, 2000). These procedures require a clear definition of project goals and objectives, so that actual effects can be tied to project objectives, as part of the assessment procedure. This is critical for understanding induced travel effects. Noland Noland (2007)has argued that this implies that comprehensive economic assessment, including estimation of land valuation effects, is the only way to fully assess the potential beneficial impacts of projects.

2.1.3 STEAM

The Surface Transportation Efficiency Analysis Model (STEAM) is a planning-level extension of the SPASM model, designed for a fuller evaluation of cross-modal and demand management policies. STEAM was designed to overcome the most important limitations of its predecessor, namely the assumption of average trip lengths within a single corridor and the inability to analyze systemwide effects. The enhanced modeling capabilities of STEAM feature greater compatibility with existing four-step travel demand models, including a trip table module that is used to calculate user benefits and emissions estimates based on changes in network conditions and travel behavior. Also, the package features a risk analysis component to its evaluation summary module, which calculates the likelihood of various outcomes such as benefit-cost ratios. An overview of STEAM and a hypothetical application are given by DeCorla-Souza et al. (1998).

2.1.4 SMITE

SMITE (Spreadsheet Model for Induced Travel Estimation) is a sketch planning application that was designed for inclusion with STEAM in order to account for the effects of induced travel in traffic forecasting. SMITE's design as a simple spreadsheet application allows it to be used in cases where a conventional, four-step travel demand model is unavailable or cannot account for induced travel effects in its structure (DeCorla-Souza and Cohen, 1998). SMITE applies elasticity measures that describe the response in demand (VMT) to changes in travel time and the response in supply (travel time) to changes in demand levels.

2.1.5 SCRITS

As a practical matter, highway corridor improvements involving intelligent transportation systems (ITS) applications to smooth traffic flow can be considered capacity enhancements, at least in the short term. The FHWA's SCRITS (SCReening for ITS) is a sketch planning tool that offers rough estimates of ITS benefits, for screening-level analysis. SCRITS utilizes aggregate relationships between average weekday traffic levels and capacity to estimate travel speed impacts and vehicle-hours of travel (VHT). Like many other FHWA sketch planning tools, it is organized in spreadsheet format and can be used in situations where more sophisticated modeling systems are unavailable or insufficient.

2.1.6 HERS

In addition to helping states plan and manage their highway systems, the FHWA's Highway Economic Requirements System for states (HERS-ST) offers a model for economic impacts evaluation. In once case, Luskin and Mallard (2005) use HERS-ST to conclude that Texas is under-invested in highways particularly urban systems and lower-order functional classes by 50 percent. Combining economic priniciples with engineering criteria, HERS evaluates competing projects via benefit-cost ratios. Recognizing user benefits, emissions levels, and construction and maintenance costs, HERS operates within a GIS environment and will be evaluated under this project, for discussion in project deliverables. Well established software like HERS offer states and regions an oportunity to readily pursue standardized economic impact evaluations on all projects, a key advantage for many users, as well as the greater community.

CRASH DATA

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Overall Corridor
Mile Post: 38.34 - 46.00
Municipality: Rahway-Linden-Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**751**		**670**		**542**		**659**		**1963**	
Vehicles Involved										
Total Number of Vehicles	1541	100.0%	1364	100.0%	1106	100.0%	1337	100.0%	4011	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**1541**	**100.0%**	**1364**	**100.0%**	**1106**	**100.0%**	**1337**	**100.0%**	**4011**	**100.0%**
Injury Category										
Fatal	1	0.3%	4	1.1%	5	2.0%	4	1.3%	10	1.1%
Injury	329	99.7%	353	98.9%	251	98.0%	311	98.7%	933	98.9%
Ped Killed	0	0.0%	3	0.8%	3	1.2%	2	0.6%	6	0.6%
Ped Injured	13	3.9%	12	3.4%	7	2.7%	11	3.5%	32	3.4%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**330**	**100.0%**	**357**	**100.0%**	**256**	**100.0%**	**315**	**100.0%**	**943**	**100.0%**
Severity										
Property Damage	535	71.2%	443	66.1%	377	69.6%	452	68.9%	1355	69.0%
Injury	215	28.6%	223	33.3%	160	29.5%	200	30.5%	598	30.5%
Fatal	1	0.1%	4	0.6%	5	0.9%	4	0.6%	10	0.5%
Sub-Total	**751**	**100.0%**	**670**	**100.0%**	**542**	**100.0%**	**656**	**100.0%**	**1963**	**100.0%**
Surface Condition										
Dry	590	78.6%	519	77.5%	411	75.8%	507	77.3%	1520	77.4%
Wet	126	16.8%	128	19.1%	120	22.1%	125	19.1%	374	19.1%
Snow/Ice	28	3.7%	21	3.1%	8	1.5%	19	2.9%	57	2.9%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	2	0.3%	1	0.1%	1	0.2%	2	0.3%	4	0.2%
Not Specified/Reported	5	0.7%	1	0.1%	2	0.4%	3	0.5%	8	0.4%
Sub-Total	**751**	**100.0%**	**670**	**100.0%**	**542**	**100.0%**	**656**	**100.0%**	**1963**	**100.0%**
Light Condition										
Daylight	444	59.1%	408	60.9%	324	59.8%	392	59.8%	1176	59.9%
*Dark (Night)/Dawn/Dusk	301	40.1%	259	38.7%	215	39.7%	259	39.5%	775	39.5%
Not Specified/Reported	6	0.8%	3	0.4%	3	0.6%	4	0.6%	12	0.6%
Sub-Total	**751**	**100.0%**	**670**	**100.0%**	**542**	**100.0%**	**655**	**100.0%**	**1963**	**100.0%**
Environmental Condition										
Clear	616	82.0%	527	78.7%	410	75.6%	518	78.7%	1553	79.1%
Rain	95	12.6%	104	15.5%	93	17.2%	98	14.9%	292	14.9%
Snow	11	1.5%	12	1.8%	7	1.3%	10	1.5%	30	1.5%
Fog/Smog/Smoke	0	0.0%	2	0.3%	2	0.4%	2	0.3%	4	0.2%
Overcast	20	2.7%	22	3.3%	28	5.2%	24	3.6%	70	3.6%
Sleet/Hail/Freezing Rain	7	0.9%	2	0.3%	1	0.2%	4	0.6%	10	0.5%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	2	0.3%	1	0.1%	1	0.2%	2	0.3%	4	0.2%
Sub-Total	**751**	**100.0%**	**670**	**100.0%**	**542**	**100.0%**	**658**	**100.0%**	**1963**	**100.0%**
Crash Type										
Same Direction - Rear End	331	44.1%	328	49.0%	270	49.8%	310	47.0%	929	47.3%
Same Direction - Side Swipe	215	28.6%	170	25.4%	136	25.1%	174	26.4%	521	26.5%
Right Angle	67	8.9%	53	7.9%	53	9.8%	58	8.8%	173	8.8%
Opposite Direction - Head On/Angular	4	0.5%	3	0.4%	4	0.7%	4	0.6%	11	0.6%
Opposite Direction - Side Swipe	1	0.1%	0	0.0%	0	0.0%	1	0.2%	1	0.1%
Struck Parked Vehicle	4	0.5%	9	1.3%	5	0.9%	6	0.9%	18	0.9%
Left Turn / U Turn	17	2.3%	18	2.7%	7	1.3%	14	2.1%	42	2.1%
Backing	8	1.1%	5	0.7%	4	0.7%	6	0.9%	17	0.9%
Encroachment	1	0.1%	0	0.0%	1	0.2%	1	0.2%	2	0.1%
Overturned	3	0.4%	1	0.1%	1	0.2%	2	0.3%	5	0.3%
Fixed Object	72	9.6%	61	9.1%	42	7.7%	59	9.0%	175	8.9%
Animal	1	0.1%	1	0.1%	1	0.2%	1	0.2%	3	0.2%
Pedestrian	13	1.7%	15	2.2%	10	1.8%	13	2.0%	38	1.9%
Pedalcyclist	4	0.5%	0	0.0%	4	0.7%	3	0.5%	8	0.4%
Non-fixed Object	1	0.1%	0	0.0%	1	0.2%	1	0.2%	2	0.1%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	9	1.2%	6	0.9%	3	0.6%	6	0.9%	18	0.9%
Sub-Total	**751**	**100.0%**	**670**	**100.0%**	**542**	**100.0%**	**659**	**100.0%**	**1963**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Lawrence Street
Mile Post: 38.84 - 38.86
Municipality: Rahway
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**15**		**1**		**0**		**9**		**16**	
Vehicles Involved										
Total Number of Vehicles	29	100.0%	2	100.0%	0	0.0%	11	100.0%	31	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**29**	**100.0%**	**2**	**100.0%**	**0**	**0.0%**	**11**	**100.0%**	**31**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Severity										
Property Damage	15	100.0%	1	100.0%	0	0.0%	6	100.0%	16	100.0%
Injury	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**1**	**100.0%**	**0**	**0.0%**	**6**	**100.0%**	**16**	**100.0%**
Surface Condition										
Dry	11	73.3%	1	100.0%	0	0.0%	4	66.7%	12	75.0%
Wet	3	20.0%	0	0.0%	0	0.0%	1	16.7%	3	18.8%
Snow/Ice	1	6.7%	0	0.0%	0	0.0%	1	16.7%	1	6.3%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**1**	**100.0%**	**0**	**0.0%**	**6**	**100.0%**	**16**	**100.0%**
Light Condition										
Daylight	13	86.7%	0	0.0%	0	0.0%	5	83.3%	13	81.3%
*Dark (Night)/Dawn/Dusk	2	13.3%	1	100.0%	0	0.0%	1	16.7%	3	18.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**1**	**100.0%**	**0**	**0.0%**	**6**	**100.0%**	**16**	**100.0%**
Environmental Condition										
Clear	11	73.3%	1	100.0%	0	0.0%	4	66.7%	12	75.0%
Rain	3	20.0%	0	0.0%	0	0.0%	1	16.7%	3	18.8%
Snow	1	6.7%	0	0.0%	0	0.0%	1	16.7%	1	6.3%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**1**	**100.0%**	**0**	**0.0%**	**6**	**100.0%**	**16**	**100.0%**
Crash Type										
Same Direction - Rear End	4	26.7%	0	0.0%	0	0.0%	2	22.2%	4	25.0%
Same Direction - Side Swipe	2	13.3%	0	0.0%	0	0.0%	1	11.1%	2	12.5%
Right Angle	4	26.7%	0	0.0%	0	0.0%	2	22.2%	4	25.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	1	6.7%	1	100.0%	0	0.0%	1	11.1%	2	12.5%
Left Turn / U Turn	1	6.7%	0	0.0%	0	0.0%	1	11.1%	1	6.3%
Backing	1	6.7%	0	0.0%	0	0.0%	1	11.1%	1	6.3%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	2	13.3%	0	0.0%	0	0.0%	1	11.1%	2	12.5%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**1**	**100.0%**	**0**	**0.0%**	**9**	**100.0%**	**16**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at E Milton Avenue
Mile Post: 39.24 - 39.26
Municipality: Rahway
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**23**		**23**		**22**		**26**		**68**	
Vehicles Involved										
Total Number of Vehicles	49	100.0%	47	100.0%	46	100.0%	48	100.0%	142	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**49**	**100.0%**	**47**	**100.0%**	**46**	**100.0%**	**48**	**100.0%**	**142**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	19	100.0%	11	100.0%	6	100.0%	12	100.0%	36	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	1	5.3%	0	0.0%	0	0.0%	1	8.3%	1	2.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**19**	**100.0%**	**11**	**100.0%**	**6**	**100.0%**	**12**	**100.0%**	**36**	**100.0%**
Severity										
Property Damage	12	52.2%	16	69.6%	16	72.7%	15	65.2%	44	64.7%
Injury	11	47.8%	7	30.4%	6	27.3%	8	34.8%	24	35.3%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**23**	**100.0%**	**22**	**100.0%**	**23**	**100.0%**	**68**	**100.0%**
Surface Condition										
Dry	16	69.6%	21	91.3%	10	45.5%	16	69.6%	47	69.1%
Wet	6	26.1%	1	4.3%	11	50.0%	6	26.1%	18	26.5%
Snow/Ice	1	4.3%	1	4.3%	1	4.5%	1	4.3%	3	4.4%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**23**	**100.0%**	**22**	**100.0%**	**23**	**100.0%**	**68**	**100.0%**
Light Condition										
Daylight	11	47.8%	11	47.8%	17	77.3%	13	56.5%	39	57.4%
*Dark (Night)/Dawn/Dusk	12	52.2%	12	52.2%	5	22.7%	10	43.5%	29	42.6%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**23**	**100.0%**	**22**	**100.0%**	**23**	**100.0%**	**68**	**100.0%**
Environmental Condition										
Clear	18	78.3%	22	95.7%	12	54.5%	18	72.0%	52	76.5%
Rain	4	17.4%	0	0.0%	8	36.4%	4	16.0%	12	17.6%
Snow	0	0.0%	0	0.0%	1	4.5%	1	4.0%	1	1.5%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	1	4.3%	1	4.5%	1	4.0%	2	2.9%
Sleet/Hail/Freezing Rain	1	4.3%	0	0.0%	0	0.0%	1	4.0%	1	1.5%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**23**	**100.0%**	**22**	**100.0%**	**25**	**100.0%**	**68**	**100.0%**
Crash Type										
Same Direction - Rear End	13	56.5%	17	73.9%	15	68.2%	15	57.7%	45	66.2%
Same Direction - Side Swipe	5	21.7%	1	4.3%	5	22.7%	4	15.4%	11	16.2%
Right Angle	4	17.4%	1	4.3%	0	0.0%	2	7.7%	5	7.4%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	1	4.3%	0	0.0%	1	3.8%	1	1.5%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	2	8.7%	0	0.0%	1	3.8%	2	2.9%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	1	4.3%	0	0.0%	0	0.0%	1	3.8%	1	1.5%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	1	4.5%	1	3.8%	1	1.5%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	1	4.3%	1	4.5%	1	3.8%	2	2.9%
Sub-Total	**23**	**100.0%**	**23**	**100.0%**	**22**	**100.0%**	**26**	**100.0%**	**68**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Turner Street
Mile Post: 39.31 - 39.33
Municipality: Rahway
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**4**		**3**		**0**		**3**		**7**	
Vehicles Involved										
Total Number of Vehicles	12	100.0%	8	100.0%	0	0.0%	7	100.0%	20	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**8**	**100.0%**	**0**	**0.0%**	**7**	**100.0%**	**20**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	9	100.0%	3	100.0%	0	0.0%	4	100.0%	12	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**9**	**100.0%**	**3**	**100.0%**	**0**	**0.0%**	**4**	**100.0%**	**12**	**100.0%**
Severity										
Property Damage	2	50.0%	2	66.7%	0	0.0%	2	66.7%	4	57.1%
Injury	2	50.0%	1	33.3%	0	0.0%	1	33.3%	3	42.9%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**3**	**100.0%**	**0**	**0.0%**	**3**	**100.0%**	**7**	**100.0%**
Surface Condition										
Dry	4	100.0%	2	66.7%	0	0.0%	2	66.7%	6	85.7%
Wet	0	0.0%	1	33.3%	0	0.0%	1	33.3%	1	14.3%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**3**	**100.0%**	**0**	**0.0%**	**3**	**100.0%**	**7**	**100.0%**
Light Condition										
Daylight	1	25.0%	2	66.7%	0	0.0%	1	33.3%	3	42.9%
*Dark (Night)/Dawn/Dusk	3	75.0%	0	0.0%	0	0.0%	1	33.3%	3	42.9%
Not Specified/Reported	0	0.0%	1	33.3%	0	0.0%	1	33.3%	1	14.3%
Sub-Total	**4**	**100.0%**	**3**	**100.0%**	**0**	**0.0%**	**3**	**100.0%**	**7**	**100.0%**
Environmental Condition										
Clear	4	100.0%	2	66.7%	0	0.0%	2	66.7%	6	85.7%
Rain	0	0.0%	1	33.3%	0	0.0%	1	33.3%	1	14.3%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**3**	**100.0%**	**0**	**0.0%**	**3**	**100.0%**	**7**	**100.0%**
Crash Type										
Same Direction - Rear End	4	100.0%	2	66.7%	0	0.0%	2	66.7%	6	85.7%
Same Direction - Side Swipe	0	0.0%	1	33.3%	0	0.0%	1	33.3%	1	14.3%
Right Angle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**3**	**100.0%**	**0**	**0.0%**	**3**	**100.0%**	**7**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at E Grand Avenue
Mile Post: 39.38 - 39.40
Municipality: Rahway
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**17**		**20**		**13**		**20**		**50**	
Vehicles Involved										
Total Number of Vehicles	39	100.0%	45	100.0%	26	100.0%	37	100.0%	110	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**39**	**100.0%**	**45**	**100.0%**	**26**	**100.0%**	**37**	**100.0%**	**110**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	5	100.0%	8	100.0%	0	0.0%	5	100.0%	13	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	1	12.5%	0	0.0%	1	20.0%	1	7.7%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**5**	**100.0%**	**8**	**100.0%**	**0**	**0.0%**	**5**	**100.0%**	**13**	**100.0%**
Severity										
Property Damage	14	82.4%	15	75.0%	13	100.0%	14	82.4%	42	84.0%
Injury	3	17.6%	5	25.0%	0	0.0%	3	17.6%	8	16.0%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**17**	**100.0%**	**20**	**100.0%**	**13**	**100.0%**	**17**	**100.0%**	**50**	**100.0%**
Surface Condition										
Dry	13	76.5%	14	70.0%	9	69.2%	12	70.6%	36	72.0%
Wet	2	11.8%	6	30.0%	4	30.8%	4	23.5%	12	24.0%
Snow/Ice	2	11.8%	0	0.0%	0	0.0%	1	5.9%	2	4.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**17**	**100.0%**	**20**	**100.0%**	**13**	**100.0%**	**17**	**100.0%**	**50**	**100.0%**
Light Condition										
Daylight	7	41.2%	11	55.0%	8	61.5%	9	50.0%	26	52.0%
*Dark (Night)/Dawn/Dusk	9	52.9%	8	40.0%	5	38.5%	8	44.4%	22	44.0%
Not Specified/Reported	1	5.9%	1	5.0%	0	0.0%	1	5.6%	2	4.0%
Sub-Total	**17**	**100.0%**	**20**	**100.0%**	**13**	**100.0%**	**18**	**100.0%**	**50**	**100.0%**
Environmental Condition										
Clear	15	88.2%	13	65.0%	9	69.2%	13	72.2%	37	74.0%
Rain	1	5.9%	5	25.0%	3	23.1%	3	16.7%	9	18.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	5.9%	1	5.0%	1	7.7%	1	5.6%	3	6.0%
Sleet/Hail/Freezing Rain	0	0.0%	1	5.0%	0	0.0%	1	5.6%	1	2.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**17**	**100.0%**	**20**	**100.0%**	**13**	**100.0%**	**18**	**100.0%**	**50**	**100.0%**
Crash Type										
Same Direction - Rear End	12	70.6%	13	65.0%	5	38.5%	10	50.0%	30	60.0%
Same Direction - Side Swipe	4	23.5%	2	10.0%	3	23.1%	3	15.0%	9	18.0%
Right Angle	0	0.0%	2	10.0%	1	7.7%	1	5.0%	3	6.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	1	7.7%	1	5.0%	1	2.0%
Left Turn / U Turn	1	5.9%	2	10.0%	1	7.7%	2	10.0%	4	8.0%
Backing	0	0.0%	0	0.0%	1	7.7%	1	5.0%	1	2.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	1	7.7%	1	5.0%	1	2.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	1	5.0%	0	0.0%	1	5.0%	1	2.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**17**	**100.0%**	**20**	**100.0%**	**13**	**100.0%**	**20**	**100.0%**	**50**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Private Avenue
Mile Post: 40.00 - 40.02
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**14**		**5**		**7**		**11**		**26**	
Vehicles Involved										
Total Number of Vehicles	30	100.0%	9	100.0%	16	100.0%	19	100.0%	55	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**30**	**100.0%**	**9**	**100.0%**	**16**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	6	100.0%	1	100.0%	5	100.0%	4	100.0%	12	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**1**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**12**	**100.0%**
Severity										
Property Damage	10	71.4%	4	80.0%	3	42.9%	6	66.7%	17	65.4%
Injury	4	28.6%	1	20.0%	4	57.1%	3	33.3%	9	34.6%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**14**	**100.0%**	**5**	**100.0%**	**7**	**100.0%**	**9**	**100.0%**	**26**	**100.0%**
Surface Condition										
Dry	14	100.0%	5	100.0%	5	71.4%	8	88.9%	24	92.3%
Wet	0	0.0%	0	0.0%	2	28.6%	1	11.1%	2	7.7%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**14**	**100.0%**	**5**	**100.0%**	**7**	**100.0%**	**9**	**100.0%**	**26**	**100.0%**
Light Condition										
Daylight	11	78.6%	3	60.0%	1	14.3%	5	55.6%	15	57.7%
*Dark (Night)/Dawn/Dusk	3	21.4%	2	40.0%	6	85.7%	4	44.4%	11	42.3%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**14**	**100.0%**	**5**	**100.0%**	**7**	**100.0%**	**9**	**100.0%**	**26**	**100.0%**
Environmental Condition										
Clear	14	100.0%	5	100.0%	5	71.4%	8	88.9%	24	92.3%
Rain	0	0.0%	0	0.0%	2	28.6%	1	11.1%	2	7.7%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**14**	**100.0%**	**5**	**100.0%**	**7**	**100.0%**	**9**	**100.0%**	**26**	**100.0%**
Crash Type										
Same Direction - Rear End	6	42.9%	0	0.0%	4	57.1%	4	36.4%	10	38.5%
Same Direction - Side Swipe	5	35.7%	4	80.0%	2	28.6%	4	36.4%	11	42.3%
Right Angle	1	7.1%	0	0.0%	1	14.3%	1	9.1%	2	7.7%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	1	7.1%	0	0.0%	0	0.0%	1	9.1%	1	3.8%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	7.1%	1	20.0%	0	0.0%	1	9.1%	2	7.7%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**14**	**100.0%**	**5**	**100.0%**	**7**	**100.0%**	**11**	**100.0%**	**26**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Pleasant Street
Mile Post: 40.15 - 40.17
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**15**		**11**		**10**		**16**		**36**	
Vehicles Involved										
Total Number of Vehicles	31	100.0%	24	100.0%	20	100.0%	25	100.0%	75	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**31**	**100.0%**	**24**	**100.0%**	**20**	**100.0%**	**25**	**100.0%**	**75**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	4	100.0%	7	100.0%	3	100.0%	5	100.0%	14	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**7**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**	**14**	**100.0%**
Severity										
Property Damage	11	73.3%	6	54.5%	7	70.0%	8	66.7%	24	66.7%
Injury	4	26.7%	5	45.5%	3	30.0%	4	33.3%	12	33.3%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**11**	**100.0%**	**10**	**100.0%**	**12**	**100.0%**	**36**	**100.0%**
Surface Condition										
Dry	13	86.7%	7	63.6%	8	80.0%	10	76.9%	28	77.8%
Wet	2	13.3%	4	36.4%	2	20.0%	3	23.1%	8	22.2%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**11**	**100.0%**	**10**	**100.0%**	**13**	**100.0%**	**36**	**100.0%**
Light Condition										
Daylight	11	73.3%	7	63.6%	8	80.0%	9	69.2%	26	72.2%
*Dark (Night)/Dawn/Dusk	4	26.7%	4	36.4%	2	20.0%	4	30.8%	10	27.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**15**	**100.0%**	**11**	**100.0%**	**10**	**100.0%**	**13**	**100.0%**	**36**	**100.0%**
Environmental Condition										
Clear	13	86.7%	6	54.5%	6	60.0%	9	64.3%	25	69.4%
Rain	1	6.7%	4	36.4%	2	20.0%	3	21.4%	7	19.4%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	6.7%	0	0.0%	2	20.0%	1	7.1%	3	8.3%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	1	9.1%	0	0.0%	1	7.1%	1	2.8%
Sub-Total	**15**	**100.0%**	**11**	**100.0%**	**10**	**100.0%**	**14**	**100.0%**	**36**	**100.0%**
Crash Type										
Same Direction - Rear End	5	33.3%	9	81.8%	5	50.0%	7	43.8%	19	52.8%
Same Direction - Side Swipe	5	33.3%	0	0.0%	2	20.0%	3	18.8%	7	19.4%
Right Angle	3	20.0%	1	9.1%	1	10.0%	2	12.5%	5	13.9%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	1	6.7%	0	0.0%	1	10.0%	1	6.3%	2	5.6%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	1	10.0%	1	6.3%	1	2.8%
Fixed Object	1	6.7%	0	0.0%	0	0.0%	1	6.3%	1	2.8%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	1	9.1%	0	0.0%	1	6.3%	1	2.8%
Sub-Total	**15**	**100.0%**	**11**	**100.0%**	**10**	**100.0%**	**16**	**100.0%**	**36**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at East Gate To Airport
Mile Post: 40.36 - 40.38
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**4**		**0**		**0**		**2**		**4**	
Vehicles Involved										
Total Number of Vehicles	9	100.0%	0	0.0%	0	0.0%	3	100.0%	9	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**9**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**3**	**100.0%**	**9**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Severity										
Property Damage	4	100.0%	0	0.0%	0	0.0%	2	100.0%	4	100.0%
Injury	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**100.0%**	**4**	**100.0%**
Surface Condition										
Dry	4	100.0%	0	0.0%	0	0.0%	2	100.0%	4	100.0%
Wet	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**100.0%**	**4**	**100.0%**
Light Condition										
Daylight	1	25.0%	0	0.0%	0	0.0%	1	50.0%	1	25.0%
*Dark (Night)/Dawn/Dusk	3	75.0%	0	0.0%	0	0.0%	1	50.0%	3	75.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**100.0%**	**4**	**100.0%**
Environmental Condition										
Clear	3	75.0%	0	0.0%	0	0.0%	1	50.0%	3	75.0%
Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	25.0%	0	0.0%	0	0.0%	1	50.0%	1	25.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**100.0%**	**4**	**100.0%**
Crash Type										
Same Direction - Rear End	3	75.0%	0	0.0%	0	0.0%	1	50.0%	3	75.0%
Same Direction - Side Swipe	1	25.0%	0	0.0%	0	0.0%	1	50.0%	1	25.0%
Right Angle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**0**	**0.0%**	**0**	**0.0%**	**2**	**100.0%**	**4**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at To Gorden
Mile Post: 40.45 - 40.47
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**1**		**1**		**1**		**2**		**3**	
Vehicles Involved										
Total Number of Vehicles	2	100.0%	1	100.0%	3	100.0%	2	100.0%	6	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**2**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**	**2**	**100.0%**	**6**	**100.0%**
Injury Category										
Fatal	0	0.0%	1	100.0%	0	0.0%	1	50.0%	1	25.0%
Injury	1	100.0%	0	0.0%	2	100.0%	1	50.0%	3	75.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**1**	**100.0%**	**1**	**100.0%**	**2**	**100.0%**	**2**	**100.0%**	**4**	**100.0%**
Severity										
Property Damage	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	1	100.0%	0	0.0%	1	100.0%	1	50.0%	2	66.7%
Fatal	0	0.0%	1	100.0%	0	0.0%	1	50.0%	1	33.3%
Sub-Total	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**2**	**100.0%**	**3**	**100.0%**
Surface Condition										
Dry	1	100.0%	1	100.0%	1	100.0%	1	100.0%	3	100.0%
Wet	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**
Light Condition										
Daylight	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Dark (Night)/Dawn/Dusk	1	100.0%	0	0.0%	1	100.0%	1	50.0%	2	66.7%
Not Specified/Reported	0	0.0%	1	100.0%	0	0.0%	1	50.0%	1	33.3%
Sub-Total	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**2**	**100.0%**	**3**	**100.0%**
Environmental Condition										
Clear	1	100.0%	1	100.0%	1	100.0%	1	100.0%	3	100.0%
Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**
Crash Type										
Same Direction - Rear End	1	100.0%	0	0.0%	1	100.0%	1	50.0%	2	66.7%
Same Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Right Angle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	1	100.0%	0	0.0%	1	50.0%	1	33.3%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**1**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**2**	**100.0%**	**3**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Stilles Avenue
Mile Post: 40.73 - 40.75
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**34**		**18**		**22**		**29**		**74**	
Vehicles Involved										
Total Number of Vehicles	69	100.0%	37	100.0%	44	100.0%	50	100.0%	150	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**69**	**100.0%**	**37**	**100.0%**	**44**	**100.0%**	**50**	**100.0%**	**150**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	12	100.0%	4	100.0%	7	100.0%	8	100.0%	23	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	1	25.0%	0	0.0%	1	12.5%	1	4.3%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**4**	**100.0%**	**7**	**100.0%**	**8**	**100.0%**	**23**	**100.0%**
Severity										
Property Damage	24	70.6%	14	77.8%	17	77.3%	19	73.1%	55	74.3%
Injury	10	29.4%	4	22.2%	5	22.7%	7	26.9%	19	25.7%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**34**	**100.0%**	**18**	**100.0%**	**22**	**100.0%**	**26**	**100.0%**	**74**	**100.0%**
Surface Condition										
Dry	23	67.6%	13	72.2%	17	77.3%	18	69.2%	53	71.6%
Wet	11	32.4%	5	27.8%	4	18.2%	7	26.9%	20	27.0%
Snow/Ice	0	0.0%	0	0.0%	1	4.5%	1	3.8%	1	1.4%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**34**	**100.0%**	**18**	**100.0%**	**22**	**100.0%**	**26**	**100.0%**	**74**	**100.0%**
Light Condition										
Daylight	13	38.2%	10	55.6%	13	59.1%	12	48.0%	36	48.6%
*Dark (Night)/Dawn/Dusk	21	61.8%	8	44.4%	9	40.9%	13	52.0%	38	51.4%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**34**	**100.0%**	**18**	**100.0%**	**22**	**100.0%**	**25**	**100.0%**	**74**	**100.0%**
Environmental Condition										
Clear	26	76.5%	13	72.2%	18	81.8%	19	73.1%	57	77.0%
Rain	7	20.6%	5	27.8%	4	18.2%	6	23.1%	16	21.6%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	2.9%	0	0.0%	0	0.0%	1	3.8%	1	1.4%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**34**	**100.0%**	**18**	**100.0%**	**22**	**100.0%**	**26**	**100.0%**	**74**	**100.0%**
Crash Type										
Same Direction - Rear End	14	41.2%	13	72.2%	8	36.4%	12	41.4%	35	47.3%
Same Direction - Side Swipe	11	32.4%	3	16.7%	8	36.4%	8	27.6%	22	29.7%
Right Angle	3	8.8%	0	0.0%	3	13.6%	2	6.9%	6	8.1%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	4	11.8%	1	5.6%	2	9.1%	3	10.3%	7	9.5%
Backing	1	2.9%	0	0.0%	0	0.0%	1	3.4%	1	1.4%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	2.9%	0	0.0%	0	0.0%	1	3.4%	1	1.4%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	1	5.6%	0	0.0%	1	3.4%	1	1.4%
Pedalcyclist	0	0.0%	0	0.0%	1	4.5%	1	3.4%	1	1.4%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**34**	**100.0%**	**18**	**100.0%**	**22**	**100.0%**	**29**	**100.0%**	**74**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Wood Avenue
Mile Post: 41.05 - 41.07
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**24**		**15**		**16**		**22**		**55**	
Vehicles Involved										
Total Number of Vehicles	49	100.0%	30	100.0%	34	100.0%	38	100.0%	113	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**49**	**100.0%**	**30**	**100.0%**	**34**	**100.0%**	**38**	**100.0%**	**113**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	11	100.0%	3	100.0%	9	100.0%	8	100.0%	23	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**11**	**100.0%**	**3**	**100.0%**	**9**	**100.0%**	**8**	**100.0%**	**23**	**100.0%**
Severity										
Property Damage	16	66.7%	13	86.7%	10	62.5%	13	68.4%	39	70.9%
Injury	8	33.3%	2	13.3%	6	37.5%	6	31.6%	16	29.1%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**24**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Surface Condition										
Dry	20	83.3%	11	73.3%	14	87.5%	15	78.9%	45	81.8%
Wet	2	8.3%	4	26.7%	2	12.5%	3	15.8%	8	14.5%
Snow/Ice	2	8.3%	0	0.0%	0	0.0%	1	5.3%	2	3.6%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**24**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Light Condition										
Daylight	8	33.3%	7	46.7%	9	56.3%	8	42.1%	24	43.6%
*Dark (Night)/Dawn/Dusk	16	66.7%	8	53.3%	7	43.8%	11	57.9%	31	56.4%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**24**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Environmental Condition										
Clear	21	87.5%	12	80.0%	13	81.3%	16	80.0%	46	83.6%
Rain	3	12.5%	2	13.3%	2	12.5%	3	15.0%	7	12.7%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	1	6.7%	1	6.3%	1	5.0%	2	3.6%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**24**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**20**	**100.0%**	**55**	**100.0%**
Crash Type										
Same Direction - Rear End	10	41.7%	6	40.0%	10	62.5%	9	40.9%	26	47.3%
Same Direction - Side Swipe	8	33.3%	5	33.3%	2	12.5%	5	22.7%	15	27.3%
Right Angle	1	4.2%	1	6.7%	3	18.8%	2	9.1%	5	9.1%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	1	6.3%	1	4.5%	1	1.8%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	1	4.2%	3	20.0%	0	0.0%	2	9.1%	4	7.3%
Backing	1	4.2%	0	0.0%	0	0.0%	1	4.5%	1	1.8%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	2	8.3%	0	0.0%	0	0.0%	1	4.5%	2	3.6%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	1	4.2%	0	0.0%	0	0.0%	1	4.5%	1	1.8%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**24**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**22**	**100.0%**	**55**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Clinton Avenue
Mile Post: 41.14 - 41.16
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**16**		**13**		**14**		**16**		**43**	
Vehicles Involved										
Total Number of Vehicles	33	100.0%	27	100.0%	30	100.0%	30	100.0%	90	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**33**	**100.0%**	**27**	**100.0%**	**30**	**100.0%**	**30**	**100.0%**	**90**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	4	100.0%	3	100.0%	2	100.0%	3	100.0%	9	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**3**	**100.0%**	**2**	**100.0%**	**3**	**100.0%**	**9**	**100.0%**
Severity										
Property Damage	13	81.3%	10	76.9%	13	92.9%	12	80.0%	36	83.7%
Injury	3	18.8%	3	23.1%	1	7.1%	3	20.0%	7	16.3%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**13**	**100.0%**	**14**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Surface Condition										
Dry	12	75.0%	11	84.6%	13	92.9%	12	80.0%	36	83.7%
Wet	4	25.0%	2	15.4%	1	7.1%	3	20.0%	7	16.3%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**13**	**100.0%**	**14**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Light Condition										
Daylight	11	68.8%	9	69.2%	12	85.7%	11	73.3%	32	74.4%
*Dark (Night)/Dawn/Dusk	5	31.3%	4	30.8%	2	14.3%	4	26.7%	11	25.6%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**13**	**100.0%**	**14**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Environmental Condition										
Clear	12	75.0%	10	76.9%	12	85.7%	12	75.0%	34	79.1%
Rain	2	12.5%	2	15.4%	1	7.1%	2	12.5%	5	11.6%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	2	12.5%	1	7.7%	1	7.1%	2	12.5%	4	9.3%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**13**	**100.0%**	**14**	**100.0%**	**16**	**100.0%**	**43**	**100.0%**
Crash Type										
Same Direction - Rear End	10	62.5%	9	69.2%	9	64.3%	10	62.5%	28	65.1%
Same Direction - Side Swipe	5	31.3%	1	7.7%	2	14.3%	3	18.8%	8	18.6%
Right Angle	1	6.3%	1	7.7%	2	14.3%	2	12.5%	4	9.3%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	2	15.4%	1	7.1%	1	6.3%	3	7.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**13**	**100.0%**	**14**	**100.0%**	**16**	**100.0%**	**43**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Woodlawn Avenue
Mile Post: 41.25 - 41.27
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**16**		**11**		**16**		**16**		**43**	
Vehicles Involved										
Total Number of Vehicles	36	100.0%	24	100.0%	39	100.0%	33	100.0%	99	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**36**	**100.0%**	**24**	**100.0%**	**39**	**100.0%**	**33**	**100.0%**	**99**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	6	100.0%	8	100.0%	7	100.0%	7	100.0%	21	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**8**	**100.0%**	**7**	**100.0%**	**7**	**100.0%**	**21**	**100.0%**
Severity										
Property Damage	12	75.0%	6	54.5%	13	81.3%	11	73.3%	31	72.1%
Injury	4	25.0%	5	45.5%	3	18.8%	4	26.7%	12	27.9%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Surface Condition										
Dry	13	81.3%	10	90.9%	15	93.8%	13	81.3%	38	88.4%
Wet	2	12.5%	1	9.1%	1	6.3%	2	12.5%	4	9.3%
Snow/Ice	1	6.3%	0	0.0%	0	0.0%	1	6.3%	1	2.3%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**16**	**100.0%**	**43**	**100.0%**
Light Condition										
Daylight	7	43.8%	7	63.6%	10	62.5%	8	53.3%	24	55.8%
*Dark (Night)/Dawn/Dusk	9	56.3%	4	36.4%	6	37.5%	7	46.7%	19	44.2%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Environmental Condition										
Clear	15	93.8%	10	90.9%	13	81.3%	13	86.7%	38	88.4%
Rain	1	6.3%	1	9.1%	0	0.0%	1	6.7%	2	4.7%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	3	18.8%	1	6.7%	3	7.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Crash Type										
Same Direction - Rear End	8	50.0%	5	45.5%	6	37.5%	7	43.8%	19	44.2%
Same Direction - Side Swipe	5	31.3%	1	9.1%	5	31.3%	4	25.0%	11	25.6%
Right Angle	1	6.3%	2	18.2%	4	25.0%	3	18.8%	7	16.3%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	2	12.5%	3	27.3%	1	6.3%	2	12.5%	6	14.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**16**	**100.0%**	**43**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Morse Mill Road
Mile Post: 41.87 - 41.89
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**4**		**1**		**1**		**4**		**6**	
Vehicles Involved										
Total Number of Vehicles	8	100.0%	2	100.0%	2	100.0%	4	100.0%	12	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**8**	**100.0%**	**2**	**100.0%**	**2**	**100.0%**	**4**	**100.0%**	**12**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Severity										
Property Damage	4	100.0%	1	100.0%	1	100.0%	2	100.0%	6	100.0%
Injury	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**2**	**100.0%**	**6**	**100.0%**
Surface Condition										
Dry	3	75.0%	1	100.0%	1	100.0%	2	66.7%	5	83.3%
Wet	1	25.0%	0	0.0%	0	0.0%	1	33.3%	1	16.7%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**	**6**	**100.0%**
Light Condition										
Daylight	3	75.0%	1	100.0%	0	0.0%	2	66.7%	4	66.7%
*Dark (Night)/Dawn/Dusk	1	25.0%	0	0.0%	1	100.0%	1	33.3%	2	33.3%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**	**6**	**100.0%**
Environmental Condition										
Clear	3	75.0%	1	100.0%	1	100.0%	2	66.7%	5	83.3%
Rain	1	25.0%	0	0.0%	0	0.0%	1	33.3%	1	16.7%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**	**6**	**100.0%**
Crash Type										
Same Direction - Rear End	0	0.0%	1	100.0%	0	0.0%	1	25.0%	1	16.7%
Same Direction - Side Swipe	4	100.0%	0	0.0%	0	0.0%	2	50.0%	4	66.7%
Right Angle	0	0.0%	0	0.0%	1	100.0%	1	25.0%	1	16.7%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**4**	**100.0%**	**6**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Park Avenue
Mile Post: 42.64 - 42.66
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**32**		**15**		**10**		**24**		**57**	
Vehicles Involved										
Total Number of Vehicles	58	100.0%	31	100.0%	20	100.0%	37	100.0%	109	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**58**	**100.0%**	**31**	**100.0%**	**20**	**100.0%**	**37**	**100.0%**	**109**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	17	100.0%	8	100.0%	4	100.0%	10	100.0%	29	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	1	12.5%	0	0.0%	1	10.0%	1	3.4%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**17**	**100.0%**	**8**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**	**29**	**100.0%**
Severity										
Property Damage	21	65.6%	11	73.3%	8	80.0%	14	70.0%	40	70.2%
Injury	11	34.4%	4	26.7%	2	20.0%	6	30.0%	17	29.8%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**32**	**100.0%**	**15**	**100.0%**	**10**	**100.0%**	**20**	**100.0%**	**57**	**100.0%**
Surface Condition										
Dry	27	84.4%	9	60.0%	10	100.0%	16	76.2%	46	80.7%
Wet	5	15.6%	4	26.7%	0	0.0%	3	14.3%	9	15.8%
Snow/Ice	0	0.0%	1	6.7%	0	0.0%	1	4.8%	1	1.8%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	1	6.7%	0	0.0%	1	4.8%	1	1.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**32**	**100.0%**	**15**	**100.0%**	**10**	**100.0%**	**21**	**100.0%**	**57**	**100.0%**
Light Condition										
Daylight	20	62.5%	10	66.7%	7	70.0%	13	65.0%	37	64.9%
*Dark (Night)/Dawn/Dusk	12	37.5%	5	33.3%	3	30.0%	7	35.0%	20	35.1%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**32**	**100.0%**	**15**	**100.0%**	**10**	**100.0%**	**20**	**100.0%**	**57**	**100.0%**
Environmental Condition										
Clear	29	90.6%	8	53.3%	10	100.0%	16	80.0%	47	82.5%
Rain	3	9.4%	4	26.7%	0	0.0%	3	15.0%	7	12.3%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	3	20.0%	0	0.0%	1	5.0%	3	5.3%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**32**	**100.0%**	**15**	**100.0%**	**10**	**100.0%**	**20**	**100.0%**	**57**	**100.0%**
Crash Type										
Same Direction - Rear End	15	46.9%	6	40.0%	4	40.0%	9	37.5%	25	43.9%
Same Direction - Side Swipe	5	15.6%	3	20.0%	5	50.0%	5	20.8%	13	22.8%
Right Angle	3	9.4%	1	6.7%	0	0.0%	2	8.3%	4	7.0%
Opposite Direction - Head On/Angular	0	0.0%	1	6.7%	0	0.0%	1	4.2%	1	1.8%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	2	6.3%	2	13.3%	0	0.0%	2	8.3%	4	7.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	1	10.0%	1	4.2%	1	1.8%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	7	21.9%	1	6.7%	0	0.0%	3	12.5%	8	14.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	1	6.7%	0	0.0%	1	4.2%	1	1.8%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**32**	**100.0%**	**15**	**100.0%**	**10**	**100.0%**	**24**	**100.0%**	**57**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Bacheller Avenue
Mile Post: 42.82 - 42.84
Municipality: Linden
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**6**		**11**		**4**		**10**		**21**	
Vehicles Involved										
Total Number of Vehicles	11	100.0%	21	100.0%	8	100.0%	14	100.0%	40	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**11**	**100.0%**	**21**	**100.0%**	**8**	**100.0%**	**14**	**100.0%**	**40**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	2	100.0%	8	100.0%	1	100.0%	4	100.0%	11	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	1	50.0%	0	0.0%	0	0.0%	1	25.0%	1	9.1%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**2**	**100.0%**	**8**	**100.0%**	**1**	**100.0%**	**4**	**100.0%**	**11**	**100.0%**
Severity										
Property Damage	4	66.7%	7	63.6%	3	75.0%	5	62.5%	14	66.7%
Injury	2	33.3%	4	36.4%	1	25.0%	3	37.5%	7	33.3%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**11**	**100.0%**	**4**	**100.0%**	**8**	**100.0%**	**21**	**100.0%**
Surface Condition										
Dry	4	66.7%	8	72.7%	4	100.0%	6	75.0%	16	76.2%
Wet	2	33.3%	3	27.3%	0	0.0%	2	25.0%	5	23.8%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**11**	**100.0%**	**4**	**100.0%**	**8**	**100.0%**	**21**	**100.0%**
Light Condition										
Daylight	2	33.3%	7	63.6%	4	100.0%	5	62.5%	13	61.9%
*Dark (Night)/Dawn/Dusk	4	66.7%	4	36.4%	0	0.0%	3	37.5%	8	38.1%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**11**	**100.0%**	**4**	**100.0%**	**8**	**100.0%**	**21**	**100.0%**
Environmental Condition										
Clear	4	66.7%	9	81.8%	3	75.0%	6	66.7%	16	76.2%
Rain	2	33.3%	2	18.2%	0	0.0%	2	22.2%	4	19.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	1	25.0%	1	11.1%	1	4.8%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**11**	**100.0%**	**4**	**100.0%**	**9**	**100.0%**	**21**	**100.0%**
Crash Type										
Same Direction - Rear End	2	33.3%	5	45.5%	0	0.0%	3	30.0%	7	33.3%
Same Direction - Side Swipe	2	33.3%	1	9.1%	4	100.0%	3	30.0%	7	33.3%
Right Angle	1	16.7%	1	9.1%	0	0.0%	1	10.0%	2	9.5%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	1	9.1%	0	0.0%	1	10.0%	1	4.8%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	3	27.3%	0	0.0%	1	10.0%	3	14.3%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	1	16.7%	0	0.0%	0	0.0%	1	10.0%	1	4.8%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**11**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**	**21**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Myrtle Avenue
Mile Post: 43.00 - 43.02
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**3**		**2**		**5**		**4**		**10**	
Vehicles Involved										
Total Number of Vehicles	5	100.0%	4	100.0%	11	100.0%	7	100.0%	20	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**5**	**100.0%**	**4**	**100.0%**	**11**	**100.0%**	**7**	**100.0%**	**20**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	3	100.0%	1	100.0%	1	100.0%	2	100.0%	5	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	2	66.7%	0	0.0%	0	0.0%	1	50.0%	2	40.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**2**	**100.0%**	**5**	**100.0%**
Severity										
Property Damage	0	0.0%	1	50.0%	4	80.0%	2	50.0%	5	50.0%
Injury	3	100.0%	1	50.0%	1	20.0%	2	50.0%	5	50.0%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**2**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**
Surface Condition										
Dry	3	100.0%	2	100.0%	4	80.0%	3	75.0%	9	90.0%
Wet	0	0.0%	0	0.0%	1	20.0%	1	25.0%	1	10.0%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**2**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**
Light Condition										
Daylight	1	33.3%	1	50.0%	3	60.0%	2	50.0%	5	50.0%
*Dark (Night)/Dawn/Dusk	2	66.7%	1	50.0%	2	40.0%	2	50.0%	5	50.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**2**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**
Environmental Condition										
Clear	2	66.7%	2	100.0%	5	100.0%	3	75.0%	9	90.0%
Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	33.3%	0	0.0%	0	0.0%	1	25.0%	1	10.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**2**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**
Crash Type										
Same Direction - Rear End	1	33.3%	1	50.0%	4	80.0%	2	50.0%	6	60.0%
Same Direction - Side Swipe	0	0.0%	1	50.0%	1	20.0%	1	25.0%	2	20.0%
Right Angle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	2	66.7%	0	0.0%	0	0.0%	1	25.0%	2	20.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**2**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at S Elmora Avenue
Mile Post: 43.10 - 43.12
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**28**		**21**		**22**		**25**		**71**	
Vehicles Involved										
Total Number of Vehicles	63	100.0%	42	100.0%	48	100.0%	51	100.0%	153	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**63**	**100.0%**	**42**	**100.0%**	**48**	**100.0%**	**51**	**100.0%**	**153**	**100.0%**
Injury Category										
Fatal	0	0.0%	1	14.3%	0	0.0%	1	11.1%	1	4.2%
Injury	14	100.0%	6	85.7%	3	100.0%	8	88.9%	23	95.8%
Ped Killed	0	0.0%	1	14.3%	0	0.0%	1	11.1%	1	4.2%
Ped Injured	0	0.0%	1	14.3%	0	0.0%	1	11.1%	1	4.2%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**14**	**100.0%**	**7**	**100.0%**	**3**	**100.0%**	**9**	**100.0%**	**24**	**100.0%**
Severity										
Property Damage	21	75.0%	16	76.2%	19	86.4%	19	76.0%	56	78.9%
Injury	7	25.0%	4	19.0%	3	13.6%	5	20.0%	14	19.7%
Fatal	0	0.0%	1	4.8%	0	0.0%	1	4.0%	1	1.4%
Sub-Total	**28**	**100.0%**	**21**	**100.0%**	**22**	**100.0%**	**25**	**100.0%**	**71**	**100.0%**
Surface Condition										
Dry	21	75.0%	16	76.2%	18	81.8%	19	76.0%	55	77.5%
Wet	7	25.0%	5	23.8%	4	18.2%	6	24.0%	16	22.5%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**28**	**100.0%**	**21**	**100.0%**	**22**	**100.0%**	**25**	**100.0%**	**71**	**100.0%**
Light Condition										
Daylight	19	67.9%	18	85.7%	13	59.1%	17	70.8%	50	70.4%
*Dark (Night)/Dawn/Dusk	9	32.1%	3	14.3%	9	40.9%	7	29.2%	21	29.6%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**28**	**100.0%**	**21**	**100.0%**	**22**	**100.0%**	**24**	**100.0%**	**71**	**100.0%**
Environmental Condition										
Clear	24	85.7%	17	81.0%	17	77.3%	20	76.9%	58	81.7%
Rain	4	14.3%	3	14.3%	3	13.6%	4	15.4%	10	14.1%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	1	4.5%	1	3.8%	1	1.4%
Overcast	0	0.0%	1	4.8%	1	4.5%	1	3.8%	2	2.8%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**28**	**100.0%**	**21**	**100.0%**	**22**	**100.0%**	**26**	**100.0%**	**71**	**100.0%**
Crash Type										
Same Direction - Rear End	8	28.6%	6	28.6%	10	45.5%	8	32.0%	24	33.8%
Same Direction - Side Swipe	14	50.0%	10	47.6%	9	40.9%	11	44.0%	33	46.5%
Right Angle	5	17.9%	3	14.3%	2	9.1%	4	16.0%	10	14.1%
Opposite Direction - Head On/Angular	1	3.6%	0	0.0%	1	4.5%	1	4.0%	2	2.8%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	2	9.5%	0	0.0%	1	4.0%	2	2.8%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**28**	**100.0%**	**21**	**100.0%**	**22**	**100.0%**	**25**	**100.0%**	**71**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Grier Avenue
Mile Post: 43.28 - 43.30
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**7**		**12**		**5**		**10**		**24**	
Vehicles Involved										
Total Number of Vehicles	11	100.0%	25	100.0%	10	100.0%	16	100.0%	46	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**11**	**100.0%**	**25**	**100.0%**	**10**	**100.0%**	**16**	**100.0%**	**46**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	1	33.3%	1	25.0%	1	10.0%
Injury	6	100.0%	1	100.0%	2	66.7%	3	75.0%	9	90.0%
Ped Killed	0	0.0%	0	0.0%	1	33.3%	1	25.0%	1	10.0%
Ped Injured	2	33.3%	0	0.0%	0	0.0%	1	25.0%	2	20.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**	**4**	**100.0%**	**10**	**100.0%**
Severity										
Property Damage	3	42.9%	11	91.7%	2	40.0%	6	60.0%	16	66.7%
Injury	4	57.1%	1	8.3%	2	40.0%	3	30.0%	7	29.2%
Fatal	0	0.0%	0	0.0%	1	20.0%	1	10.0%	1	4.2%
Sub-Total	**7**	**100.0%**	**12**	**100.0%**	**5**	**100.0%**	**10**	**100.0%**	**24**	**100.0%**
Surface Condition										
Dry	6	85.7%	11	91.7%	5	100.0%	8	88.9%	22	91.7%
Wet	1	14.3%	1	8.3%	0	0.0%	1	11.1%	2	8.3%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**12**	**100.0%**	**5**	**100.0%**	**9**	**100.0%**	**24**	**100.0%**
Light Condition										
Daylight	4	57.1%	5	41.7%	2	40.0%	4	44.4%	11	45.8%
*Dark (Night)/Dawn/Dusk	3	42.9%	7	58.3%	3	60.0%	5	55.6%	13	54.2%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**12**	**100.0%**	**5**	**100.0%**	**9**	**100.0%**	**24**	**100.0%**
Environmental Condition										
Clear	6	85.7%	12	100.0%	5	100.0%	8	88.9%	23	95.8%
Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	14.3%	0	0.0%	0	0.0%	1	11.1%	1	4.2%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**12**	**100.0%**	**5**	**100.0%**	**9**	**100.0%**	**24**	**100.0%**
Crash Type										
Same Direction - Rear End	2	28.6%	7	58.3%	4	80.0%	5	50.0%	13	54.2%
Same Direction - Side Swipe	1	14.3%	3	25.0%	0	0.0%	2	20.0%	4	16.7%
Right Angle	1	14.3%	2	16.7%	0	0.0%	1	10.0%	3	12.5%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	14.3%	0	0.0%	0	0.0%	1	10.0%	1	4.2%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	2	28.6%	0	0.0%	1	20.0%	1	10.0%	3	12.5%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**12**	**100.0%**	**5**	**100.0%**	**10**	**100.0%**	**24**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at S Broad Street
Mile Post: 43.38 - 43.40
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**10**		**15**		**14**		**15**		**39**	
Vehicles Involved										
Total Number of Vehicles	31	100.0%	28	100.0%	27	100.0%	29	100.0%	86	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**31**	**100.0%**	**28**	**100.0%**	**27**	**100.0%**	**29**	**100.0%**	**86**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	3	100.0%	16	100.0%	9	100.0%	10	100.0%	28	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	1	33.3%	2	12.5%	2	22.2%	2	20.0%	5	17.9%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**16**	**100.0%**	**9**	**100.0%**	**10**	**100.0%**	**28**	**100.0%**
Severity										
Property Damage	8	80.0%	8	53.3%	7	50.0%	8	57.1%	23	59.0%
Injury	2	20.0%	7	46.7%	7	50.0%	6	42.9%	16	41.0%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**10**	**100.0%**	**15**	**100.0%**	**14**	**100.0%**	**14**	**100.0%**	**39**	**100.0%**
Surface Condition										
Dry	10	100.0%	11	73.3%	8	57.1%	10	66.7%	29	74.4%
Wet	0	0.0%	3	20.0%	5	35.7%	3	20.0%	8	20.5%
Snow/Ice	0	0.0%	1	6.7%	0	0.0%	1	6.7%	1	2.6%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	1	7.1%	1	6.7%	1	2.6%
Sub-Total	**10**	**100.0%**	**15**	**100.0%**	**14**	**100.0%**	**15**	**100.0%**	**39**	**100.0%**
Light Condition										
Daylight	9	90.0%	7	46.7%	7	50.0%	8	57.1%	23	59.0%
*Dark (Night)/Dawn/Dusk	1	10.0%	8	53.3%	6	42.9%	5	35.7%	15	38.5%
Not Specified/Reported	0	0.0%	0	0.0%	1	7.1%	1	7.1%	1	2.6%
Sub-Total	**10**	**100.0%**	**15**	**100.0%**	**14**	**100.0%**	**14**	**100.0%**	**39**	**100.0%**
Environmental Condition										
Clear	10	100.0%	12	80.0%	9	64.3%	11	73.3%	31	79.5%
Rain	0	0.0%	2	13.3%	4	28.6%	2	13.3%	6	15.4%
Snow	0	0.0%	1	6.7%	0	0.0%	1	6.7%	1	2.6%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	1	7.1%	1	6.7%	1	2.6%
Sub-Total	**10**	**100.0%**	**15**	**100.0%**	**14**	**100.0%**	**15**	**100.0%**	**39**	**100.0%**
Crash Type										
Same Direction - Rear End	3	30.0%	7	46.7%	4	28.6%	5	33.3%	14	35.9%
Same Direction - Side Swipe	3	30.0%	2	13.3%	4	28.6%	3	20.0%	9	23.1%
Right Angle	1	10.0%	3	20.0%	3	21.4%	3	20.0%	7	17.9%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	10.0%	1	6.7%	0	0.0%	1	6.7%	2	5.1%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	1	10.0%	2	13.3%	2	14.3%	2	13.3%	5	12.8%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	1	10.0%	0	0.0%	1	7.1%	1	6.7%	2	5.1%
Sub-Total	**10**	**100.0%**	**15**	**100.0%**	**14**	**100.0%**	**15**	**100.0%**	**39**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Maple Avenue
Mile Post: 43.47 - 43.49
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**16**		**11**		**16**		**17**		**43**	
Vehicles Involved										
Total Number of Vehicles	27	100.0%	23	100.0%	29	100.0%	27	100.0%	79	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**27**	**100.0%**	**23**	**100.0%**	**29**	**100.0%**	**27**	**100.0%**	**79**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	3	100.0%	5	100.0%	13	100.0%	7	100.0%	21	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	2	66.7%	0	0.0%	0	0.0%	1	14.3%	2	9.5%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**5**	**100.0%**	**13**	**100.0%**	**7**	**100.0%**	**21**	**100.0%**
Severity										
Property Damage	13	81.3%	8	72.7%	5	31.3%	9	60.0%	26	60.5%
Injury	3	18.8%	3	27.3%	11	68.8%	6	40.0%	17	39.5%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Surface Condition										
Dry	12	75.0%	9	81.8%	13	81.3%	12	75.0%	34	79.1%
Wet	2	12.5%	2	18.2%	2	12.5%	2	12.5%	6	14.0%
Snow/Ice	1	6.3%	0	0.0%	1	6.3%	1	6.3%	2	4.7%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	1	6.3%	0	0.0%	0	0.0%	1	6.3%	1	2.3%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**16**	**100.0%**	**43**	**100.0%**
Light Condition										
Daylight	7	43.8%	5	45.5%	7	43.8%	7	46.7%	19	44.2%
*Dark (Night)/Dawn/Dusk	9	56.3%	6	54.5%	9	56.3%	8	53.3%	24	55.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**15**	**100.0%**	**43**	**100.0%**
Environmental Condition										
Clear	13	81.3%	9	81.8%	13	81.3%	12	70.6%	35	81.4%
Rain	2	12.5%	0	0.0%	2	12.5%	2	11.8%	4	9.3%
Snow	0	0.0%	0	0.0%	1	6.3%	1	5.9%	1	2.3%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	2	18.2%	0	0.0%	1	5.9%	2	4.7%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	1	6.3%	0	0.0%	0	0.0%	1	5.9%	1	2.3%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**17**	**100.0%**	**43**	**100.0%**
Crash Type										
Same Direction - Rear End	7	43.8%	5	45.5%	6	37.5%	6	35.3%	18	41.9%
Same Direction - Side Swipe	4	25.0%	4	36.4%	1	6.3%	3	17.6%	9	20.9%
Right Angle	0	0.0%	0	0.0%	2	12.5%	1	5.9%	2	4.7%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	1	6.3%	1	5.9%	1	2.3%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	6.3%	1	9.1%	5	31.3%	3	17.6%	7	16.3%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	2	12.5%	0	0.0%	0	0.0%	1	5.9%	2	4.7%
Pedalcyclist	0	0.0%	0	0.0%	1	6.3%	1	5.9%	1	2.3%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	2	12.5%	1	9.1%	0	0.0%	1	5.9%	3	7.0%
Sub-Total	**16**	**100.0%**	**11**	**100.0%**	**16**	**100.0%**	**17**	**100.0%**	**43**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at E Jersey Street
Mile Post: 44.29 - 44.31
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**23**		**29**		**21**		**26**		**73**	
Vehicles Involved										
Total Number of Vehicles	44	100.0%	56	100.0%	42	100.0%	48	100.0%	142	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**44**	**100.0%**	**56**	**100.0%**	**42**	**100.0%**	**48**	**100.0%**	**142**	**100.0%**
Injury Category										
Fatal	0	0.0%	1	5.9%	0	0.0%	1	7.7%	1	2.7%
Injury	7	100.0%	16	94.1%	13	100.0%	12	92.3%	36	97.3%
Ped Killed	0	0.0%	1	5.9%	0	0.0%	1	7.7%	1	2.7%
Ped Injured	1	14.3%	3	17.6%	2	15.4%	2	15.4%	6	16.2%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**17**	**100.0%**	**13**	**100.0%**	**13**	**100.0%**	**37**	**100.0%**
Severity										
Property Damage	18	78.3%	18	62.1%	13	61.9%	17	65.4%	49	67.1%
Injury	5	21.7%	10	34.5%	8	38.1%	8	30.8%	23	31.5%
Fatal	0	0.0%	1	3.4%	0	0.0%	1	3.8%	1	1.4%
Sub-Total	**23**	**100.0%**	**29**	**100.0%**	**21**	**100.0%**	**26**	**100.0%**	**73**	**100.0%**
Surface Condition										
Dry	16	69.6%	26	89.7%	17	81.0%	20	80.0%	59	80.8%
Wet	5	21.7%	3	10.3%	4	19.0%	4	16.0%	12	16.4%
Snow/Ice	2	8.7%	0	0.0%	0	0.0%	1	4.0%	2	2.7%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**29**	**100.0%**	**21**	**100.0%**	**25**	**100.0%**	**73**	**100.0%**
Light Condition										
Daylight	13	56.5%	16	55.2%	12	57.1%	14	56.0%	41	56.2%
*Dark (Night)/Dawn/Dusk	10	43.5%	13	44.8%	9	42.9%	11	44.0%	32	43.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**29**	**100.0%**	**21**	**100.0%**	**25**	**100.0%**	**73**	**100.0%**
Environmental Condition										
Clear	17	73.9%	28	96.6%	17	81.0%	21	84.0%	62	84.9%
Rain	4	17.4%	1	3.4%	3	14.3%	3	12.0%	8	11.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	2	8.7%	0	0.0%	1	4.8%	1	4.0%	3	4.1%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**29**	**100.0%**	**21**	**100.0%**	**25**	**100.0%**	**73**	**100.0%**
Crash Type										
Same Direction - Rear End	11	47.8%	15	51.7%	12	57.1%	13	50.0%	38	52.1%
Same Direction - Side Swipe	7	30.4%	6	20.7%	2	9.5%	5	19.2%	15	20.5%
Right Angle	1	4.3%	1	3.4%	4	19.0%	2	7.7%	6	8.2%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	1	4.3%	2	6.9%	1	4.8%	2	7.7%	4	5.5%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	4.3%	2	6.9%	0	0.0%	1	3.8%	3	4.1%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	1	4.3%	3	10.3%	2	9.5%	2	7.7%	6	8.2%
Pedalcyclist	1	4.3%	0	0.0%	0	0.0%	1	3.8%	1	1.4%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**23**	**100.0%**	**29**	**100.0%**	**21**	**100.0%**	**26**	**100.0%**	**73**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at E Grand Street
Mile Post: 44.51 - 44.53
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**19**		**21**		**15**		**23**		**55**	
Vehicles Involved										
Total Number of Vehicles	41	100.0%	39	100.0%	29	100.0%	37	100.0%	109	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**41**	**100.0%**	**39**	**100.0%**	**29**	**100.0%**	**37**	**100.0%**	**109**	**100.0%**
Injury Category										
Fatal	0	0.0%	1	6.7%	2	12.5%	1	7.7%	3	7.9%
Injury	7	100.0%	14	93.3%	14	87.5%	12	92.3%	35	92.1%
Ped Killed	0	0.0%	1	6.7%	1	6.3%	1	7.7%	2	5.3%
Ped Injured	0	0.0%	1	6.7%	0	0.0%	1	7.7%	1	2.6%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**15**	**100.0%**	**16**	**100.0%**	**13**	**100.0%**	**38**	**100.0%**
Severity										
Property Damage	14	73.7%	11	52.4%	7	46.7%	11	57.9%	32	58.2%
Injury	5	26.3%	9	42.9%	6	40.0%	7	36.8%	20	36.4%
Fatal	0	0.0%	1	4.8%	2	13.3%	1	5.3%	3	5.5%
Sub-Total	**19**	**100.0%**	**21**	**100.0%**	**15**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Surface Condition										
Dry	18	94.7%	17	81.0%	12	80.0%	16	84.2%	47	85.5%
Wet	1	5.3%	4	19.0%	3	20.0%	3	15.8%	8	14.5%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**19**	**100.0%**	**21**	**100.0%**	**15**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Light Condition										
Daylight	10	52.6%	12	57.1%	8	53.3%	10	52.6%	30	54.5%
*Dark (Night)/Dawn/Dusk	8	42.1%	9	42.9%	7	46.7%	8	42.1%	24	43.6%
Not Specified/Reported	1	5.3%	0	0.0%	0	0.0%	1	5.3%	1	1.8%
Sub-Total	**19**	**100.0%**	**21**	**100.0%**	**15**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Environmental Condition										
Clear	17	89.5%	18	85.7%	12	80.0%	16	80.0%	47	85.5%
Rain	1	5.3%	2	9.5%	2	13.3%	2	10.0%	5	9.1%
Snow	0	0.0%	1	4.8%	1	6.7%	1	5.0%	2	3.6%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	1	5.3%	0	0.0%	0	0.0%	1	5.0%	1	1.8%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**19**	**100.0%**	**21**	**100.0%**	**15**	**100.0%**	**20**	**100.0%**	**55**	**100.0%**
Crash Type										
Same Direction - Rear End	8	42.1%	10	47.6%	8	53.3%	9	39.1%	26	47.3%
Same Direction - Side Swipe	6	31.6%	4	19.0%	3	20.0%	5	21.7%	13	23.6%
Right Angle	2	10.5%	2	9.5%	1	6.7%	2	8.7%	5	9.1%
Opposite Direction - Head On/Angular	1	5.3%	0	0.0%	0	0.0%	1	4.3%	1	1.8%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	1	4.8%	0	0.0%	1	4.3%	1	1.8%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	1	5.3%	0	0.0%	0	0.0%	1	4.3%	1	1.8%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	1	4.8%	1	6.7%	1	4.3%	2	3.6%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	3	14.3%	1	6.7%	2	8.7%	4	7.3%
Pedalcyclist	1	5.3%	0	0.0%	1	6.7%	1	4.3%	2	3.6%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**19**	**100.0%**	**21**	**100.0%**	**15**	**100.0%**	**23**	**100.0%**	**55**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Bond Street
Mile Post: 44.69 - 44.71
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**16**		**12**		**9**		**16**		**37**	
Vehicles Involved										
Total Number of Vehicles	34	100.0%	26	100.0%	17	100.0%	26	100.0%	77	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**34**	**100.0%**	**26**	**100.0%**	**17**	**100.0%**	**26**	**100.0%**	**77**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	11	100.0%	5	100.0%	4	100.0%	7	100.0%	20	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	1	25.0%	1	14.3%	1	5.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**11**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**7**	**100.0%**	**20**	**100.0%**
Severity										
Property Damage	10	62.5%	7	58.3%	6	66.7%	8	61.5%	23	62.2%
Injury	6	37.5%	5	41.7%	3	33.3%	5	38.5%	14	37.8%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**12**	**100.0%**	**9**	**100.0%**	**13**	**100.0%**	**37**	**100.0%**
Surface Condition										
Dry	10	62.5%	9	75.0%	5	55.6%	8	57.1%	24	64.9%
Wet	5	31.3%	3	25.0%	3	33.3%	4	28.6%	11	29.7%
Snow/Ice	0	0.0%	0	0.0%	1	11.1%	1	7.1%	1	2.7%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	1	6.3%	0	0.0%	0	0.0%	1	7.1%	1	2.7%
Sub-Total	**16**	**100.0%**	**12**	**100.0%**	**9**	**100.0%**	**14**	**100.0%**	**37**	**100.0%**
Light Condition										
Daylight	8	50.0%	9	75.0%	6	66.7%	8	61.5%	23	62.2%
*Dark (Night)/Dawn/Dusk	8	50.0%	3	25.0%	3	33.3%	5	38.5%	14	37.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**12**	**100.0%**	**9**	**100.0%**	**13**	**100.0%**	**37**	**100.0%**
Environmental Condition										
Clear	12	75.0%	9	75.0%	6	66.7%	9	64.3%	27	73.0%
Rain	4	25.0%	3	25.0%	1	11.1%	3	21.4%	8	21.6%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	1	11.1%	1	7.1%	1	2.7%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	1	11.1%	1	7.1%	1	2.7%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**12**	**100.0%**	**9**	**100.0%**	**14**	**100.0%**	**37**	**100.0%**
Crash Type										
Same Direction - Rear End	12	75.0%	7	58.3%	5	55.6%	8	50.0%	24	64.9%
Same Direction - Side Swipe	3	18.8%	0	0.0%	1	11.1%	2	12.5%	4	10.8%
Right Angle	0	0.0%	0	0.0%	1	11.1%	1	6.3%	1	2.7%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	3	25.0%	0	0.0%	1	6.3%	3	8.1%
Left Turn / U Turn	0	0.0%	1	8.3%	0	0.0%	1	6.3%	1	2.7%
Backing	0	0.0%	1	8.3%	1	11.1%	1	6.3%	2	5.4%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	1	6.3%	0	0.0%	0	0.0%	1	6.3%	1	2.7%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	1	11.1%	1	6.3%	1	2.7%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**16**	**100.0%**	**12**	**100.0%**	**9**	**100.0%**	**16**	**100.0%**	**37**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Anna Street
Mile Post: 44.74 - 44.76
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**12**		**6**		**5**		**11**		**23**	
Vehicles Involved										
Total Number of Vehicles	24	100.0%	13	100.0%	10	100.0%	16	100.0%	47	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**24**	**100.0%**	**13**	**100.0%**	**10**	**100.0%**	**16**	**100.0%**	**47**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	6	100.0%	4	100.0%	1	100.0%	4	100.0%	11	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	1	16.7%	0	0.0%	0	0.0%	1	25.0%	1	9.1%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**6**	**100.0%**	**4**	**100.0%**	**1**	**100.0%**	**4**	**100.0%**	**11**	**100.0%**
Severity										
Property Damage	8	66.7%	3	50.0%	4	80.0%	5	62.5%	15	65.2%
Injury	4	33.3%	3	50.0%	1	20.0%	3	37.5%	8	34.8%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**6**	**100.0%**	**5**	**100.0%**	**8**	**100.0%**	**23**	**100.0%**
Surface Condition										
Dry	10	83.3%	4	66.7%	4	80.0%	6	75.0%	18	78.3%
Wet	2	16.7%	2	33.3%	1	20.0%	2	25.0%	5	21.7%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**6**	**100.0%**	**5**	**100.0%**	**8**	**100.0%**	**23**	**100.0%**
Light Condition										
Daylight	8	66.7%	3	50.0%	3	60.0%	5	62.5%	14	60.9%
*Dark (Night)/Dawn/Dusk	4	33.3%	3	50.0%	2	40.0%	3	37.5%	9	39.1%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**6**	**100.0%**	**5**	**100.0%**	**8**	**100.0%**	**23**	**100.0%**
Environmental Condition										
Clear	10	83.3%	4	66.7%	5	100.0%	7	77.8%	19	82.6%
Rain	1	8.3%	2	33.3%	0	0.0%	1	11.1%	3	13.0%
Snow	1	8.3%	0	0.0%	0	0.0%	1	11.1%	1	4.3%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**6**	**100.0%**	**5**	**100.0%**	**9**	**100.0%**	**23**	**100.0%**
Crash Type										
Same Direction - Rear End	6	50.0%	3	50.0%	3	60.0%	4	36.4%	12	52.2%
Same Direction - Side Swipe	1	8.3%	0	0.0%	1	20.0%	1	9.1%	2	8.7%
Right Angle	1	8.3%	1	16.7%	1	20.0%	1	9.1%	3	13.0%
Opposite Direction - Head On/Angular	0	0.0%	1	16.7%	0	0.0%	1	9.1%	1	4.3%
Opposite Direction - Side Swipe	1	8.3%	0	0.0%	0	0.0%	1	9.1%	1	4.3%
Struck Parked Vehicle	1	8.3%	1	16.7%	0	0.0%	1	9.1%	2	8.7%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	1	8.3%	0	0.0%	0	0.0%	1	9.1%	1	4.3%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	1	8.3%	0	0.0%	0	0.0%	1	9.1%	1	4.3%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**6**	**100.0%**	**5**	**100.0%**	**11**	**100.0%**	**23**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Flora Street
Mile Post: 44.78 - 44.80
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**5**		**3**		**5**		**7**		**13**	
Vehicles Involved										
Total Number of Vehicles	12	100.0%	5	100.0%	12	100.0%	10	100.0%	29	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**12**	**100.0%**	**5**	**100.0%**	**12**	**100.0%**	**10**	**100.0%**	**29**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	1	100.0%	1	33.3%	1	20.0%
Injury	3	100.0%	1	100.0%	0	0.0%	2	66.7%	4	80.0%
Ped Killed	0	0.0%	0	0.0%	1	100.0%	1	33.3%	1	20.0%
Ped Injured	0	0.0%	1	100.0%	0	0.0%	1	33.3%	1	20.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**3**	**100.0%**	**1**	**100.0%**	**1**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**
Severity										
Property Damage	3	60.0%	2	66.7%	3	60.0%	3	50.0%	8	61.5%
Injury	2	40.0%	1	33.3%	1	20.0%	2	33.3%	4	30.8%
Fatal	0	0.0%	0	0.0%	1	20.0%	1	16.7%	1	7.7%
Sub-Total	**5**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**	**6**	**100.0%**	**13**	**100.0%**
Surface Condition										
Dry	5	100.0%	3	100.0%	4	80.0%	4	80.0%	12	92.3%
Wet	0	0.0%	0	0.0%	1	20.0%	1	20.0%	1	7.7%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**5**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**	**5**	**100.0%**	**13**	**100.0%**
Light Condition										
Daylight	4	80.0%	1	33.3%	2	40.0%	3	60.0%	7	53.8%
*Dark (Night)/Dawn/Dusk	1	20.0%	2	66.7%	3	60.0%	2	40.0%	6	46.2%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**5**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**	**5**	**100.0%**	**13**	**100.0%**
Environmental Condition										
Clear	5	100.0%	3	100.0%	4	80.0%	4	80.0%	12	92.3%
Rain	0	0.0%	0	0.0%	1	20.0%	1	20.0%	1	7.7%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**5**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**	**5**	**100.0%**	**13**	**100.0%**
Crash Type										
Same Direction - Rear End	1	20.0%	1	33.3%	2	40.0%	2	28.6%	4	30.8%
Same Direction - Side Swipe	2	40.0%	1	33.3%	1	20.0%	2	28.6%	4	30.8%
Right Angle	2	40.0%	0	0.0%	0	0.0%	1	14.3%	2	15.4%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	1	20.0%	1	14.3%	1	7.7%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	1	33.3%	1	20.0%	1	14.3%	2	15.4%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**5**	**100.0%**	**3**	**100.0%**	**5**	**100.0%**	**7**	**100.0%**	**13**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Olive Street
Mile Post: 44.88 - 44.90
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**0**		**4**		**5**		**5**		**9**	
Vehicles Involved										
Total Number of Vehicles	0	0.0%	9	100.0%	9	100.0%	6	100.0%	18	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**9**	**100.0%**	**9**	**100.0%**	**6**	**100.0%**	**18**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	0	0.0%	3	100.0%	4	100.0%	3	100.0%	7	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	1	25.0%	1	33.3%	1	14.3%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**3**	**100.0%**	**4**	**100.0%**	**3**	**100.0%**	**7**	**100.0%**
Severity										
Property Damage	0	0.0%	3	75.0%	2	40.0%	2	50.0%	5	55.6%
Injury	0	0.0%	1	25.0%	3	60.0%	2	50.0%	4	44.4%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**4**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**9**	**100.0%**
Surface Condition										
Dry	0	0.0%	4	100.0%	4	80.0%	3	75.0%	8	88.9%
Wet	0	0.0%	0	0.0%	1	20.0%	1	25.0%	1	11.1%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**4**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**9**	**100.0%**
Light Condition										
Daylight	0	0.0%	1	25.0%	1	20.0%	1	25.0%	2	22.2%
*Dark (Night)/Dawn/Dusk	0	0.0%	3	75.0%	4	80.0%	3	75.0%	7	77.8%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**4**	**100.0%**	**5**	**100.0%**	**4**	**100.0%**	**9**	**100.0%**
Environmental Condition										
Clear	0	0.0%	4	100.0%	5	100.0%	3	100.0%	9	100.0%
Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**4**	**100.0%**	**5**	**100.0%**	**3**	**100.0%**	**9**	**100.0%**
Crash Type										
Same Direction - Rear End	0	0.0%	3	75.0%	4	80.0%	3	60.0%	7	77.8%
Same Direction - Side Swipe	0	0.0%	1	25.0%	0	0.0%	1	20.0%	1	11.1%
Right Angle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	1	20.0%	1	20.0%	1	11.1%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**4**	**100.0%**	**5**	**100.0%**	**5**	**100.0%**	**9**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Fairmount Avenue
Mile Post: 45.13 - 45.15
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**20**		**42**		**21**		**30**		**83**	
Vehicles Involved										
Total Number of Vehicles	42	100.0%	92	100.0%	43	100.0%	59	100.0%	177	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**42**	**100.0%**	**92**	**100.0%**	**43**	**100.0%**	**59**	**100.0%**	**177**	**100.0%**
Injury Category										
Fatal	1	14.3%	0	0.0%	0	0.0%	1	5.3%	1	1.8%
Injury	6	85.7%	29	100.0%	19	100.0%	18	94.7%	54	98.2%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**7**	**100.0%**	**29**	**100.0%**	**19**	**100.0%**	**19**	**100.0%**	**55**	**100.0%**
Severity										
Property Damage	15	75.0%	26	61.9%	13	61.9%	18	62.1%	54	65.1%
Injury	4	20.0%	16	38.1%	8	38.1%	10	34.5%	28	33.7%
Fatal	1	5.0%	0	0.0%	0	0.0%	1	3.4%	1	1.2%
Sub-Total	**20**	**100.0%**	**42**	**100.0%**	**21**	**100.0%**	**29**	**100.0%**	**83**	**100.0%**
Surface Condition										
Dry	16	80.0%	26	61.9%	11	52.4%	18	62.1%	53	63.9%
Wet	4	20.0%	16	38.1%	9	42.9%	10	34.5%	29	34.9%
Snow/Ice	0	0.0%	0	0.0%	1	4.8%	1	3.4%	1	1.2%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**20**	**100.0%**	**42**	**100.0%**	**21**	**100.0%**	**29**	**100.0%**	**83**	**100.0%**
Light Condition										
Daylight	7	35.0%	24	57.1%	11	52.4%	14	50.0%	42	50.6%
*Dark (Night)/Dawn/Dusk	13	65.0%	18	42.9%	10	47.6%	14	50.0%	41	49.4%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**20**	**100.0%**	**42**	**100.0%**	**21**	**100.0%**	**28**	**100.0%**	**83**	**100.0%**
Environmental Condition										
Clear	16	80.0%	29	69.0%	11	52.4%	19	63.3%	56	67.5%
Rain	3	15.0%	13	31.0%	9	42.9%	9	30.0%	25	30.1%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	1	4.8%	1	3.3%	1	1.2%
Overcast	1	5.0%	0	0.0%	0	0.0%	1	3.3%	1	1.2%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**20**	**100.0%**	**42**	**100.0%**	**21**	**100.0%**	**30**	**100.0%**	**83**	**100.0%**
Crash Type										
Same Direction - Rear End	13	65.0%	23	54.8%	15	71.4%	17	56.7%	51	61.4%
Same Direction - Side Swipe	2	10.0%	8	19.0%	1	4.8%	4	13.3%	11	13.3%
Right Angle	5	25.0%	9	21.4%	4	19.0%	6	20.0%	18	21.7%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	1	2.4%	0	0.0%	1	3.3%	1	1.2%
Left Turn / U Turn	0	0.0%	1	2.4%	0	0.0%	1	3.3%	1	1.2%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	1	4.8%	1	3.3%	1	1.2%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**20**	**100.0%**	**42**	**100.0%**	**21**	**100.0%**	**30**	**100.0%**	**83**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Louisa Street
Mile Post: 45.26 - 45.28
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**4**		**6**		**1**		**5**		**11**	
Vehicles Involved										
Total Number of Vehicles	8	100.0%	15	100.0%	2	100.0%	9	100.0%	25	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**8**	**100.0%**	**15**	**100.0%**	**2**	**100.0%**	**9**	**100.0%**	**25**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	0	0.0%	3	100.0%	0	0.0%	1	100.0%	3	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**0**	**0.0%**	**3**	**100.0%**	**0**	**0.0%**	**1**	**100.0%**	**3**	**100.0%**
Severity										
Property Damage	4	100.0%	5	83.3%	1	100.0%	4	80.0%	10	90.9%
Injury	0	0.0%	1	16.7%	0	0.0%	1	20.0%	1	9.1%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**6**	**100.0%**	**1**	**100.0%**	**5**	**100.0%**	**11**	**100.0%**
Surface Condition										
Dry	3	75.0%	6	100.0%	0	0.0%	3	75.0%	9	81.8%
Wet	1	25.0%	0	0.0%	1	100.0%	1	25.0%	2	18.2%
Snow/Ice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**6**	**100.0%**	**1**	**100.0%**	**4**	**100.0%**	**11**	**100.0%**
Light Condition										
Daylight	4	100.0%	5	83.3%	1	100.0%	4	80.0%	10	90.9%
*Dark (Night)/Dawn/Dusk	0	0.0%	1	16.7%	0	0.0%	1	20.0%	1	9.1%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**6**	**100.0%**	**1**	**100.0%**	**5**	**100.0%**	**11**	**100.0%**
Environmental Condition										
Clear	3	75.0%	6	100.0%	1	100.0%	4	80.0%	10	90.9%
Rain	1	25.0%	0	0.0%	0	0.0%	1	20.0%	1	9.1%
Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fog/Smog/Smoke	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overcast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**6**	**100.0%**	**1**	**100.0%**	**5**	**100.0%**	**11**	**100.0%**
Crash Type										
Same Direction - Rear End	0	0.0%	5	83.3%	0	0.0%	2	40.0%	5	45.5%
Same Direction - Side Swipe	3	75.0%	1	16.7%	1	100.0%	2	40.0%	5	45.5%
Right Angle	1	25.0%	0	0.0%	0	0.0%	1	20.0%	1	9.1%
Opposite Direction - Head On/Angular	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**4**	**100.0%**	**6**	**100.0%**	**1**	**100.0%**	**5**	**100.0%**	**11**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

PARSONS BRINCKERHOFF
CRASH SUMMARY SHEET

PLA 19525A

Made By : C. Bastida
Date : 9/10/2010
Checked By : S. Chiaramonte
Date : 9/10/2010

Subject : **Route 1&9 Corridor Study**

Location: US 1&9 at Co. Route 624
Mile Post: 45.43 - 45.45
Municipality: Elizabeth
County: Union
Time Period: 2007-2009

	2007	%	2008	%	2009	%	AVERAGE 07-09		TOTAL 07-09	
TOTAL CRASHES AT INTERSECTION	**52**		**68**		**30**		**54**		**150**	
Vehicles Involved										
Total Number of Vehicles	106	100.0%	139	100.0%	62	100.0%	103	100.0%	307	100.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**106**	**100.0%**	**139**	**100.0%**	**62**	**100.0%**	**103**	**100.0%**	**307**	**100.0%**
Injury Category										
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Injury	27	100.0%	49	100.0%	6	100.0%	28	100.0%	82	100.0%
Ped Killed	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Ped Injured	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**27**	**100.0%**	**49**	**100.0%**	**6**	**100.0%**	**28**	**100.0%**	**82**	**100.0%**
Severity										
Property Damage	36	69.2%	40	58.8%	25	83.3%	34	66.7%	101	67.3%
Injury	16	30.8%	28	41.2%	5	16.7%	17	33.3%	49	32.7%
Fatal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**52**	**100.0%**	**68**	**100.0%**	**30**	**100.0%**	**51**	**100.0%**	**150**	**100.0%**
Surface Condition										
Dry	44	84.6%	51	75.0%	24	80.0%	40	78.4%	119	79.3%
Wet	6	11.5%	15	22.1%	6	20.0%	9	17.6%	27	18.0%
Snow/Ice	2	3.8%	1	1.5%	0	0.0%	1	2.0%	3	2.0%
*Other (Slush/Water/Sand/Mud/Dirt/Oil)	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	1	1.5%	0	0.0%	1	2.0%	1	0.7%
Sub-Total	**52**	**100.0%**	**68**	**100.0%**	**30**	**100.0%**	**51**	**100.0%**	**150**	**100.0%**
Light Condition										
Daylight	33	63.5%	46	67.6%	21	70.0%	34	65.4%	100	66.7%
*Dark (Night)/Dawn/Dusk	19	36.5%	22	32.4%	8	26.7%	17	32.7%	49	32.7%
Not Specified/Reported	0	0.0%	0	0.0%	1	3.3%	1	1.9%	1	0.7%
Sub-Total	**52**	**100.0%**	**68**	**100.0%**	**30**	**100.0%**	**52**	**100.0%**	**150**	**100.0%**
Environmental Condition										
Clear	43	82.7%	53	77.9%	26	86.7%	41	78.8%	122	81.3%
Rain	6	11.5%	11	16.2%	4	13.3%	7	13.5%	21	14.0%
Snow	1	1.9%	1	1.5%	0	0.0%	1	1.9%	2	1.3%
Fog/Smog/Smoke	0	0.0%	1	1.5%	0	0.0%	1	1.9%	1	0.7%
Overcast	1	1.9%	2	2.9%	0	0.0%	1	1.9%	3	2.0%
Sleet/Hail/Freezing Rain	1	1.9%	0	0.0%	0	0.0%	1	1.9%	1	0.7%
Blowing Snow	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Blowing Sand/Dirt	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Severe Crosswinds	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**52**	**100.0%**	**68**	**100.0%**	**30**	**100.0%**	**52**	**100.0%**	**150**	**100.0%**
Crash Type										
Same Direction - Rear End	18	34.6%	22	32.4%	12	40.0%	18	33.3%	52	34.7%
Same Direction - Side Swipe	15	28.8%	21	30.9%	7	23.3%	15	27.8%	43	28.7%
Right Angle	15	28.8%	18	26.5%	8	26.7%	14	25.9%	41	27.3%
Opposite Direction - Head On/Angular	0	0.0%	1	1.5%	1	3.3%	1	1.9%	2	1.3%
Opposite Direction - Side Swipe	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Struck Parked Vehicle	0	0.0%	1	1.5%	0	0.0%	1	1.9%	1	0.7%
Left Turn / U Turn	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Backing	0	0.0%	1	1.5%	0	0.0%	1	1.9%	1	0.7%
Encroachment	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Overturned	1	1.9%	0	0.0%	0	0.0%	1	1.9%	1	0.7%
Fixed Object	3	5.8%	4	5.9%	2	6.7%	3	5.6%	9	6.0%
Animal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedestrian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pedalcyclist	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Non-fixed Object	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Railcar-Vehicle	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not Specified/Reported	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Sub-Total	**52**	**100.0%**	**68**	**100.0%**	**30**	**100.0%**	**54**	**100.0%**	**150**	**100.0%**

* Over-represenation percentages shown in yellow are above statewide average at intersections for state roadways in 2009

LIGHTING ANALYSIS

Project: RT 1/9 Corridor Study
Description: Lighting Inventory
Location: RT 1/9 NB M.P. 38.34 + ~3.5
Conducted by: Parsons Brinckerhoff (C.Bastida / M.Adams)
Date: 3/17/2011

Pole_Type	Light_Type	Wattage	Bulb_Condition (OFF)	Comment
Signal	Standard	15		START RANDOLPH AVE
Signal	Standard	15		NB START RANDOLPH
Aluminum	Standard	15		
Aluminum	Standard	15		
Aluminum	Standard	15		
Aluminum	Standard	15		
Aluminum	Standard	15		
Aluminum	Standard	15		
Aluminum	Standard	15		
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0	OFF	OFF
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0		UNKNOWN TYPE BRIDGE
Other	Other	0	OFF	OFF
Other	Other	0	OFF	OFF
Utility	LED	25		
Other	Other	0		UNKNOWN TYPE BRIDGE
Utility	LED	25		
Utility	LED	25		
Utility	Standard	15	OFF	OFF
Utility	LED	25		
Utility	LED	25		
Utility	Standard	15		
Utility	Standard	15		
Utility	LED	25		
Signal	Standard	15		NB START MILTON AVE
Signal	Standard	15		
Utility	LED	25		
Utility	Standard	15		
Utility	Standard	15		
Utility	LED	25		NB START GRAND AVE

Project: RT 1/9 Corridor Study
Description: Lighting Inventory
Location: RT 1/9 NB M.P. 38.34 + ~3.5
Conducted by: Parsons Brinckerhoff (C.Bastida / M.Adams)
Date: 3/17/2011

Pole_Type	Light_Type	Wattage	Bulb_Condition (OFF)	Comment
Utility	Standard	15		
Utility	LED	25		
Utility	LED	25		
Utility	LED	25		NB START SCOTT ST
Utility	LED	25	OFF	OFF
Utility	LED	25		
Utility	LED	25		NB START LINCOLN AVE
Utility	LED	25		
Utility	LED	25		
Utility	Standard	15		
Utility	Standard	15	OFF	OFF
Utility	Standard	93		
Utility	Standard	93		NB START EDWARD ST
Utility	Standard	25	OFF	OFF
Utility	Standard	93	OFF	OFF
Utility	Standard	40	OFF	OFF
Utility	Standard	40	OFF	OFF
Utility	Standard	40		
Utility	Standard	25	OFF	NB START AVENUE C OFF
Utility	Standard	93	OFF	OFF
Utility	Standard	93		
Utility	Standard	25	OFF	NB START SYLVAN ST OFF
Utility	Standard	25		
Signal	Vertical	0	OFF	OFF
Signal	Vertical	0		NB START LINDEN AIRPORT
Utility	Standard	25	OFF	OFF
Utility	Standard	25	OFF	OFF
Utility	Standard	25		
Signal	Vertical	0	OFF	OFF
Signal	Vertical	0	OFF	NB START AVIATION PLAZA OFF
Utility	Standard	25		
Utility	Standard	25		
Utility	Standard	25		
Signal	Vertical	0	OFF	OFF
Signal	Vertical	0	OFF	NB START AVIATION PLAZA NO OFF
Utility	Standard	25		
Utility	Standard	25		
Utility	Standard	25		
Utility	Standard	25		

Project: RT 1/9 Corridor Study
Description: Lighting Inventory
Location: RT 1/9 NB M.P. 38.34 + ~3.5
Conducted by: Parsons Brinckerhoff (C.Bastida / M.Adams)
Date: 3/17/2011

Pole_Type	Light_Type	Wattage	Bulb_Condition (OFF)	Comment
Utility	Standard	25		
Signal	Vertical	0	OFF	OFF
Utility	Standard	25		NB START STILES AVE
Utility	Standard	93	OFF	OFF
Utility	Standard	25		NB START MOPSICK AVE
Utility	Standard	93		NB START EDDY AVE
Utility	Standard	25		NB START WINANS AVE
Utility	Standard	17		
Utility	Standard	93		
Utility	Standard	25	OFF	OFF
Utility	Standard	40		NB START WOOD AVE
Utility	Standard	25	OFF	OFF
Utility	LED	25		
Utility	Standard	93		
Utility	LED	25		NB START CLINTON ST
Utility	LED	25		
Utility	LED	25		
Utility	LED	25		
Utility	LED	25		
Utility	Standard	25	OFF	OFF

Type of Pole

Nomencla ture Used

Utility: Overhead Structure supporting lighting fixture and other public utilities. Only utility poles made of wood were observed.

Typical Utility Pole Obversed along Rt 1/9T

Aluminum: Overhead Structure (made of aluminum) supporting lighting fixture.

Typical Aluminum Pole Obversed along Rt 1/9T

Signal: Overhead structure supporting both traffic signal head and lighting fixture.

Typical Traffic Signal and Lighting Pole Obversed along Rt 1/9T

Other: Other type of overhead structure supporting lighting fixture. This type of lighting poles were only obseverd at the Elizabeth River overpass/bridge.

Non-Typical Pole Obversed along Rt 1/9T

Type of Lighting Fixture

Nomenclature Used

Standard (Cobrahead): More common street lighting fixture.

Typical Standard Lighting Fixture along Rt 1/9T

LED (Induction): Induction type fixture, full cutoff.

Typical Induction Lighting Fixture along Rt 1/9T

Vertical: lighting fixture typically found on pole at an intersection.

Typical Vertical Lighting Fixture along Rt 1/9T

Other: Other type of non-typical lighting fixture found along Rt1/9

Non-Typical Lighting Fixture along Rt 1/9T

Other examples obtained from http://www.pseg.com/business/local_government/outdoor_lighting/security.jsp#induction

Other example obtained from http://www.pseg.com/business/local_government/outdoor_lighting/security.jsp#induction

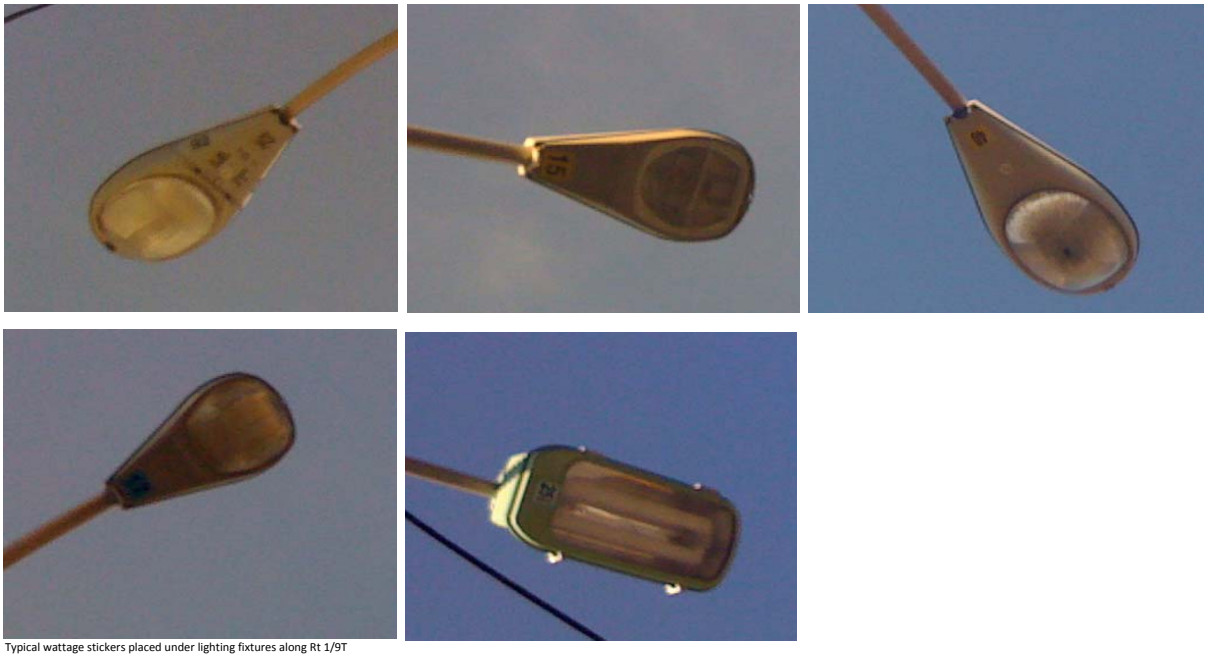
Other example obtained from http://www.holophane.com/products/Family.asp?Brand=HLP&Family=RSL-200&ProductType=Outdoor&Categc

Wattage

Nomenclature Used

Sticker	Wattage
15	150 Watts
17	170 Watts
25	250 Watts
40	400 Watts
0	Not Available/Visible
93	Other

*__NOTE__: Wattage was directly obtained from sticker placed under the lighting fixture housing



Typical wattage stickers placed under lighting fixtures along Rt 1/9T

Type of Lighting Fixture

Nomenclature Used

Standard (Cobrahead): More common street lighting fixture.

Typical Standard Lighting Fixture along Rt 1/9T

Bulb Condition

Nomenclature Used

OFF	Light bulb off at the time observed
-	Othewise

PHOTO LOG

Route 1&9 at North Avenue jug handle looking south

Route 1&9 northbound approaching North Avenue looking north

Route 1&9 at North Avenue looking south from northbound bus stop

Route 1&9 at North Avenue looking north

Route 1&9 at North Avenue looking west

Route 1&9 at North Avenue looking north

Route 1&9 at Olive Street looking south

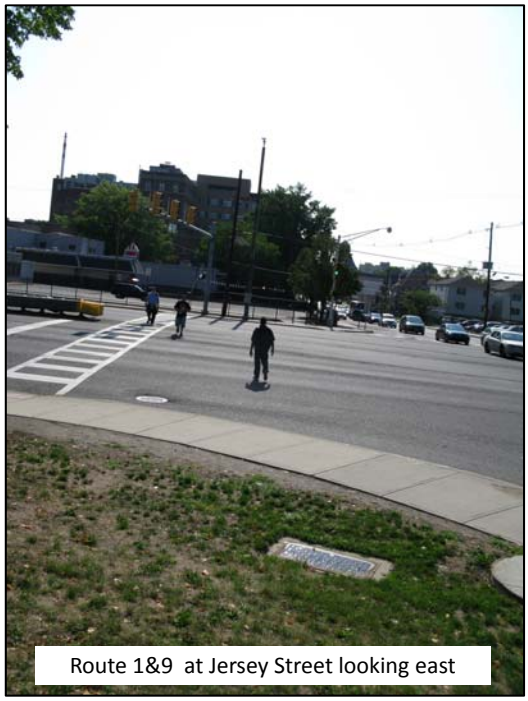
Route 1&9 at Flora Street looking west

Route 1&9 at Grand Street looking north

Route 1&9 at Grand Street looking north from southwest corner

Route 1&9 at Grand Street looking north from southwest corner

Route 1&9 at Grand Street looking south



Route 1&9 at Jersey Street looking east

Route 1&9 at Jersey Street looking north

Route 1&9 at Jersey Street looking north

Gordon Street at Route 1&9 looking east

Route 1&9 at Broad Street looking south

Route 1&9 at Broad Street looking southeast

Route 1&9 at Broad Street looking east

Route 1&9 at Gibbons Court looking south

Gibbons Court at Route 1&9 looking southwest

Route 1&9 at Gibbons Court looking north

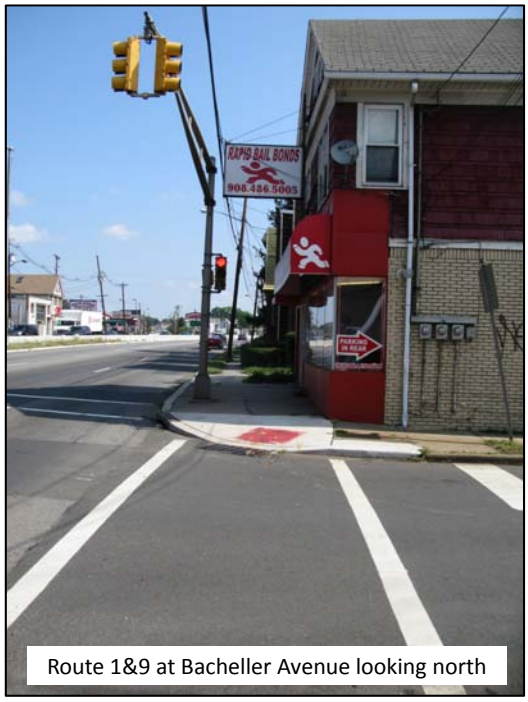
Route 1&9 at Bayway Circle North
looking northeast

Route 1&9 at Bayway Circle North looking north

Route 1&9 at Spofford Avenue looking south

Route 1&9 at Bacheller Avenue looking west

Route 1&9 at Bacheller Avenue looking south

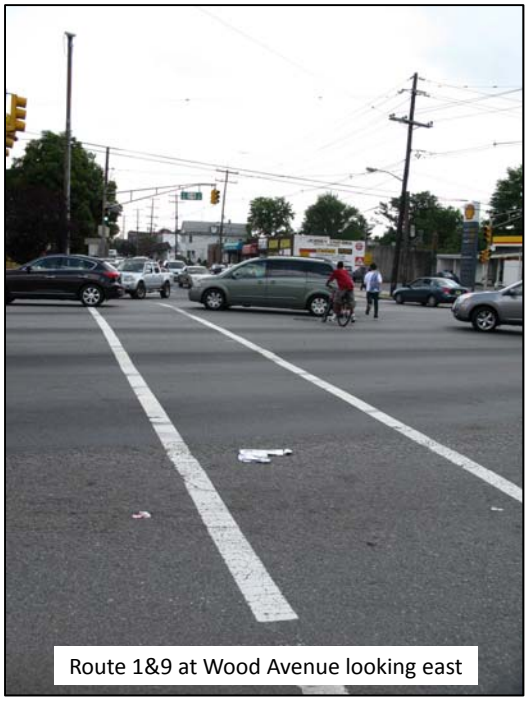


Route 1&9 at Bacheller Avenue looking north

Route 1&9 at Park Avenue looking east

Route 1&9 at Woodlawn A venue looking east

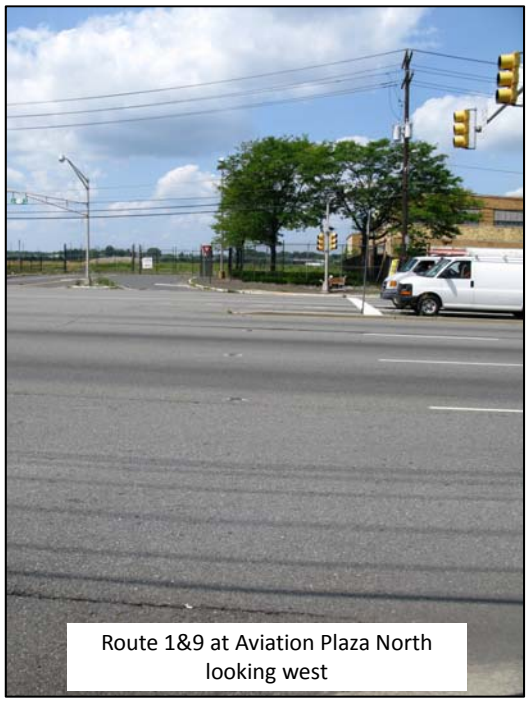
Route 1&9 at Clinton Street looking east



Route 1&9 at Wood Avenue looking east

Route 1&9 at Wood Avenue looking east

Route 1&9 at Stiles Street looking east



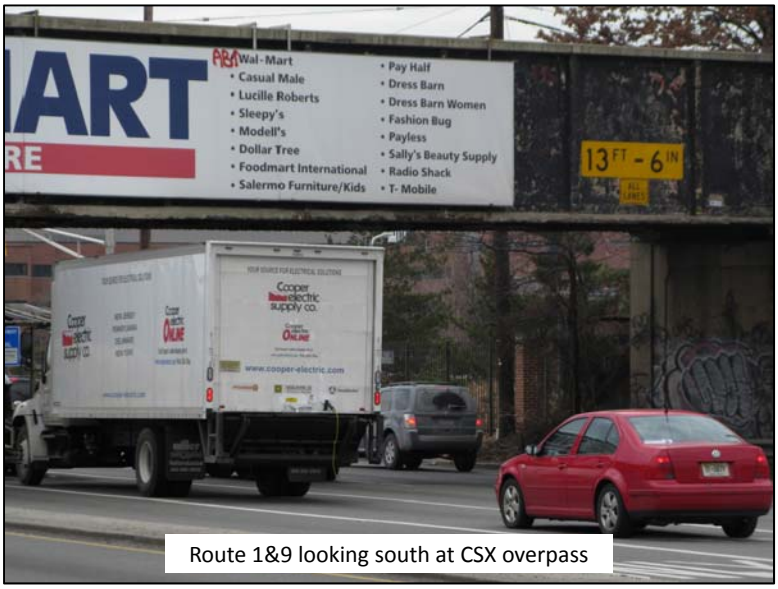
Route 1&9 at Aviation Plaza North
looking west

Route 1&9 at Aviation Plaza North
looking south

Route 1&9 at Pleasant Street looking east

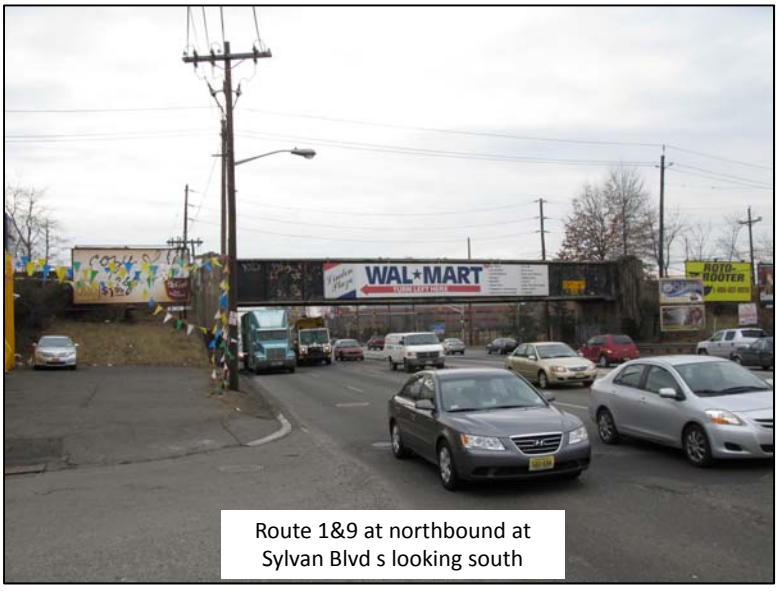
Route 1&9 at Pleasant Street looking south

Route 1&9 northbound at Avenue C looking south



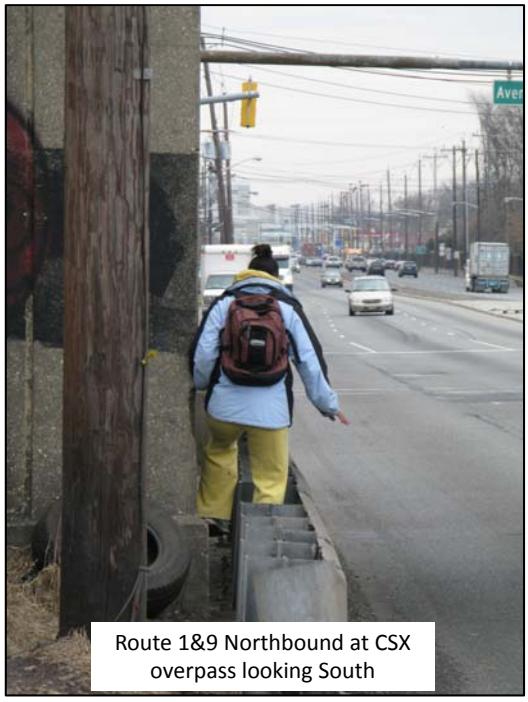
Route 1&9 looking south at CSX overpass

Route 1&9 at northbound at CSX overpass looking south

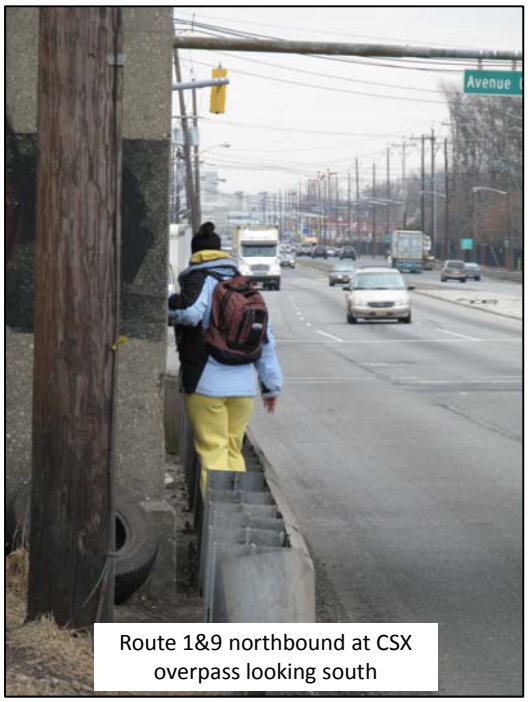


Route 1&9 at northbound at Sylvan Blvd s looking south

Route 1&9 northbound at CSX overpass looking south



Route 1&9 Northbound at CSX overpass looking South



Route 1&9 northbound at CSX overpass looking south

CSX overpass looking south from Pleasant Street

Route 1&9 at Avenue C looking west

Route 1&9 at Milton Avenue looking northwest from southwest corner

Route 1&9 at Crowd Street looking east

Route 1&9 at Milton Avenue looking north

Route 1&9 at Milton Avenue looking north

MEETING AGENDAS

UNION COUNTY
Route 1&9 Corridor Study
Wednesday, September 15, 2010

MUNICIPAL OUTREACH MEETING

CITY OF LINDEN
CITY HALL
LINDEN, NJ 07036

AGENDA

The purpose of this meeting is to describe the goals of Route 1&9 Corridor Study and discuss issues related to the highway and project study area.

- Introductions
- Project overview and status to date
- Discussion of safety conditions and mobility concerns in the Study Area
- Approved and pending development plans, recent traffic and planning studies
- Next Steps

UNION COUNTY
Route 1&9 Corridor Study

Thursday, December 16, 2010
7:30 AM

LINDEN INDUSTRIAL ASSOCIATION MEETING
Bayway Office Building (B.O.B)
1400 South Park Avenue
Linden, NJ 07036

AGENDA

The purpose of this meeting is to describe the goals of Route 1&9 Corridor Study and discuss issues related to the businesses and industries in project study area.

- Introductions
- Project overview and status to date
- Discussion of safety conditions and mobility concerns in the Study Area
- Next Steps

UNION COUNTY
Route 1&9 Corridor Study

Wednesday, March 30, 2011
9:30 AM

TECHNICAL ADVISORY COMMITTEE MEETING

AGENDA

The purpose of this meeting is to discuss the corridor issues and sample concepts for the Route 1&9 Corridor Study.

- Welcome and Introductions
- Role of the Technical Advisory Committee
- Project Overview
  - Objectives
  - Study Area
  - Timeline
- Summary of Existing Conditions
- Discussion
  - Specific Corridor Issues
  - Sample Concepts
- Next Steps

UNION COUNTY
ROUTE 1&9 CORRIDOR STUDY

9:30 AM, Wednesday, June 1, 2011
Peterstown Community Center, Elizabeth, NJ

TECHNICAL ADVISORY COMMITTEE MEETING

AGENDA

I. Welcome and introductions

II. Purpose of today's meeting

III. Recommendations

   A. Corridor-wide issues
   B. Location specific improvements for addressing identified issues.
   C. Developing a roadmap for taking action, including identifying potential lead public agencies.

IV. Summary matrix of issues, recommendations, and potential lead agencies

V. Next Steps

MEETING MINUTES

PB Meeting Minutes

Subject: Route 1&9 Corridor Study
Interview with City of Elizabeth
Attendees: Liza Betz, Union County
Phyllis Reich, City of Elizabeth Department of Planning and Community Development
Lt. Dugan, City of Elizabeth Police Department
Jenn Grenier, Parsons Brinckerhoff
Ron Weening, Anne Strauss Wieder Inc.

Date: August 10, 2010 – 10:00am
Location: Conference Call

Liza began the meeting with introductions of all on the phone and provided a brief summary of the project. Liza noted this was a one year project to examine the issues along Route 1&9 from a safety and traffic operations perspective as well as to review land uses and how they might impact/enhance the traffic conditions.

Jenn noted the consultant team is made up of Parsons Brinckerhoff, 4Ward Planning for land use issues, T&M to assist with traffic assessments, and Anne Straus Wieder Inc (ASW) for stakeholder outreach and freight issues. Ron explained his background with the County and ASW's role in the project.

Liza, Jenn and Ron then interviewed the Lt. Dugan and Phyllis. The following is a summary of the general questions and responses.

IS THERE ANY FUTURE DEVELOPMENT, IN THE PIPELINE, THAT WOULD AFFECT THE CORRIDOR WITHIN THE PROJECT LIMITS? ARE THERE ANY LARGE SCALE DEVELOPMENT PLANS THAT HAVE BEEN RECENTLY APPROVED OR PENDING APPROVAL THAT WOULD SIGNIFICANTLY AFFECT CONDITIONS WITHIN THE PROJECT AREA?

Phyllis was not aware of any plans at this time. Lt. Dugan noted that a hotel with shops, a strip mall and fast food is planned for the former Haywood manufacturing site on the northbound side near Fairmont and Woodruf Avenues. He also noted that the City applied to the state for red light cameras to be installed at Fairmont, East Grand, East Jersey and Maple Avenues. These locations were selected by the city because they have the highest number of crashes.

WHAT ARE YOUR PRIMARY ISSUES AND CONCERNS RELATED TO THE ROUTE 1&9 CORRIDOR WITHIN YOUR MUNICIPALITY? WHAT DO YOU SEE AS THE MOST CRITICAL TRANSPORTATION, SAFETY, AND/OR ACCESS ISSUES WITHIN THE PROJECT AREA?ARE THERE AREAS WHERE THE SAFETY OF MOTORISTS, PEDESTRIANS, OR BICYCLISTS IS A CONCERN?

Jaywalking is of high concern. Pedestrian crossing is a major concern. At most intersections, there is generally an unsafe feeling. Lt. Dugan noted you are putting your life a

risk at most crossing locations. The corridor is congested, high speed and has significant aggressive driving issues.

The highest pedestrian activity is at East Grand Avenue and East Jersey Avenue. East Jersey Avenue does not provide enough time to cross due to the left turn signals.

Pedestrian activity is high due to shopping, bars, liquor stores, retail, and visiting friends homes. Nighttime activity remains high which is a concern as speeds are higher at this time as well.

The viaduct area has speeding isses. Since the viaduct was improved speeding has increased. Motorists come off of the improved/widened viaduct as high speeds and the roadway quickly narrows to the signals at East Jersey and East Grand where there is a lot of pedestrian activity. Too short a transition from freeway like conditions to downtown like conditions.

In the northern section of town the signal system is out of whack. The signals are too close together. There is a lot of jaywalking in this area where people jump the divider.

DO YOU HAVE ANY IDEAS OR SPECIFIC SUGGESTIONS ON HOW TO ADDRESS THE ISSUES THAT YOU NOTED?

Refuge islands are not a preferred solution. It would be better to get the pedestrians more time to get across the roadway.

They have applied for grants to install pedestrian countdown heads at East Grand and East Jersey. There have been fatalities here. The grants went to the Director of Transporation at NJDOT in Trenton.

The improvements at North Avenue are an example of a good State improvement in the area.

ARE THERE ISSUES ASSOCIATED WITH CERTAIN TIMES OF THE DAY/NIGHT?

It is congested all day and sometimes at night as well. Speeds tend to be higher at night. There is heavy airport traffic into the night till 2 or 3 am.

ARE THERE ISSUES ASSOCIATED WITH OTHER MODES SUCH AS TRUCKS OR BUSSES?

There are busses in the area, however there are no issues associated with them the interviewees were aware of.

Trucks use Route 1&9 because there is no toll as compared to the NJTPK. There are a lot of truck crashes, primarily rear end and angle collisions.

Limosines kill time in the study area in local parking lots. They linger around the businesses in the area and until they are chased out or have a pick up at the airport.

CAN YOU SUGGEST INDIVIDUALS AND/OR GROUPS THAT WE SHOULD BE INCLUDING IN THIS DISCUSSION AND/OR AS PART OF OUR STAKEHOLDER LIST?

For now include Lt. Dugan, Phyllis, and Warren Bush (electrical supervisor). They will look into additional groups we may want to include.

The interviewees noted how hard it is to get people to participate as they have limited time for meetings for studies. How can we assure them that the results will be beneficial. Liza noted that the County understands these concerns and will do their best to limit the time commitments, however the local stakeholders know the study area issues the most and that input is invaluable. The County will drive the State as much as possible to make improvements, but we need to be sure we have the support of the stakeholders. It is important in these fisally constrained times to be the consistent and continue to push for improvements.

Liza thanked all for participating and for providing their input.

Distribution: Attendees, PLA 19525A 6.0, Central File 19525A 6.0

PB Meeting Minutes

Subject: Route 1&9 Corridor Study
Interview with City of Linden

Attendees: Councilman Bob Sadowski, City of Linden 6th Ward
George Vircik, Engineer, City of Linden
Ron Stefanowicz, Executive Director, Linden Economic Development Corp.
Sergeant Michael Babulski, Linden Traffic Division
Mark Gialluca, Duke Realty Corporation
Al Faella, Director, Union County Parks and Community Renewal
Liza Betz, Special Assistant to Director, Project Manager
Martin Willard, Union County Transportation Planning Intern
Jenn Grenier, Project Manager, PB Americas
Ronald Weening, Freight Specialist, A. Strauss-Wieder, Inc.

Date: September 15, 2010 – 10:30 AM
Location: Linden City Hall

The meeting began with introductions around the table and a brief summary of the project. Liza Betz noted that this was a one year project to examine the issues along Route 1&9 from a safety and traffic operations perspective as well as to review land uses and how they might impact/enhance traffic conditions.

Ron Stefanowicz noted that Bob Sadowski from the 6th Ward was present to discuss issues. Additionally, Michele Yamakaitis (8th Ward) and Jack Sheehy (7th Ward) were unable to attend. As such Ron discussed the project with them in advance to gain their input on key issues so that he could provide a consolidated list of issues. Ron also obtained input from Mike Karlovich of ConocoPhillips, which has a major fueling depot on the corridor in Linden. Mike's concerns include the awkward turn from Route 1&9 southbound to the Conoco facility and the fatalities at this site. Ron also noted that Bayway Lumber is looking to expand.

The group discussed a range of issues along the corridor in Linden. Safety concerns for Route 1&9 users was a top priority. This included traffic accidents, pedestrian crossings, cyclists, missing sidewalks, air pollution (carbon monoxide), and lighting. Traffic congestion difficulties were mentioned not only for residents, but for industrial trucking as well.

The 6th Ward is primarily comprised of residential neighborhoods. It was noted that the five traffic lights in the vicinity slow traffic. During congested periods, the traffic backs up to the I-278 Interchange. There are no U-turns in the area so vehicles and trucks that miss their turns go through residential areas to make U-turns (specifically Woodlawn Avenue near Wood Avenue). There is a truck terminal north of this area where trucks regularly miss the entrance, forcing them to U-turn in the adjacent residential areas to return to their destination. Heading northbound many out-of-towners miss the cemetery and also U-turn through resisdential streets. Additionally, many travelers heading west in the County need to travel through Linden along Stiles or Wood Avenues.

It was also noted that in general unfamiliar drivers along the corridor, including cemetery visitors, unfamiliar truck operators and New York shoppers who now come to this area to shop

often make u-turns along local streets. Also the New York shoppers add pressure to the roadway system by adding to the congestion.

The development on Route 1&9 at Park Avenue has recently redeveloped with a Kohl's and a Sam's Club. There is more retail development planned for this site.

The proposed development plans for the former GM property are as follows: The "Front 40 Acres" will consist of a retail shopping center; the "Back 50 Acres" will be warehouse and industrial space; and two acres will be residential (presumably age restricted over 55). The proposed "Pur Gen" property would be repurposed as an industrial research facility. It was noted that Duke Realty now has a permit from NJDOT to proceed with the development and adjacent transportation improvements.

A traffic study was undertaken on behalf of Duke Realty to identify areas in need of improvement related to the redevelopment of the GM site. This study and intersection plans were not available for viewing at this meeting but can be obtained upon request. It was noted that south of Woodlawn Avenue there are many traffic light issues and that a signal retiming and turn lanes will be completed at the GM site. Route 1&9 at Stiles Street will be completely rebuilt as part of the GM redevelopment. Carl Pehnke of Langan Engineering can provide the traffic studies and construction plans for the GM site and the plans for the intersections of Route 1&9 at Stiles Street, at GM, at Aviation Plaza, and at Pleasant Street.

Speeding was cited as an issue along Route 1&9 with traffic often observed traveling greater than 20 mph above the posted speed limit. It was noted that traffic merging onto Route 1&9 from I-278 travels at high speeds. Sergeant Babulski noted that speeding is a concern and that in his estimation, approximately one-half of motorists travel about 20 mph over the speed limit and roughly ten percent travel at double the speed limit. He will provide the project team with an National Transportation Safety Board report related to a traffic crash in the area that reviews some of the speeding concerns and highlights the results of a speed study completed in Linden by NJDOT.

The need to increase the safety of left turns was noted by interviewees. The absence of jughandles was mentioned, although land acquisition costs may make this improvement prohibitive. Roadway improvements related to the Duke Realty development will increase the amount of left turn lanes in the area near the major shopping centers. Additionally, it was noted that improved signal timings were needed throughout the corridor.

It was also noted that the I-278 Interchange completion is needed and will change the travel patterns in the corridor. A study of this issue is underway by the Port Authority of New York and New Jersey and the NJDOT.

The Conoco entrance at Morse Mill Road was described as a problem. At the left turn to Conoco, motorists accidentally enter the lane and are forced to travel through and thus wind up on the median.

Children have been observed jumping the fence from the skatepark in the park between Wood Avenue and Stiles Street then crossing Route 1&9 midblock to access the McDonalds across the street. Additionally improved pedestrian timings are needed throughout Route 1&9

in Linden. The crossing at Bacheller Avenue was noted as a hazardous crossing area. The entire corridor is considered a hostile pedestrian environment. There are many workers bicycling along and across Route 1&9 and bike accommodations are needed along the highway. The lack of sidewalks were also noted across from the GM site.

There is flooding in the area of Morse Mill Road which ices up in the winter months causing safety issues.

The lighting along I-278 in this area has not been working for more than fifteen years. Linden has attempted coordination with the local district office of NJDOT as well as with PSE&G related to lighting. Responsibility and ownership of the lighting facilities has not been made clear.

Maintenance is not done regularly along the corridor, including underpasses, overpasses, street sweeping, mowing, and lighting. A responsible party for NJDOT has not been established or made clear. Linden does not know who to reach out to when there is an issue. In the past, when Linden has contacted NJDOT many times, there was no response.

Significant truck traffic exists between the New Jersey Turnpike and Tremley Point. The exit 12 improvements to Tremley Point are may be complete in the future.. Currently many trucks use Wood Avenue and Stiles Street to access Tremley Point.

Merck may use their property in Linden for more research.

Al Faella thanked the attendees for their input and noted that the result of this study could include a Powerpoint show of critical issues to be presented to NJDOT and elected officials in order to avance projects in this area. Liza Betz and Jenn Grenier thanked all for their input and provided contact information should additional issues come to mind.

Distribution: Attendees, PLA 19525A 6.0, Central File 19525A 6.0

PB Meeting Minutes

Subject: Route 1&9 Corridor Study
Interview with City of Rahway

Attendees: Peter Pelissier, Business Administrator, City of Rahway
Cindy Solomon, Director, Community Development, City of Rahway
Joseph Kostick, Patrol Officer, Rahway Police Department
Freeholder Rick Proctor, Union County
Al Faella, Director, Union County Parks and Community Renewal
Liza Betz, Project Manager, Special Assistant to Director, Union County
Martin Willard, Union County Transportation Planning Intern
Jenn Grenier, Project Manager, Parsons Brinckerhoff
Ronald Weening, Freight Specialist, A. Strauss-Wielder, Inc

Date: September 21, 2010, 2 PM

Location: Rahway City Hall

The meeting began with introductions and a brief summary of the project. Liza Betz noted that this was a one year project to examine existing safety and traffic operations issues along Route 1&9 as well as to review land uses and how they might impact or enhance traffic conditions. Jenn Grenier and Liza then asked a series of questions to gain input on development and redevelopment in the study area, key issues related to safety, traffic, pedestrians, and trucks, and insight into priorities and potential improvements.

The group provided a brochure that highlighted several redevelopment projects in Rahway that have revitalized the City and provided economic growth in the region. They noted that along the study corridor, two locations (Quik Check and Best Western) were redevelopment projects and a new project (hotel and restaurant) has been approved for the lot adjacent to the Best Western.

The City has a population of approximately 27,000 that is expected to grow with the construction of 1,500 new apartment units. There are 8,000 single family homes in the CBD. Merck employs over 5,000 workers and the Robert Wood Johnson University Hosptial has experienced significant growth. These residential and commercial developments all add significant traffic volumes to the area.

Several other redevelopment areas include the McDonalds, the elimination of a tavern in poor condition, the White Castle property, and an approved plan to replace a motel in disrepair with a new chain motel. The primary uses along Route 1&9 are service industry.

Key issues noted related to Route 1&9 included the lack of maintenance for mowing and litter on NJDOT property including the underpasses and jughandles. A safety concern was the excessive and sometimes large debris along the shoulders of Route 1&9. Under the new overpass bridge (realignment), near Hazelwood Avenue, the area is a “junkyard.” It is unclear who is responsible for maintenance. This is an issue under the railroad overpass as well.

The overall corridor in Rahway has improved since the highway was redone (realignment and overpass) about two years ago. This was a significant improvement.

Since the realignment was completed crashes have been reduced. However, it seems that speeding has increased. There is significant speed limit signing and heavy enforcement in the vicinity of the new overpass; however the wide lanes and change in roadway context result in more speeding. Speeding sometimes is nearly double the 45 mph speed limit.

It was noted that lighting was not an issue in the area. It was also noted that there is not a lot of pedestrian traffic in this area.

Rahway representatives noted that East Grand and Milton Streets are the two remaining dangerous signalized intersections along Route 1&9 in Rahway.

Additionally the timing of the signalized intersection at Aviation Plaza should be reviewed.

City officials noted that street trees and lighting with a grass median is the preferred vision for the corridor. However, the group generally agreed that the ROW impacts would be too great to allow for this type of treatment.

Unlike Linden and Elizabeth, sign pollution is not an issue in this area.

Truck traffic has improved and shifted to Randolph Avenue on the Rahway/Woodbridge border from which is accesses the New Jersey Turnpike. Previously, more of this traffic traveled through Rahway. However, Grand Avenue does serve the industrial areas in Linden and points west in Carteret. Truck traffic is prohibited on Barnett Street and the residential streets are all load posted to limit through truck traffic.

Merck brings in a significant amount of traffic that backs up on the jughandles. The northbound lane near KFC to the jughandle is never maintained. The signs are down often and the city repairs it on their own rather than waiting for NJDOT maintenance. It often takes NJDOT several weeks to repair/maintain signs. The shoulder debris on the bridge is a hazard detracts from the revitalized/beautification efforts of the city.

The city requested having a single NJDOT contact person to take action and follow up with on local issues. Often city officials are sent to a different person each time they call with limited abilities to follow up.

Finally it was noted that Rahway was recently approved for Red Light Cameras on Route 1&9.

Al Faella thanked all for their input and noted that the result of this study could include a PowerPoint show of critical issues to be presented to NJDOT and elected officials in order to advance projects in this area.

Liza Betz and Jenn Grenier thanked all for their input and provided contact information should additional issues come to mind.

Distribution: Attendees, PLA 19525A 6.0, Central File 19525A 6.0

Union County Route 1&9 Corridor Study

Linden Industrial Association (LIA) Meeting
Hosted by Mike Karlovich, ConocoPhillips
Thursday, December 16, 2010, 7:30 am, ConocoPhillips Administration Building, 1400 South Park Avenue, Linden, New Jersey 07036

An agenda was handed out and two aerial maps were strategically placed so that participants could mark up the identified problem areas. An attendance sheet was also circulated, along with a newsletter that described the project.

Project Manager, Liza Betz, Principal Transportation Planner and Special Assistant to the Director, Department of Parks and Community Renewal, County of Union introduced the Consultant team present: Jenn Grenier, Project Manager, Parsons Brinckerhoff; Anne Strauss-Wieder, Principal, A. Strauss-Wieder, Inc. (ASWinc); Ronald S Weening, Senior Freight Specialist, ASWinc.

Ms. Betz explained the goals and objectives of the Route 1&9 Corridor Study and progress to date. The purpose of this meeting was to discuss issues related to the businesses and industries in the project study area. Each participant was then asked to introduce themselves, and the discussion started.

The key points emerging from the discussion included:

Area along Route 1&9 from the entrance to the ConocoPhillips Domestic Sales Terminal to Park Avenue

- The configuration at the front of the terminal entrance includes a long ramp from westbound Interstate 278 to southbound Route 1&9 that is two lanes wide. Route 1&9 southbound drivers destined to ConocoPhilips enter a channelized left turn lane. The I-278 ramp is parallel to the left turn lane on the left and after the signal, merges in the fast lane of Route 1&9 southbound. There is an entrance to the left turn lane from the I-278 ramp as well. This entrance is sometimes confused for the ramp to Route 1&9 Southbound by motorists. There are raised islands between the ramp and the left turn lane and between the ramp and northbound Route 1&9. Additionally, there is a raised island ahead of the left turn lanes to keep traffic from traveling through (ie continue southbound) at this location.
- According to meeting attendees, this location has been the scene of numerous accidents, of which some may have had fatal outcomes as vehicles traveling at unsafe speeds hit the raised island and become airborne. Motorists speed down the ramp and have become airborne when hitting the raised island at the bottom. Cars hit the island and crash onto northbound Route 1&9.
- The U-Turn at Domestic Sales needs a redesign.
- Other issues at this site, south of ConocoPhillips is motorists traveling down the Interstate 278 westbound ramp enter the fast lane of Route 1&9 and must immediately cross over three-to-four lanes to exit by the cemetery on southbound Route

1&9. This weaving pattern has caused accidents for those unfamiliar with the area.

- Between 400 and 500 tank trucks a day enter Bayway Terminal at this location. They enter from northbound Route 1&9 as well as from the westbound Interstate 278 ramp.
- Signage identifying the left lane of the ramp as an entrance only to the refinery may be inadequate for those unfamiliar with the area. Cars then have to swiftly change lanes to continue southbound on Route 1&9.
- Trucks traveling northbound on Route 1&9 cannot easily make the right angle turn at Park Avenue. They must make a wide swing. The geometry at this corner needs to be improved, especially if the missing northbound ramp from Interstate 278 is constructed and additional truck traffic from the Goethals Bridge uses this location to access eastbound Park Avenue.
- Speeding tends to occur between Park and Woodlawn Avenues along this 1.5 mile stretch of Route 1&9. There are no traffic signals between these two points.

Area along Route 1&9 between Stiles Street, the entrance to Safety Kleen and the GM Property at Pleasant Avenue south to Rahway

- There is a lack of jug handles in this stretch of Route 1&9. One was removed on the southbound side and became part of the Merck Property. Pleasant Avenue also used to have a jug handle.
- If drivers miss their turn, they go down to Woodlawn and then go through residential neighborhoods.
- Participants noted that the queue lane on the northbound side into Sam's Club and Kohl's is not sufficient in length.
- Trucks pick up loads at Safety-Kleen Systems, Magnaplate and other industrial businesses between 2 and 4 PM. This causes significant traffic in this area on the Corridor between the Bayway Circle and Wood.
- It was noted that Duke Properties will take part of Klein Automotive to add another left lane as part of their redevelopment of the GM property. NJDOT has already issued the permits related to this redevelopment. Housing is anticipated for this site in the old parking lot areas.
- The CSAO (Conrail Shared Assets Organization) railroad overpass is a low clearance bridge by today's standards. Trucks have hit this bridge. It restricts truck traffic on this stretch of Route 1&9.
- The traffic light signals on the armatures over the roadway at the turn off lanes to the mall are not clearly positioned over lanes causing confusion for motorists. This has caused rear end collisions. It was suggested that the team and County look at the signalization at Woodbridge Mall as a model.
- Signage along the complete length of the corridor is confusing and is needs to be improved to guide motorists and truckers. Also, Route 1&9 is identified as

Spring Street in Elizabeth and Edgar Road in Linden – this causes driver confusion.

- Some in attendance noted that they understood the official designation of Route 1&9 is as an east-west highway, not a north-south highway. Current practice is for odd numbered highways to be North-South roadways. This legacy designation is confusing to drivers. The NJDOT straight line diagrams denote Route 1&9 as a north-south highway.
- Red light violation cameras are located at Stiles Street and Route 1&9 and at Park Avenue and Route 1&9. This has led to a considerable reduction in accidents, according to the City of Linden.
- In this section south into Rahway there are no shoulders, along with roadway geometry issues. Trucks have to make wide swings to exit or enter adjoining properties. Patrol cars have to be positioned on adjoining private properties when monitoring the roadway.
- Traffic back-ups occur on Route 1&9 northbound from the Aviation Plaza Mall south into Rahway during mid-day between 2:00pm and 4:00pm. This may coincide with the pm truck pick-up period. Trucks usually drop off in the am and pick –up in the pm before heading back to home terminals.
- The Stiles Street left hand turning lane on northbound Route 1&9 may not be long enough to handle traffic queuing, thereby blocking northbound traffic.

Access to Route 1&9 corridor via public transit and non-motorized vehicles

- There are no sidewalks under the CSAO railroad overpass forcing people to walk on Route 1&9 traffic lanes. The Complete Streets program requires this accommodation.
- There is no bus service into the corridor from any of the six bus routes that serve Linden.
- Employees at the retail centers are walking or biking from the NJ Transit railroad station on Wood Avenue to their destinations along Route 1&9. A shuttle van could be useful.
- Bayway and Infineum employees come by car because transit service is not convenient to the work shifts.
- There needs to be a way to provide shuttle services to and from the retail clusters for customers. One person cited how Disney World in Florida uses shuttles to move people from parking areas to the main entranceway as an example that might be applied to connecting current and future retail development areas.

Overall issues impacting traffic flow in Route 1&9 Corridor

- Participants noted that the timing of lights along Route the Route 1& 9 Corridor could affect traffic movement on the side roads.
- It was noted that toll rates on the turnpike particularly at Interchanges 12, 13, 13A forces diversion of trucks moving into and out of the port area onto route 1&9.

- It was explained that revenues derived from the state's Safe Corridor program and recently installed cameras at two intersections flows back to the state. The State retains one half of the revenues and the other half is returned to the municipalities to make additional improvements. It was noted that the state has been extremely slow in returning these funds to the municipalities.
- Police cannot enforce regulations in this area because no space exists to safely park their vehicles to monitor and respond to traffic.
- The City of Linden has applied for grant funds for improvements (applications were made to NJ Transit/NJDOT Transit Village Program and to Tiger II federal funding program for example) but has not secured any funding to date.
- Participants anticipate the construction of the proposed connector road from the New Jersey Turnpike at exit 12 into Tremley Point area to alleviate truck traffic on Route 1&9 in general; and specifically at the Stiles Street and Wood Avenue intersections.
- Infineum Corporation noted that the economy has impacted the type of freight conveyances used by its customers. Customers are currently ordering materials in smaller quantities- in the range of 5,000 gallon instead of in the 23,000-gallon range. The smaller quantities are more conducive to truck haulage since 23,000-gallon orders are more economical by rail. Accordingly, more is currently being shipped by truck and less by rail car. This adds to the traffic in the Route 1/9 Corridor.
- It was noted that a warehouse developed by Joe Morris that abuts Linden Airport has been leased. Trucks serving this facility will likely use Wood Avenue and/or Lower Road to access Route 1&9 corridor.
- Significant warehousing and industrial facilities exist along W. Blanke Street, Elizabeth Avenue, and Stiles Street. Truck traffic enters and exits route 1&9 corridor via Stiles Street.
- Linden has a high level of industrial and distribution activities and intends to continue to encourage these types of land uses.
- Five separate companies are now co-located at the Bayway Refinery area.
- The project team was invited to view the issues first hand at Magna Plate and Safety Kleen.

The lists of attendees at the discussion are attached.

UNION COUNTY ROUTE 1/9 CORRIDOR STUDY

FIELD MEETING MINUTES

Time and Date: Tuesday, February 24, 2011 at 12:00 PM
Location: General Magnaplate Corporation
1331 Route 1
Linden, New Jersey
Project Name: **Route 1/9 Corridor Study**
Purpose: **Meeting with General Magnaplate Corp. and Safety-Kleen Inc.**

Attendees (alphabetically by last name):

Name	***Affiliation***	***E-Mail***
Carlos Bastida	*Parsons Brinckerhoff*	*bastida@pbworld.com*
Liza Betz	*Union County*	*ebetz@ucnj.org*
Valerie Corigliano	*General Magnaplate Corp.*	*vcorigliano@magnaplate.com*
Wayne Cromwell	*General Magnaplate Corp.*	*wcromwell@magnaplate.com*
Andrea Martone	*Safety-Kleen Inc.*	*andrea.martone@safety-kleen.com*
Anne Strauss-Wieder	*ASWinc.*	*asw@as-w.com*
Ronald Weening	*ASWinc.*	*rsweening@as-w.com*

An agenda was handed out and one aerial map was placed on the center of the table so that participants could mark up the identified problem areas. An attendance sheet was also circulated.

The purpose of this meeting was to discuss issues related to two industries directly located along the Route 1/9 corridor, General Magnaplate Corp. and Safety-Kleen Inc. The meeting started with each participant introducing themselves. Each industry representative was then asked to express their particular point of view of the issues along the corridor, particularly those directly related to each industry operations. Following this discussion, all participants proceed to the field to make observations.

The key points emerging from the field meeting and visit included:

- Some employees from both industries bicycle or walk to work. Need to provide safer environment and pedestrian and bicycle access to site. There is a lack of sidewalks, crosswalks or bike/ped connections.
- Turning radius at Sylvan Street does not properly accommodate trucks. Trucks have to use all three travel lanes when entering or exiting to/from Sylvan St., interrupting traffic.
- Vertical clearance (13'6") at C.R bridge (Structure No. 2001153) is low. Many trucks have struck this structure repeatedly.
- Traffic lights at Aviation Plaza appear not to be in sync with upstream or downstream traffic lights.
- Cycle time at Stiles St does not meet demand, there are constant queues.
- The Route 1/9 northbound left-turn lane at Pleasant Street backs up constantly blocking other travel lanes and sometimes causing accidents.
- There are just a few u-turns along the corridor in which trucks can turn. Oftentimes trucks have to use back roads through residential areas to turn back.

- U-turn at “Avenue C” has been prohibited recently but no u-turn sign has been installed to warn motorists.
- Some at employees Magnaplate have adapted their work schedule to avoid congestion.
- There is a great concern that the proposed redevelopment at the old GM site will significantly increase traffic in the area, potentially impacting the operations of both industries.

DRAFT Meeting Summary

Union County Route 1& 9 Corridor Study
Technical Advisory Committee Meeting
Wednesday, March 30, 2011, 9:30 AM
Peterstown Community Center, Elizabeth, New Jersey

The first meeting of the Technical Advisory Committee for the Route 1&9 Corridor Study was held on March 30, 2011 in Elizabeth. Previously, individual meetings with the towns and members of the Linden Industrial Association, along with a field meeting with Safety Kleen and General Magna Plate were conducted by County staff and the consultant team.

The purpose of March 30 meeting was to discuss the specific corridor issues and next steps for the Route 1&9 Corridor Study. Liza Betz, project manager for Union County on this study, provided an overview of the study objectives and progress to date and highlighted the role of the Technical Advisory Committee.

Attendees introduced themselves and their affiliations. A copy of the sign in sheet is attached. The consultant team posted several large maps highlighting specific corridor issues for review. Subsequent to the meeting, they were made available on-line in addition to the prepared PowerPoint Presentation.

Jennifer Grenier, Parsons Brinckerhoff, Project Manager for the consultant team, led a PowerPoint presentation, the first portion which highlighted the following:

- Identification of key study tasks being undertaken and the time line for completion of the effort.
- The corridor overview, including key functions, physical conditions, operating conditions.
- Identification of recent improvements in the corridor, including the complete replacements of the Elizabeth River and Rahway River viaducts.
- Summary of the findings to date, including mixed land use issues, heavy traffic volumes, significant freight movement, pedestrian issues, lighting issues, U-turn issues, signage and traffic light placement issues, and high crash areas.
- The concerns, considerations and ideas that emerged from the outreach conducted with municipalities and stakeholders. These included way finding, pavement conditions, lighting, signing, aggressive driving, pedestrian and bicycle constraints, truck access to several industrial facilities, and trucks hitting a Conrail bridge in Linden.

The second part of the PowerPoint presentation summarized in detail the existing conditions at key intersections and corridor sections including but not limited to accident data as well as pavement , turning, pedestrian and truck movement issues. The conditions were identified from south to north as follows:

- **City of Rahway:** Milton Avenue/Paterson Street and East Grand Avenue.

- **City of Linden**: Avenue C, Stiles Street, Wood Avenue, Woodlawn Avenue, U-turn issues between Stiles Street and Woodlawn Avenue, ConocoPhillips Entrance/Morse Mill Road, Park Avenue
- **City of Elizabeth**: Bayway Circle, Grier Avenue, South Broad Street, Maple Avenue, East Jersey Street, East Grand Street, Bond/Anna/Flora Streets, Fairmount Avenue. North Avenue

Key discussion comments included the following:

- Insufficient or inoperable street lighting is a concern for pedestrian and vehicular movements. This issue may be correlated with the number of accidents in some locations and should be investigated further.
- There appears to be a need to address the issue of slow turning tractor-trailer trucks at intersections. This impacts queuing at intersections and reduces the effective cycle times at key intersections.
- It appears that traffic signals at Route 1&9 intersections in Linden are not coordinated whereas Route 1&9 intersections in Elizabeth appear to be synchronized. It was suggested that the installation of “smart lights”, be considered.
- The length of “green light time” at some intersections should be investigated further in terms of impact on traffic flow.
- The consultant team was asked if it considered how overall corridor congestion is impacting levels of service and capacity. Has there or can there be a value placed on lost time and how does this factor into the economic impact of corridor congestion?
- The capacity of left turning lanes seems to be an issue from Stiles Street to Park Avenue in the City of Linden.
- It was reported by Todd Poole (4Ward Planning) that approximately 2,400 employees were added in the retail sector in the Corridor from 2007-2009. Data indicates that approximately 36% of employees live and work in the same corridor. Together with the approved major retail development on the GM site, traffic will continue to grow in this corridor. This job growth in this corridor is counter to the overall New Jersey economy.
- Concern was voiced over the significant number of fatal accidents in the section between Park Avenue and Woodlawn Avenues, which includes the entrance way to the ConocoPhillips Domestic Sales Terminal. It was suggested that ice and water flows from the BJ’s Warehouse property be investigated. In addition, this is a location where vehicles traveling on I-

278 weave across three lanes of traffic to reach Willow Glade (access to Sam's Club property).

- Participants noted that because of changes made by the developers of the Sam's Club property, the older traffic and crash data may no longer be relevant. Participants indicated that the issues have changed.
- At Maple Avenue, a long straight away exists without many traffic lights. Vehicles tend to pick up speed on the viaduct.
- The City of Linden noted that it is cost prohibitive to purchase property to create jughandles and suggested that the team focus on improving left turn lanes in the area.
- It was noted that lighting issues may be a contributing factor, rather than the only factor, in certain crash locations. The other factors include the volume and speed of the traffic at the time.
- NJDOT noted that the acquisition of property to create sidewalks was unlikely in the current fiscal environment.
- Corridor wide congestion is a concern seven days a week from Conoco-Phillips to Rahway. Many driveways are blocked regularly due to congestion.
- The Rosehill Cemetery traffic can back up all the way to Wood and Stiles streets.
- It was noted that pedestrian traffic will continue to grow in this area.

The third part presentation identified the next tasks, including establishing a vision for the Corridor and developing improvement concepts. The next steps in the project include:

- Develop sketch level concepts
- Prioritize concepts
- Draft a Final Report/Corridor Plan
- Present plans/proposals to partner agencies to obtain funding.

There will be follow-up with the technical advisory committee to review improvement concepts and prioritization matrixes.

The list of attendees follows.

DRAFT Meeting Summary

Union County Route 1& 9 Corridor Study
Second Technical Advisory Committee Meeting
Wednesday, June 1, 2011, 9:30 AM
Peterstown Community Center, Elizabeth, New Jersey

The second and final meeting of the Technical Advisory Committee (TAC) for the Route 1&9 Corridor Study was held on June 1, 2011 in Elizabeth. The purpose of June 1 TAC meeting was to discuss the specific recommendations for both corridor-wide and location specific improvements.

Liza Betz, project manager for Union County on this study, provided an overview at the start of the meeting by referencing how the previous issues and problems identified at the first TAC meeting served as the context for the team's recommendations.

Attendees introduced themselves and their affiliations, as well as provided their information on sign in sheets. The consultant team posted a large map suggesting how the corridor can be given an identity by using arterial, transitional, and urban contextual design elements. Subsequent to the meeting, the map along with the prepared PowerPoint Presentation, were made available on-line.

Jennifer Grenier, Parsons Brinckerhoff, Project Manager for the consultant team, led a PowerPoint presentation and also referenced a detailed hand out of issues and potential actions.

The first portion highlighted seven major corridor-wide recommendations in response to the concerns, considerations and ideas that emerged from the outreach conducted with municipalities and stakeholders as well as comments and discussions from the first TAC meeting.

The seven corridor-wide potential action areas included:

- Maintenance responsibilities along the Corridor need to be defined and maintenance requests need to be streamlined.
- Pavement improvements may be required, including resurfacing in Linden and Elizabeth and new striping and pavement markings.
- Existing lighting needs to be checked in terms of maintenance and service conditions, the overall level of lighting should be reviewed, and pedestrian scale lighting where activity is highest should be considered.
- A way-finding signage program for the corridor should be developed, along with the possibility of using backlit cross-street signage at signalized intersections.

- Sidewalks/Crosswalks need to be addressed including missing sidewalks, adding sidewalks in certain locations, restriping crosswalks, improving access to bus stops, and providing countdown timers for pedestrians.
- Transit facilities could be improved by having pedestrian scale lighting, better information at bus stops and installation of bus shelters.
- An alternate parallel bicycle routes should be established to access the corridor and provide way-finding signage to direct cyclists to new routes.

The second part of the PowerPoint presentation summarized and illustrated in detail the recommendations for improvements at key intersections and corridor sections. These potential actions reflect accident data as well as pavement, turning, pedestrian and truck movement issues.

The recommendations for improvements were identified from south to north as follows:

- **City of Rahway:** Milton Avenue/Paterson Street and East Grand Avenue.
- **City of Linden**: Avenue C/Sylvan Road, Wood Avenue, Wood Avenue/ Woodlawn Avenue, Tremley Point Access, I-278 Interchange/Morse Mill Road, BJ's Warehouse/Morse Mill Road, Park Avenue, and Bacheller Avenue.
- **City of Elizabeth**: Area South of Bayway Circle, Grier Avenue, South Broad Street, Maple Avenue, East Jersey Street, East Grand Street, Bond/Anna/Flora Streets, Fairmount Avenue. North Avenue

Two additional recommendations for longer-term improvements are presented by Mr. Weening:

- To improved access to and from for Tremley Point primarily for trucks, as well as address concerns regarding access to Safety Kleen and General Magna Plate, it was suggested that 21st street between Stiles and Wood Avenues could be used to link to a new access road to run parallel along the eastern border of Linden Airport. This improvement would take pressure off of Wood and Stiles.
- A proposal to improve access to Industrial Lane, Linden Avenue, and the ConocoPhillips facility by having a ramp connect to the southbound route 1&9 on the BJ 's Warehouse side of the roadway, along with a turning loop and traffic light in the vicinity of Willow Glade Road as a new roadway arrangement to access ConocoPhillips. The traffic light would slow down traffic in an area where TAC members have expressed concern about speeding and accidents.

Key discussion comments included the following:

- In response to a participant question, it was noted that the responsibility for bus shelter maintenance is negotiated between New Jersey Transit

and the local municipality, with advertising at the bus stops often used as a revenue source to offset maintenance expenses.

- Several questions were raised regarding the placement of bus shelters, along with the prioritization of bus shelter improvements.
- In Linden, it was noted that an increase in pedestrian traffic would occur in around Sylvan street and Route 1&9 pursuant to the redevelopment of the GM property.
- It was noted that NJDOT has just finished synchronizing the traffic lights and should have the lights optimized by year-end.
- Some participants observed parents dropping off children in front of the McDonald's on northbound route 1&9 opposite the Skate Board Facility in Wheeler Park. The children would then hop the divider separating the southbound and northbound lanes to access the Park. It was suggested that a higher fence on the divider could be needed.
- At the intersection of Wood and Woodlawn Avenues, it was noted that the pedestrian issue is related to the Church at this location; there appears to be a timing issue for pedestrians crossing at Woodlawn Avenue, Clinton Street, Wood Avenue, and Stiles Street to access Saint Teresa's Church.
- Some TAC members noted that trucks continually miss the turn for Industrial Lane going southbound on route 1&9, then backtracking through local neighborhoods to correct the mistake. Clear identification and access improvements are needed.
- East Jersey Street and East Grand Streets in Elizabeth have heavy pedestrian usage and need to be upgraded to reflect the need of the local neighborhoods. Participants noted that the issue may involve the timing of the lights for pedestrians.
- Participants asked whether a pedestrian-sensitive light would affect the traffic light optimization along Route 1/9.
- Discussion ensued about possible elimination of on street parking in Fairmount Avenue and Bond/Anna/Flora Streets area in Elizabeth. There seems to be several incidents of cars being struck and damaged by passing traffic. It was also noted that it may be possible to develop off-street parking in the area.
- TAC members inquired about the construction of a pedestrian overpass at North Avenue in Elizabeth. There is pedestrian activity 24/7.
- It was noted that information related to the Park Avenue interchange because the installation of red light cameras has significantly reduced the accident rate.

- Participants noted that the I-278 interchange is a “legacy” situation and the proposed improvement involves property already owned by NJDOT. The proposed longer-term improvement also supports the missing moves project.

The final part of the presentation identified the next Steps, including establishing a vision for the Corridor and implementing improvement concepts. The next steps in the project include:

- Revising/Finalizing Recommendation Concepts
- Draft Report to Union County/NJTPA
- Finalizing Report/Addressing Comments
- Submitting Problem Statements to NJDOT
- NJDOT to begin maintenance work orders and CD/PE

The TAC members were asked to provide all comments regarding recommendations to the team by June 8, 2011. A draft final report is due to the NJTPA by June 30, 2011.

PROJECT NEWSLETTER

Union County—Route 1 & 9 Corridor Study

Winter 2011

Union County Division of Planning and Community Development

Bureau of Transportation Planning—www.ucnj.org

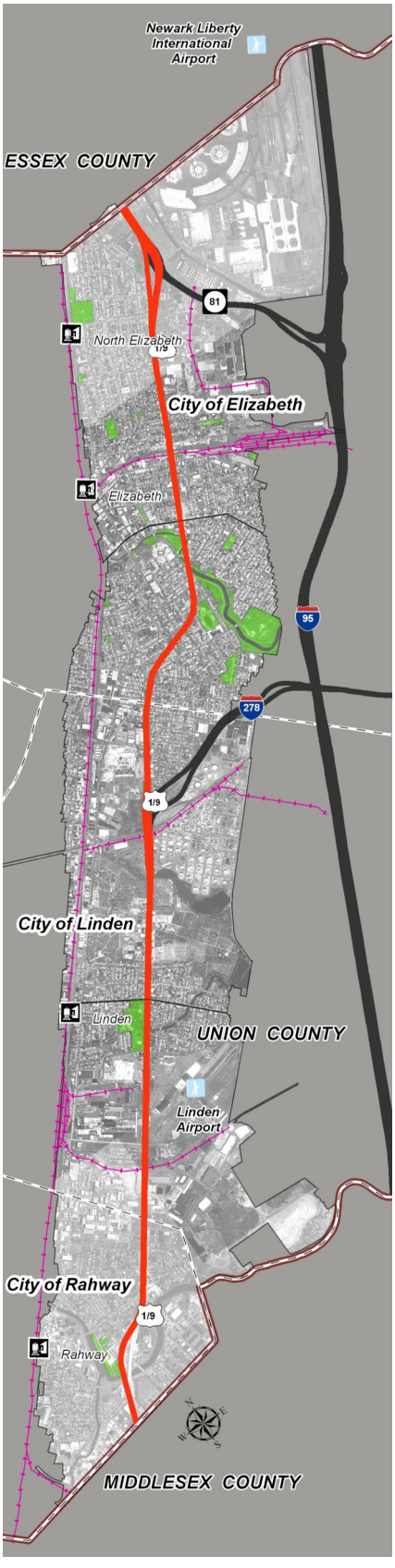
The Route 1&9 Corridor Study focuses on vehicular and non-motorized transportation along the Route 1&9 Corridor through the Cities of Elizabeth, Linden, and Rahway. The goals of the study are to further safety along the corridor, reduce delays and traffic conflicts, and balance the transportation demands of the local communities along the highway with those of the region.

Study Area

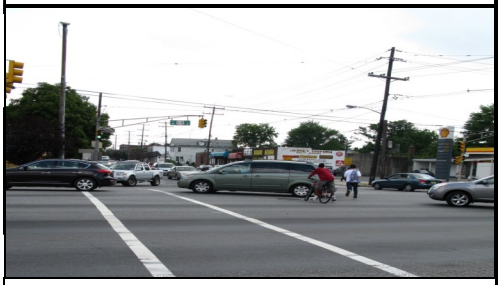
The study area consists of the eight mile section of Route 1&9 that passes through the Cities of Elizabeth, Linden, and Rahway. The corridor forms a spine of commerce and community in the region, with a sizable portion of the county's residents and jobs. With 29 signalized intersections and six interchanges, it provides access to nearly every major public, industrial, and commercial facility in Union County, including Newark Liberty International Airport, Linden Airport, major maritime facilities, and industrial facilities at Bayway and Tremley Point. The corridor also provides key regional connections, such as a link between I-278 and I-78. The corridor also serves several NJ Transit bus routes and is within one mile of three Northeast Corridor Rail stations, which increases pedestrian activity in the area. Daily traffic volumes range from 47,000 in Rahway to 119,000 in Elizabeth. Truck percentages range from 7% of traffic in the evening to nearly 17% of traffic during midday periods.

Why is this study needed?

Route 1&9 has a history of high crash rates and poor traffic performance, with a host of geometric deficiencies including a lack of left turn capacity, narrow lanes, narrow or deficient shoulders, and inadequate pedestrian accommodations. NJDOT has completed several projects in recent years to improve conditions, including the reconstruction of the Elizabeth River Viaduct, improvements to the intersection at North Avenue, the Magnolia Avenue Bridge Modifications, the Rahway River Bridge replacement, and Bayway Circle improvements. Despite these improvements, over four miles of the eight mile study corridor still has a crash rate higher than the state average for similar roadways. What is needed now is a holistic assessment of the overall corridor, recognizing the changing character of the area. As a major truck route, as well as the access route for numerous regional and local destinations, Route 1&9 serves many functions. Commuter traffic, local trips, delivery vehicles, heavy trucks, buses, and pedestrians mix within the often substandard roadway profile and facilities. Yet Route 1&9 is key to the future redevelopment of underutilized industrial sites along the corridor. The study's goal is to balance the many functions of the corridor so that local residents, pedestrians, commuters, and industrial operations can coexist safely and the corridor can support and complement local redevelopment plans.



Several areas are redeveloping with big box retail.



Crossing Route 1&9 is a challenge for pedestrians.

Heavy traffic exists adjacent to residential homes fronting Route 1&9.

Transportation Planning Process

The project team is in the process of gathering key data about the existing conditions and expected future of the Route 1&9 corridor from a variety of data sources. Outreach to the local communities has been an integral part of this task. Input from municipal representatives, transportation agency officials, freight industry representatives, and other stakeholders is helping to guide the plan's development. Data collection and analysis is focusing on the following areas:

- Safety analysis
- Land use inventory and redevelopment trends
- Traffic volumes and flows (current and projected)
- Bicycle and pedestrian conditions
- Transit operations and trends
- Truck movements

The next task will be to develop near and long term recommendations to address the priority issues and deficiencies revealed in the data analysis. The recommendations are anticipated to include safety measures, such as improved pedestrian crossings, as well as congestion reduction measures, such as signal coordination. The final planning study, to be completed by June 2011, will identify corridor wide issues, spot improvements, and priorities for consideration and potential advancement in the NJDOT funding process.

Project Team

This planning study is being conducted by the Union County Department of Parks and Community Renewal, Division of Planning and Community Development, with assistance from a consultant team led by Parsons Brinckerhoff, in association with T&M Associates, 4Ward Planning LLC, and A. Strauss-Wieder, Inc. The study is being funded by the North Jersey Transportation Planning Authority (NJTPA) and Union County.

High densities of autos, transit, pedestrians and trucks make a challenging mix on Rt. 1&9.

Contact Us: To get more information, make comments and/or get on the mailing list, please contact Liza Betz, AICP/PP, Special Assistant to the Director, Department of Parks & Community Renewal, County of Union, County Administration Building, Elizabethtown Plaza, Elizabeth, NJ 07207. Phone: 908-527-4086 Fax: 908-527-4715 Email: ebetz@ucnj.org or www.ucnj.org

NJDOT PROBLEM STATEMENTS

New Jersey Department of Transportation
Transportation Problem Statement Form

NOTE: **To add text** - click on gray box, then start typing.
To mark a check box - double-click, under Default Value click checked, then click OK

CONTACT INFORMATION	
Name: Liza Betz	Organization: Union County
Phone/E-Mail: 908-558-2273/ebetz@ucnj.com	Name/ Phone/E-mail of Alternate:

PROBLEM LOCATION & DESCRIPTION

Please provide applicable location information of the problem (if field doesn't apply, type N/A):

Route: U.S. Route 1&9

Mileposts: 40.04

Other Limits:

Structure Number: 2001153

County: Union

Municipality: Linden City

Other: CSAO Railroad Bridge

Please check those items that best catagorizes the problem, along with a detailed description:

Existing Highway Problem:

☐ Capacity:

☐ Operational:

☒ Physical: Local stakeholders report that CSAO railroad overpass is frequently hit by heavy vehicle traffic because the posted clearance (13 feet - 6 inches) may be incorrect. There is visible evidence that the structure has been hit numerous times. Several stakeholders mentioned that resurfacing projects may have resulted in the clearance being less than is currently posted.

☒ Safety: Existing structure consistutes a safety problem for pedestrians that must traverse a narrow passageway between the existing abutment and guiderail. Field investigations indicate that pedestrian traffic is frequent within this area along Route 1&9 northbound and no other connection exists for pedestrians traveling through this area. Further, lighting beneath the overpass is insufficent to provide adequate mobility during non-daylight periods.

☐ Other:

Existing Bridge Problem:

☐ Capacity:

☐ Operational:

☒ Physical: As noted above, local stakeholders report that CSAO railroad overpass is frequently hit by heavy vehicles.

☒ Safety: Pedestrian safety is of concern as there is insuffient space for walking along this area.

☐ Other:

Sub-corridor/Corridor/Sub-regional/Regional Problem:

☐ Need for Corridor Study:

☐ Possible Highway on New Alignment:

☐ Possible New Transit Line:

☐ Possible New Park & Ride Lot:

☐ Other:

NJDOT GOALS APPLICABLE TO YOUR PROBLEM LOCATION

Check all the goals contained in New Jersey's Long Range Plan (Transportation Choices 2030) that apply to your problem location	☐ Maintain and Renew Transportation Infrastructure ☐ Integrate Transportation and Land Use Planning ☒ Increase Safety and Security ☒ Improve Mobility, Accessibility, Reliability ☐ Respect the Environment ☒ Optimize Freight Movement ☐ Operate Efficiently ☐ Continue To Improve Agency Effectiveness
Provide any additional information here that details how mitigating the problem meets the goal(s)	Route 1&9 serves a diverse mix of modes, including significant freight and pedestrian traffic. Improvements to the existing CSAO structure will maintain Route 1&9 as a key highway freight corridor within New Jersey by minimizing potential incidents due to the low clearance. Further, improving pedestrian circulation alongside Route 1&9 between Avenue C (to the south of the structure) and Sylvan Road (to the north of the structure) fulfill the overall goals to provide accessibility for all modes (where appropriate) along New Jersey's state highways.

OTHER GOALS APPLICABLE TO YOUR PROBLEM LOCATION

Please provide additional information that details how mitigating this problem location meets OTHER goals and objectives, as contained in, but not limited to: Regional Long Range Transportation Plans; Regional Capital Investment Strategies; Regional Strategy Evaluation; Sub-region, Corridor or Sub-corridor Plans, etc.:

The Route 1&9 Corridor Study completed by Union County identified this location as being critically in need of improvements. The primary goal of that study is to balance the needs of multiple users of this portion of Route 1&9, including the needs of heavy vehicles and pedestrians. Improvements to this location will maintain future heavy vehicle movements while allowing pedestrians to traverse this location with minimal difficulty.

ASSET MANAGEMENT (PERFORMANCE MEASURES AND TARGETS)

Please provide a detailed description of the key performance measures and targets applicable to the problem location that will track success in obtaining the vision and goals and objectives of the aforementioned plans:

PROBLEM LOCATION PRIORITY

Please provide a detailed description of the priority of this problem location, including a ranking or scoring relative to all other similar problem locations:

Pavement Management System - NB: SDI - 0.96 (Very Poor), IRI - 128 (Fair),
SB: SDI - 1.01 (Poor), IRI - 260 (Deficient)

Crash Data - 4 Fixed Object crashes in vicinity of overpass between 2007-2009.

MISC

Please provide any additional information pertinent to the problem location not covered by the above (see Attachment 1, next page, for guidance):

Insert pictures detailing issue:
IMG_5844 - Truck approaching overpass, looking south
IMG_5845 - Truck underneath overpass, looking south
IMG_5846 - Damage to overpass, looking south
IMG_5843 - Narrow pedestrian passageway, looking south
IMG_5853 - Pedestrian approaching passageway, looking south
IMG_5854 - Pedestriaan using passageway, looking south
IMG_5855 - Pedestrian using passageway, looking south

Signature of Initiator: _____

Date of Signature: _____

Please attach the appropriate support documentation, such as, but not limited to: Resolutions of Support; approved documents from decision-making groups such as Executive Committees or Boards

of Trustees; approved documents from other official decision-making bodies; etc.

Send this completed form and support material to:

Thomas Wospil, Director
Capital Investment Planning and Development
New Jersey Department of Transportation
PO Box 600
Trenton, NJ 08625-0600

FOR NJDOT USE ONLY

Assigned DB Number:

Legislative District:

Congressional District:

Program Category:

Information on the Form Has Been Verified by:

Attachment 1

Information required on all Transportation Problem Statements:

- Concise statement of need
- Proposed concept and/or range of strategies to address the identified need, as appropriate
- Statement of the extent to which the proposed capital improvement project or removal of the identified deficiency would advance the Department's objectives as identified in the Statewide Capital Investment Strategy
- Current traffic counts, accident data and/or other appropriate supplemental data, and associated analyses (e.g.; Highway Capacity Software analysis), as well as images (ground level or aerial) and/or mapping that further confirms the problem
- Identification of individuals or groups who may be sponsoring or

supporting the proposed project

- As available, summary of any identified environmental issues within the probable footprint of the proposed project, especially including the identification of any historic or potentially historic properties, historic or potentially historic structures, historic districts, and wetlands.

NOTE: Capital Investment Planning and Development will return a Transportation Problem Statement to the initiator if it is deemed incomplete.

IMG_5844: Truck approaching overpass, looking south

IMG_5843: Narrow pedestrian passageway, looking south

IMG_5845: Truck underneath overpass, looking south

IMG_5846: Damage to overpass, looking south

IMG_5853: Pedestrian approaching passageway looking south

IMG_5854: Pedestrian using passageway looking south

IMG_5855: Pedestrian usingpassageway looking south

New Jersey Department of Transportation
Transportation Problem Statement Form

NOTE: **To add text** - click on gray box, then start typing.
To mark a check box - double-click, under Default Value click checked, then click OK

CONTACT INFORMATION	
Name: Liza Betz	Organization: Union County
Phone/E-Mail: 908-558-2273/ebetz@ucnj.com	Name/ Phone/E-mail of Alternate:

PROBLEM LOCATION & DESCRIPTION

Please provide applicable location information of the problem (if field doesn't apply, type N/A):

Route: U.S. Route 1&9

Mileposts: 39.0 - 45.5

Other Limits:

Structure Number: 2001150, 2001152, 2001153, 2001154, 2001155, 2015156, 2001156, 2015154, 2015153, 2002150, 2002151

County: Union

Municipality: Rahway City, Linden City, Elizabeth City

Other:

Please check those items that best catagorizes the problem, along with a detailed description:

Existing Highway Problem:

☐ Capacity:

☒ Operational: A critical concern of stakeholders and residents within the study area is wayfinding and u-turns caused by the lack of adequate signage. First, Route 1&9 is signed by numerous different names (Spring Street, Edgar Road, Herbert Highway) often leading to confusion for drivers not familiar with the area. Second, freight traffic destined to Bayway Refinery or Tremley Point often use residential side streets to access their destination, as opportunities for U-turns are limited. Additionally, there are concerns with retail travelers and those visiting the area cemeteries making u-turns along local streets. Speeding is also of concern in areas where there is a transition from freeway like segments to signalized areas with heavy pedestrian activity.

☒ Physical: The NJDOT Drainage Management System includes numerous locations within the study corridor that have documented existing drainage issues. Further, other locations experienced an overrepresentation of crashes occuring on wet pavement during the three year study period (2007-2009).

Poor pavement was evident during field investigations to the study area and is documented in the NJDOT Pavement Management System, which notes that the entire segment of the corridor within Linden and Elizabeth is either in poor or very poor condition. Heavy rutting was observed within the corridor due to the high percentage of heavy vehciles along this route, and worn striping and pavement markings are common throughout the study area.

☒ Safety: Nearly 40 percent of all crashes within the study corridor (for the three year period 2007-2009) occur during dawn, dusk, or night, which is more than 35 percent higher than the statewide average (29 percent). Several crash types were overrepresented corridor-wide, most notably same direction-rear (47 percent versus 36 percent), and same direction-side (27 percent versus 15 percent). These crash types are often a result of congestion and often result in property damage only. Local stakeholders note that insufficent lighting is common throughout the area. As detailed in the Route 1&9 Corridor Study, several intersections experience an overpresented number of crashes during dawn, dusk, or night.

☒ Other: Pedestrian mobility is a significant concern throughout the corridor, as Route 1&9 bisects residential communities within all three study area communities. Numerous locations with unmet pedestrian demand are missing sidewalks. Pedestrian signal heads within the corridor are not consistent and in many cases are not MUTCD-compliant as they lack countdown timers. The width of Route 1&9 throughout the study area forces pedestrians to traverse long crossings. Finally, the number of pedestrian crashes within the corridor, particularly within Elizabeth, is high.

Maintenance has been cited as a consistent problem within the study area in terms of street cleaning, sign replacement, mowing, and lighting. A significant amount of debris and garbage along Route 1&9 was observed during field visits and the overall corridor has a generally unkempt feel.

Existing Bridge Problem:

☐ Capacity:

☐ Operational:

☐ Physical:

☐ Safety:

☐ Other:

Sub-corridor/Corridor/Sub-regional/Regional Problem:

☐ Need for Corridor Study:

☐ Possible Highway on New Alignment:

☐ Possible New Transit Line:

☐ Possible New Park & Ride Lot:

☐ Other:

NJDOT GOALS APPLICABLE TO YOUR PROBLEM LOCATION

Check all the goals contained in New Jersey's Long Range Plan (Transportation Choices 2030) that apply to your problem location	☐ Maintain and Renew Transportation Infrastructure ☐ Integrate Transportation and Land Use Planning ☒ Increase Safety and Security ☒ Improve Mobility, Accessibility, Reliability ☐ Respect the Environment ☒ Optimize Freight Movement ☒ Operate Efficiently ☒ Continue To Improve Agency Effectiveness
Provide any additional information here that details how mitigating the problem meets the goal(s)	Deficiencies identified within the corridor and the recommended concepts aimed at mitigating them aim to improve circulation and overall safety for vehicular and pedestrian traffic, improve roadway aesthetics and maintenance, reduce driver confusion through the use of wayfinding, reduce or mitigate congestion and ultimately make Route 1&9 a more appealing roadway for all users.

OTHER GOALS APPLICABLE TO YOUR PROBLEM LOCATION

Please provide additional information that details how mitigating this problem location meets OTHER goals and objectives, as contained in, but not limited to: Regional Long Range Transportation Plans; Regional Capital Investment Strategies; Regional Strategy Evaluation; Sub-region, Corridor or Sub-corridor Plans, etc.:

The Route 1&9 Corridor Study completed by Union County identified numerous coordior-wide and intersection-specific deficiencies and potential improvement concepts. Ultimately, the corridor goals identified within the study are: Provide safe and efficient travel for all modes of traffic; Improve pedestrian accommodations in this corridor as a key component that will need to be balanced with the

needs of regional vehicular and freight mobility; Allow pedestrians and vehicular traffic to move safely and efficiently in tandem to create a more appealing overall route; Provide reliable travel times to efficiently move people and goods; Improve maintenance to both the highway and adjacent properties to help improve the surrounding areas and aim to make the corridor a more inviting environment; and provide clear corridor signing and wayfinding and provide U-turn movements with the smallest possible impact on local residents.

ASSET MANAGEMENT (PERFORMANCE MEASURES AND TARGETS)

Please provide a detailed description of the key performance measures and targets applicable to t the problem location that will track success in obtaining the vision and goals and objectives of the aforementioned plans:

PROBLEM LOCATION PRIORITY

Please provide a detailed description of the priority of this problem location, including a ranking or scoring relative to all other similar problem locations:

Pavement Management System - Entire segment of corridor (NB and/or SB) within Linden/Elizabeth (MP 39.7 - 46.2) has pavement identified as Deficient (IRI) or Poor/Very Poor (SDI) or both.

Crash data indicates several overrepresented criteria with respect to statewide averages for the state highway system:
Crashes During Dawn/Dusk/Night (39.5% versus 29.0%)
Same Direction Rear End (47.3% versus 36.0%)
Same Direction Side (26.5% versus 14.7%)
Pedestrian (1.9% versus 1.5%)

Many locations exhibit similar trends, as detailed within the corridor study.

Drainage Management System data indicates 3 locations ranked in the top 133 locations statewide, with two other locations unranked. Many locations within the study area exhibited crash overrepresentations for crashes occuring on wet pavement.

MISC
Please provide any additional information pertinent to the problem location not covered by the above (see Attachment 1, next page, for guidance):

Signature of Initiator: _____

Date of Signature: _____

Please attach the appropriate support documentation, such as, but not limited to: Resolutions of Support; approved documents from decision-making groups such as Executive Committees or Boards of Trustees; approved documents from other official decision-making bodies; etc.

Send this completed form and support material to:

Thomas Wospil, Director
Capital Investment Planning and Development
New Jersey Department of Transportation
PO Box 600
Trenton, NJ 08625-0600

FOR NJDOT USE ONLY

Assigned DB Number:

Legislative District:

Congressional District:

Program Category:

Information on the Form Has Been Verified by:

Attachment 1

Information required on all Transportation Problem Statements:

- Concise statement of need
- Proposed concept and/or range of strategies to address the identified need, as appropriate
- Statement of the extent to which the proposed capital improvement project or removal of the identified deficiency would advance the Department's objectives as identified in the Statewide Capital Investment Strategy
- Current traffic counts, accident data and/or other appropriate supplemental data, and associated analyses (e.g.; Highway Capacity Software analysis), as well as images (ground level or aerial) and/or mapping that further confirms the problem
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