

Chapter 5.0

Evaluation of Alternatives

5.0 Evaluation of Alternatives

5.1 Introduction

This chapter compares the No-Action and action alternatives based on an evaluation framework that evaluates the alternatives relative to the project purpose, goals and objectives and preliminary cost estimates. The data used in the evaluation is based on the findings of the technical traffic and environmental studies conducted for the EIS and presented in Chapter 4. As described in detail in Chapter 2, the alternatives include the No-Action or "do-nothing" alternative as well as 19 action alternatives which propose a variety of roadway improvements in the Penns Neck area, as well as concurrent implementation of a Commute Options package intended to foster the use of non-auto travel modes.

The evaluation of the alternatives relative to project goals and objectives has been organized around three areas of potential impact; these include potential impacts to traffic and circulation (based on key congestion and travel indicators), potential impacts to the built environment and potential impacts to the natural environment. In addition, the alternatives are compared to several additional project goals and objectives related to the relationship between land use and transportation, public participation and EIS process. Finally, the alternatives are evaluated based on preliminary cost estimates.

5.2 Comparison to Project Purpose

As described in Chapter 1, the purpose of the project is to address traffic congestion, mobility constraints and safety concerns on U.S. Route 1 and east-west cross-streets in the Penns Neck area of West Windsor Township, Mercer County, New Jersey and its environs. The principal measures used to assess the performance of the alternatives in this regard are: system-wide congestion relief as measured by Vehicle Hours Traveled (VHT), VHT under congested conditions and Vehicle Miles Traveled (VMT) under congested conditions; north-south travel time; east-west travel time; and intersection delay crossing Route 1. In addition, the degree to which the alternatives provide the potential to reduce accidents was assessed. The following is a brief summary comparing the performance of the alternatives relative to these measures. A more detailed explanation of the measures and comparison of the alternatives relative to these measures is presented in Section 5.3 below.

System-wide Congestion Relief

All of the action alternatives, except the G-series alternatives, would provide for uninterrupted flow of traffic along Route 1 and at least one grade-separated interchange north of Alexander Road for east-west access in the Penns Neck area. As shown in Figure 5-1, these alternatives would provide significant public benefit in terms of system-wide congestion relief. VHT would be reduced 21% to 45%. VHT under congested conditions would be reduced 23% to 50%; and VMT under congested conditions would be reduced 11% to 34%. Compared to the No-Action

Alternative, the G-series alternatives would be the worst performing, followed by the C-series and Alternative D.2. With regard to system-wide congestion relief, it appears that the key elements of a successful alternative are the elimination of the Route 1 Penns Neck area traffic signals, the maintenance of at least one east-west crossing of Route 1 north of Alexander Road, and the incorporation of an east-side connector road.

North-south travel time

All of the action alternatives except G.2 would reduce north-south travel time in the AM peak hour, especially in the non-peak direction. Northbound travel time in the AM peak hour would be reduced 4% to 26%; and southbound (non-peak direction) travel time in the AM peak hour would be reduced 15% to 43%. Alternative G.2 would increase north-south travel time in the AM peak hour. Compared to the No-Action Alternative, the G-series alternatives would be the worst performers relative to reducing north-south travel time. With regard to north-south travel time, it appears that a key component of a successful alternative is the elimination of the Route 1 Penns Neck area traffic signals which would provide unrestricted flow of traffic on Route 1. This finding is consistent with the previous finding related to reduction in system-wide congestion measures.

East-west travel time

All of the alternatives except C.1 and G.2 would reduce east-west travel time in the AM peak hour from 3% to 31%. Compared to the No-Action Alternative, reductions in east-west travel time between West Windsor and Nassau Street in the vicinity of Alexander Road, Washington Road and Harrison Street in Princeton Borough would vary by alternative. Alternatives A and D would be the best overall performers, providing the most consistent reduction in east-west travel time to/from all three points. The G-series alternatives would be the worst performers relative to reducing east-west travel time. With regard to east-west travel time, it appears that those alternatives that include a grade-separated east-west connection across Route 1 at both Washington Road (Route 1 in-a-cut) and Harrison Street would be superior to those which include only a grade-separated interchange in the vicinity of Harrison Street.

Intersection delays crossing Route 1

All of the action alternatives except the G-series alternatives would significantly reduce intersection delays on Washington Road and Harrison Street approaching Route 1. Delays under future No-Action conditions are estimated to exceed 16 minutes. For those alternatives that include grade-separated through movement of east-west traffic across Route 1 at Washington Road, Harrison Street, or both, delays would be reduced to 1 minute or less. Intersection delays on Alexander Road approaching Route 1 are largely unaffected by the alternatives.

Accident and safety conditions

All of the action alternatives would include the widening of Route 1 to include a shoulder and/or auxiliary lanes in both the northbound and southbound directions.

This shoulder area would provide a location for disabled vehicles to get out of the traffic stream and await assistance. Roadways similar to Route 1 that have shoulders exhibit accident rates approximately 40% lower than those without shoulders. Additionally, all of the action alternatives, except for the G-series alternatives would remove the traffic signals from Route 1 and provide grade-separation to facilitate east-west movements across Route 1. As noted in Chapter 3, section 3.1.4.3, approximately 72% of the accidents occurring along this segment of Route 1 were rear end type, occurring in proximity to the intersections. This high percentage of accidents was attributed to congested conditions and the stop and go traffic caused by the Penns Neck area traffic signals. Removal of the traffic signals along Route 1 would reduce the potential for vehicular conflicts thereby creating an improved operating and safety condition.

5.3 Comparison to Project Goals and Objectives

The framework and performance measures selected for this evaluation were based, primarily, on the goals and objectives developed and agreed to by the Partners' Roundtable advisory committee presented in Chapter 1. A series of comparison tables have been created to summarize the findings of the traffic and environmental impact analyses in a concise and comprehensible manner.

The comparison tables incorporate the project objectives and are organized by impact area. A multitude of performance measures were selected for each goal/objective highlighted in the tables. The tables were prepared in a format which includes symbols consistent with a *Consumer Reports* style, because it is a familiar technique used to present and compare performance information objectively, in a manner that allows the reviewer to make judgments from a variety of perspectives. The data used to derive the performance "grades" presented in the comparison tables are included in a series of companion data tables.

As previously stated, the objectives and performance measures (criteria) presented in column 1 of the comparison tables are intended to correlate to the goals and objectives agreed to by the Partners' Roundtable. Because of the nature of the data, different performance scales have been developed for different criteria. These scales are presented at the top of the comparison tables and are explained in this chapter. Unless otherwise noted, the performance of each alternative is compared to future conditions under the No-Action Alternative.

5.3.1 Potential Impacts to Traffic and Circulation

A series of 11 objectives were used to assess the performance of the alternatives relative to potential impacts to traffic and circulation patterns in the Penns Neck area. Table 5-1 presents the performance "grades" given to each alternative for each transportation-related objective. Tables 5-2 and 5-3 present the data and information used to derive the performance grades. Explanations of the objectives, performance

measures and performance scales, as well as a narrative evaluation of the alternatives relative to the objectives, are presented below.

5.3.1.1 Objectives, Performance Measures, and Performance Scales

The performance measures and performance scales for each objective are presented below.

Objective 1: Reduce travel delay and rate of growth in congestion – The measures used to assess performance relative to this objective are the following system level performance measures: Vehicle Hours Traveled (VHT), which measures total hours traveled by all vehicles on all roadway segments within the core area over a specified period of time; VHT under congested conditions, which is the amount of vehicle hours spent on roadways where traffic volumes exceed the capacity of the roadway; and Vehicle Miles Traveled (VMT) under congested conditions, which measures total miles traveled by all vehicles on roads where traffic volumes exceed the capacity of the roadway).

Each of the alternatives was assessed against the No-Action Alternative to determine comparative improvement relative to each of the three measures. The performance scale ranges from *Best*, which represents a greater than 45% reduction in VHT, VHT under congested conditions or VMT under congested conditions; to *Poor*, which represents less than a 15% reduction. In addition, there is a special symbol (solid circle with an up arrow) to denote which alternative(s) resulted in an increase in system-level congestion compared to future No-Action conditions.

Objective 2: Improve flow of traffic on Route 1 – The measure used to assess performance relative to this objective is average travel time on Route 1 between Carnegie Center Boulevard in West Windsor and Scudders Mill Road in Plainsboro during the AM peak hour. Travel times for each alternative were compared to travel times under future No-Action conditions in each direction. Travel time is expressed in minutes.

The performance scale range for this measure is as follows: from *Best*, which represents greater than 25% reduction in travel time; to *Poor*, which represents less than a 10% reduction in travel time. The scale also includes a special symbol (solid circle with an up arrow) to denote which alternative(s) resulted in increased travel time on Route 1.

Objective 3: Improve flow of traffic on east-west routes – The measure used to assess performance relative to this objective is average east-west travel time in the AM peak hour between designated origins and destinations in West Windsor Township and Princeton Borough. Specifically, average travel times were calculated based on simulated travel between the intersection of CR571 and Clarksville Road in West Windsor and Nassau Street, Princeton Borough in the vicinity of: a) Alexander Road, b) Washington Road, and c) Harrison Street, via the most time-efficient route

between the two points. It is important to note that travelers can take multiple routes between each of the origins and destinations. For example, the most time-efficient route to and from the intersection of Washington Road and Nassau Street may or may not be via Washington Road, depending on the alternative being considered.

Average east-west travel times for each alternative were compared to travel times under future No-Action conditions. Again, travel times are expressed in minutes. The performance scale for this measure ranges from *Best*, which represents greater than 25% reduction in travel time to *Poor*, which represents less than a 10% reduction in travel time. The scale also includes a special symbol (solid circle with an up arrow) to denote which alternative(s) resulted in increased travel time on east-west routes.

Objective 4: Reduce intersection delays when crossing Route 1 – The measure used to assess performance relative to this objective is average intersection delay for east-west travelers crossing Route 1 in the AM peak hour. Travel delay is expressed in minutes or seconds and corresponds to intersection Level of Service (LOS) grades A-F. The data presented for this measure resulted from a secondary intersection delay analysis conducted using traffic volume data from the EIS travel forecasting model. The performance scale for this measure includes three categories: *Best* which represents less than 20 seconds of delay and corresponds to LOS A-B; *Good* which represents between 20 and 55 seconds of delay and corresponds to LOS C-D; and *Poor* which represents more than 56 seconds of delay and corresponds to LOS E-F. If east-west travel across Route 1 on Washington Road and/or Harrison Street is prohibited in any given alternative, the cell in the table is marked N/A for not applicable.

Objective 5: Ensure an equitable balance of traffic on east-west routes – The two measures used to assess performance relative to this objective are a) total two-way east-west traffic volume and b) the percent distribution of total two-way, east-west traffic volume at two sets of locations during the AM peak hour. **Location 1** was on Alexander Road, Washington Road and Harrison Street west of Faculty Road. **Location 2** was east of Route 1, just west of the NEC rail line, on Alexander Road, Washington Road and the east-side connector road (as applicable depending on the alternatives).

Given the nature of this objective, raw data is reported rather than converting to a performance scale. When considering this objective, it is very important to consider both the volume of traffic using a particular route and the percentage distribution of traffic. The percent distribution alone may be misleading relative to the impact of changing traffic patterns.

Objective 6: Discourage traffic on residential streets – An important aspect of understanding the potential traffic impacts of the alternatives is how local traffic patterns may change. In this regard, change in traffic volume on key roadway segments was selected as a performance measure. Change in traffic volume was assessed based on the degree to which traffic increased or decreased in comparison to

the No-Action alternative. Key roadway segments were selected and grouped into three generalized geographic areas: a) the core area between the D&R Canal and the NEC rail line; b) west of the D&R Canal; and c) the vicinity of the NEC rail line. The traffic volumes reported are two-way traffic in the AM peak hour. Although traffic data for more than twenty roadway segments was considered, given the specific nature of this objective, change in traffic volume on a selected group of residential streets was evaluated in the comparison table.

The performance scale for this objective ranges from *Best*, which represents a more than 30% decrease in traffic, to *Poor*, which represents a more than 15% increase in traffic.

It should be noted that changes in local traffic patterns are particularly relevant to potential impacts on neighborhoods, community facilities, parks and cultural resources. Data from this objective is used extensively in the assessment of potential impacts to the built environment.

Objective 7: Discourage heavy truck through movements on local east-west streets –

The measure used to assess performance relative to this objective is heavy trucks crossing the D&R Canal as a percent of daily traffic. For this objective, we have reported raw data rather than converting it to a performance scale.

The data used for this measure is a product of the regional component of the EIS travel demand forecasting model. It should be noted that the predictive capabilities of travel demand models is limited with regard to truck traffic. Model outputs are primarily based on regional goods movement patterns, changes in regional land use patterns relative to uses known to generate significant truck traffic (e.g., warehouses, large scale retail, etc.), and changes in roadway infrastructure that add/improve links/connections within the existing roadway network.

As with other aspects of travel demand forecast modeling, route choice is largely determined by time efficiency. Consequently, as specific roadways become more attractive to travelers from a time savings perspective, they attract more traffic. In general, if overall share of traffic using a particular roadway increases, then the number of trucks using that route may also increase. Conversely, if the route becomes less attractive and overall share of traffic decreases, then the number of trucks using a route may also decrease.

Objective 8: Encourage alternative transportation choices and regional use of travel demand management (TDM) strategies.

Objective 9: Provide better access and safety for pedestrians and bicyclist and effective transportation options for underserved populations – The measure used to assess performance relative to Objectives 8 and 9 is whether the alternative includes concurrent implementation of a Penns Neck Area EIS Commute Options package, which includes a variety of complementary TDM strategies, transit service

enhancements and bicycle and pedestrian improvements. The Commute Options package is explained in detail in Chapter 2.

Objective 10: Reduce Route 1 curb cuts and use collector/distributor roads as appropriate – The performance scale for this objective includes: *Yes*, which is the rating given to those alternatives that eliminated driveway access points along Route 1 and made use of a frontage road system; *Some*, for those alternatives that eliminated some driveway access points along Route 1, but did not utilize a frontage road system; and *No*, for those alternatives that did not eliminate driveway access points along Route 1.

Objective 11: Address the needs of emergency response personnel – The performance scale for this objective includes: *Yes*, which is the rating given to those alternatives that reduced north-south and east-west travel time and maintained through access across Route 1 at both Washington Road and Harrison Street; *Some*, for those alternatives that reduced north-south and east-west travel time, but eliminated access across Route 1 at Washington Road; and *No*, for those alternatives that did not reduce north-south or east-west travel time.

This page intentionally left blank.

TABLE 5-1: Potential Traffic and Circulation Impacts

last revised 4-15-03

PERFORMANCE SCALES:	SCALE FOR OBJECTIVE 1							SCALE FOR OBJECTIVES 2-3							SCALE FOR OBJECTIVE 4							SCALE FOR OBJECTIVE 5						
	Reduces travel delay and congestion							Reduces travel time							Average Intersection delay							Decreases traffic						
	Best	Better	Good	Fair	Poor	+	-	Best	Better	Good	Fair	Poor	+	-	Best	Good	Poor	+	-	Best	Better	Good	Fair	Poor	+	-		
	>45%	35-45%	25-35%	15-25%	<15%	increases congestion	>25%	21-25%	16-20%	10-15%	<10%	increases travel time	LOS A-B (<10s)	LOS C-D (20-35 sec)	LOS E-F (30-60 sec)	>30	15-30%	5-15%	1-15%	>15%								
OBJECTIVES (Performance measures)																												
1. Reduce travel delay and rate of growth in congestion (Change in VMT and VMT)																												
Reduces Vehicle Hours Traveled (VHT)																												
Reduces Vehicle Hours Traveled (VMT) under congested conditions																												
Reduces Vehicle Miles Traveled (VMT) under congested conditions																												
2. Improve flow of traffic (i.e., reduce travel time) on Route 1 (Change in travel time - AM peak hour)																												
Northbound (peak direction of travel)																												
Southbound																												
3. Improve flow of traffic on E-W routes (Change in average 2-way travel time - AM peak hour)																												
Travel from Clarksville Road/CR 571 Intersection in W. Windsor to Nassau Street in the vicinity of:																												
Alexander Rd																												
Washington Rd																												
Harrison St																												
4. Reduce intersection delays when crossing Route 1 (Average E-W approach delay - AM peak hour)																												
Alexander Rd crossing Route 1																												
Washington Rd crossing Route 1																												
Harrison St crossing Route 1																												
5. Ensure equitable balance of traffic on east-west routes																												
a) Location 1 - Distribution of traffic west of Faculty Road (% of total 2-way E-W traffic - AM peak hour)																												
Alexander Rd																												
Washington Rd																												
Harrison St																												
b) Location 2 - Distribution of traffic b/w NEC rail line and Route 1 (% of total 2-way E-W traffic - AM peak hour)																												
Alexander Rd																												
Washington Rd																												
East-side connector (ESC) road (only those alternatives that include an ESC road)																												
6. Discourage traffic on residential streets (Change in 2-way traffic volume - AM peak hour)																												
a) Core area b/w D&R Canal and NEC rail line																												
Harrison St b/w Canal and Route 1 (Lower Harrison St)																												
Washington Rd in Penna Neck																												
Fisher Place b/w Route 1 and Fairview Ave																												
b) West of D&R Canal																												
Alexander Rd b/w University Pl and Mexico St																												
Harrison St b/w Nassau St & Faculty Rd (Upper Harrison St)																												
c) Vicinity of NEC rail line																												
Alexander Rd east of NEC rail line																												
North Post Rd																												
Clarksville Rd b/w No. Post Rd and CR571																												
Bear Brook Road																												
7. Discourage heavy truck through movements on local E-W streets (heavy trucks as a % of daily traffic crossing D&R Canal)																												
Alexander Road																												
Washington Road																												
Harrison Street																												
8. Encourage alternative transportation choices and regional use of TDM																												
9. Provide better access and safety for pedestrians and bicyclists and transportation options for underserved populations.																												
a) Includes concurrent implementation of a Complete Streets package																												
10. Reduces Route 1 curb cut/area collector/distributor roads as appropriate																												
11. Address the needs of emergency response personnel																												

* Assumes constrained development on Samoil property

TABLE 5-2: Potential Traffic and Circulation Impacts - Data (AM peak hour)

last revised 5-15-03

	Existing 2001	No Action	Route 1 at-grade					Route 1 at-grade					Route 1 at-grade					Route 1 at-grade					
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
1. Travel delay and rate of growth in congestion (Various measures)																							
Reduces Vehicle hours traveled	7,391	18,059	11,294	12,102	12,247	11,778	10,650	11,680	10,756	10,685	12,842	14,233	11,632	11,112	13,196	11,693	8,902	9,985	17,373	17,373	15,073	15,073	
Reduces Vehicle hours traveled under congested conditions	3,065	16,843	9,851	10,724	10,734	10,294	9,449	10,170	9,347	9,279	11,564	13,003	10,264	9,724	11,917	10,289	8,305	8,484	16,171	16,171	14,176	14,176	
Reduces Vehicle Miles Traveled under congested conditions	1,929	31,220	26,384	26,880	24,472	27,824	26,942	24,834	25,231	23,069	24,859	26,657	27,019	27,630	28,229	26,951	20,662	21,910	29,369	29,369	24,634	24,634	
2. Travel time on Route 1 (Travel time in minutes - AM peak hour)																							
Northbound	5	15.13	12.83	12.80	12.82	12.75	12.53	12.12	12.35	11.29	11.18	11.87	12.85	12.71	12.14	12.90	11.65	11.60	14.54	14.54	14.54	14.54	
Southbound	4	6.66	4.69	4.28	4.18	4.73	4.85	5.36	4.96	4.37	3.92	3.99	5.06	4.48	4.52	4.45	4.36	4.95	5.80	5.80	7.54	7.54	
3. Travel time on E-W streets (Average 2-way travel time in minutes - AM peak hour)																							
Travel from Clarksville Road/CR 571 Intersection in W. Windsor to Nassau Street in the vicinity of:																							
Alexander Rd	13	21.34	18.84	19.15	18.62	18.57	18.05	20.89	19.08	19.22	20.38	22.66	18.13	19.01	18.67	18.10	18.48	17.67	20.67	20.67	26.54	26.54	
Washington Rd	10	19.32	18.64	14.05	13.74	14.61	14.14	16.47	16.35	16.84	18.95	19.79	13.65	13.88	13.92	13.04	13.26	14.62	17.41	17.41	23.21	23.21	
Harrison St	12	19.79	13.86	13.68	14.08	14.78	14.25	16.84	16.01	16.84	18.91	20.64	13.84	13.81	14.40	14.24	14.54	15.72	16.77	16.77	23.21	23.21	
4. Intersection delays crossing Route 1 (Total average E-W approach delay in minutes - AM peak hour)																							
Alexander Rd crossing Route 1	<1	0.5	<1	0.4	<1	0.3	<1	0.4	<1	0.3	<1	0.4	<1	0.3	<1	0.4	<1	0.3	<1	0.3	<1	0.3	
Washington Rd crossing Route 1	3	16	<1	0	<1	0.4	<1	0.4	N/A	N/A	N/A	N/A	<1	0.3	<1	0.4	<1	0.3	<1	0.3	<1	0.3	
Harrison St crossing Route 1	4	16	<1	0.4	<1	0.3	<1	0.4	<1	0.3	<1	0.4	<1	0.3	<1	0.4	<1	0.3	<1	0.3	<1	0.3	
5. Changes in traffic volume on key routes (Two-way traffic volume - AM peak hour)																							
at Cora area b/w D&R Canal and Route 1																							
Alexander Rd b/w Canal & Route 1	1,681	2,348	2,118	2,221	2,157	2,077	1,943	2,181	2,127	2,037	2,286	2,554	2,033	2,068	2,088	2,432	2,030	1,903	2,223	2,223	2,607	2,607	
Alexander Rd crossing D&R Canal	% Change		40%	-10%	-5%	-8%	-11%	17%	-6%	-9%	13%	9%	-13%	-14%	-11%	3%	-13%	-15%	-5%	-5%	11%	11%	
Washington Rd b/w Canal and Route 1	1,825	2,480	2,265	2,370	2,301	2,222	2,091	2,314	2,273	2,146	2,398	2,702	2,181	2,221	2,200	2,599	2,171	2,031	2,363	2,363	2,733	2,733	
Washington Rd crossing D&R Canal	% Change		30%	-9%	-4%	-7%	-10%	16%	-7%	-10%	13%	9%	-12%	-10%	-8%	4%	-12%	-13%	-5%	-5%	10%	10%	
Harrison St b/w Canal and Route 1 (Lower Harrison St)	1,388	2,428	1,728	1,702	1,570	1,600	1,371	1,722	1,636	1,391	1,832	2,098	1,698	1,750	1,688	1,768	1,508	1,700	2,291	2,291	2,527	2,527	
Washington Rd crossing D&R Canal	% Change		75%	-29%	-30%	-30%	-31%	27%	-47%	-48%	36%	59%	-24%	-26%	-22%	27%	-38%	-26%	-6%	-6%	43%	43%	
Harrison St crossing D&R Canal	1,380	2,207	1,985	1,945	1,400	1,511	1,601	1,808	1,884	1,982	2,100	1,856	1,525	1,575	1,670	1,593	1,329	1,625	2,067	2,067	1,257	1,257	
Harrison St b/w Canal and Route 1 (Upper Harrison St)	% Change		60%	-28%	-30%	-31%	-32%	16%	-15%	-11%	11%	15%	-11%	-10%	-10%	20%	-44%	-31%	-4%	-4%	42%	42%	
Mayfield Rd in Plainboro	923	1,182	1,067	1,098	1,058	1,008	978	1,078	1,048	1,018	1,108	1,208	1,068	1,098	1,108	1,208	1,068	1,098	1,208	1,208	1,408	1,408	
Mayfield Rd crossing D&R Canal	% Change		28%	-17%	-17%	-17%	-17%	17%	-17%	-17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	
Mayfield Rd in Plainboro	393	801	857	863	825	855	865	860	848	861	906	945	828	810	740	669	810	860	850	850	821	821	
Mayfield Rd crossing D&R Canal	% Change		129%	-59%	-14%	-6%	-5%	-5%	-5%	-4%	1%	5%	-8%	-10%	-18%	-24%	-3%	-2%	-6%	-6%	82%	82%	
Washington Rd in Penns Neck	1,607	2,870	2,548	2,329	2,167	2,060	1,960	2,260	2,230	2,100	2,350	2,650	2,180	2,220	2,200	2,599	2,170	2,030	2,363	2,363	2,733	2,733	
Washington Rd crossing D&R Canal	% Change		66%	-40%	-44%	-55%	-55%	45%	-72%	-69%	75%	27%	-25%	-25%	-25%	25%	-44%	-35%	-6%	-6%	42%	42%	
Fisher Place b/w Route 1 and Fairview Ave	44	0	393	0	0	61	0	7	0	0	0	0	0	0	149	138	68	0	84	571	0	0	
Fisher Place crossing D&R Canal	% Change		4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Canal Points Blvd south of Alexander Rd	833	1,549	1,294	1,437	1,368	1,199	1,409	1,287	1,358	2,030	1,612	1,413	1,525	1,575	1,587	1,525	1,454	1,450	1,503	1,503	1,468	1,468	
Canal Points crossing D&R Canal	% Change		86%	-16%	7%	-12%	-32%	-5%	-17%	-12%	31%	4%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	
6. West of D&R Canal																							
Alexander Rd b/w Faculty Rd & University Pl	1,736	2,229	2,054	2,143	2,110	2,074	2,015	2,152	2,121	2,065	2,252	2,272	2,062	2,104	2,113	2,019	2,041	2,003	2,142	2,142	2,259	2,259	
Alexander Rd crossing D&R Canal	% Change		28%	-8%	-14%	-15%	-17%	10%	-3%	-6%	7%	1%	2%	2%	2%	-10%	-6%	-10%	-4%	-4%	1%	1%	
Alexander Rd b/w University Pl and Mercer St	1,300	1,713	1,604	1,682	1,652	1,616	1,557	1,694	1,663	1,618	1,800	1,818	1,618	1,668	1,678	1,557	1,557	1,557	1,668	1,668	1,818	1,818	
Alexander Rd crossing D&R Canal	% Change		32%	-8%	-10%	-10%	-11%	10%	-2%	-3%	12%	1%	2%	2%	2%	-10%	-6%	-10%	-4%	-4%	1%	1%	
Nassau St b/w Faculty Rd & University Pl	1,222	2,058	1,668	1,711	1,658	1,609	1,550	1,679	1,653	1,602	1,785	1,802	1,602	1,652	1,662	1,550	1,550	1,550	1,662	1,662	1,802	1,802	
Nassau St crossing D&R Canal	% Change		68%	-15%	-17%	-17%	-17%	10%	-3%	-6%	12%	1%	2%	2%	2%	-10%	-6%	-10%	-4%	-4%	1%	1%	
Harrison St b/w Nassau St & Faculty Rd (Upper Harrison St)	899	1,251	1,094	1,153	1,123	1,094	1,055	1,192	1,163	1,114	1,297	1,314	1,114	1,164	1,174	1,055	1,055	1,055	1,164	1,164	1,314	1,314	
Harrison St crossing D&R Canal	% Change		37%	-25%	-25%	-25%	-25%	13%	15%	25%	0%	2%	27%	16%	22%	19%	17%	17%	17%	17%	17%	17%	
Nassau St b/w Mercer St & Washington Rd	1,495	1,808	1,617	1,733	1,757	1,730	1,671	1,808	1,784	1,735	1,921	1,941	1,735	1,785	1,795	1,721	1,671	1,671	1,785	1,785	1,941	1,941	
Nassau St crossing D&R Canal	% Change		21%	-1%	-4%	-5%	-5%	10%	-2%	-4%	10%	2%	2%	2%	2%	2%	-10%	-6%	-10%	-4%	-4%	1%	1%
Nassau St b/w Washington Rd & Harrison St	1,194	2,344	1,927	2,123	2,092	2,053	1,993	2,093	2,063	2,013	2,200	2,219	2,013	2,063	2,073	1,927	1,877	1,877	2,073	2,073	2,219	2,219	
Nassau St crossing D&R Canal	% Change		96%	-17%	-14%	-15%	-16%	17%	-15%	-10%	7%	15%	-18%	-20%	-22%	-17%	-18%	-23%	5%	5%	14%	14%	
Faculty Rd b/w Alexander Rd & Washington Rd	726	1,053	1,068	1,117	1,102	1,033	1,000	1,011	1,003	928	924	1,137	968	970	978	978	978	978	978	978	1,137	1,137	
Faculty Rd crossing D&R Canal	% Change		45%	-19%	-16%	-17%	-20%	-5%	-4%	-12%	12%	8%	5%	5%	5%	5%	5%	5%	5%	5%	13%	13%	
Faculty Rd b/w Washington Rd & Harrison St	351	648	597	631	634	611	597	627	629	607	607	607	597	597	597	597	597	597	597	597	607	607	
Faculty Rd crossing D&R Canal	% Change		142%	-30%	-34%	-37%	-44%	39%	18%	-20%	-26%	5%	-5%	-6%	-6%	-6%	-6%	-6%	-6%	-6%	9%	9%	
7. Vicinity of NEC rail line																							
Alexander Road b/w Roszel Rd & Vaughn Dr	2,301	2,631	3,100	3,181	3,098	3,029	2,954	3,141	2,973	2,912	3,261	3,378	3,090	3,145	3,054	3,081	2,888	2,892	2,840	2,840	3,077	3,077	
Alexander Rd crossing D&R Canal	% Change		14%	18%	15%	14%	13%	11%	13%	11%	13%	14%	13%	14%	13%	14%	13%	13%	13%	13%	17%	17%	
Alexander Rd east of NEC rail line	808	1,594	1,194	1,178	1,208	1,183	1,108	1,362	1,329	1,085	1,448	1,373	1,126	1,159	1,153	1,175	1,198	1,078	1,308	1,308	1,520	1,520	
Wallace Rd	509	723	489	461	478	4																	
North Post Rd	% Change		29%	-33%	-18%	-34%	-18%	36%	20%	-33%	22%	42%	-37%	-33%	-29%	-21%	-16%	-11%	4%	4%	38%	38%	
North Post Rd crossing D&R Canal	1,275	1,314	1,100	1,120	1,041	1,000	968	1,068	1,038	1,008	1,108	1,138	1,008	1,058	1,068	1,008	958	908	1,008	1,008	1,108	1,108	
North Post Rd crossing D&R Canal	% Change		3%	-16%	-8%	-21%	-25%	17%	-3%	-24%	20%	18%	-14%	-13%	-13%	-13%	-13%	-13%	-13%	-13%	4%	4%	
Rear Brook Road	619	1,428	1,677	1,698	1,608	1,614	1,647	1,298	1,642	1,607	1,512	1,611	1,616	1,568	1,427	1,563	1,588	1,602	1,681	1,681	1,411	1,411	
Rear Brook Road crossing D&R Canal	% Change		14%	131%	17%	19%	17%	-13%	15%	11%	15%	13%	6%	2%	6%	10%	11%	12%	18%	18%	-1%	-1%	
CR 571 b/w Alexander Rd and Wallace Rd	1,213	2,088	2,578	2,661	2,608	2,561	2,495	2,821	2,637	2,658	2,808	3,033	2,601	2,601	2,610	2,310	2,257	2,235	2,400	2,415	2,415	2,405	
CR 571 crossing D&R Canal	% Change		113%	0%	0%	0%	-2%	43%	3%	4%	-2%	22%	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%	
Clarksville Road b/w No Post Rd and CR 571	1,517	2,010	2,070	2,070	2,010	1,970	1,910	2,200	2,160	2,140	2,340	2,360	2,140	2,160	2,170	2,010	1,970	1,970	2,160	2,160	2,360	2,360	
Clarksville Road crossing D&R Canal	% Change		30%	0%	0%	0%	-3%	11%	11%	5%	-5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	

TABLE 5-3: Maximum Traffic Volumes on New Roadway Segments

New Roadway Segment	No Action	Route 1 In-a-cut					Route 1 at-grade				
		A	A.1	A.2	A.3	A.4	B	B.1	B.2	C *	C.1 *
AM Peak Hour											
Eastside Connector	0	3,577	3,512	3,554	3,583	3,709	3,602	3,710	3,774	0	0
Westside Connector to Harrison	0	2,083	2,018	2,052	2,132	2,173	2,477	2,351	2,028	1,460	1,533
Westside Connector to Washington	0	0	0	0	0	0	1,246	1,284	1,583	0	0
Westside Connector Washinhton to Alexander	0	0	0	0	0	0	0	0	2,895	2,252	0
Vaughn Drive Connector	0	1,820	1,927	1,727	1,886	1,768	0	1,799	1,587	1,949	2,036
Eastside Frontage Road	0	0	308	0	1,107	1,007	0	0	0	0	0
Westside Frontage Road	0	0	863	0	1,014	966	0	0	0	0	0
Two-way Frontage Road	0	0	0	1,137	0	0	0	0	0	1,701	1,567
PM Peak Hour											
Eastside Connector	0	3,457	3,435	3,398	3,560	3,481	3,528	3,302	3,733	0	0
Westside Connector to Harrison	0	2,179	2,080	2,427	2,471	2,462	2,541	2,628	2,088	1,318	1,303
Westside Connector to Washington	0	0	0	0	0	0	1,348	1,275	1,483	0	0
Westside Connector Washinhton to Alexander	0	0	0	0	0	0	0	0	2,070	1,893	0
Vaughn Drive Connector	0	2,502	2,685	2,398	2,600	2,310	0	2,067	2,087	2,084	2,050
Eastside Frontage Road	0	0	299	0	773	864	0	0	0	0	0
Westside Frontage Road	0	0	697	0	1,297	1,171	0	0	0	0	0
Two-way Frontage Road	0	0	0	828	0	0	0	0	0	1,520	1,487

New Roadway Segment	Route 1 In-a-cut						Route 1 at-grade		
	D	D.1	D.2*	E	F	F.1	G*	G.1*	G.2*
AM Peak Hour									
Eastside Connector	3,368	3,361	0	3,324	3,619	3,739	0	0	0
Westside Connector to Harrison	2,182	1,998	2190	1,773	2,319	2,171	1,617	1,617	1,515
Westside Connector to Washington	0	0	0	0	0	0	0	0	0
Westside Connector Washinhton to Alexander	0	0	0	0	0	0	0	0	0
Vaughn Drive Connector	1,660	1,652	1,980	1,837	1,773	1,717	1,675	1,675	0
Eastside Frontage Road	1,018	1,001	1,270	593	0	879	0	0	0
Westside Frontage Road	1,033	1,016	1,320	1,094	0	700	0	0	0
Two-way Frontage Road	0	0	0	0	0	0	0	0	0
PM Peak Hour									
Eastside Connector	3,384	3,329	0	3,407	3,769	3,876	0	0	0
Westside Connector to Harrison	2,441	2,240	1,850	2,111	2,564	2,503	1,494	1,494	1,671
Westside Connector to Washington	0	0	0	0	0	0	0	0	0
Westside Connector Washinhton to Alexander	0	0	0	0	0	0	0	0	0
Vaughn Drive Connector	2,118	2,123	1,800	2,285	2,251	2,257	1,993	1,993	0
Eastside Frontage Road	893	850	1,340	731	0	957	0	0	0
Westside Frontage Road	1,297	1,239	1,370	1,021	0	537	0	0	0
Two-way Frontage Road	0	0	0	0	0	0	0	0	0

* Assumes constrained development of Samoff property