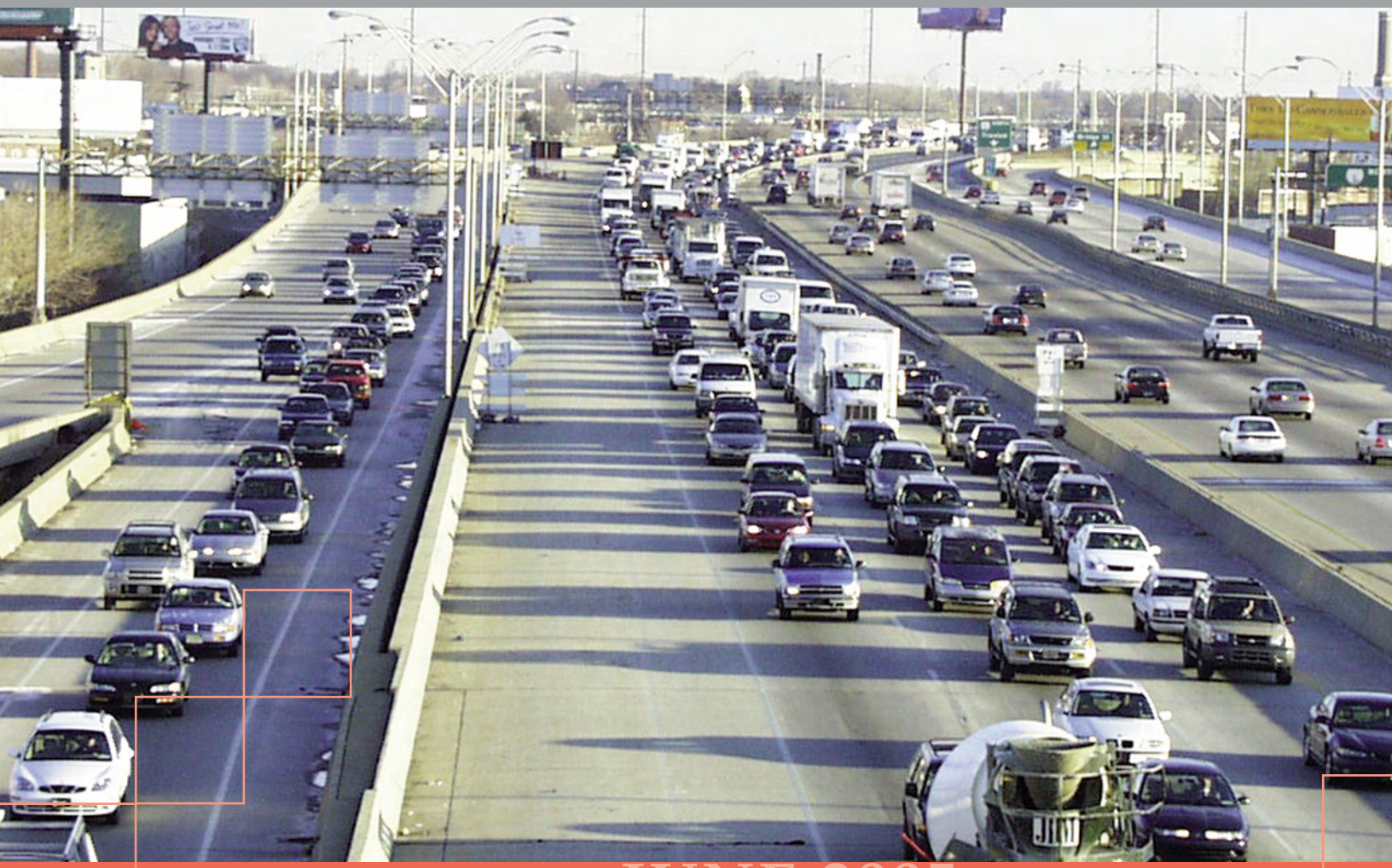
I-95 Interchange Enhancement and Reconstruction

I-95 GIRARD AVENUE AND I-676 VINE EXPRESSWAY INTERCHANGES, SECTION GIR TRAFFIC STUDY



JUNE 2005

Prepared for Pennsylvania Department of Transportation by

Delaware Valley Regional Planning Commission

PENNDOT

I-95 GIRARD AVENUE AND I-676 VINE EXPRESSWAY INTERCHANGES, SECTION GIR TRAFFIC STUDY

June 2005

Prepared for
Pennsylvania Department of Transportation
By
Delaware Valley Regional Planning Commission
190 North Independence Mall West, 8th Floor
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Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty, and intercity agency which provides continuing, comprehensive and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties as well as the City of Philadelphia, in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. DVRPC provides technical assistance and services; conducts high priority studies that respond to the request and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues; determines and meets the needs of the private sector, and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the commission.

Our logo is adapted from the official DVRPC seal, and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. This report was primarily funded by the Pennsylvania Department of Transportation and the Federal Highway Administration (FHWA). The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES (CONTINUED)

LIST OF MAPS

LIST OF TABLES

EXECUTIVE SUMMARY

This report summarizes traffic forecasts for a No-Build (Base Case) Alternative and five different build options for the Girard Avenue and I-676 Vine Expressway Interchange complex along I-95 in the Northern Liberties and Penn Treaty sections of Philadelphia. Because large portions of I-95 are being rehabilitated over the next several years, detailed studies of several of the interchanges are being conducted as a precursor to any changes. Average daily and peak hour traffic forecasts are prepared for each option for 2025 and 2005.

The limits of the study area rum from Allegheny Avenue to just south of the I-676 Vine Expressway interchange. In this section, the alignment of I-95 is approximately northeast/southwest at the north to north/south at the south, but it generally follows the alignment of the Delaware River. In this section, all of mainline I-95 is elevated either on a structure or embankment, separating industrial and warehousing activities on the east from residential and commercial uses to the west of the alignment.

Six improvement alternatives were identified for this interchange, all of which involve construction. The base case, or No-Build Alternative, addresses the two primary objectives for this study section. An I-95 southbound off-ramp connects to Aramingo Avenue giving access to the waterfront, and I-95 mainline is assumed to be widened to four lanes in each direction. The five Build Options further address the efficiency of traffic flow by reconfiguring the Girard Avenue interchange. For each alternative, regional travel simulation models were used to forecast future travel patterns. They utilize a system of traffic zones and rely on demographic and employment data, land use, and transportation network characteristics to simulate trip-making patterns throughout the region.

Objectives for improvements in this study area, which guided the development of the build alternatives, included providing direct access from southbound I-95 to the Penn's Landing waterfront. A second objective was to eliminate the lane drop on either side of the Girard interchange, resulting in four through lanes of traffic in the study area. At the same time, reconstruction allowed for the redesign of the Girard interchange to improve the efficiency of traffic movement. As with all I-95 sections undergoing rehabilitation, design efforts focus on making improvements to safety; better signage; minimizing the traffic, particularly truck, impacts on local street; and implementing incident management technology.

Projected traffic volumes for selected highway links within the study area are presented and analyzed. Average daily traffic volumes and AM and PM peak hour volumes at selected intersections are included for each alternative. The Appendices to this report include current traffic counts of the various roadways and intersections examined in the study area.

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I. INTRODUCTION

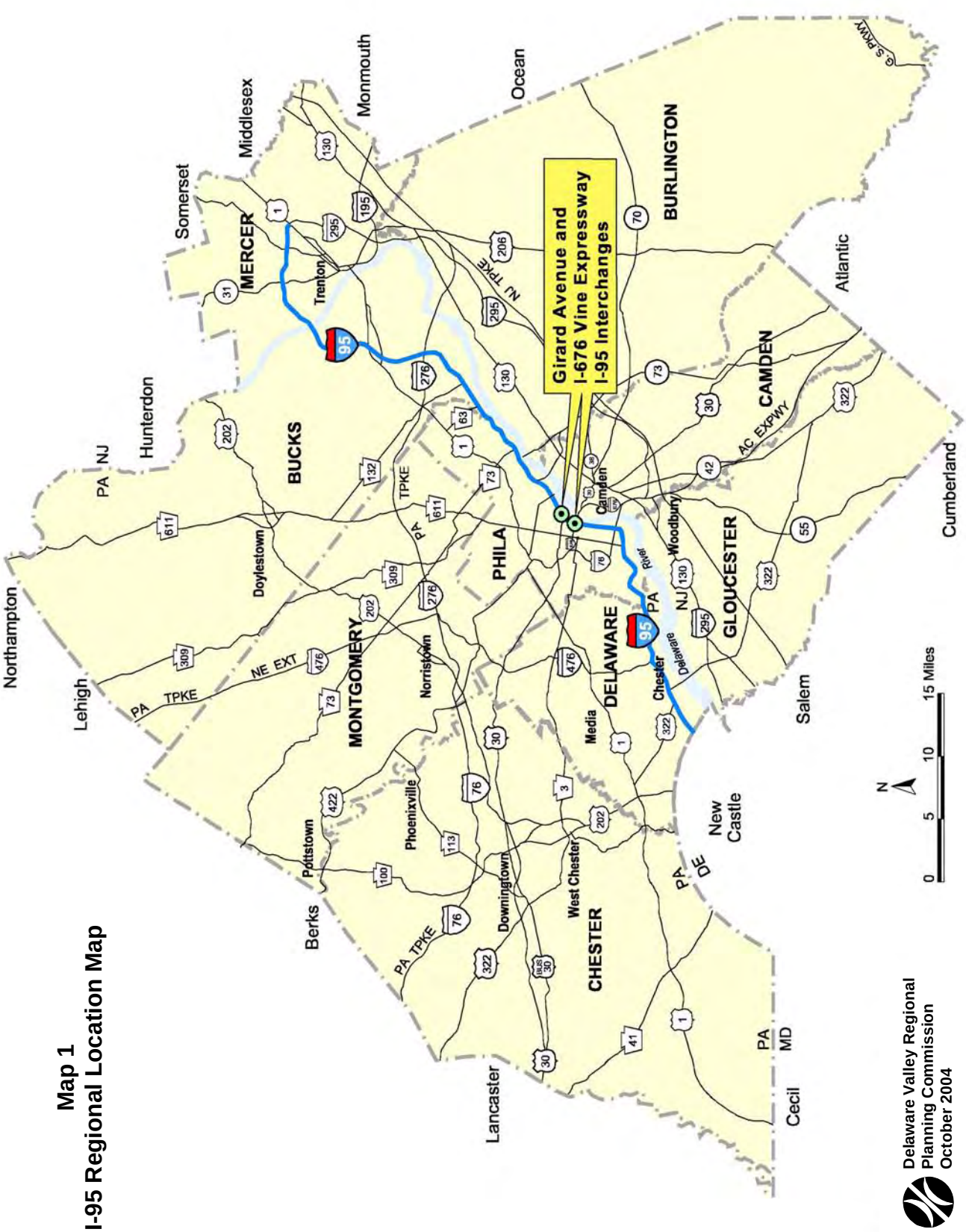
This report summarizes traffic forecasts for a Base Alternative and five different build options for the Girard Avenue and I-676 Vine Expressway Interchange complex along I-95 in the Northern Liberties and Penn Treaty sections of Philadelphia ***(maps 1 and 2)***. It was prepared at the request of the Pennsylvania Department of Transportation (PENNDOT) and their consultants, who are conducting a Point of Access Study for the interchange area. Because large portions of I-95 are being rehabilitated over the next several years, detailed studies of several of the interchanges were conducted as a precursor to any changes. The forecasts in this report are prepared for 2025 and 2005.

I-95 in Pennsylvania was constructed in sections beginning in the middle 1960s, and it was not until the 1990s that a continuous roadway between the State of Delaware and New Jersey boundaries was available to travelers. Traveling north, the highway enters Pennsylvania in Lower Chichester Township, Delaware County, and follows the Delaware River corridor. North of the City of Chester, I-476 heads northward towards the Pennsylvania Turnpike interchange in Plymouth Meeting. I-95, which is at-grade to this point, continues past the Philadelphia International Airport, where it enters the City of Philadelphia.

Once past the Airport, the highway becomes elevated, and passes the Philadelphia stadium complex, the Walt Whitman Bridge, and the Penn's Landing areas. The section within Center City is depressed until just south of the Benjamin Franklin Bridge where it emerges to become elevated once again. The highway remains elevated until well north of the study area, giving access to the various port-related industrial and commercial activities, which are the traditional land uses along the Delaware River, as well as to adjacent residential areas. North of Pennypack Creek I-95 returns to an at-grade alignment and continues at-grade through the residential and commercial areas of Philadelphia and Bucks County until it crosses out of Pennsylvania at the Scudder Falls Bridge northwest of Trenton, New Jersey.

In recent years, pavement, bridges, and overpasses have begun to deteriorate, and beginning in 2000 PENNDOT began a four-phase series of repairs of I-95 from Center City Philadelphia northward into Bucks County. Planned projects include rebuilding numerous bridges, expanding the Intelligent Transportation System (ITS) by installing closed circuit TV cameras, dynamic message signs, and microwave sensors, and upgrading the following interchanges:

- I-676 (Vine Expressway)
- Girard Avenue
- Allegheny/Castor Avenue
- Betsy Ross Bridge
- Bridge Street
- Cottman (PA 73)/Princeton Avenue, and
- PA 132 (Street Road)



Map 1
I-95 Regional Location Map

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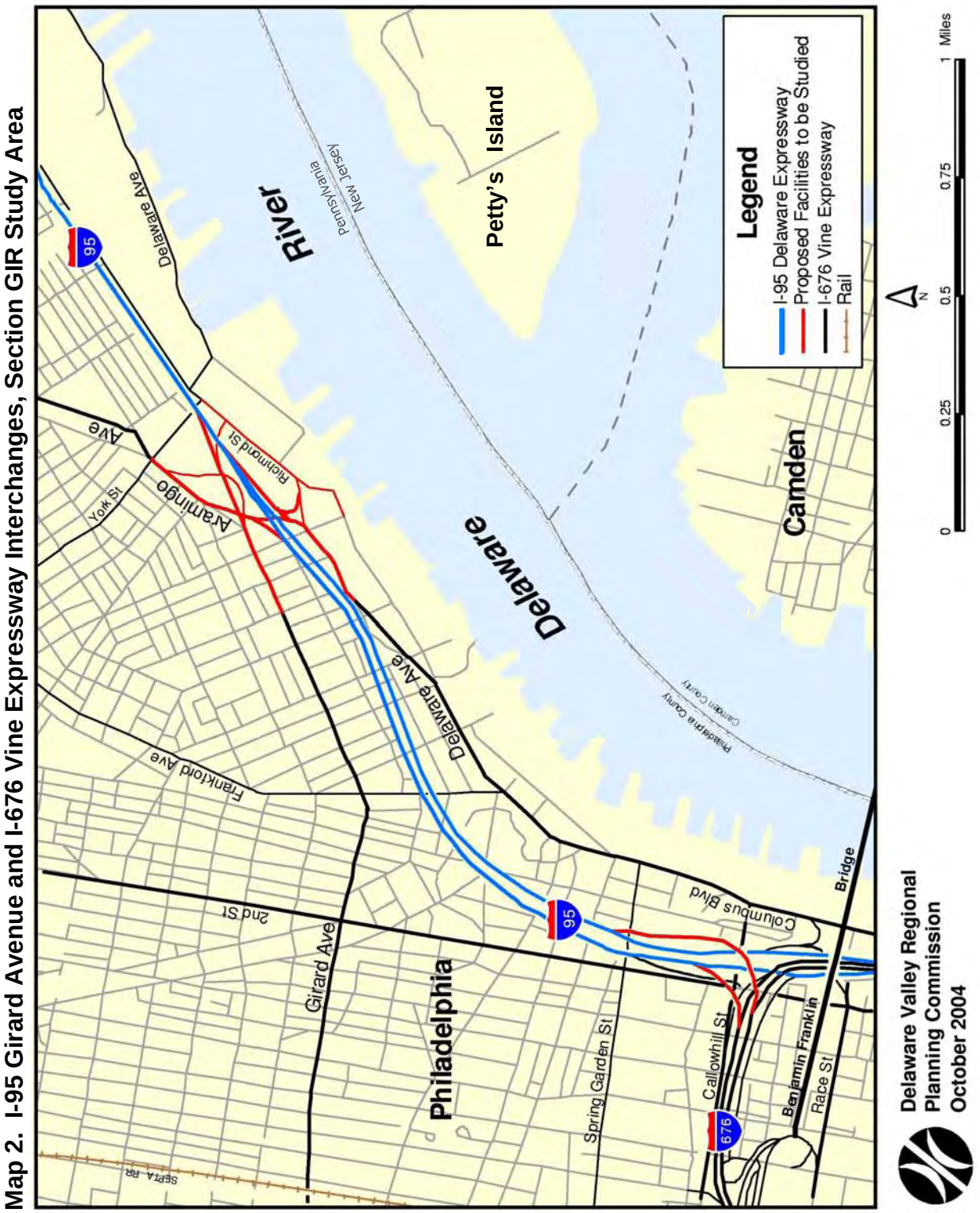

Map 2. I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Study Area

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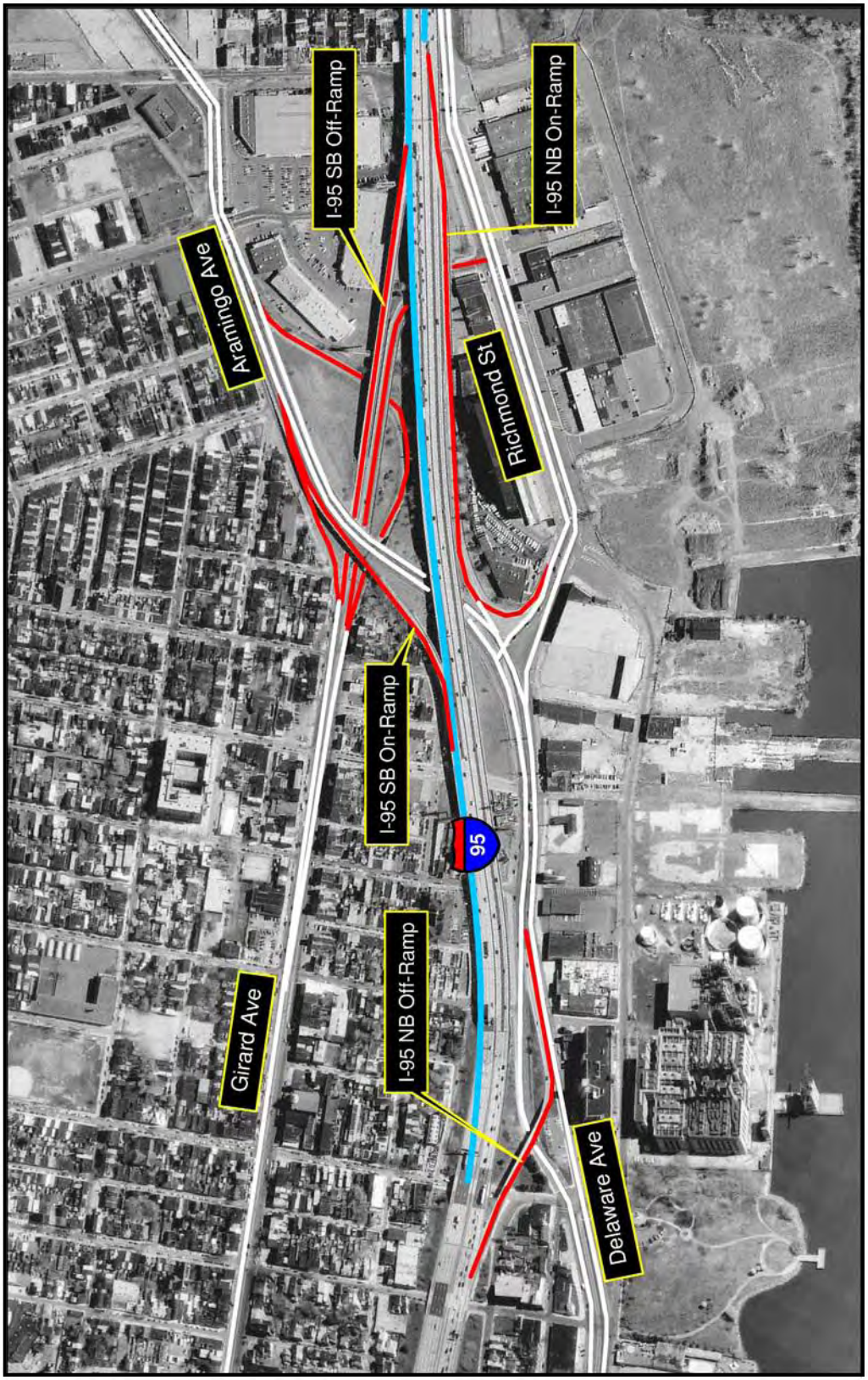
This report focuses on the Girard Avenue (GIR) and I-676 Vine Expressway Study Areas. Approaching this study area from the North, I-95 is a four-lane by direction limited access highway. South of the Girard Interchange, I-95 has three lanes by direction. Two main issues are addressed by the design alternatives. In the current situation, southbound I-95 traffic destined to the northern Penn's Landing waterfront exits to Girard Avenue and then must use local streets to access Delaware Avenue ***(see map 3)***. Many of these local roads consist of a one lane cart-path with parking for adjoining residences. As the waterfront has been developed, the increased traffic, including truck traffic, have made this an unacceptable situation. The first design directive is to provide direct access from southbound I-95 to Delaware Avenue. The second design directive is to continue four through lanes of traffic by direction between the Girard and I-676 Vine Expressway interchanges. Currently, the fourth southbound through lane becomes an exit to Girard Avenue. The I-676 ramp to northbound I-95 consists of two lanes, one of which merges with the three lanes of northbound through traffic while the other becomes the off-ramp to Girard/Aramingo Avenues ***(see map 4)***. This "necking down" of traffic exacerbates congestion on I-95 just north of Center City, Philadelphia. In addition to these primary goals, the build options examine reconfiguring the ramps at the Girard Avenue interchange to improve the efficiency of traffic movement.

A focused travel simulation was conducted using DVRPC's regional travel forecasting models. The traffic zones in the study area were subdivided into smaller zones to better reflect the highway network and land use characteristics of the study area. The model's highway network within the study area was reviewed and modified as needed to reflect the detailed nature of the traffic improvements to be tested.

Chapter II of this report documents the physical characteristics of the study area. Included are a description of the land uses and surrounding roadway network, along with a discussion of current traffic volumes and levels of service. The six alternatives of the study are described in detail in Chapter III. Chapter IV explains the travel forecasting methodology, with a brief discussion of the focused traffic simulation model used to develop the traffic projections. The regional demographic and employment forecasts and corridor-specific future development proposals which form the basis for the forecasts are also presented in this chapter. Chapter V presents an analysis of the travel forecasts for these interchanges. The forecasts represent projected 2005 and 2025 daily traffic volumes for I-95 and the adjacent ramps and surrounding roadways under five Build Options and one No-Build (Base Case) alternative. The appendices contains current traffic counts and intersection turning movements.

Map 3. I-95 - Girard Avenue Interchange Area Ramp Configurations



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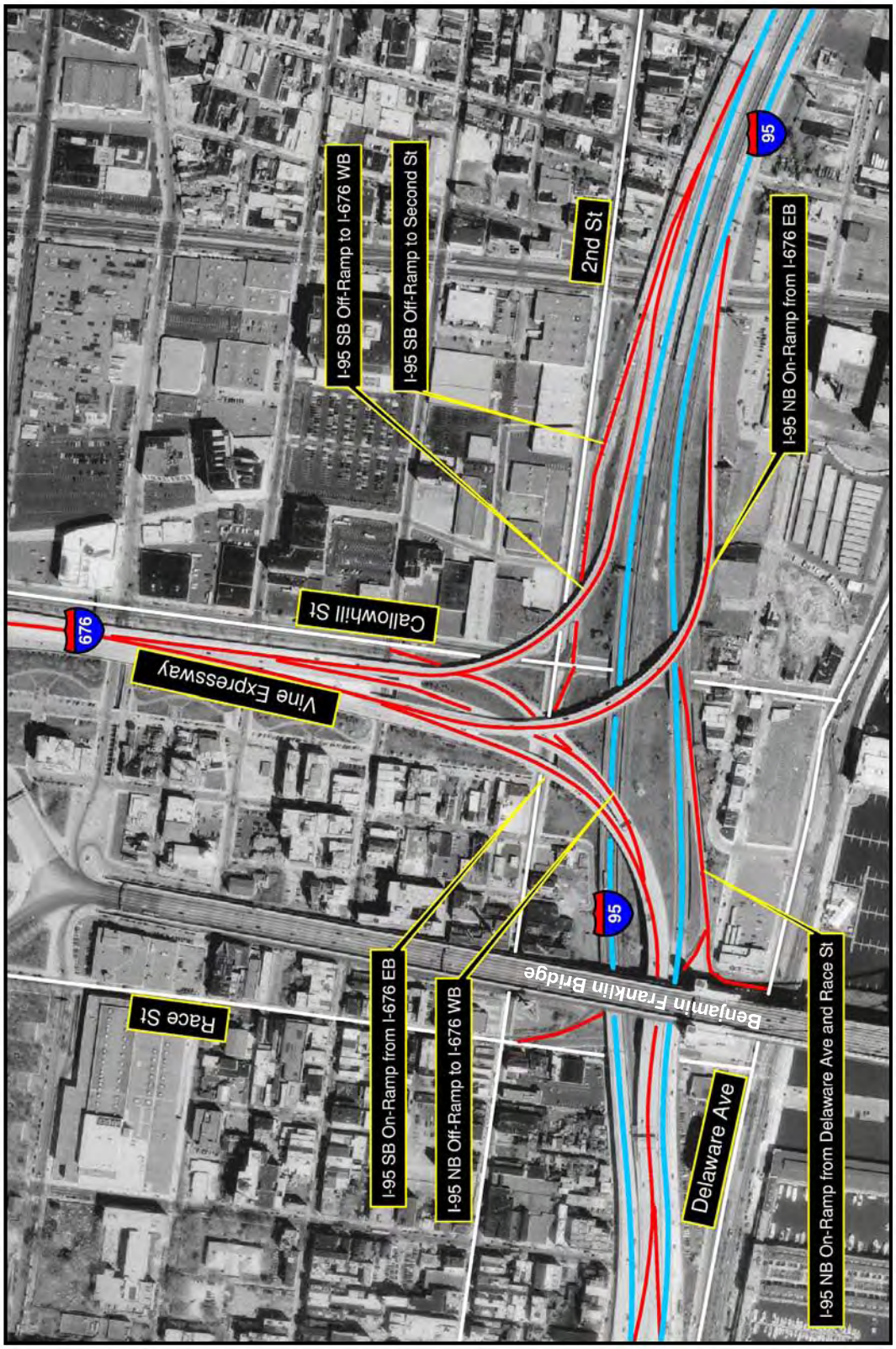
Map 4. I-95 - I-676 Vine Expressway Interchange Area Ramp Configurations



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II. DESCRIPTION OF THE GIRARD AVENUE / I-676 VINE EXPRESSWAY I-95 INTERCHANGES AREA

The limits of the study area run from the Ben Franklin Bridge northwards to Allegheny Avenue and from the Delaware River westward to 2nd Street in North Philadelphia. In this section, the alignment of I-95 changes from north/south at the I-676 interchange to approximately northeast/southwest closer to the Girard Avenue interchange. The routing generally follows the Delaware River. The mainline of the highway is elevated at the north end, but closer to I-676 rests on an embankment. From Laurel Street south the median is occupied by SEPTA's Market Frankford Subway/Elevated line.

A. Existing Highway Facilities and Land Use

The original construction of I-95 provided four southbound lanes from the Allegheny Interchange, approximately one mile to the north of the Girard Interchange. The outermost lane becomes a southbound off-ramp to Girard Avenue, leaving three southbound lanes through the Girard Interchange. The Girard/Aramingo Avenue southbound on-ramp reintroduces the fourth southbound lane. These southbound through lanes continue until the southbound off-ramp to I-676 and Callowhill Street diverges. At this point, the expressway flares out to provide three lanes for through traffic, two lanes to I-676 westbound, and two lanes to Callowhill and 2nd streets. Southbound I-95 continues through the Penn's Landing area on the east side of Center City, a segment rebuilt in the 1980's to improve access to the waterfront and accommodate movements to and from I-676, which was under construction. Three traffic lanes provide northbound I-95 travel from the southern end of the study area. Traffic from Race Street and Delaware Avenue merge on a ramp before joining the traffic stream. Eastbound I-676 provides a two lane ramp just north of this merge. Traffic from both lanes which continues north on I-95 must merge with the three through lanes of traffic. The outer lane of the ramp merges with the inner lane after the connection with I-95 and the ramp continues north to become the northbound off-ramp to Delaware/Girard avenues. The three lanes of northbound through traffic continue through the Girard Interchange, where a combined northbound on-ramp from Girard and Delaware avenues/Richmond Street provides the fourth lane for travel north.

Several major arterials in the vicinity of the Girard Interchange significantly contribute to interchange traffic. Delaware Avenue runs parallel to the expressway from South Philadelphia to the Girard Interchange. To facilitate waterfront redevelopment, this facility has recently been improved north of Vine Street. At the Girard Interchange, Delaware Avenue crosses under I-95 and continues on a course parallel to the west of the expressway as Aramingo Avenue. East of the expressway, Richmond Street serves traffic continuing north from the Delaware Avenue crossing. Girard Avenue originates at an intersection with Richmond Street under the interchange with I-95. Ramps to and from I-95 provide significant traffic to the arterial. From this point Girard proceeds parallel on the west side of I-95 for 3/4 of a mile before turning west and providing a crosstown route across lower north Philadelphia. Land uses within the Girard end of the study area tend to be predominately residential and light commercial on the western

side of I-95 and warehousing and industrial to the east, particularly near the intersection of Delaware Avenue and Richmond Street in and around the Riverside Industrial Park. To the west of I-95 Girard Avenue is lined with small scale commercial uses targeted at the local neighborhoods. The neighborhoods on both sides of Girard consist of row houses. Further north, at the intersection of Aramingo Avenue and York Street is the Aramingo Plaza, an urban shopping center.

Toward the I-676 Vine Expressway end of the study area, the land use character on both sides of I-95 transforms. On the east side, along the Delaware River, warehousing and long closed port related uses are increasingly being redeveloped into entertainment, recreational and residential uses. These uses, which tend to distribute trip origins and destinations more evenly around the clock, are trans-forming not only the character of the area, but the character of the traffic. On the west side of I-95, residential row houses common in the northern portion of the study area give way to warehouses and manufacturing facilities which are increasingly being transformed or replaced by office uses.

B. Existing Traffic Volumes

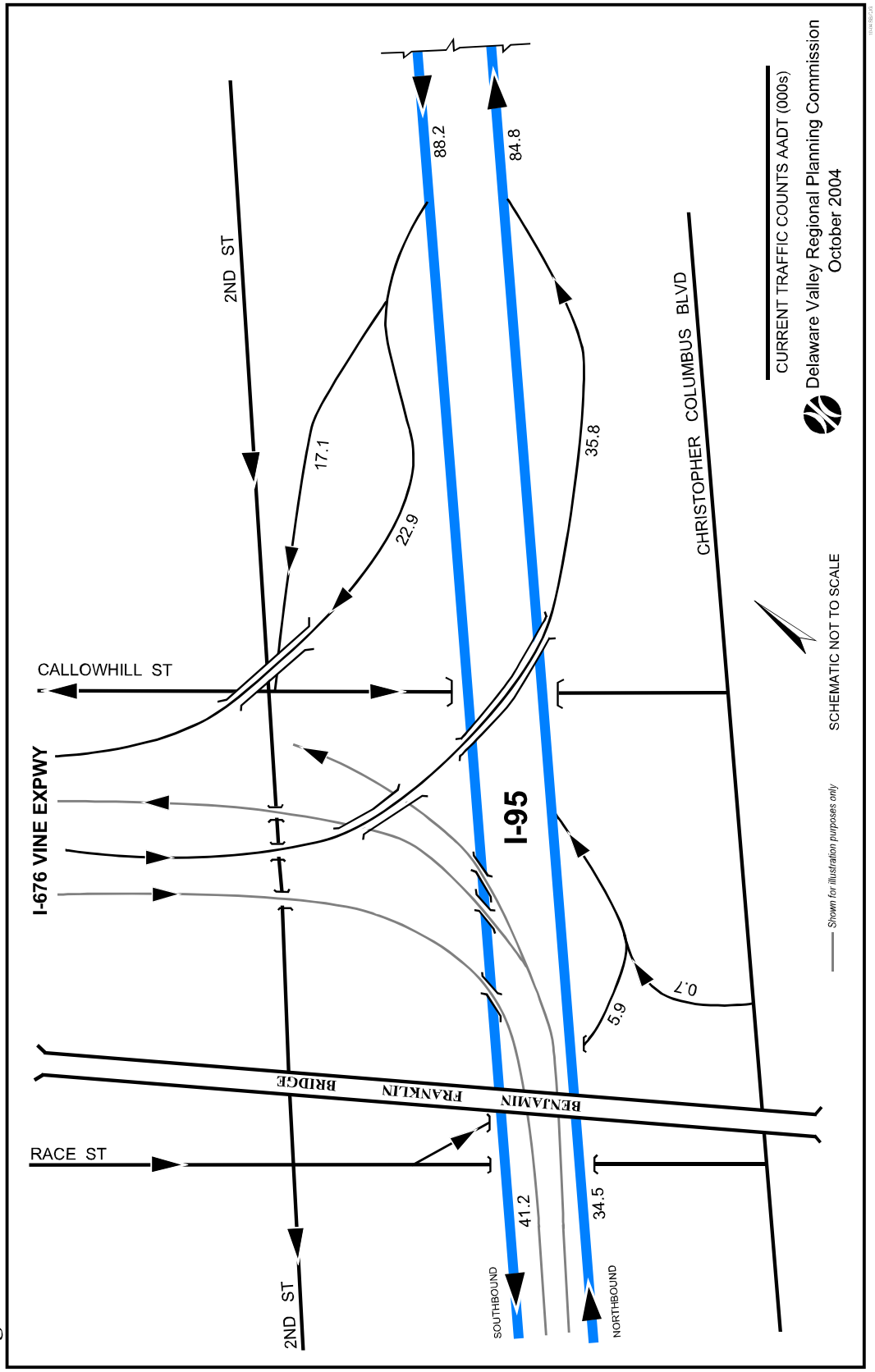
While there has been little new development in the study area since this section of I-95 opened, intensive development has taken place in the greater Northeast Philadelphia, Bucks County, Center City Philadelphia and particularly the waterfront which has generated significant additional traffic volumes at these interchanges. Also, during the same time, main line volumes on I-95 have increased significantly because of development throughout the region. When these factors are added to the general overall increase in regional traffic volumes, capacity on the interchange complex, access ramps and surrounding street system is severely taxed.

Traffic counts were collected on mainline I-95, ramps within the interchange complexes, as well as on impacted arterials and local roads within the study area including: Aramingo, Girard, and Delaware avenues, and Richmond Street. Current daily traffic volumes are shown on ***figures 1A and 1B***. Detailed traffic counts for all locations, including hourly counts and turning movements, are included in the two Appendices to this report.

On the main line of I-95, 86,900 vehicles currently approach the Girard Interchange from the north and 85,500 depart the interchange to the north during the average day. On the southern side of the I-676 Vine Expressway Interchange, the corresponding volumes are 41,200 vehicles per day (vpd) departing to the south and 34,500 vpd arriving from the south. The Callowhill Street and I-676 Vine Expressway offer major access into Center City and together bleed off about 40,000 vpd from southbound I-95. The return movement, from Center City, is predominantly handled by the Vine Expressway with 35,800 vpd. A northbound on-ramp from Race Street (5,900 vpd) combines with approximately 700 vehicles from Delaware Avenue to provide the remaining northbound traffic from this interchange. At the Girard Interchange, the northbound I-95 off-ramp carries 9,300 vpd while the northbound on-ramp adds 16,700 vehicles from both Delaware Avenue and Girard Avenue to northbound I-95 traffic. Southbound, a

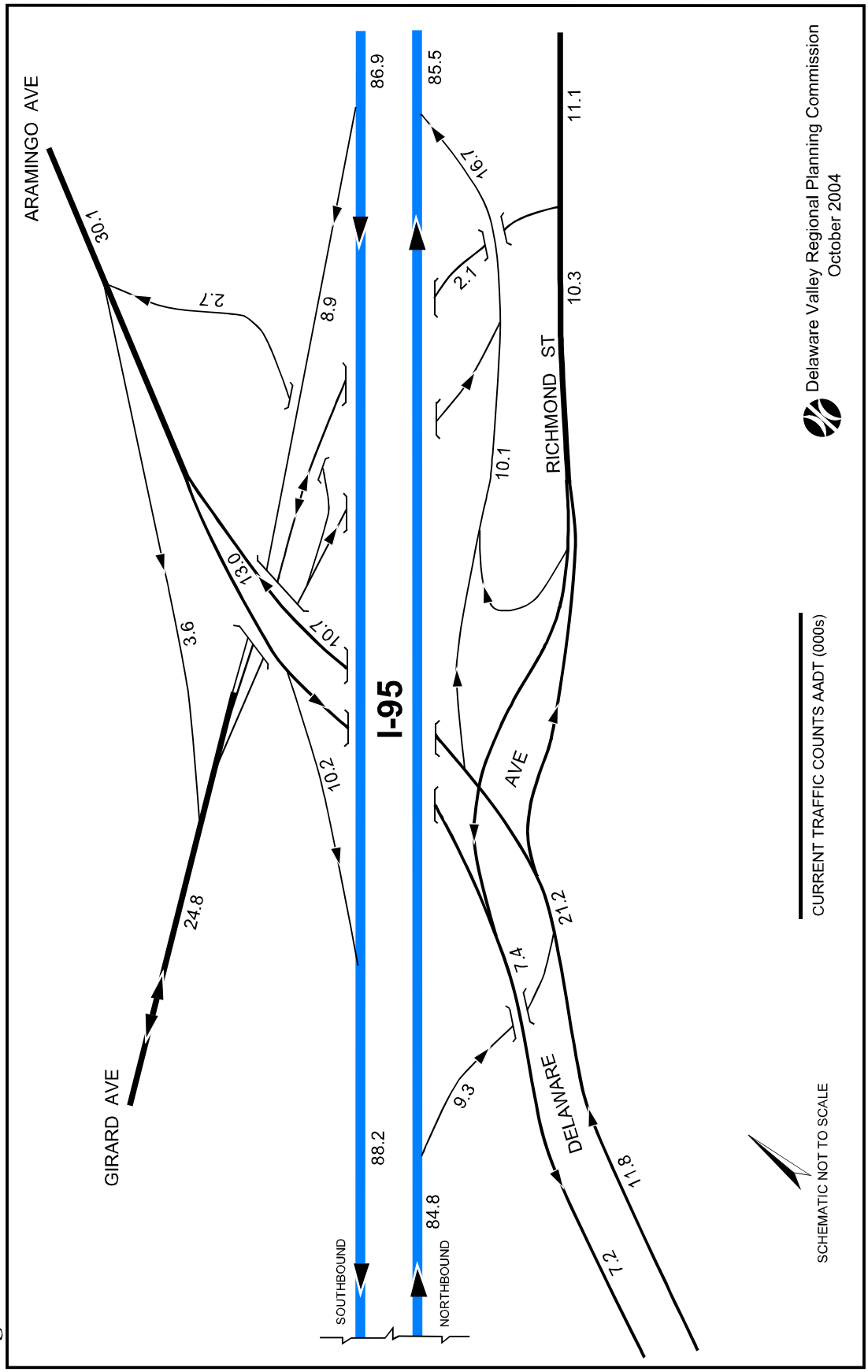
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 1A. Current Traffic Counts



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 1B. Current Traffic Counts



volume of 8,900 vpd was counted on the exit to Girard Avenue, while the southbound on-ramp from Aramingo Avenue contributes 10,200 vehicles.

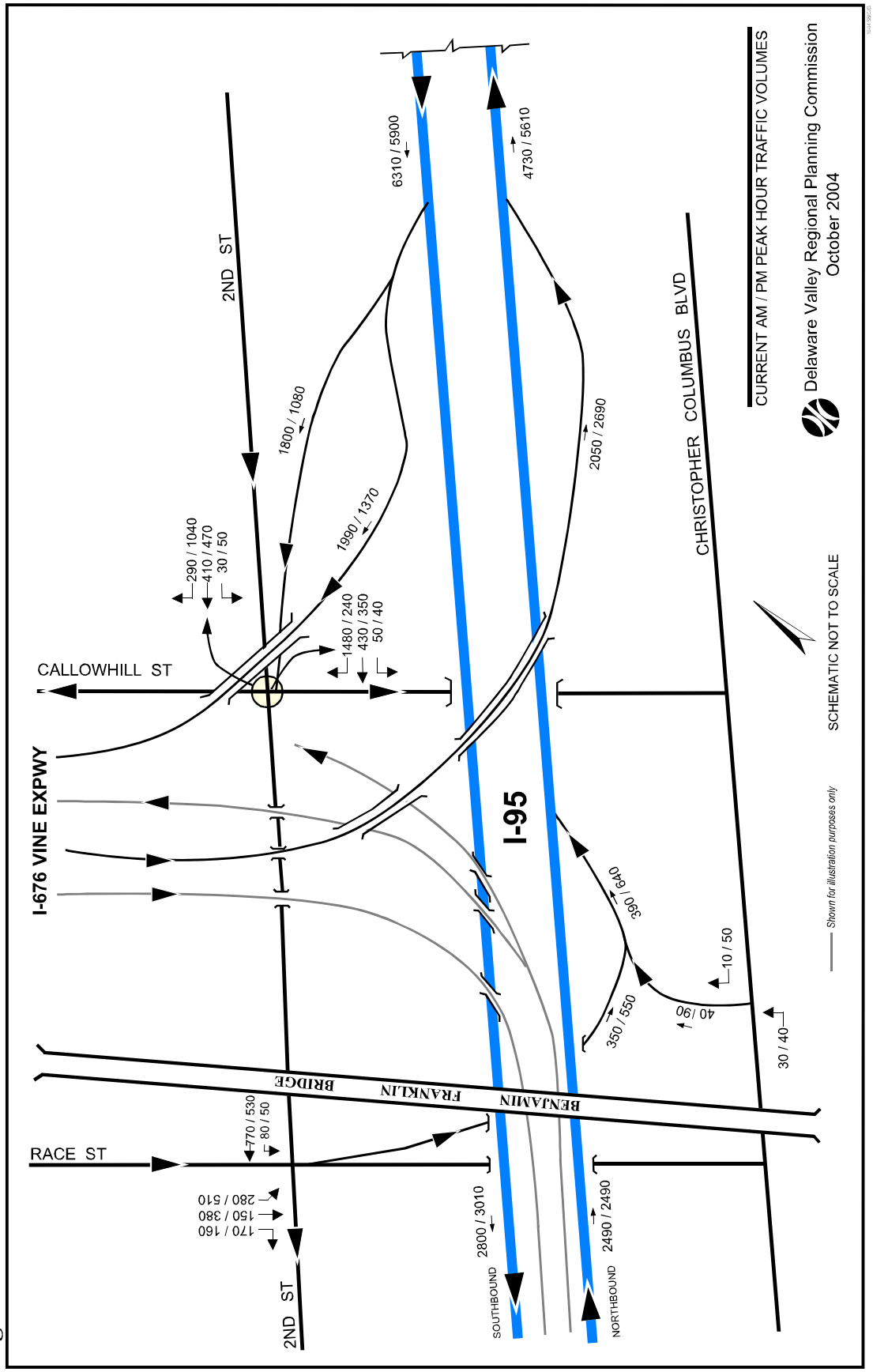
Traffic volumes on study area roadways were also counted. Delaware Avenue south of the Girard Interchange recorded a daily volumes of 19,000 vehicles. Of this total, almost 12,000 traveled northbound and slightly over 7,000 traveled southbound. Volume on the west side of the interchange, where Delaware Avenue becomes Aramingo Avenue, was counted at 30,100 vpd. Girard Avenue, south of the interchange with I-95, handles daily traffic of 24,800 vehicles. Along with the 8,900 vpd coming via the southbound I-95 off-ramp, 3,600 vehicles travel along a connection from Aramingo Avenue. Northbound Girard Avenue contributes 2,700 vehicles via a connection to Aramingo Avenue in the shadow of the I-95 Interchange while the ramp to northbound I-95 carries 6,600 vehicles prior to it's merge with ramp traffic from Delaware Avenue and Richmond Street. The connection to Richmond Street, where Girard Avenue terminates, carries 2,100 vehicles in both directions. Volumes on Richmond Street were counted at 11,100 and 10,300 vpd north and south of this connection with Girard Avenue, respectively.

Along with daily traffic volumes, the traffic counts provided AM and PM peak hour traffic volumes for I-95, it's ramps, and the area roadways. These volumes are displayed on ***figures 2A and 2B***. On I-95 north of the Girard Avenue Interchange, AM peak hour volumes of 5,910 vehicles southbound and 5,040 vehicles northbound were recorded. South of the I-676 Vine Expressway Interchange, the numbers drop significantly to 2,800 and 2,490 vehicles south and northbound, respectively. The heavy AM movement to Center City employment draws 3,790 vehicles off the Callowhill Street (1,800) and I-676 (1,990) southbound combined ramp. In the PM peak, the returning movement accounts for 3,330 vehicles, with 2,690 on the I-676 northbound on-ramp to I-95 and 640 from the combined Race Street/Delaware Avenue northbound on-ramp. At the Girard Avenue Interchange, 460 vehicles exiting on the northbound ramp to Delaware Avenue in the AM peak grows to 570 vehicles for the PM peak. The northbound on-ramp from Delaware Avenue/Richmond Street and Girard Avenue is more temporally different, with an AM peak volume of 770 vehicles more than doubling to 1,890 vehicles in the PM peak. The southbound Girard off-ramp carries slightly more volume in the AM than the PM peak, with 680 and 540 vehicles, respectively. The Aramingo southbound on-ramp favors the AM peak, with a volume of 1,080 vehicles compared to 700 vehicles in the PM peak.

Traffic on adjacent roadways in the study area reflect I-95 directionality with the AM peak volumes directed south toward Center City, Philadelphia and PM peak volumes concentrated northbound away from Center City. Southbound Delaware Avenue traffic south of the Girard Interchange is more than three times greater (730 vehicles) in the AM than the PM peak (200 vehicles). The difference is not as great northbound on this roadway, with an AM volume of 880 AM vehicles increasing to a count of 1,730 vehicles in the PM peak. Southbound Aramingo Avenue recorded 1,660 vehicles in the AM and 1,060 vehicles in the PM peaks; northbound volumes were 810 and 1,080 vehicles in the AM and PM peaks, respectively. Girard Avenue volumes were more sensitive temporally in the northbound direction. Southbound generated a

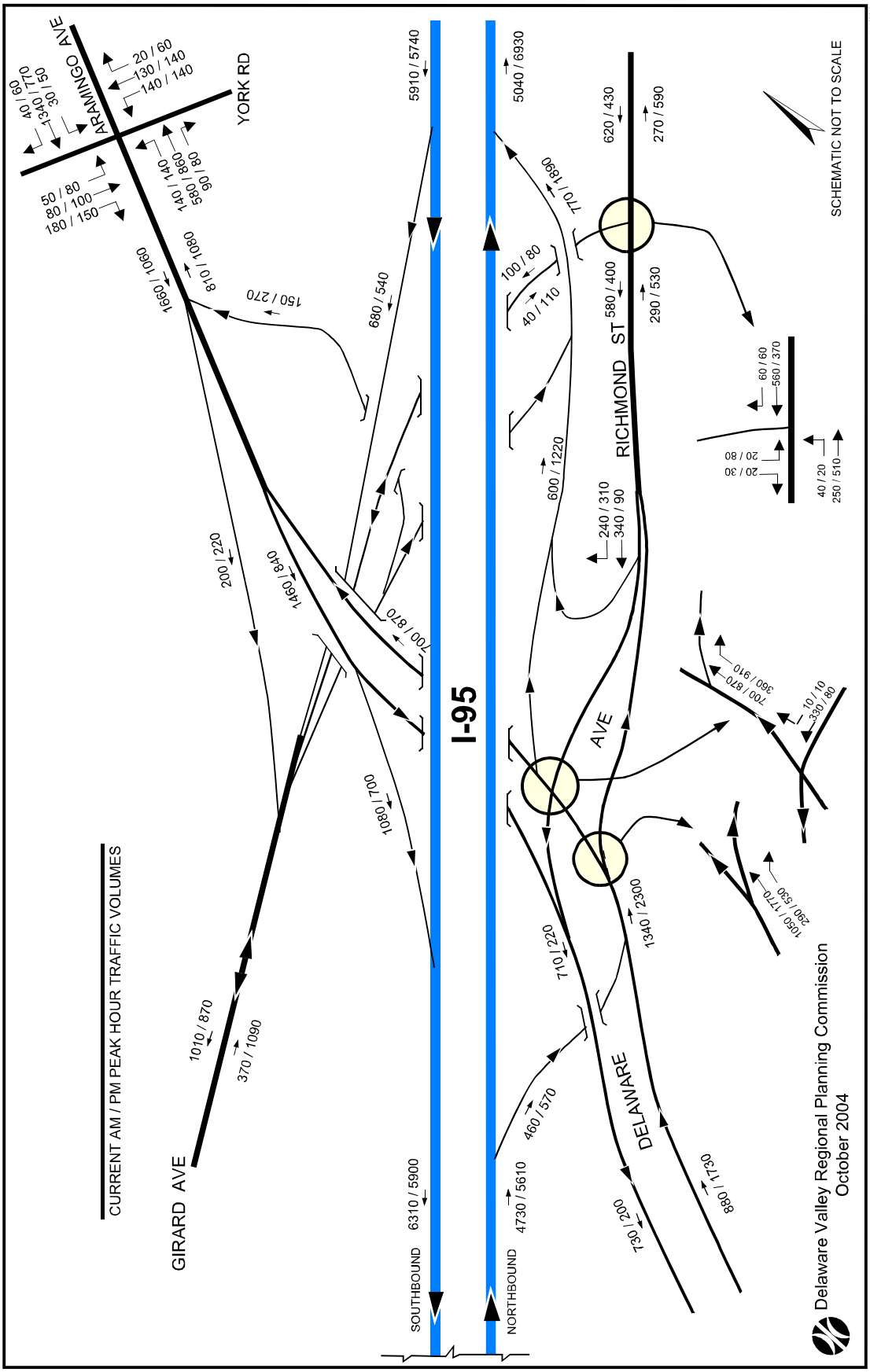
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 2A. Current AM / PM Peak Hour Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 2B. Current AM / PM Peak Hour Traffic Volumes



difference of 1,010 vehicles in the AM peak versus 870 vehicles for the PM peak, while the difference was greater northbound at 370 versus 1,090 vehicles in the AM and PM peaks. This same situation is evident on Richmond Street, where the difference in northbound volumes between the AM and PM peak is greater than that for southbound volumes.

III. IMPROVEMENT OPTIONS

The project objectives which guided the development of the design options, included improving traffic flows on I-95 and the supporting arterial system in the study area by eliminating merge and weave disturbances. Congestion, noise, and air pollution impacts on the neighborhood are to mitigated as mush as possible. Also included were improvements to safety and capacity of I-95, improved access to and from I-95, including better signage, minimizing the traffic and truck impacts on local streets, and implementing incident management technology. In the options tested in this study, the preferred ramp alternatives in I-95 section Cottman (PA 73) / Princeton Avenue was assumed. In Section AFC, the existing ramp configuration was assumed.

Six alternatives were identified for development of traffic forecasts, including five construction, or "build" alternatives (Design Options), and one no action, or "No-Build" alternative. The Build Options presented herein are those selected for development of traffic forecasts and therefore the numbering is not sequential. All options include the construction of the I-95/Pennsylvania Turnpike Interchange and the construction of the Aramingo Avenue connector to the Betsy Ross Bridge and the Adams Avenue Extension to Torresdale Avenue. A more detailed description of the facility improvements included in each option is included in the following sections.

A. No-Build Alternative (also referred to as "Minimum Build")

Figure 3 displays the configuration of the Girard Interchange in the No-Build Alternative. This base case alternative tests traffic flows in the study area assuming the elimination of the lane drop on I-95 southbound at Girard Avenue, thus providing four through lanes of southbound traffic in the study area. A ramp is added connecting the southbound Girard Avenue off-ramp to Aramingo Avenue. The southbound Aramingo Avenue on-ramp to I-95 becomes an acceleration ramp rather than the means to add the fourth I-95 southbound lane. The dual on-ramp from I-676 to I-95 northbound transitions to a single northbound lane versus the current situation where both ramp lanes merge into mainline traffic. This results in four northbound lanes to the Delaware Avenue off-ramp. Currently the right lane exits at this point, whereas in the reconstructed state, the Delaware Avenue off-ramp is a true off-ramp, preserving four northbound lanes.

The No-Build Alternative achieves both of the stated objectives for this section of I-95. Access is provided from I-95 southbound to the Delaware Avenue waterfront via the new southbound ramp to Aramingo Avenue, thus removing truck traffic from the local streets between Girard and Delaware avenues. In addition, a four lane by direction profile of I-95 is provided in the study area. The provision of the ramp from the I-95 Girard Avenue southbound off-ramp to Aramingo Avenue provides a conflict between traffic destined from I-95 to the Delaware Avenue waterfront and northbound Aramingo Avenue traffic. This necessitates the installation of a traffic signal at the intersection of the ramp and Aramingo Avenue. There is also no

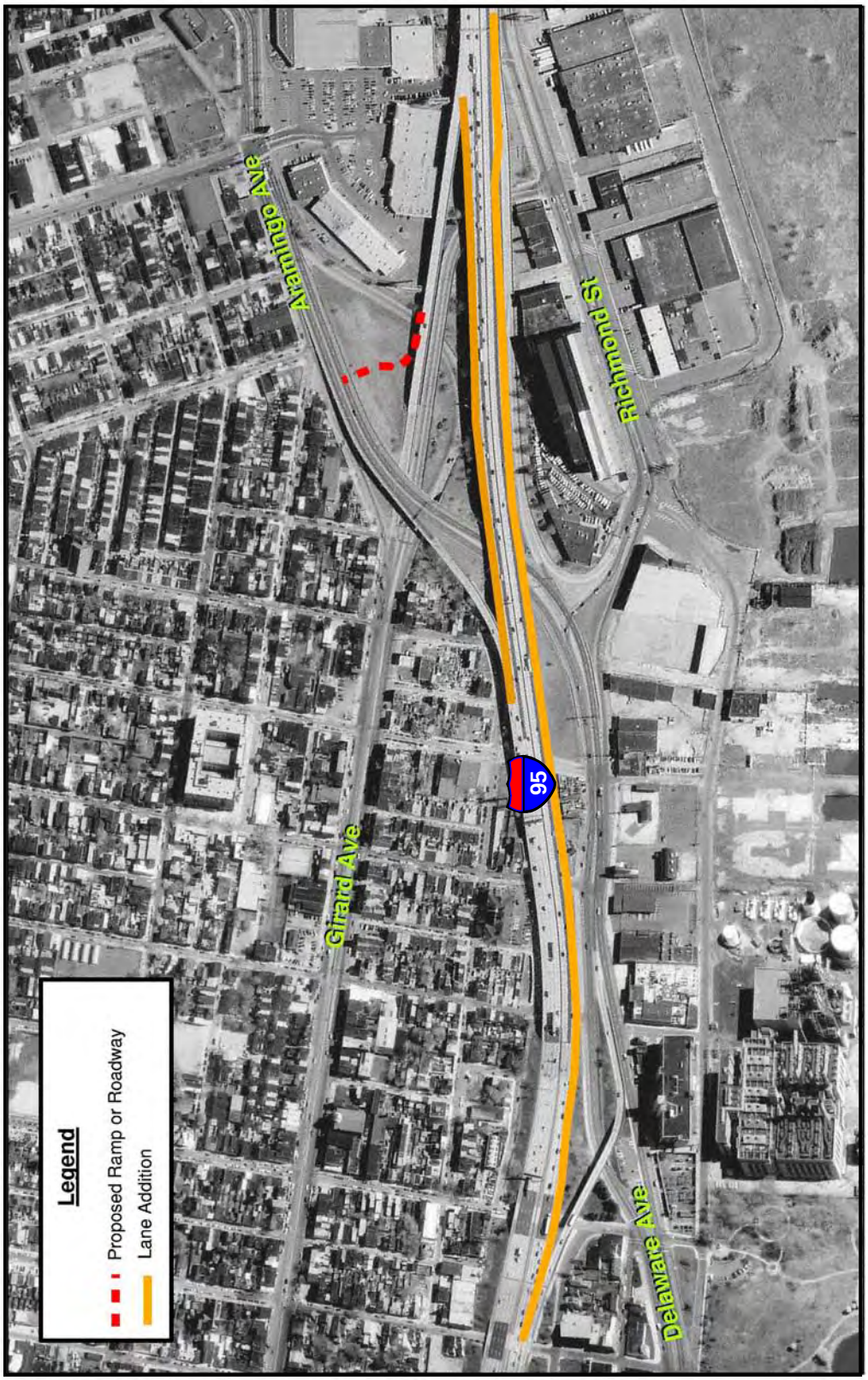


Figure 3. I-95 Girard Avenue Interchange Area – No-Build Alternative

provision for northbound Aramingo Avenue traffic to utilize the southbound I-95 on-ramp. This traffic must currently continue north on Aramingo Avenue to Aramingo Plaza, where the opportunity exists for using the parking lot to reverse direction to proceed south on Aramingo Avenue to the on-ramp. As with all alternatives, a detailed analysis of the traffic impacts of this scenario is presented in Chapter 5 of this report.

B. Build Option 3

As shown on ***figure 4***, the primary feature of this build alternative is the reconstruction of Girard and Aramingo avenues to intersect. This allows for all movements between these two facilities as well as the elimination of several cart-paths and merge movements. The current northbound on-ramp from Richmond Street/Delaware Avenue is removed, as is the merge between this ramp and the northbound on-ramp from Girard Avenue. The cart-path carrying northbound Girard Avenue traffic through to Aramingo Avenue is also redundant, and therefore removed.

In all build options, as with the No-Build Alternative, four lanes of through traffic are provided through the study area on southbound I-95. Both lanes of the I-676 ramp to northbound I-95 become traffic lanes on I-95, eliminating the merge at the base of this ramp and providing five northbound lanes to the Delaware Avenue off-ramp. At this point the right lane becomes the Delaware Avenue off-ramp and four northbound lanes are provided for through traffic.

Providing an intersection between Girard and Aramingo avenues allows southbound I-95 traffic access to the Delaware Avenue waterfront. Northbound Girard and Delaware avenue traffic now have access to the southbound I-95 on-ramp without a reverse movement at Aramingo Plaza. The consolidation of I-95 northbound on-ramp traffic at one intersection improves efficiency and safety. However, from a traffic standpoint, the installation of two new traffic signalization at the intersection of Girard and Aramingo avenues is a disadvantage.

C. Build Option 4

Build Option 4 consists of the relocation of several of the Girard Interchange ramps as well as the provision of a ramp from the I-95 southbound Girard off-ramp to Aramingo Avenue. These changes are shown on ***figure 5***. As in the No-Build Alternative, a new ramp is constructed between the southbound I-95 Girard Avenue ramp and Aramingo Avenue. The signalized intersection on Aramingo Avenue at the base of this ramp is also where a relocated southbound Aramingo on-ramp to southbound I-95 originates. The through movement from Delaware to Aramingo avenues with Richmond Street coming into a “T” intersection is reconstructed to provide through movements between Delaware Avenue and Richmond Street with Aramingo Avenue realigned to intersect this arterial in a signalized “T” intersection. The current Girard Avenue northbound I-95 on-ramp is severed and the current northbound on-ramp from Delaware Avenue/Richmond Street is removed. In place of these ramps, a new signalized intersection on Richmond Street is provided with an I-95 northbound on-ramp originating at this point. Finally, the northbound Delaware Avenue off-ramp is relocated to the north in order that

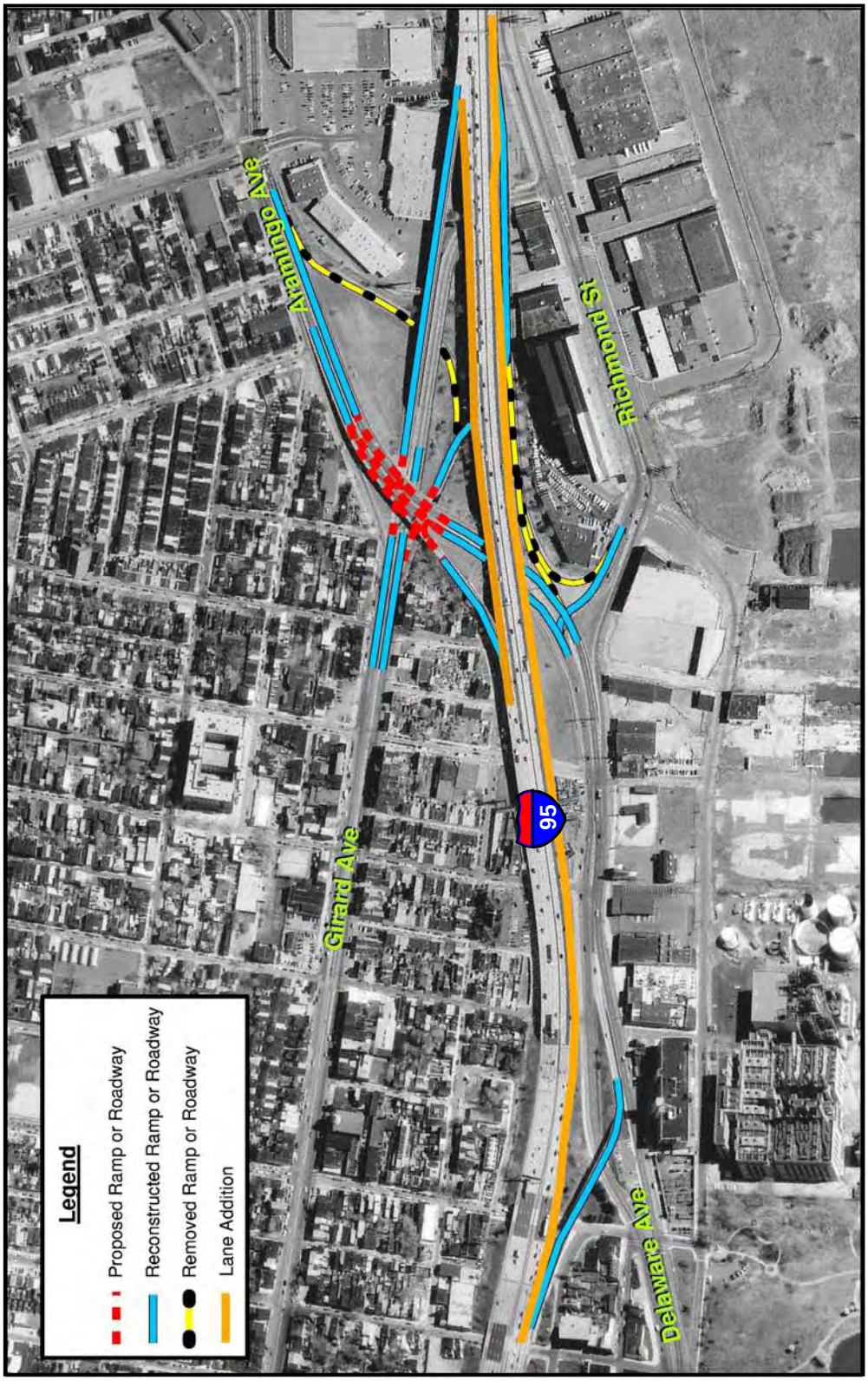


Figure 4. I-95 Girard Avenue Interchange Area – Build Option 3

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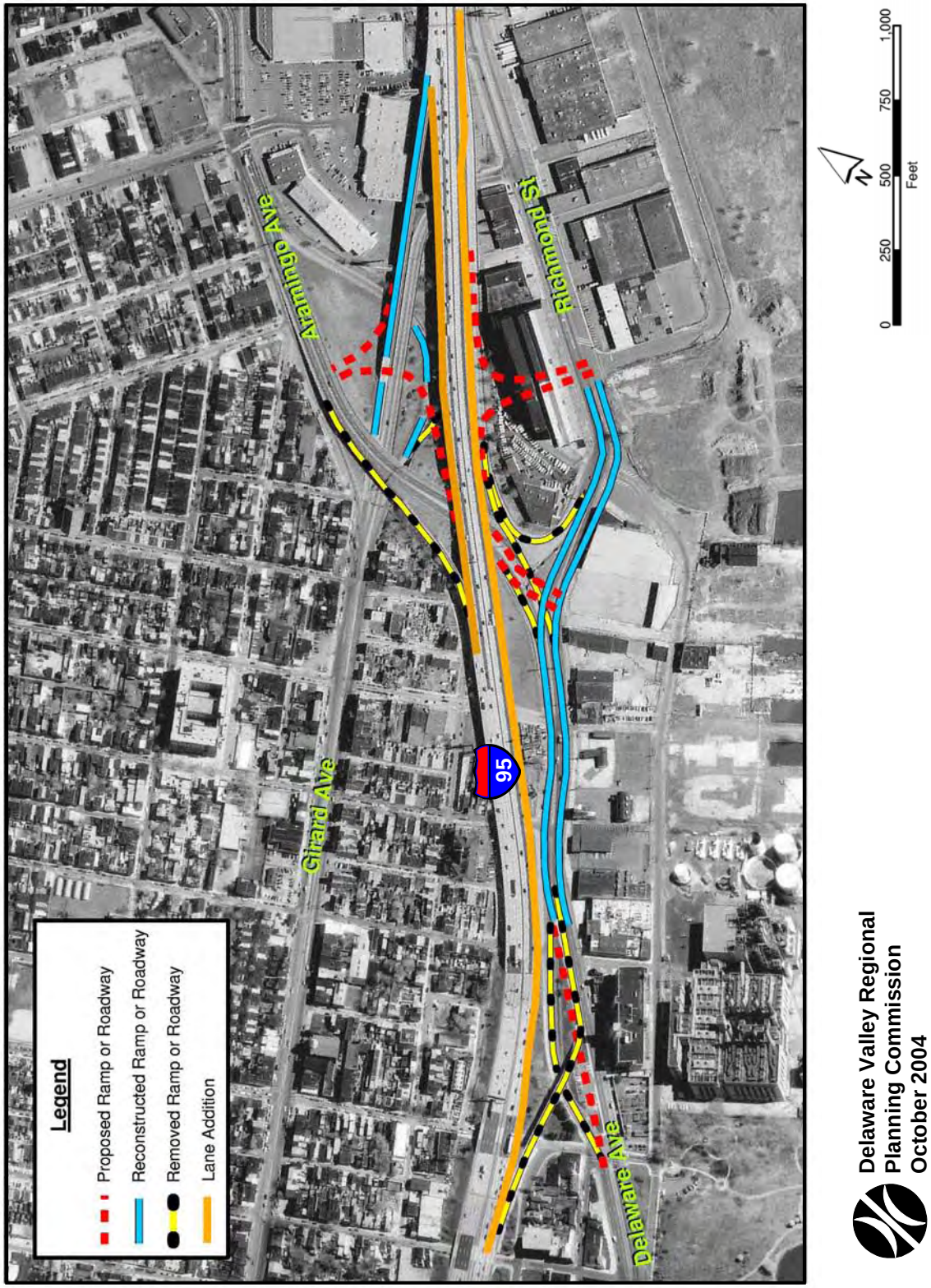

Figure 5. I-95 Girard Avenue Interchange Area – Build Option 4

it might connect to Richmond Street at this new signalized intersection. Delaware Avenue southbound is reconstructed to eliminate the bow where the original northbound off-ramp tied into the arterial. As with the No-Build and all Build options, option 4 fulfills the objectives of providing access between southbound I-95 and the Delaware Avenue waterfront. In addition, northbound Aramingo Avenue traffic gains access to southbound I-95 via the relocated southbound on-ramp. However, a new signal is introduced on Aramingo Avenue at this location. Conflicting movements are reduced and the geometry is improved at the confluence of Delaware and Aramingo avenues with Richmond Street by introducing a "T" intersection and moving the northbound I-95 ramp from this location; but another signal is introduced. Bringing the northbound on and off-ramps to the same point on Richmond Street concentrates access points. By moving the northbound off-ramp north, there is greater distance for weaving movements between the I-676 on-ramp and relocated Delaware Avenue off-ramp. On the negative side, the direct access of Girard Avenue to northbound I-95 is eliminated and another signal is introduced on Richmond Street.

As with all options, the southbound lane drop at Girard Avenue is eliminated, with four lanes of through traffic provided through the interchange. Northbound I-95 is also provided with four lanes of through traffic in the study area.

D. Build Option 5

This design option shown in ***figure 6*** represents a combination of features from the No-Build Alternative and Build Option 3. Mainline I-95 through the interchange is provided with four lanes by direction. This alternative provides the ramp spur from the southbound I-95 Girard Avenue off-ramp to Aramingo Avenue as in the No-Build Alternative. This allows the movement from southbound I-95 to the Delaware Avenue waterfront. It also provides access for traffic from the Delaware Avenue waterfront to I-95 southbound without the reverse movement at Aramingo Plaza via a direct connection to the southbound Aramingo Avenue on-ramp. This feature is similar to what is found in Build Option 3. Other than these features, much of the current geometry remains intact.

E. Build Option 6

As shown on ***figure 7*** the main feature of this option is to split Aramingo Avenue by direction between Delaware Avenue and York Street. This scenario includes the removal of the northbound I-95 on-ramp from Delaware Avenue and Richmond Street. These movements are replaced with a new intersection between the new Aramingo northbound alignment and the Girard Avenue to Aramingo Avenue cart-path allowing access to the existing Girard Avenue northbound I-95 on-ramp. Additionally, a connection is established between the Girard Avenue to Aramingo Avenue cart-path and southbound Aramingo Avenue. The primary advantage of this geometry is to remove the potential conflict of northbound Aramingo traffic with traffic bound from the I-95 southbound Girard off-ramp to the Delaware Avenue waterfront. The merge between northbound on-ramp traffic from Girard Avenue with that from Delaware

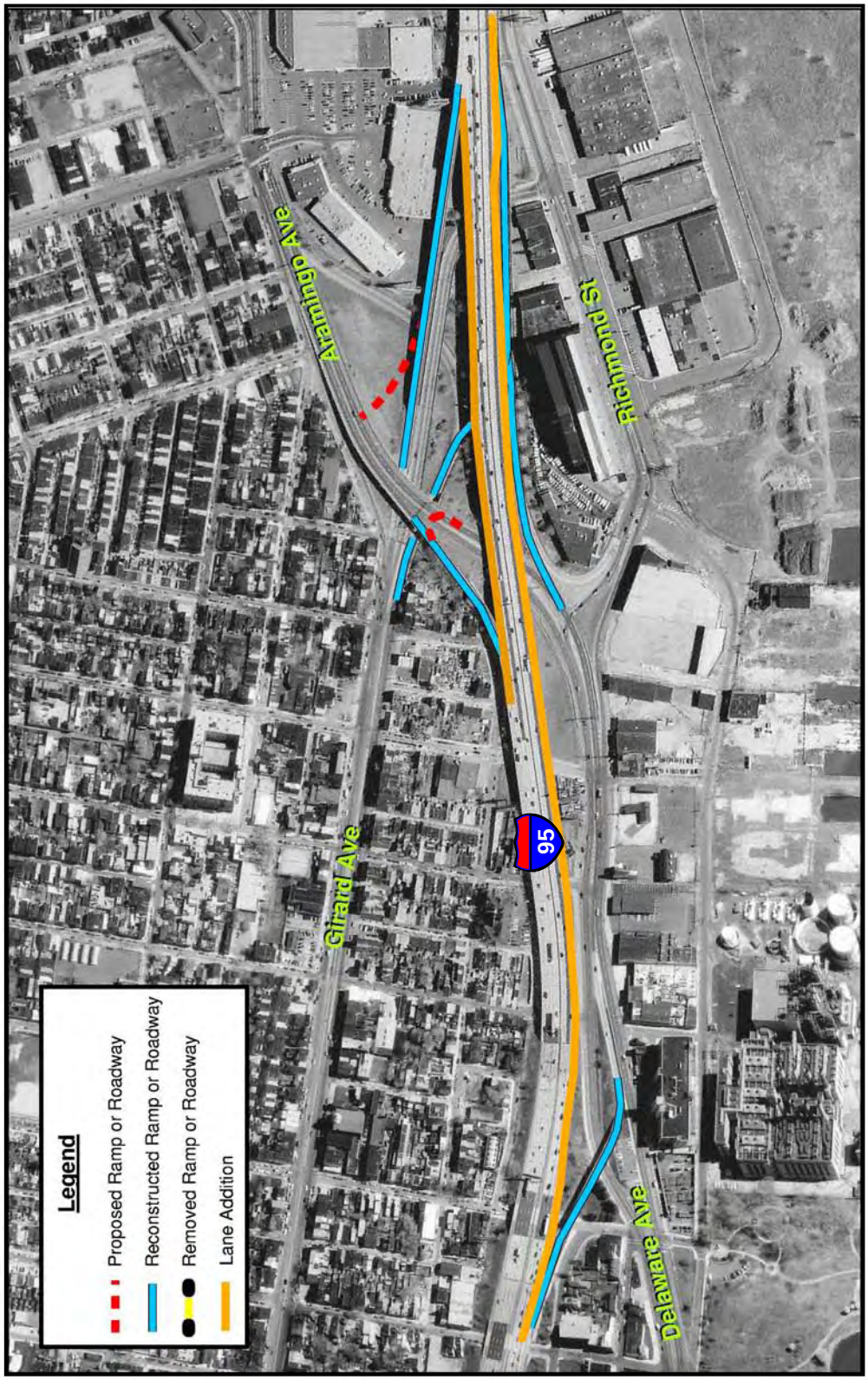

Figure 6. I-95 Girard Avenue Interchange Area – Build Option 5

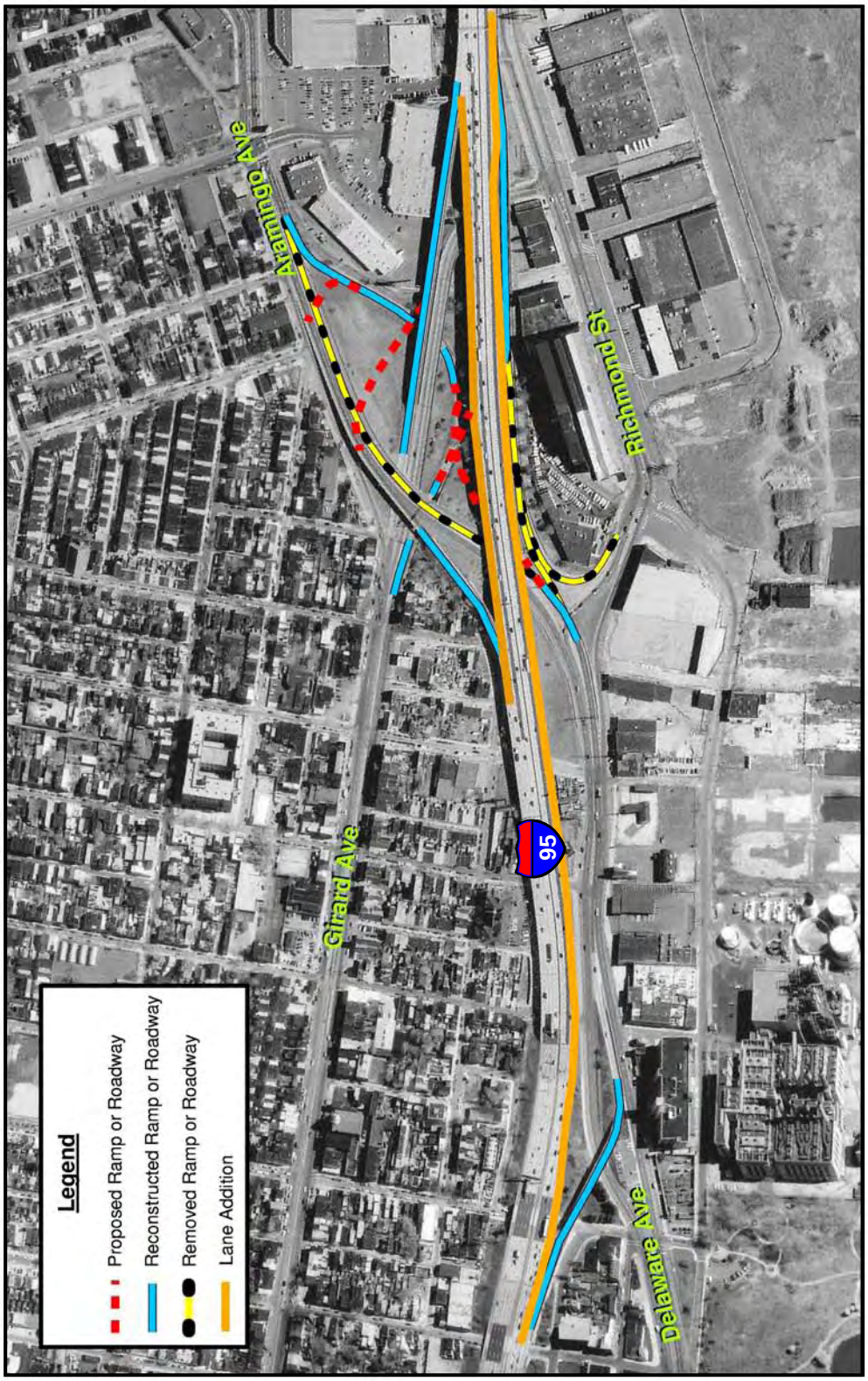

Figure 7. I-95 Girard Avenue Interchange Area – Build Option 6

Delaware Valley Regional Planning Commission
October 2004

Avenue and Richmond Street is removed. The connection to southbound Aramingo Avenue facilitates Delaware Avenue waterfront and Girard Avenue traffic access to southbound I-95 without the reverse movement at Aramingo Plaza.

F. Build Option 7

As displayed on ***figure 8***, Build Option 7 is a hybrid containing some of the features of Options 4 and 6. Changes adopted from Option 4 include the relocation of the I-95 northbound off-ramp to Delaware Avenue to tie in at Richmond Street. At this location, a signalized intersection is created which provides a new entrance for the I-95 northbound on-ramp. As in Option 4, Delaware Avenue is reconstructed in the vicinity at the base of the former off-ramp. The current base of the northbound on-ramp at Delaware Avenue and Richmond Street is also removed. This facilitates the realigning of the intersection to a "T" intersection changing the through movement from Delaware Avenue to Aramingo Avenue to Delaware Avenue to Richmond Street. Option 6 revisions incorporated in this scenario include splitting Aramingo Avenue by direction. Aramingo Avenue northbound intersects the current cart-path of the Girard Avenue to Aramingo Avenue movement. The I-95 northbound on-ramp from Girard Avenue is removed. Further north on this new northbound Aramingo alignment, a connection is installed to Aramingo Avenue southbound.

By relocating the I-95 northbound off-ramp, a greater distance is provided for the weaving movements between the I-676 Vine Expressway interchange and this exit, while giving exiting traffic the new option of proceeding south on Delaware Avenue.

Splitting Aramingo Avenue by direction removes conflicts between northbound Aramingo Avenue traffic and that using the new I-95 southbound ramp to Aramingo Avenue southbound. Girard Avenue access to northbound I-95 is maintained with the removal of the northbound Girard Avenue on-ramp; however, it becomes more circuitous, using Girard Avenue to Richmond Street to the base of the new ramp. The provision of the connection between the new northbound Aramingo Avenue and southbound Aramingo Avenue provides access to the I-95 southbound on-ramp for traffic from the Delaware Avenue waterfront without a reverse movement at Aramingo Plaza.

G. Build Option 7 with Delaware Avenue Extension

This build option is the same as Option 7, except that the section of Richmond Street between the current Delaware Avenue/Aramingo Avenue intersection and Lehigh Avenue is renamed Delaware Avenue. At Lehigh Avenue, Delaware Avenue diverges onto a new alignment parallel and east of the I-95 viaduct to Allegheny Avenue. This improvement is intended to provide better access to the marine terminals located at Port Richmond. Richmond Street between Lehigh Avenue and Allegheny Avenue is currently one lane by direction, with parking on both sides of the street. Residential and neighborhood retail uses line this section of Richmond, adding to congestion. The provision of a new Delaware Avenue between Allegheny Avenue and Aramingo Avenue improves traffic flow for trips between these two locations.

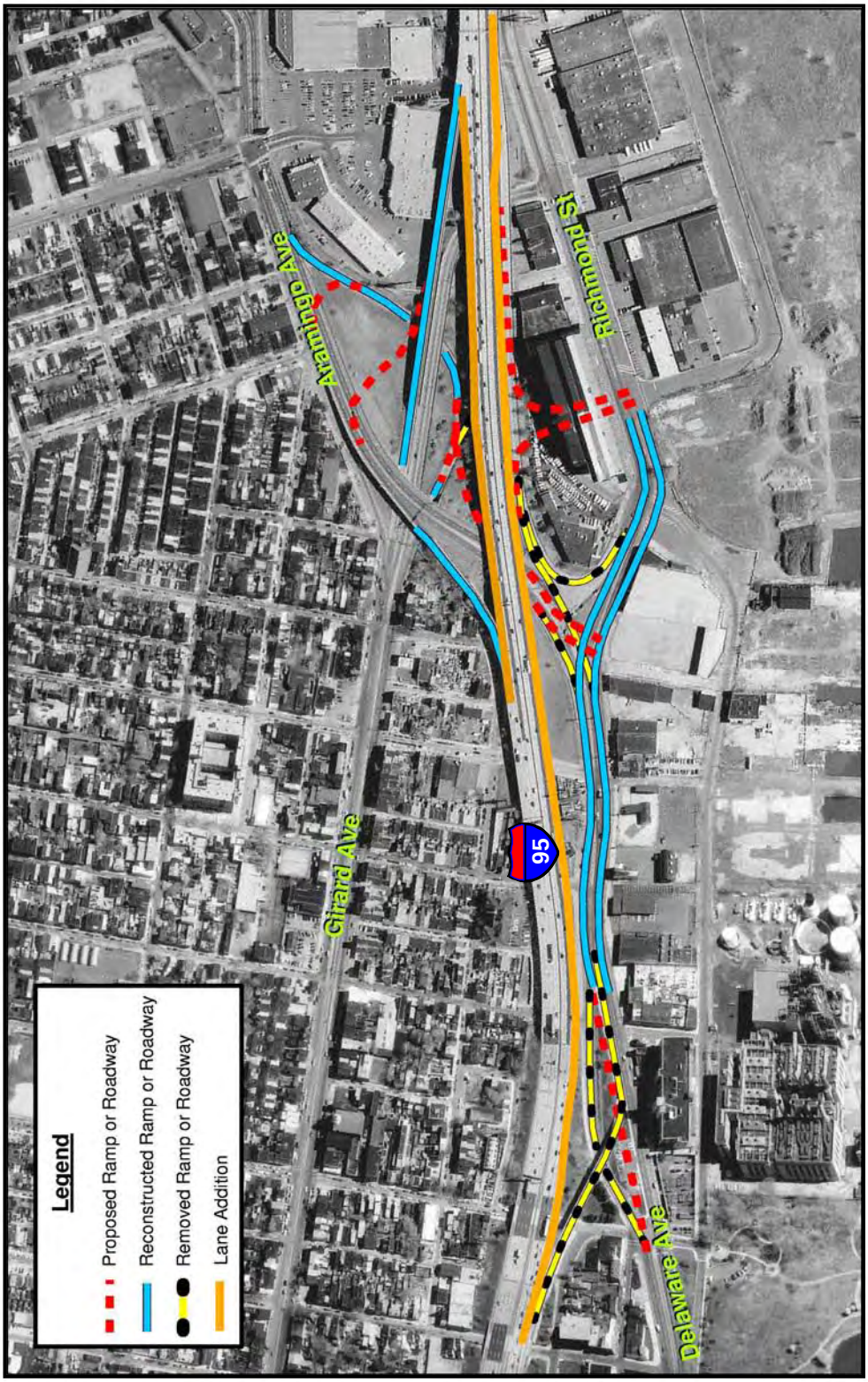

Figure 8. I-95 Girard Avenue Interchange Area – Build Option 7

IV. TRAVEL FORECASTING PROCEDURES

Regional travel simulation models are used to forecast future travel patterns. They utilize a system of traffic zones that follow Census boundaries and rely on demographic and employment data, land use, and transportation network characteristics to simulate trip making patterns throughout the region.

A. Socio-Economic Projections

DVRPC's long-range population and employment forecasts are revised periodically to reflect changing market trends, development patterns, local and national economic conditions, and available data. The completed forecasts reflect all reasonably known current information and the best professional judgement of predicted future conditions. The revised forecasts adopted by the DVRPC Board on February 24, 2000[1] reflect an update to municipal forecasts that were last completed in June 1993.

DVRPC uses a multi-step, multi-source methodology to produce its forecasts at the county-level. County forecasts serve as control totals for municipal forecasts, which are disaggregated from county totals. Municipal forecasts are based on an analysis of historical data trends adjusted to account for infrastructure availability, environmental constraints to development, local zoning policy, and development proposals. Municipal population forecasts are constrained using density ceilings and floors. County, and where necessary, municipal input is used throughout the process to derive the most likely population forecasts for all geographic levels.

1. Population Forecasting

Population forecasting at the regional level involves review and analysis of six major components: births, deaths, domestic in-migration, domestic out-migration, international immigration, and changes in group quarters populations (e.g. dormitories, military barracks, prisons, and nursing homes). DVRPC uses both the cohort survival concept to age individuals from one age group to the next, and a modified Markov transition probability model based on the most recent US Census and the US Census' recent Current Population Survey (CPS) research to determine the flow of individuals between the Delaware Valley and the outside world. For movement within the region, Census and IRS migration data coupled with CPS data are used to determine migration rates between counties. DVRPC relies on county planning offices to provide information on any known, expected, or forecasted changes in group quarters populations. These major population components are then aggregated and the resulting population forecasts are reviewed by member counties for final adjustments based on local knowledge.

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[1]Delaware Valley Regional Planning Commission, *Year 2025 County & Municipal Population & Employment Forecasts*, Philadelphia, PA, April 2000.

In these forecasts, the study area was considered to span the Bridesburg/Kensington/Richmond and Lower North Philadelphia County Planning Areas, while the addition of the I-676 Vine Expressway Interchange adds the Center City County Planning Area in Philadelphia. These sections, in 2000, had a population of 279,600, about 18.3 percent of the total City of Philadelphia population. By 2025, that figure is expected to decline by 3.3 percent, or 9,800 persons, to 269,800. In 2025, that will be 18.0 percent of the total City of Philadelphia population, which will have shrunk 2.0 percent to 1,500,000 residents as shown below:

Area	2000 Population Forecast	2025 Population Forecast	Change Absolute	Change Percent
Center City Philadelphia	48,800	55,600	6,800	13.9%
Lower North Philadelphia	145,300	134,500	-11,050	-7.6%
Bridesburg/Kensington/ Richmond	85,500	79,700	-5,800	-6.8%
City of Philadelphia	1,530,950	1,500,000	-30,950	-2.0%

2. Employment Forecasting

Employment is influenced by local, national, and global political and socio-economic factors. The Bureau of Economic Analysis provides the most complete and consistent time series data on county employment by sector, and serves as DVRPC's primary data source for employment forecasting. Employment sectors include mining, agriculture, construction, manufacturing, transportation, wholesale, retail, finance/insurance, service, government, and military. Other supplemental sources of data include the U.S. Census, Dun & Bradstreet, Bureau of Labor Statistics, Occupational Privilege tax data, and other public and private sector forecasts. The OBERS shift-share model in combination with the Woods and Poole Economics' sectoral forecasts provides the basis for DVRPC's employment forecasts. As in the population forecasts, county level total employment is used as a control total for sector distribution and municipal level forecasts. Forecasts are then reviewed by member counties for final adjustments based on local knowledge.

The county planning areas in the study area, in 2000, had employment of 397,350, or 50.5 percent of the City of Philadelphia total employment. By 2025, that figure is expected to grow by over six percent, to 421,250, with growth in Center City employment more than compensating for losses in the Lower North Philadelphia and Bridesburg/Kensington/Richmond county planning areas. Study area employment will decline slightly (0.3 percent) to 50.2 percent of the City's total. Employment figures are as follows:

Area	2000 Employment Forecast	2025 Employment Forecast	Change Absolute	Change Percent
Center City Philadelphia	293,550	325,000	31,450	10.7%
Lower North Philadelphia	71,350	67,100	-4,250	-6.0%
Bridesburg/Kensington/ Richmond	32,450	29,500	-2,950	-9.1%
City of Philadelphia	786,150	840,250	54,100	6.9%

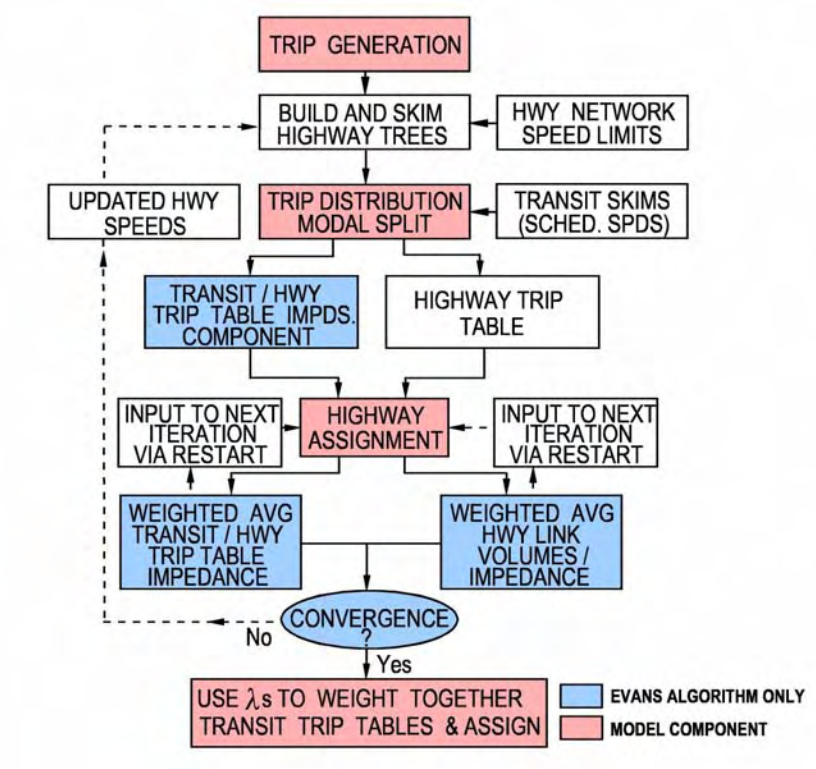
B. DVRPC's Travel Simulation Process

For the I-95 study, a focused simulation process was employed ***(see figure 9)***. A focused simulation process allows the use of DVRPC's regional simulation models but includes a more detailed representation of the study area. Local streets not included in the regional network, but of interest in this study, are added to the highway network. Traffic zones inside the study area are subdivided so that traffic from existing and proposed land use developments may be loaded more precisely on the network. The focusing process increases the accuracy of the travel forecasts within the detailed study area. At the same time, all existing and proposed highways throughout the region and their impact on both regional and interregional travel patterns become an integral part of the simulation process.

DVRPC's travel models follow the traditional steps of trip generation, trip distribution, modal split, and traffic assignment. However, an iterative feedback loop is employed from traffic assignment to the trip distribution step. The feedback loop ensures that the congestion levels used by the models when determining trip origins and destinations are equivalent to those that result from the traffic assignment step. Additionally, the iterative model structure allows trip making patterns to change in response to changes in traffic patterns, congestion levels, and improvements to the transportation system.

The DVRPC travel simulation process uses the Evans Algorithm to iterate the model. Evans re-executes the trip distribution and modal split models based on updated highway speeds after each iteration of highway assignment and assigns a weight (λ) to each iteration. This weight is then used to prepare a convex combination of the link volumes and trip tables for the current iteration and a running weighted average of the previous iterations. This algorithm converges rapidly to the equilibrium solution on highway travel speeds and congestion levels. About seven iterations are required for the process to converge to the equilibrium state for I-95 travel patterns. After equilibrium is achieved, the weighted average transit trip tables are assigned to the transit networks to produce link and route passenger volumes.

Figure 9
Evans Iterative Travel Simulation Process



1. Separate Peak, Midday, and Evening Models

The DVRPC travel simulation models are disaggregated into separate peak period, midday, and evening time periods. This disaggregation begins in trip generation where factors are used to separate daily trips into peak, midday, and evening travel. The enhanced process then utilizes completely separate model chains for peak, midday, and evening travel simulation runs. Time of day sensitive inputs to the models such as highway capacities and transit service levels are disaggregated to be reflective of time-period specific conditions. Capacity factors are used to allocate daily highway capacity to the peak, midday, and evening time periods. Separate transit networks were required to represent the difference in transit service.

The enhanced model is disaggregated into separate model chains for the peak (combined AM and PM), midday (the period between the AM and PM peaks), and evening (the remainder of the day) periods for the trip distribution, modal split, and travel assignment phases of the process. The peak period is defined as 7:00 AM to 9:00 AM and 3:00 PM to 6:00 PM. Peak period and midday travel are based on a series of factors which determine the percentage of daily trips that occur during those periods. Evening travel is then defined as the residual after peak and midday travel are removed from daily travel. External-local productions at the nine-county cordon stations are disaggregated into peak, midday, and evening components using percentages derived from the temporal distribution of traffic counts taken at each cordon station.

2. The Model Chain

The first step in the process involves generating the number of trips that are produced by and destined for each traffic zone and cordon station throughout the nine-county region.

a. Trip Generation

Both internal trips (those made within the DVRPC region) and external trips (those which cross the boundary of the region) must be considered in the simulation of regional travel. For the simulation of current and future travel demand, internal trip generation is based on zonal forecasts of population and employment, whereas external trips are extrapolated from cordon line traffic counts and other sources. The latter also include trips which pass through the Delaware Valley region. Estimates of internal trip productions and attractions by zone are established on the basis of trip rates applied to the zonal estimates of demographic and employment data. This part of the DVRPC model is not iterated on highway travel speed. Rather, estimates of daily trip making by traffic zone are calculated and then disaggregated into peak and off-peak time periods.

b. Evans Iterations

The iterative portion of the Evans forecasting process involves updating the highway network restrained link travel speeds, rebuilding the minimum time paths through the network, and skimming the interzonal travel time for the minimum paths. Then the trip distribution, modal split, and highway assignment models are run in sequence for each pass through the model chain. After convergence is reached, the transit trip tables for each iteration are weighted together and the weighted average table assigned to the transit network. The highway trip tables are loaded onto the network during each Evans iteration. For each time period, seven iterations of the Evans process are performed to ensure that convergence on travel times is reached.

c. Trip Distribution

Trip distribution is the process whereby the zonal trip ends established in the trip generation analysis are linked together to form origin-destination patterns in the trip table format. Peak, midday, and evening trip ends are distributed separately. For each Evans iteration, a series of seven gravity-type distribution models are applied at the zonal level. These models follow the trip purpose and vehicle type stratifications established in trip generation.

d. Modal Split

The modal split model is also run separately for the peak, midday, and evening time periods. The modal split model calculates the fraction of each person-trip interchange in the trip table which should be allocated to transit, and then assigns the residual to the highway side. The choice between highway and transit usage is made on the basis of comparative cost, travel time,

and frequency of service, with other aspects of modal choice being used to modify this basic relationship. In general, the better the transit service, the higher the fraction assigned to transit, although trip purpose and auto ownership also affect the allocation. The model subdivides highway trips into auto drivers and passengers. Auto driver trips are added to the truck, taxi, and external vehicle trips in preparation for assignment to the highway network.

e. Highway Assignment

For highway trips, the final step in the focused simulation process is the assignment of current or future vehicle trips to the highway network representative of the appropriate scenario. For peak, midday, and evening travel, the assignment model produces the future traffic volumes for individual highway links that are required for the evaluation of the alternatives. The regional nature of the highway network and trip table underlying the focused assignment process allow the diversion of travel into and through the study area to various points of entry and exit in response to the improvements made in the transportation system.

For each Evans iteration, highway trips are assigned to the network representative of a given alternative by determining the best (minimum time) route through the highway network for each zonal interchange and then allocating the interzonal highway travel to the highway facilities along that route. This assignment model is “capacity restrained” in that congestion levels are considered when determining the best route. The Evans equilibrium assignment method is used to implement the capacity constraint. When the assignment and associated trip table reach equilibrium, no path faster than the one actually assigned can be found through the network, given the capacity restrained travel times on each link.

f. Transit Assignment

After equilibrium is achieved, the weighted average transit trip tables (using the λs calculated from the overall Evans process as weights) are assigned to the transit network to produce link and route passenger volumes. The transit person trips produced by the modal split model are "linked" in that they do not include any transfers that occur either between transit trips or between auto approaches and transit lines. The transit assignment procedure accomplishes two major tasks. First, the transit trips are "unlinked" to include transfers, and second, the unlinked transit trips are associated with specific transit facilities to produce link, line, and station volumes. These tasks are accomplished simultaneously within the transit assignment model, which assigns the transit trip matrix to minimum impedance paths built through the transit network. There is no capacity restraining procedure in the transit assignment model.

C. Traffic Assignment Validation

Before a focused simulation model can be used to predict future trip making patterns, its ability to replicate existing conditions is validated. The simulated highway assignment outputs are compared to current traffic counts taken on roadways serving the study area. The focused

simulation model was executed with current conditions and the results compared with recent traffic counts collected by DVRPC. Based on this analysis, the focused model produced accurate traffic volumes. The validated model was then executed for each alternative with socio-economic and land use inputs reflective of future conditions.

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V. PROJECTED TRAFFIC VOLUMES

Projected average daily traffic volumes for selected highway links within the study area are presented and analyzed for the No-Build and six build options within this chapter. In the first half of the chapter forecasts are for the horizon year, 2025, which is 20 years after the anticipated opening year. Facility Average Daily Traffic Volume (AADT) forecasts are presented, followed by peak hour and turning movement forecasts. The second part of the chapter contains the same information, but the forecasts presented are for 2005.

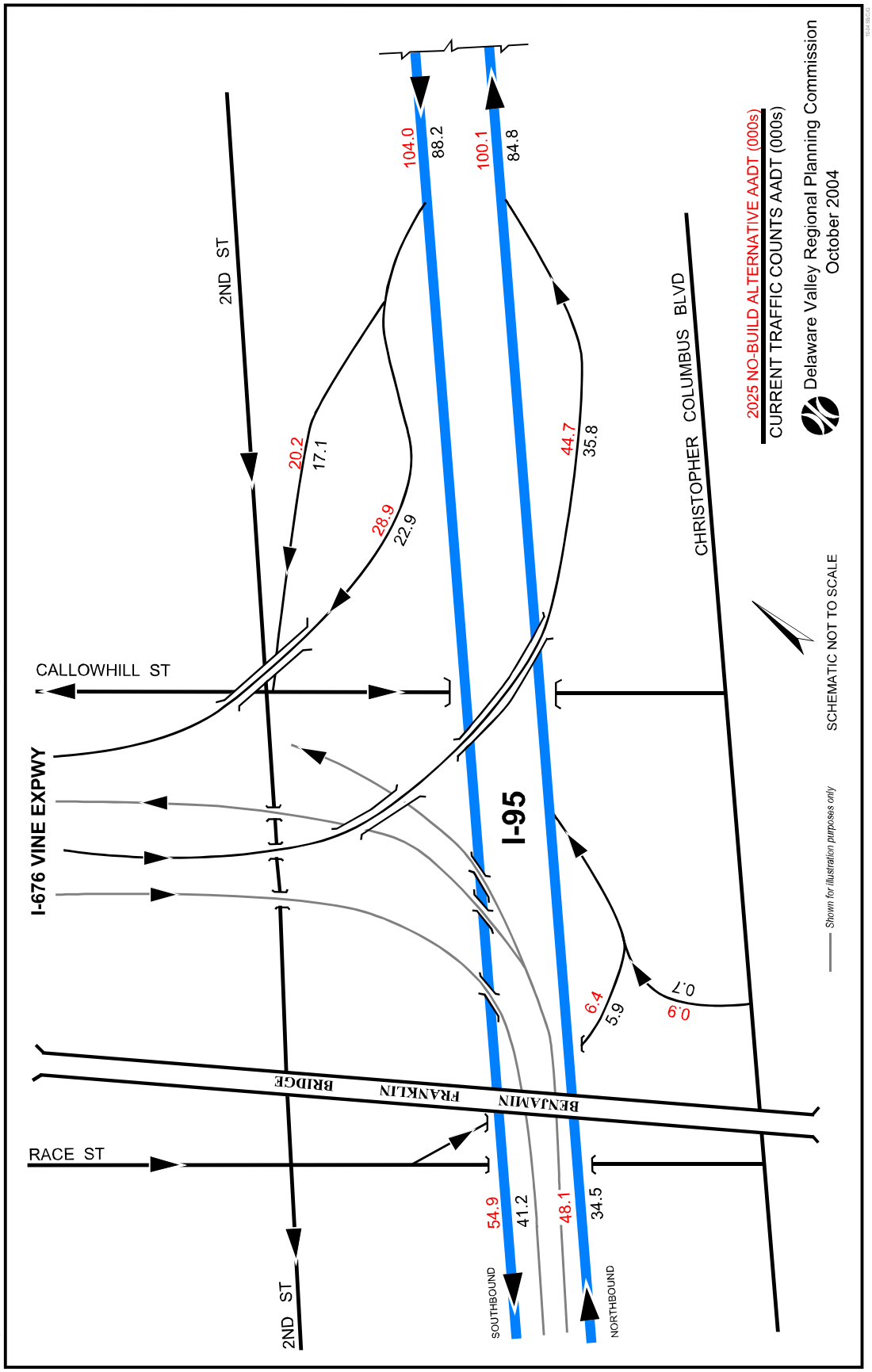
A. The No-Build Alternative

Figures 10a and 10b show the current and 2025 volumes for this Alternative in the I-676, Vine Expressway and Girard Avenue interchange areas. Current year volumes are shown in black, below the streets in the diagram, while 2025 volumes are shown in red, above the streets in the diagram. A comparison of the 2025 projected volumes under the base case with current traffic counts is given in ***table 1***. Generally, the increase in I-95 mainline traffic volumes is larger north of the study area at 37,000, declining as you proceed south. Between the Girard and I-676 interchanges the growth is 31,100, while south of I-676 (a primary access point to Center City) the increase is 27,300. In percentage terms, the increase is almost constant north of Girard Avenue and between the interchanges, at 21.4 percent and 18 percent, respectively. Partly due to the lower current volume, the percentage increase south of I-676 is much larger, at 36 percent. Part of this increase can be attributed to the elimination of the lane drop in the Girard interchange, where mainline I-95 is reconstructed to four lanes by direction.

The southbound I-95 ramp to Girard Avenue is forecast to grow by almost 4,700 vehicles (52.3 percent). This is primarily due to the addition of the spur from this ramp to Delaware Avenue, which accounts for 3,300 vehicles of this total. The southbound I-95 on-ramp from Aramingo Avenue experiences an increase of over 3,000 vehicles per day (vpd), or 29.9 percent. Further south, the ramps serving Center City Philadelphia oriented traffic increase 3,100 vpd (18.3 percent) to Callowhill Street and almost 6,000 vpd (26.2 percent) to I-676 Vine Expressway. Northbound I-95 ramps also experience volume increases; however, there is greater variance in the growth. The on-ramp from Race Street is forecast to increase from a current count of 5,864 vpd to 6,400 vpd, a growth of 536 vpd (9.1 percent). Merging with this ramp is the Winter Street ramp, where the increase is 185 vpd, but due to the smaller current count (715 vpd) represents a larger percentage increase (25.9 percent). The northbound ramp from I-676 grows from a current count of 35, 840 to 44,700 vpd, representing an increase of 24.7 percent. Of the I-95 northbound ramps, the off-ramp to Delaware Avenue experiences the largest growth; it increases from a current count of 9,343 vpd to 13,900 vpd (48.8 percent). The on-ramp from Delaware Ave/Richmond Street increases by 990 vpd (9.8 percent) but after its merge with the ramp from Girard Avenue this increase is 2,200 vpd (13.2 percent). Arterial volumes in the vicinity of the Girard Interchange increase under the No-Build Alternative. The greatest increases occur on southbound Delaware Avenue. This is due to the presence of the spur ramp percent, representing an increase from 7,239 to 11,800 vpd, an increase of 4,561 vpd. On the

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 10A. Current & 2025 No-Build Alternative Average Daily Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 10B. Current & 2025 No-Build Alternative Average Daily Traffic Volumes

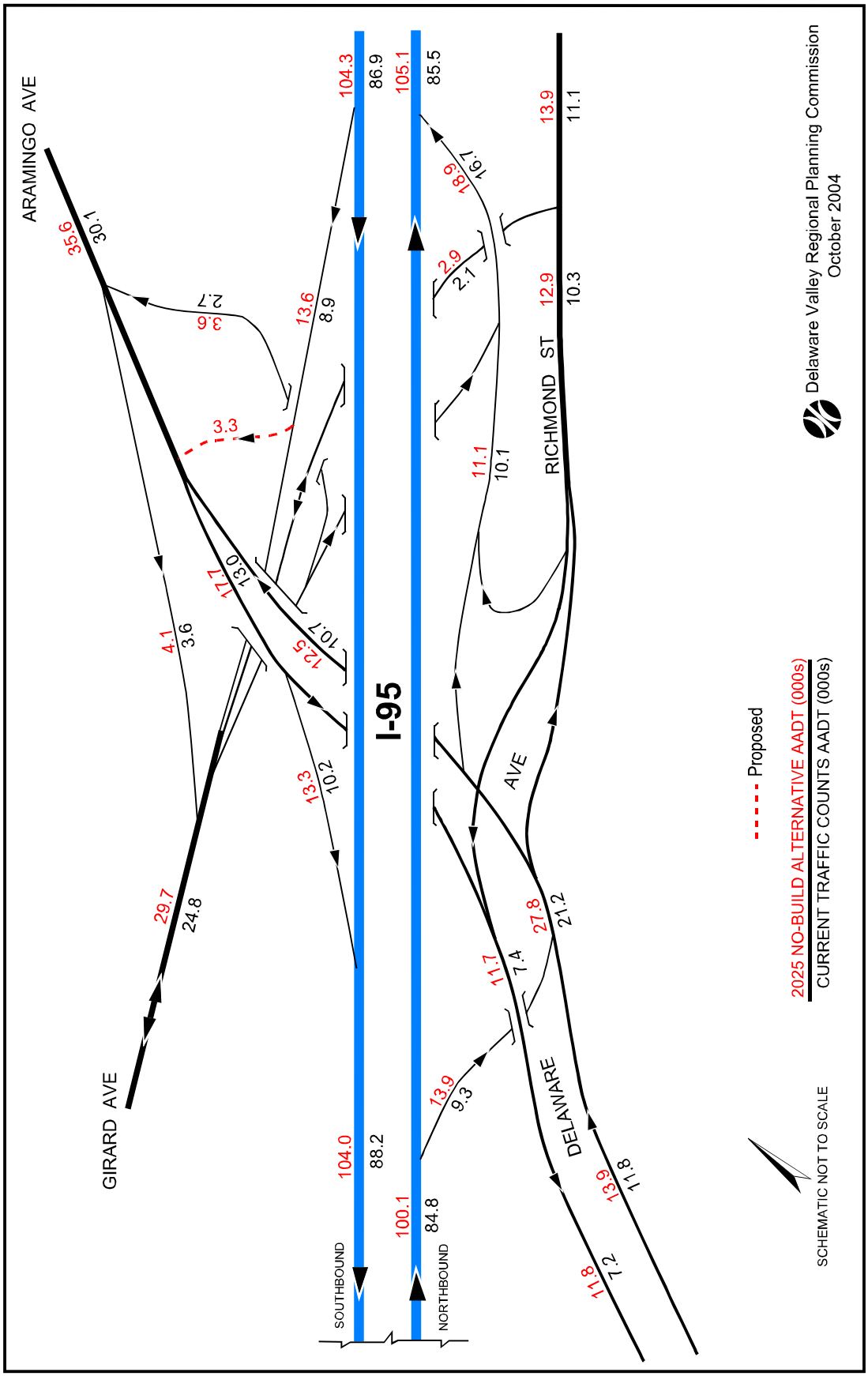


Table 1
Current and 2025 No-Build Alternative Average Daily Traffic Volumes

Highway Facility	Location From	To	Current Traffic Count	No-Build Alternative 2025 AADT	Versus Current Diff.	% Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	34,529	48,100	13,571	39.3%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	41,197	54,900	13,703	33.3%
I-95 NB **	I-676 on-ramp	Delaware Avenue off-ramp	84,779	100,100	15,321	18.1%
I-95 SB **	Girard Ave on-ramp	I-676/Callowhill off-ramp	88,234	104,000	15,766	17.9%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	85,546	105,100	19,554	22.9%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	86,922	104,300	17,378	20.0%
Sub-Total			**421,207**	**516,500**	**95,293**	**22.6%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	5,864	6,400	536	9.1%
I-95 NB On-ramp	Winter St	I-95	715	900	185	25.9%
I-95 NB On-ramp	I-676	I-95	35,840	44,700	8,860	24.7%
I-95 SB Off-ramp	I-95	Callowhill St	17,072	20,200	3,128	18.3%
I-95 SB Off-ramp	I-95	I-676	22,904	28,900	5,996	26.2%
I-95 NB Off-ramp **	I-95	Delaware Ave	9,343	13,900	4,557	48.8%
I-95 NB On-ramp	Delaware/Richmond ave's	Delaware/Girard on-ramp merge	10,110	11,100	990	9.8%
I-95 NB On-ramp	Delaware/Girard onramp merge	I-95	16,700	18,900	2,200	13.2%
I-95 SB Off-ramp	I-95	Girard Ave	8,927	13,600	4,673	52.3%
I-95 SB On-ramp	Aramingo Ave	I-95	10,239	13,300	3,061	29.9%
I-95 SB Off-ramp *	Girard Ave off-ramp	Delaware Ave	N/A	3,300	3,300	N/A
Sub-Total			**137,714**	**175,200**	**37,486**	**27.2%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp	11,836	13,900	2,064	17.4%
Delaware Ave SB	I-95 NB off-ramp	Shackamaxon St	7,239	11,800	4,561	63.0%
Delaware Ave NB	I-95 NB off-ramp	Berks Street	21,179	27,800	6,621	31.3%
Delaware Ave SB	Berks Street	I-95 NB off-ramp	7,388	11,700	4,312	58.4%
Girard Ave **	Berks St	Susquehanna Ave	24,756	29,700	4,944	20.0%
Girard Ave	Under I-95		2,104	2,900	796	37.8%
Girard Ave **	NB connection to Aramingo Ave		2,745	3,600	855	31.1%
Aramingo Ave NB	I-95 NB on-ramp	Norris St	10,741	12,500	1,759	16.4%
Aramingo Ave SB	Norris St	I-95 SB on-ramp	13,039	17,700	4,661	35.7%
Aramingo Ave	Dauphin St	York St	30,118	35,600	5,482	18.2%
Aramingo Ave **	SB connection to Girard Ave		3,593	4,100	507	14.1%
Richmond St	Delaware Ave	Girard Ave	10,271	12,900	2,629	25.6%
Richmond St	Girard Ave	York St	11,101	13,900	2,799	25.2%
Sub-Total			**156,110**	**198,100**	**41,990**	**26.9%**
Total			**715,031**	**889,800**	**174,769**	**24.4%**

* New Connection to Delaware Ave

** Count derived by flowing nearby counts

north side of the northbound I-95 off-ramp tie-in, near Berks Street the growth is 58.4 percent, or an increase of 4,312 vpd from a current count of 7,388 vpd. Northbound Delaware Avenue also registers increases, although not as large as the southbound direction. At Shackamaxon Street, volumes increase from a current count of 11,836 to 13,900 vpd, a growth of 2,064 vpd (17.4 percent). Further north, near Berks Street, this increase is 6,621 vpd, growing from 21,179 currently to 27,800 vpd in 2025 (31.3 percent). Also south of the Girard Interchange, Girard Avenue is projected in experience volume increases. Between Susquehanna Avenue and Berks Street the current count of 24,756 vpd grows to 29,700 vpd, an increase of 4,944 vpd (20.0 percent). The section of Girard Avenue which connects to Richmond Street also sustains a large percentage increase (37.8 percent); however, due to the smaller current count, 2,104 vpd, this represents a growth of only 796 vpd. The effect of this scenario is similar on the Girard connection to Aramingo Avenue. A traffic increase of 855 vpd (31.1 percent) is forecast from the current 2,745 to 3,600 vpd. Forecast volume increases on Aramingo Avenue are more modest than on either Delaware or Girard avenues. The exception is the southbound section from the new I-95 spur ramp to the Aramingo Ave southbound on-ramp. At the north end, between Dauphin Street and York Street, volumes increase from 30,118 to 35,600 vpd (18.2 percent). A similar percentage increase (16.4 percent) is expected on northbound Aramingo Avenue between the Delaware Avenue/Richmond Street northbound I-95 on-ramp and Norris Street. Here, volumes grow from a current count of 10,741 to 12,500 vpd. The southbound volumes in this section are affected by the traffic from the new ramp. Traffic on this segment grows from 13,039 to 17,700 vpd (35.7 percent). The connection between southbound Aramingo Avenue and Girard Avenue is forecast to grow 507 vpd (14.1 percent), from a 3,593 vpd currently to 4,100 vpd in 2025. Traffic growth on Richmond Street is similar on both sides of the intersection with Girard Avenue. South of this intersection, traffic increases from a count of 10,271 to 12,900 vpd (25.6 percent); while north of the intersection the growth is from 11,101 to 13,900 vpd (25.2 percent).

Peak hour ramp and turning movement growth is consistent with AADT growth ***(see figures 10C and 10D)***. There is a general increase in volumes throughout the system when comparing the No-Build Alternative to current volumes, consistent with regional traffic growth expectations for the region. Traffic from the new spur ramp from I-95 southbound to Delaware Avenue is predominantly oriented southbound toward Delaware Avenue. For instance, in the AM peak, 210 of the 250 ramp vehicles turn south onto Delaware Avenue. The forecast is similar in the PM peak, where 170 of 200 vehicles using the ramp proceed south onto Delaware Avenue. These vehicles lead to an increase in the peak hour volumes on Delaware Avenue southbound. Immediately south of this intersection of the ramp, AM peak volumes increase from 1,460 to 2,020, a growth of 38.4 percent. Proceeding south on Delaware Avenue, volumes increase from 710 to 1,160 (63.3 percent) south of Berks Street and from 730 to 1,240 (69.9 percent) closer to Shackamaxon Street. In the PM peak these same sections are forecast to increase by 57.1 percent, 145.5 percent, and 170.0 percent, respectively. Although the percentage increases are larger in the PM peak, absolute traffic growth is smaller due to the smaller current traffic count. Traffic increases in these sections are 480, 320 and 340 vehicles, respectively.

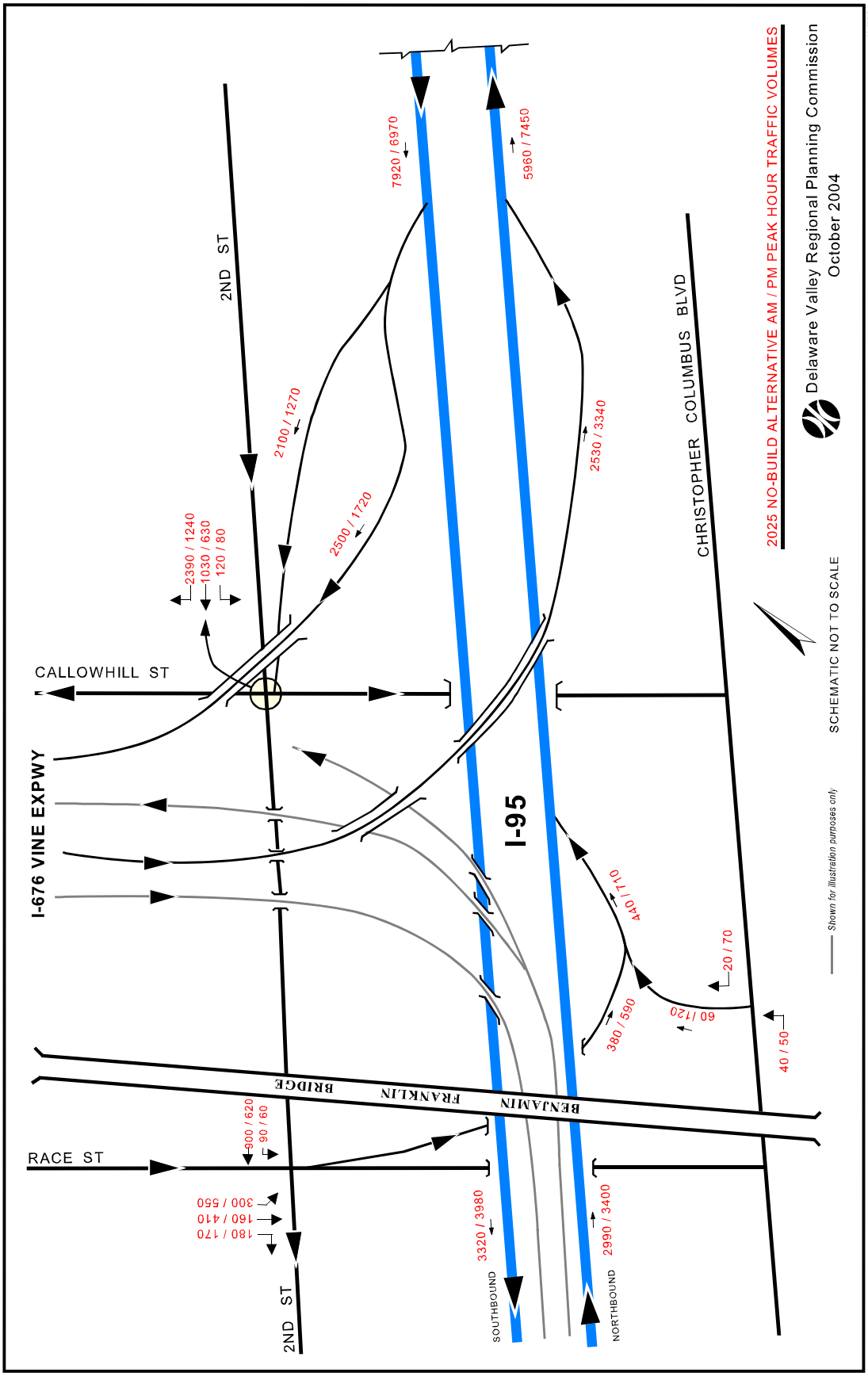
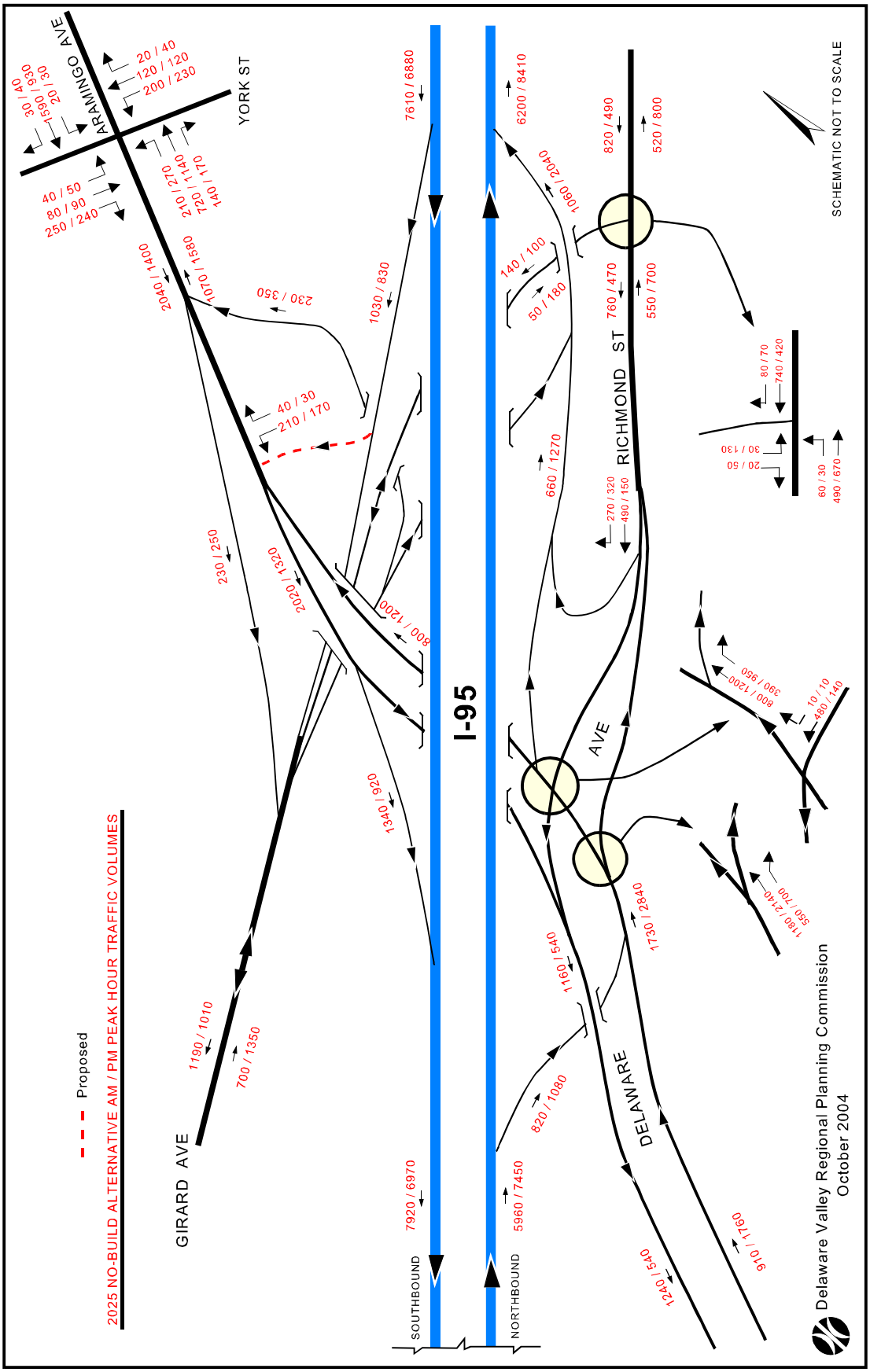


Figure 10C. 2025 No-Build Alternative AM / PM Peak Hour Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study


I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 10D. 2025 No-Build Alternative AM / PM Peak Hour Traffic Volumes
2025 NO-BUILD ALTERNATIVE AM / PM PEAK HOUR TRAFFIC VOLUMES
Proposed
GIRARD AVE
ARAMINGO AVE
YORK ST
I-95
SOUTHBOUND
NORTHBOUND
DELAWARE AVE
RICHMOND ST
SCHEMATIC NOT TO SCALE
Delaware Valley Regional Planning Commission
October 2004

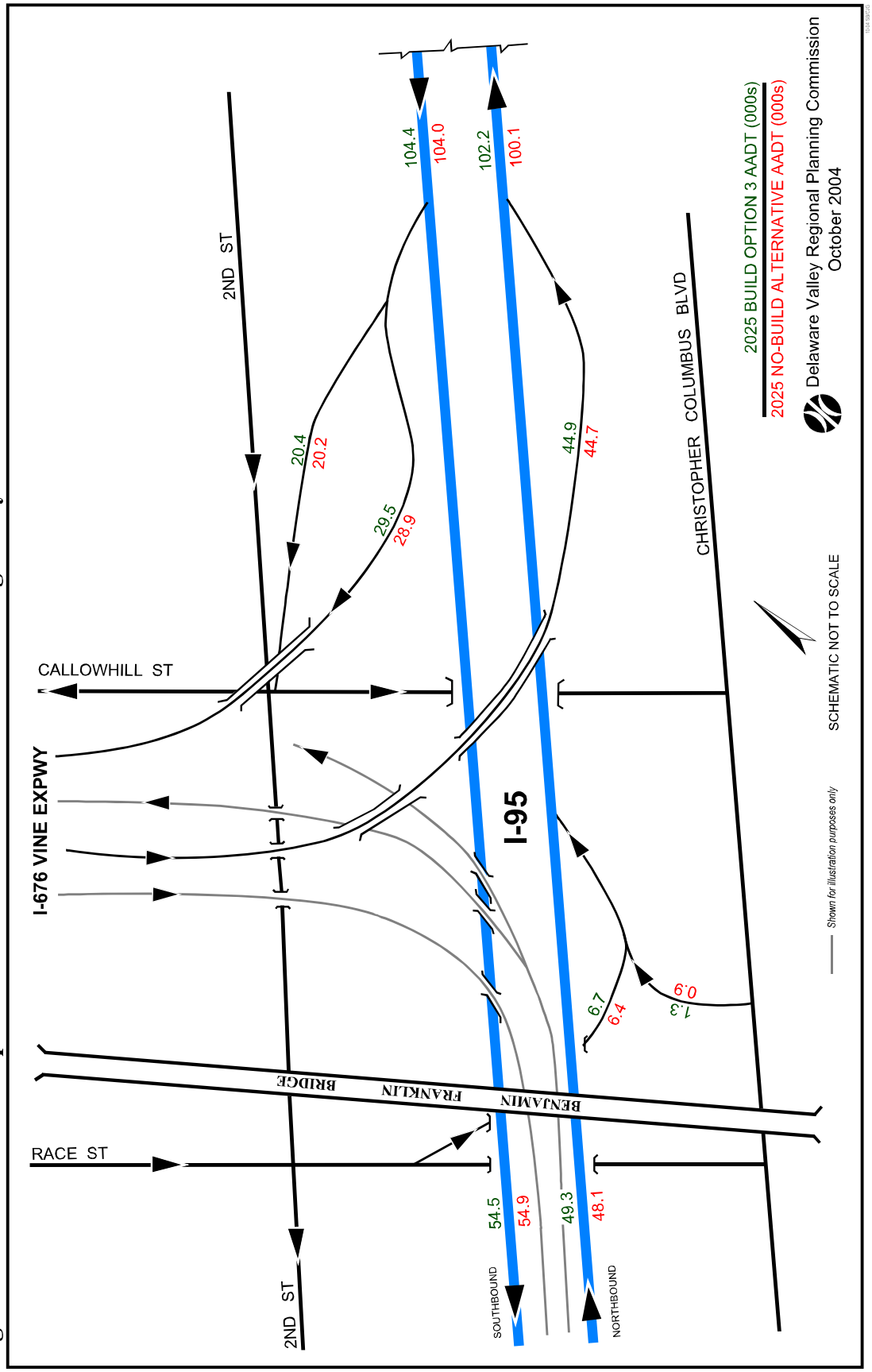
B. Build Option 3

This design option includes the reconstruction of Aramingo and Girard avenues currently grade separated. Compared to the No-Build Alternative, this option allows the elimination of the need to provide the ramp from southbound I-95 to Delaware Avenue. It also allows the removal of the current on-ramp from Delaware Avenue/Richmond Street to northbound I-95 and with it the elimination of the merge with traffic on the ramp from Girard Avenue. The current Girard Avenue connection to Aramingo Avenue is also no longer necessary. Under this option, northbound Delaware Avenue traffic is provided access to the southbound I-95 on-ramp. AADT volumes for the No-Build and Build Option 3 are displayed on ***figures 11A and 11B,*** while a comparison is presented in ***table 2***. AM and PM peak hour volumes are presented on ***figures 11C and 11D.***

Mainline I-95 traffic volumes are only slightly impacted in Build Option 3 versus the No-Build Alternative. Southbound I-95 north of the Girard Interchange is forecast to carry 200 vpd fewer than in the No-Build, 104,100 vs. 104,300 vpd (-0.2 percent). This decline is reversed between the Girard and I-676 interchanges. Traffic forecast volume of 104,400 compares to the No-Build forecast of 104,000 vpd, representing a 0.4 percent increase. South of I-676, southbound I-95 again experiences a decrease in volume, with 54,500 and 54,900 vpd forecast for Build Option 3 and the No-Build Alternative, respectively. This represents a decline, however, of less than 1 percent (0.7 percent).

I-95 ramp volumes are little affected by this build option , when compared to the No-Build situation. All changes are less than five percent, with a few exceptions. The first of these is the I-95 northbound on-ramp from Winter Street, where a No-Build volume of 900 increases to 1,300 vpd. (44.4 percent). Traffic destined from the Penn's Landing area finds this ramp more attractive when the northbound on-ramp from Delaware Avenue is moved to the new Girard Ave/Aramingo Avenue intersection. This is reflected in that the volume on this northbound entrance declines from 18,900 to 16,200 vpd, a loss of 14.3 percent. The provision of the movement between northbound Delaware/Aramingo avenue's to southbound I-95 generates a forecast of 700 vpd.

For the most part, arterial volumes in the vicinity of the Girard Interchange vary more that those on mainline I-95 or on the ramps. Northbound Delaware Avenue volumes increase slightly from the No-Build Alternative. The increase is 600 vpd (4.3 percent) at Shackamaxon Street, declining to an increase 500 vpd (1.8 percent) northward toward the interchange. Southbound Delaware Avenue volumes decline from the No-Build. Just south of the Girard Interchange the decline is 300 vpd (-2.6 percent), increasing to a decline of 600 vpd (-5.1 percent) nearer to Shackamaxon Street. The direct connection to Aramingo Avenue boosts volumes on Girard Avenue south of the interchange by 3,100 vpd (10.4 percent) while the segment connecting to Richmond Street experiences no change. The greatest volume changes occur on Aramingo Avenue. The relocation of the northbound I-95 on-ramp from Delaware Avenue/Richmond Street to the new intersection increases this segment of Aramingo Avenue northbound by 8,100 vpd (64.8 percent). North of the intersection, northbound Aramingo sustains an increase of



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 11A. 2025 Build Option 3 and No-Build Alternative Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 11B. 2025 Build Option 3 & No-Build Alternative Average Daily Traffic Volumes

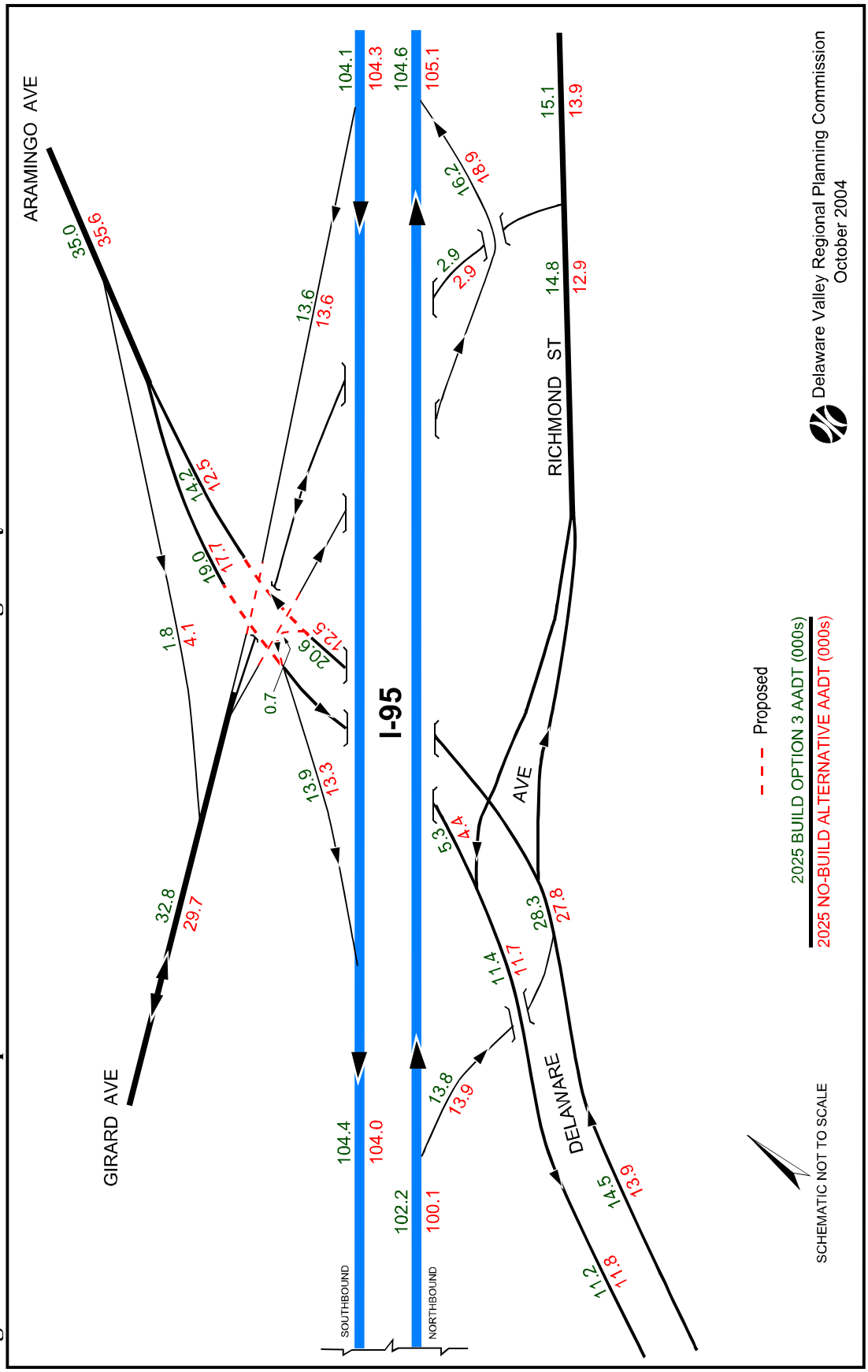


Table 2
2025 No-Build Alternative and Build Option 3 Average Daily Traffic Volumes

Highway Facility	Location From	To	2025 No-Build Forecast	Build Option 3 2025 AADT	Versus No-Build Alt. Diff.	% Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	48,100	49,300	1,200	2.5%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	54,900	54,500	-400	-0.7%
I-95 NB	I-676 on-ramp	Delaware Ave off-ramp	100,100	102,200	2,100	2.1%
I-95 SB	Girard Ave on-ramp	I-676/Callowhill off-ramp	104,000	104,400	400	0.4%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	105,100	104,600	-500	-0.5%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	104,300	104,100	-200	-0.2%
Sub-Total			**516,500**	**519,100**	**2,600**	**0.5%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	6,400	6,700	300	4.7%
I-95 NB On-ramp	Winter St	I-95	900	1,300	400	44.4%
I-95 NB On-ramp	I-676	I-95	44,700	44,900	200	0.4%
I-95 SB Off-ramp	I-95	Callowhill St	20,200	20,400	200	1.0%
I-95 SB Off-ramp	I-95	I-676	28,900	29,500	600	2.1%
I-95 NB Off-ramp	I-95	Delaware Ave	13,900	13,800	-100	-0.7%
I-95 NB On-ramp **	Delaware/Girard ave's	I-95	18,900	16,200	-2,700	-14.3%
I-95 SB Off-ramp	I-95	Girard Ave	13,600	13,600	0	0.0%
I-95 SB On-ramp	Aramingo Ave	I-95	13,300	13,900	600	4.5%
I-95 SB On-ramp *	Aramingo Ave NB	I-95	N/A	700	700	N/A
Sub-Total			**160,800**	**161,000**	**200**	**0.1%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp	13,900	14,500	600	4.3%
Delaware Ave SB	I-95 NB off-ramp	Shackamaxon St	11,800	11,200	-600	-5.1%
Delaware Ave NB	I-95 NB off-ramp	Berks Street	27,800	28,300	500	1.8%
Delaware Ave SB	Berks St	I-95 NB off-ramp	11,700	11,400	-300	-2.6%
Girard Ave	Berks St	Susquehanna Ave	29,700	32,800	3,100	10.4%
Girard Ave	Under I-95		2,900	2,900	0	0.0%
Aramingo Ave NB ***	Delaware Ave	Girard Ave	12,500	20,600	8,100	64.8%
Aramingo Ave SB ***	I-95 SB on-ramp	Delaware Ave	4,400	5,300	900	20.5%
Aramingo Ave NB ***	Girard Ave	Norris St	12,500	14,200	1,700	13.6%
Aramingo Ave SB ***	Norris St	Girard Ave	17,700	19,000	1,300	7.3%
Aramingo Ave	Dauphin St	York St	35,600	35,000	-600	-1.7%
Aramingo Ave	SB connection to Girard Ave		4,100	1,800	-2,300	-56.1%
Richmond St	Delaware Ave	Girard Ave	12,900	14,800	1,900	14.7%
Richmond St	Girard Ave	York St	13,900	15,100	1,200	8.6%
Sub-Total			**211,400**	**226,900**	**15,500**	**7.3%**
Total			**888,700**	**907,000**	**18,300**	**2.1%**

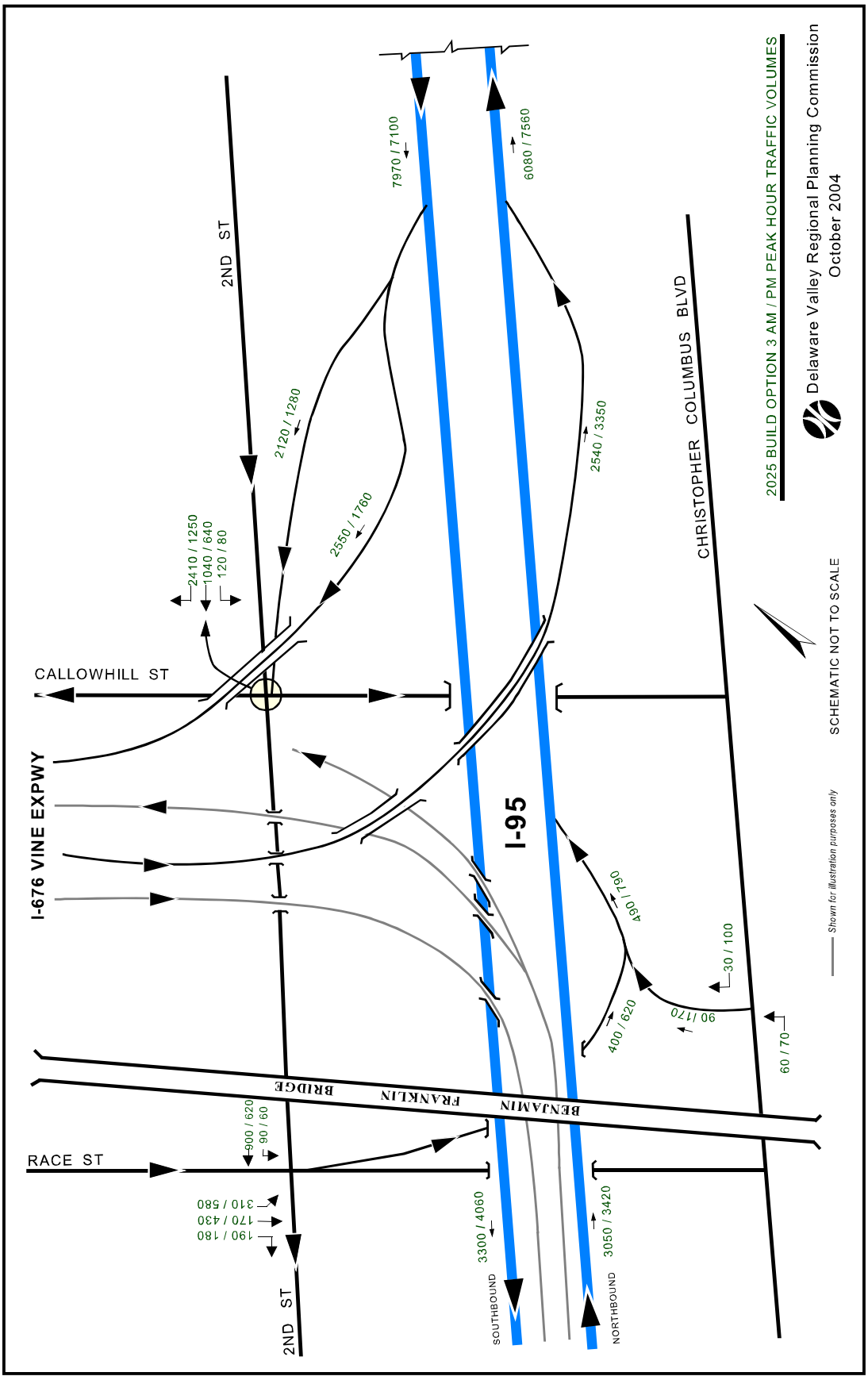
* New movement in this option

** Relocated in this option

*** New intersection with Girard Ave

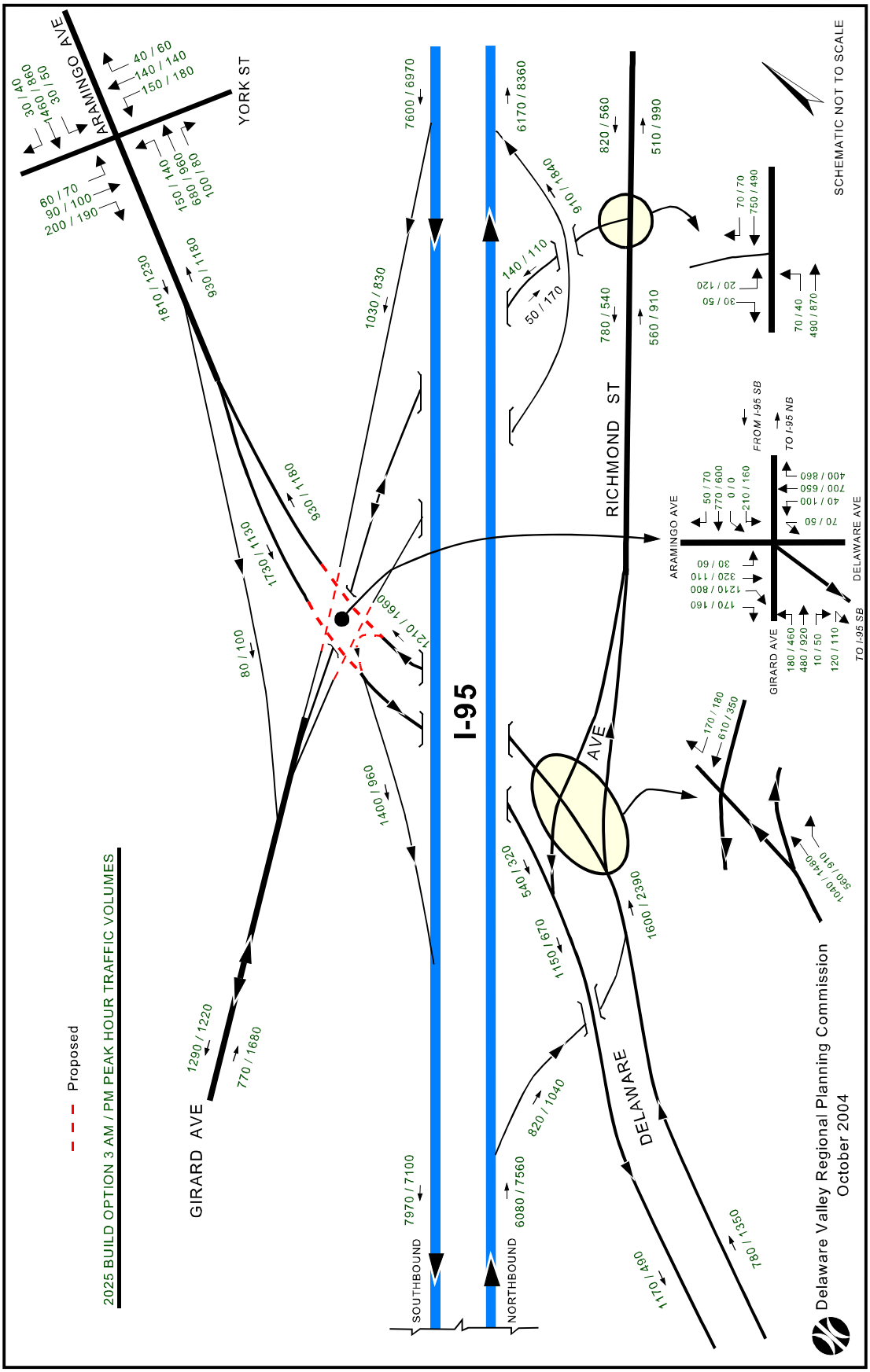
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 11C. 2025 Build Option 3 AM / PM Peak Hour Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 11D. 2025 Build Option 3 AM / PM Peak Hour Traffic Volumes



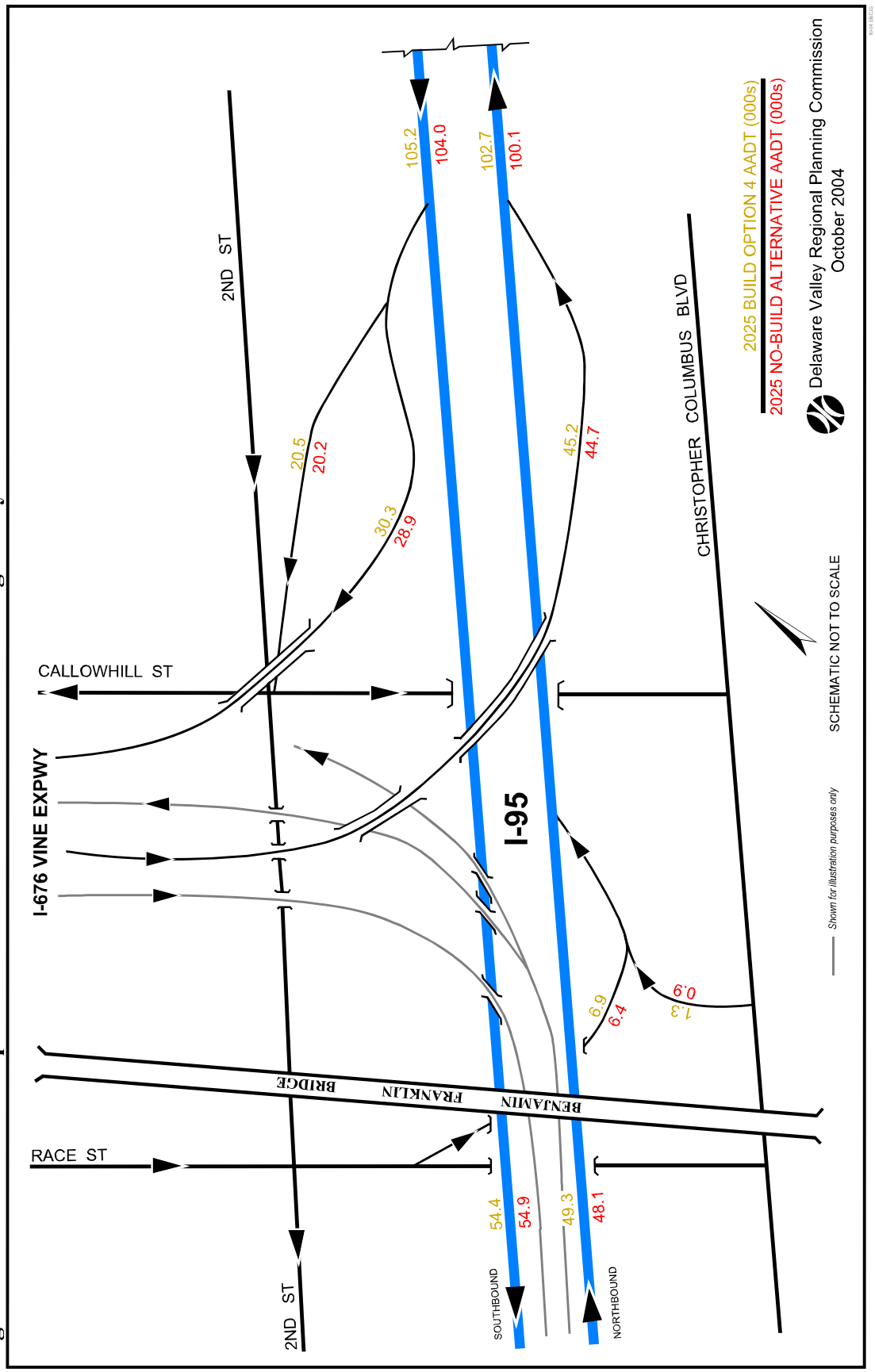
1,700 vpd (13.6 percent), while the comparable southbound section grows by 1,300 vpd (7.3 percent). South of the intersection the increase is 900 vpd (20.5 percent). The effects of the intersection dissipate by Dauphin Street, where volumes on Aramingo Avenue decline by 600 vpd (-1.7 percent). Due to the access provided by the intersection to southbound Aramingo traffic destined for Girard Avenue, volumes on the connecting road between Aramingo and Girard ave's decline by over half, or 2,300 vpd (-56.1 percent). Under Build Option 3 traffic on Richmond Street increases, with the increase higher south of the Girard Avenue intersection (1,900 vpd or 14.7 percent) than north of Girard Ave (1,200 vpd or 8.6 percent).

Build Option 3 Peak hour volumes differ from the No-Build Alternative forecasts only slightly except in the vicinity of the new Aramingo/Girard Avenue intersection. On Aramingo Avenue north of the intersection, volumes differ by only approximately 100 vehicles by direction in the AM peak period, while the difference in the PM peak is even smaller. South of the intersection, volumes on southbound Aramingo Avenue increase by 140 vehicles. The larger increase, 410 vehicles, is registered on Aramingo Avenue northbound just south of the intersection. This is due to the relocation of the northbound I-95 on movement. Girard Avenue south of the intersection is forecast to have a larger increase over the No-Build in the PM peak versus the AM peak (540 versus 170 vehicles), while there is almost no change on the segment of Girard Avenue intersecting Richmond Street. The provision of access from Delaware Avenue northbound to I-95 southbound has less of an impact on traffic than the access to the same ramp provided by the intersection to Girard Avenue. Almost twice as many vehicles (120 vs. 70 in the AM and 110 vs. 50 in the PM peak) access the ramp from Girard Avenue than from Delaware Avenue.

C. Build Option 4

Similar to the No-Build Alternative, Build Option 4 includes the spur ramp from the southbound I-95 off-ramp to Girard Avenue to Delaware Avenue. However, this alternative seeks to rationalize Aramingo Avenue by concentrating ramps at one location. The southbound I-95 on-ramp is moved so that it originates from the same location at the base of the new spur ramp. Another major modification is the relocation of the northbound I-95 off-ramp to Delaware Avenue to a new location on Richmond Street between Delaware and Girard avenue's. The current Delaware Avenue/Richmond Street northbound I-95 on-ramp would be relocated to originate at this point. This design includes the elimination of the Girard Avenue northbound on-ramp, redirecting this traffic to continue on Girard Avenue to Richmond Street and utilize the new on-ramp. Daily traffic forecasts for the No-Build and Build Option 4 are located on ***figures 12A and 12B***, while a comparison of these volumes is presented in ***table 3***. Both AM and PM peak hour traffic forecasts are presented in ***figures 12C and 12D***.

As was the case with Build Option 3, the changes to the roadway network in this build option have only a slight effect on mainline I-95 traffic. Southbound I-95 volumes increase by 900 vpd interchanges volumes grow by 1,200 vpd (1.2 percent). South of I-676 volumes actually (0.9 percent) versus the No-Build north of the Girard Interchange. Between the Girard and I-676 decrease, declining by 500 vpd (-0.9 percent). On northbound I-95, all three of these segments



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 12A. 2025 Build Option 4 and No-Build Alternative Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 12B. 2025 Build Option 4 and No-Build Alternative Average Daily Traffic Volumes

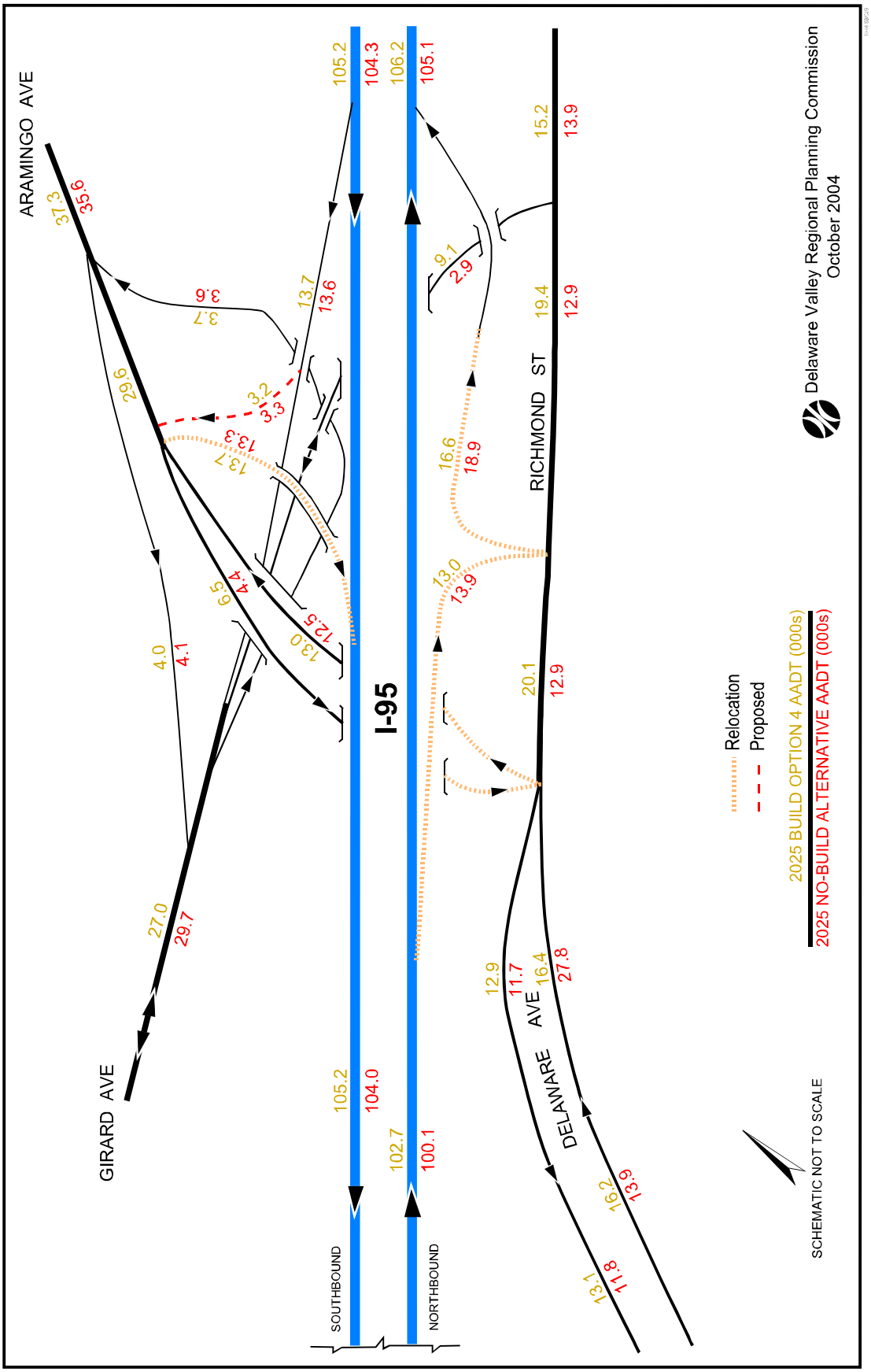


Table 3
2025 No-Build Alternative and Build Option 4 Average Daily Traffic Volumes

Highway Facility	Location From	Location To	2025 No-Build Forecast	Build Option 4 2025 AADT	Build Option 4 Versus No-Build Alt Diff.	Build Option 4 Versus No-Build Alt % Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	48,100	49,300	1,200	2.5%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	54,900	54,400	-500	-0.9%
I-95 NB	I-676 on-ramp	Delaware Ave off-ramp	100,100	102,700	2,600	2.6%
I-95 SB	Girard Ave on-ramp	I-676/Callowhill off-ramp	104,000	105,200	1,200	1.2%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	105,100	106,200	1,100	1.0%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	104,300	105,200	900	0.9%
Sub-Total			**516,500**	**523,000**	**6,500**	**1.3%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	6,400	6,900	500	7.8%
I-95 NB On-ramp	Winter St	I-95	900	1,300	400	44.4%
I-95 NB On-ramp	I-676	I-95	44,700	45,200	500	1.1%
I-95 SB Off-ramp	I-95	Callowhill St	20,200	20,500	300	1.5%
I-95 SB Off-ramp	I-95	I-676	28,900	30,300	1,400	4.8%
I-95 NB Off-ramp **	I-95	Delaware Ave	13,900	13,000	-900	-6.5%
I-95 NB On-ramp **	Delaware/Girard ave's	I-95	18,900	16,600	-2,300	-12.2%
I-95 SB Off-ramp	I-95	Girard Ave	13,600	13,700	100	0.7%
I-95 SB On-ramp **	Aramingo Ave	I-95	13,300	13,700	400	3.0%
I-95 SB On-ramp *	Girard Ave off-ramp	Delaware Ave	3,300	3,300	0	0.0%
Sub-Total			**160,800**	**164,500**	**400**	**2.3%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp ***	13,900	16,200	2,300	16.5%
Delaware Ave SB	I-95 NB off-ramp	Shackamaxon St	11,800	13,100	1,300	11.0%
Delaware Ave NB	I-95 NB off-ramp	Berks Street	27,800	16,400	-11,400	-41.0%
Delaware Ave SB	Berks St	I-95 NB off-ramp ***	11,700	12,900	1,200	10.3%
Girard Ave	Berks St	Susquehanna Ave	29,700	27,000	-2,700	-9.1%
Girard Ave	Under I-95		2,900	9,100	6,200	213.8%
Girard Ave	NB Connection to Aramingo Ave		3,600	3,700	100	2.8%
Aramingo Ave NB **	Delaware Ave	Norris St	12,500	13,000	500	4.0%
Aramingo Ave SB **	Norris St	Delaware Ave	4,400	6,500	2,100	47.7%
Aramingo Ave	I-95 SB on/off-ramps	Dauphin St	N/A	29,600	29,600	N/A
Aramingo Ave	Dauphin St	York St	35,600	37,300	1,700	4.8%
Aramingo Ave	SB connection to Girard Ave		4,100	4,000	-100	-2.4%
Richmond St	Delaware Ave	Girard Ave	12,900	19,400	6,500	50.4%
Richmond St	Girard Ave	York St	13,900	15,200	1,300	9.4%
Sub-Total			**184,800**	**223,400**	**38,600**	**20.9%**
Total			**862,100**	**910,900**	**48,800**	**5.7%**

* New connection to Delaware Ave

** Relocated in this option

*** Former location of ramp

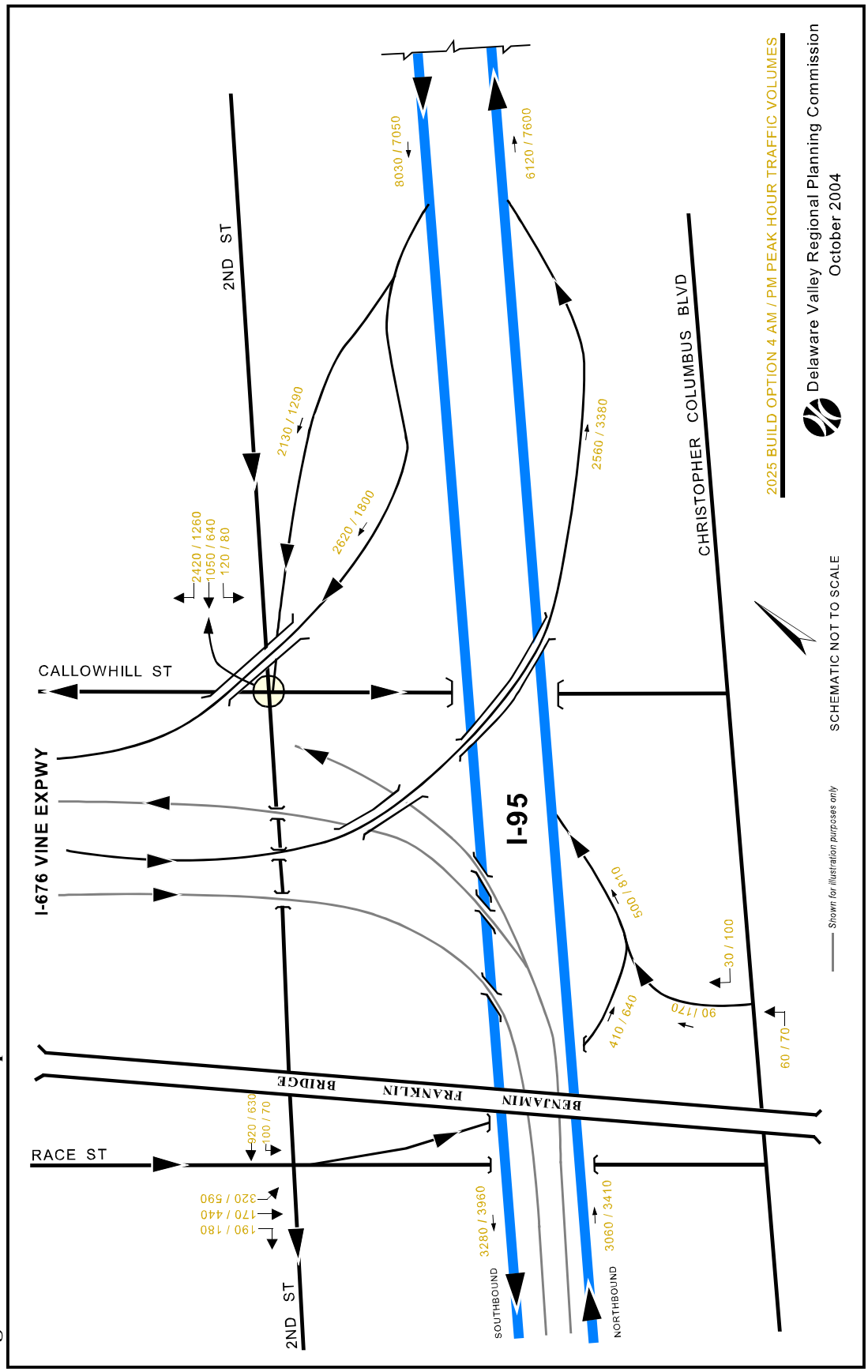
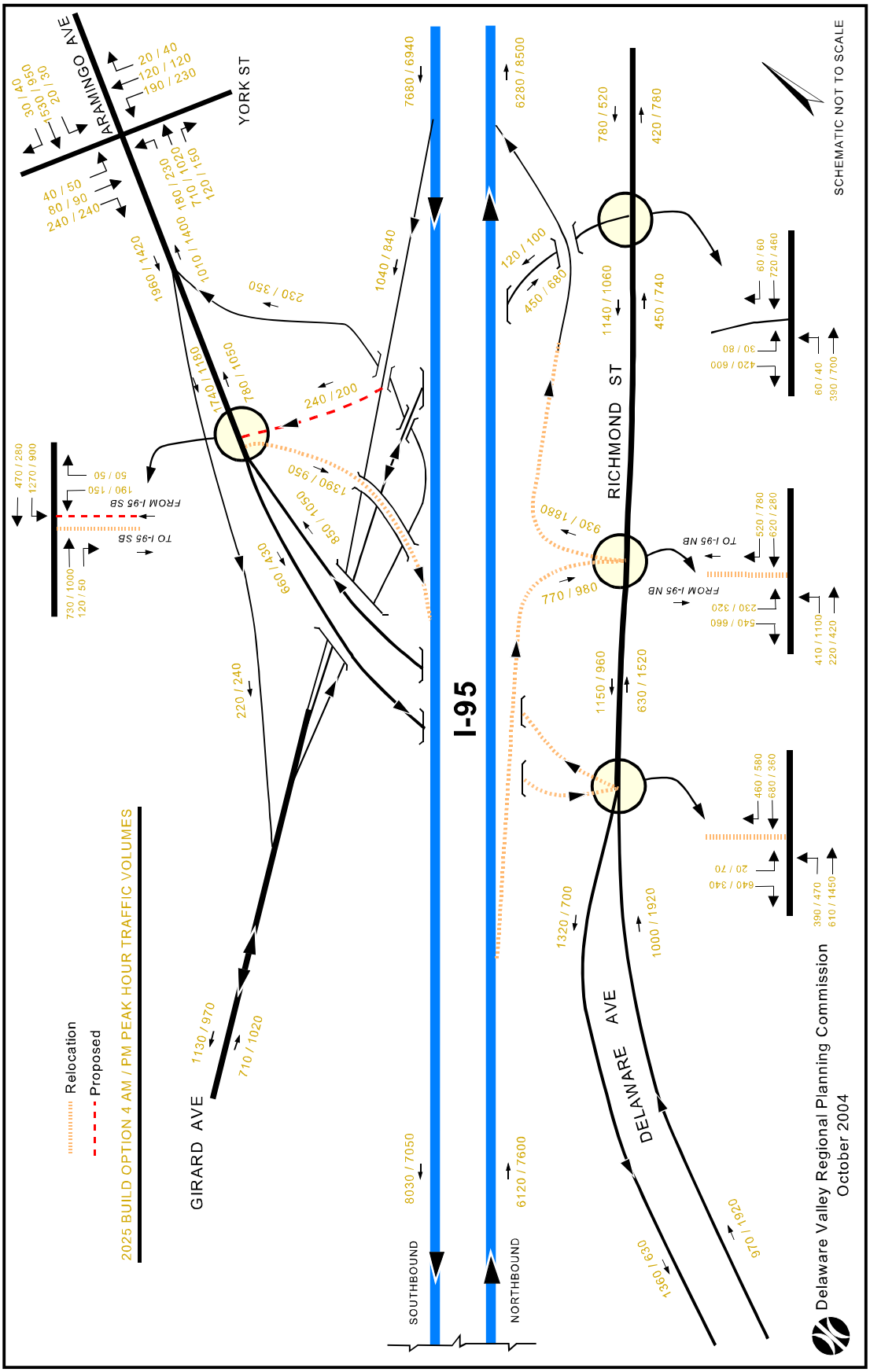


Figure 12C. 2025 Build Option 4 AM / PM Peak Hour Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study


I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 12D. 2025 Build Option 4 AM / PM Peak Hour Traffic Volumes
2025 BUILD OPTION 4 AM / PM PEAK HOUR TRAFFIC VOLUMES
Relocation
Proposed
I-95
SOUTHBOUND
NORTHBOUND
GIRARD AVE
ARAMINGO AVE
YORK ST
RICHMOND ST
DELAWARE AVE
FROM I-95 SB
TO I-95 SB
FROM I-95 NB
TO I-95 NB
SCHEMATIC NOT TO SCALE
Delaware Valley Regional Planning Commission
October 2004

display traffic increases. In the vicinity of Penn's Landing south of I-676 volumes increase by 1,200 vpd (2.5 percent). This increases to 2,600 vpd (2.6 percent) south of Girard Avenue. North of Girard Avenue the increase drops back to 1,100 vpd, or 1.0 percent.

The effects of the changes in this option on ramp volumes vary. Similar to Build Option 3, moving the Delaware Avenue/Richmond Street on-ramp to northbound I-95 increases the attractiveness of the northbound on-ramps from Race and Winter streets. Both the relocated I-95 northbound off-ramp and on-ramp are less attractive to motorists; the forecast is 900 vpd (-6.5 percent) fewer on the off-ramp and 2,300 vpd (-12.2 percent) less on the on-ramp. The volumes on the I-95 southbound off-ramp to Girard Avenue and the spur to Delaware Avenue remain relatively constant when compared to the No-Build Alternative. Relocating the Aramingo Avenue on-ramp to southbound I-95 increases its volume by 400 vpd (3.0 percent). This is due to the additional movement allowed from northbound Delaware Ave to southbound I-95 at the new location. Although the volume on the I-95 off-ramp to Callowhill Street remains relatively constant (a gain of 300 vpd, or 1.5 percent), the volume on the ramp to I-676 increases by 1,400 vpd (4.8 percent). This growth is not reflected on the northbound on-ramp from I-676, where the forecast increases by only 500 vpd (1.1 percent); however, the increase on the Race Street on-ramp accounts for part of the difference.

Shifting the ramp locations has a definite effect on arterial facilities in the Girard Interchange study area. Delaware Avenue southbound volumes increase by 1,200 vpd (10.3 percent) and 1,300 vpd (11.0 percent) proceeding south from Richmond Street. Affects on northbound Delaware Avenue are more profound. South of the former I-95 northbound off-ramp merge with Delaware Avenue the increase is 2,300 vpd (16.5 percent). North of the former merge traffic declines by 11,400 vpd (-41.0 percent). This reflects removing traffic from the ramp. Girard Ave south of the Girard Interchange is less attractive without the direct on-ramp to northbound I-95. Traffic volumes decline by 2,700 vpd (9.1 percent) at this location; however, they increase on the segment connecting to Richmond Street with its access to the northbound on-ramp. Traffic forecasts increase by 6,200 vpd, or a growth of 213.8 percent.

The new ramp configuration has little effect on Aramingo Avenue traffic volumes with one exception. Allowing the movement from southbound Aramingo to the northbound on-ramp via Richmond Street increases the Aramingo volume by 2,100 vpd (47.7 percent). As expected, tying the ramps to Richmond Street increases traffic on this facility. Between the base of the ramps and Girard Avenue volumes increase by 6,500 vpd (50.4 percent), while north of Girard Avenue the growth is 1,300 vpd (9.4 percent).

Peak hour volumes are little changed except where the ramps have been relocated. The new location for the Aramingo Avenue on-ramp to southbound I-95, with its signal, proves less attractive for southbound traffic on Aramingo Avenue - volumes decline by 70 and 20 in the AM and PM peak, respectively. This volume is compensated by new volume of 120 and 50 utilizing the ramp from northbound Delaware Avenue. Volumes on southbound Delaware Avenue increase in the peak due to the new choice of using the northbound off-ramp to access

southbound Delaware Avenue. The increase south of Aramingo Avenue is 160 in both the AM and PM peak periods. As in the daily forecasts, northbound peak hour volumes on the Girard Avenue connection to Richmond Street grow, increasing by 400 and 500 vehicles in the AM and PM peaks, respectively. This volume is carried through on southbound Richmond St between Girard Avenue and the base of the ramps. Here, increases of 380 vehicles in the AM and 590 vehicles in the PM peak are forecast.

D. Build Option 5

Of all of the build options, Build Option 5 is the closest design to the No-Build Alternative. In essence, the only difference from the no-build is the addition of the movement from northbound Delaware Avenue to the I-95 southbound on-ramp at Aramingo Avenue. As in the No-Build Alternative, a spur is constructed between the southbound I-95 off-ramp to Girard Avenue. Aside from these changes to the ramp network, the basic configuration of the existing ramps remains. Daily traffic forecasts for this build option are presented with the no-build for comparison on ***figures 13A and 13B***, as well as in ***table 4***. As in the case of the other build options, AM and PM peak hour forecasts were prepared, and are presented on ***figures 13C and 13D***.

As expected, the effect of the new movement from Delaware Avenue northbound to the I-95 southbound on-ramp has a minimal effect on I-95 mainline volumes. All mainline volumes vary from the No-Build Alternative by less than 2,000 vpd, which represents less than 2 percent change. The greatest effect is measured between the Girard and I-676 interchanges, where the difference amounts to 1.8 percent.

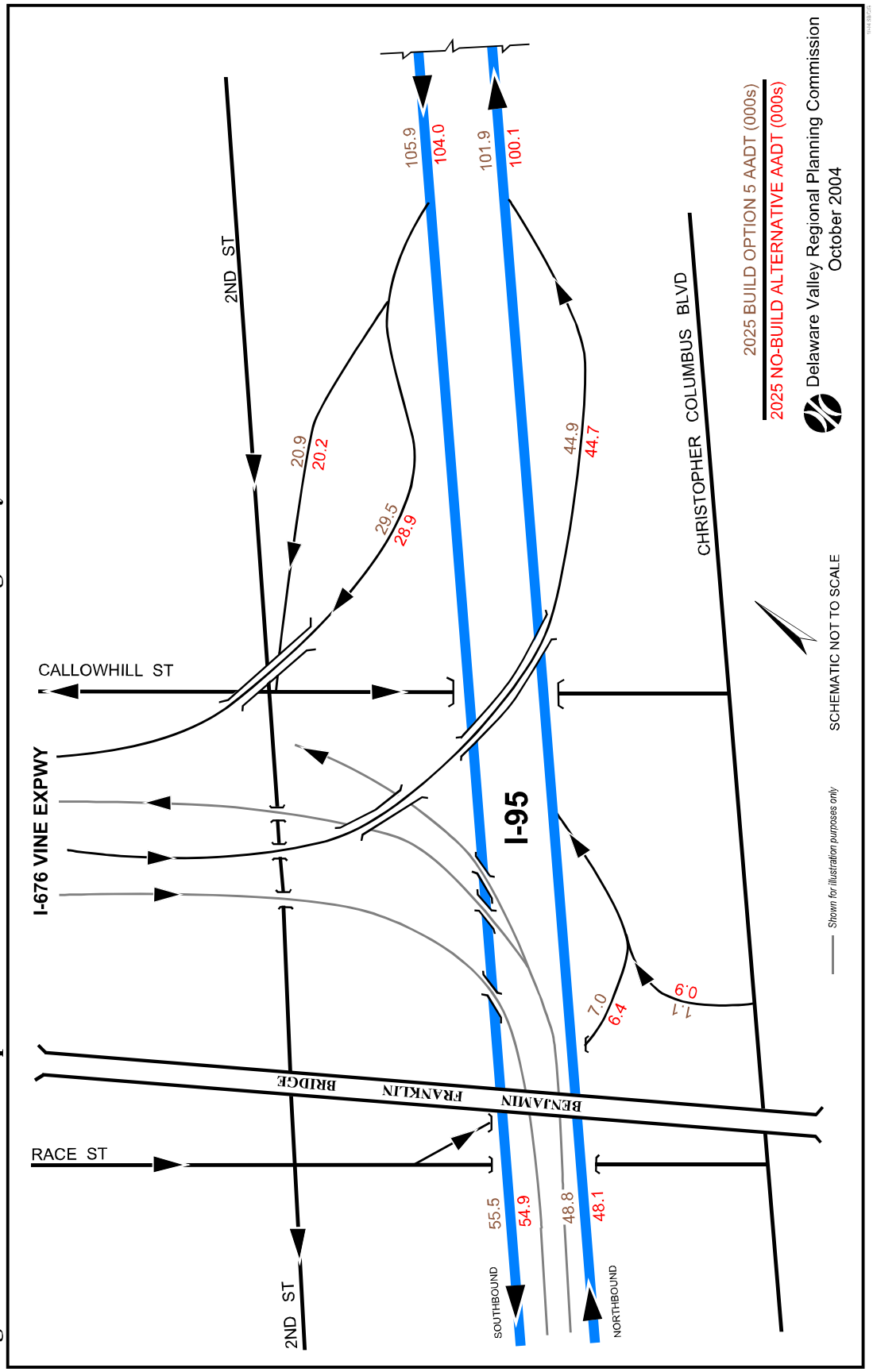
The addition of the movement from northbound Delaware Avenue to I-95 serves only approximately 800 vpd. This translates to an increase on the southbound on-ramp of 600 vpd; however, this is only an increase of 4.5 percent above the No-Build Alternative volume for this ramp. The volume changes on other ramps in the study area are 700 or fewer.

Volume changes on area arterials, as with the ramps, are negligible. The greatest effect of this new movement is on Delaware Avenue northbound, which becomes more attractive to motorists. The forecast north of Shackamaxon Street is 1,000 vpd higher than in the no-build (14,900 vs 13,900). This represents an increase of 7.2 percent. No other volumes change by more than five percent. Collectively, the forecasts on arterials in the study area change by only 0.7 percent.

The relatively small number of daily users of the new movement translates to a small number of vehicle turns in the peak hours. During the AM peak, approximately 70 vehicles would utilize this movement; in the PM peak the number grows to 100. The effect on the southbound on-ramp is minimal. An AM peak no-build forecast of 1,340 grows to 1,390 vehicles with the new movement. This is an increase of 50 vehicles, or approximately three percent. The 40 additional vehicles on the ramp in the PM peak is a smaller number than in the AM; however, the lower no-build forecast of 920 vehicles translates to a percentage increase of 4.3 percent. The presence

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 13A. 2025 Build Option 5 and No-Build Alternative Average Daily Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 13B. 2025 Build Option 5 and No-Build Alternative Average Daily Traffic Volumes

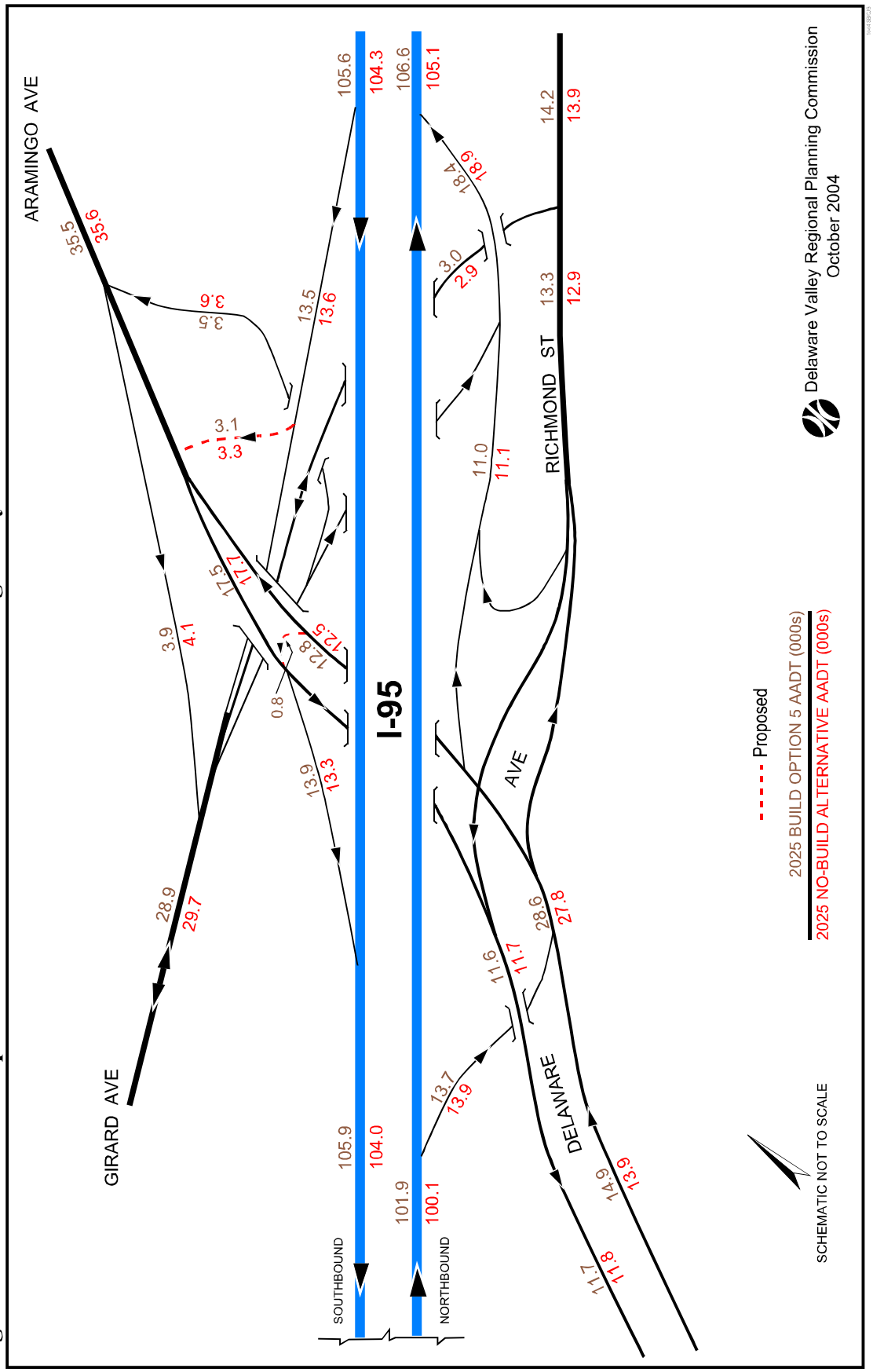


Table 4
2025 No-Build Alternative and Build Option 5 Average Daily Traffic Volumes

Highway Facility	Location From	To	2025 No-Build Forecast	Build Option 5 2025 AADT	Versus No-Build Alt Diff.	% Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	48,100	48,800	700	1.5%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	54,900	55,500	600	1.1%
I-95 NB	I-676 on-ramp	Girard Ave	100,100	101,900	1,800	1.8%
I-95 SB	Girard Ave on-ramp	I-676/Callowhill off-ramp	104,000	105,900	1,900	1.8%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	105,100	106,600	1,500	1.4%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	104,300	105,600	1,300	1.2%
Sub-Total			**516,500**	**524,300**	**7,800**	**1.5%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	6,400	7,000	600	9.4%
I-95 NB On-ramp	Winter St	I-95	900	1,100	200	22.2%
I-95 NB On-ramp	I-676	I-95	44,700	44,900	200	0.4%
I-95 SB Off-ramp	I-95	Callowhill St	20,200	20,900	700	3.5%
I-95 SB Off-ramp	I-95	I-676	28,900	29,500	600	2.1%
I-95 NB Off-ramp	I-95	Delaware Ave	13,900	13,700	-200	-1.4%
I-95 NB On-ramp	Delaware/Richmond ave's	Delaware/Girard on-ramp merge	11,100	11,000	-100	-0.9%
I-95 NB On-ramp	Delaware/Girard on-ramp merge	I-95	18,900	18,400	-500	-2.6%
I-95 SB Off-ramp	I-95	Girard Ave	13,600	13,500	-100	-0.7%
I-95 SB On-ramp	Aramingo Ave	I-95	13,300	13,900	600	4.5%
I-95 SB Off-ramp *	Girard Ave off-ramp	Delaware Ave	3,300	3,100	-200	-6.1%
I-95 SB On-ramp **	Aramingo Ave NB	I-95	N/A	800	800	N/A
Sub-Total			**171,900**	**177,800**	**2,600**	**3.4%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp	13,900	14,900	1,000	7.2%
Delaware Ave SB	I-95 NB off-ramp	Shackamaxon St	11,800	11,700	-100	-0.8%
Delaware Ave NB	I-95 NB off-ramp	Berks St	27,800	28,600	800	2.9%
Delaware Ave SB	Berks St	I-95 NB off-ramp	11,700	11,600	-100	-0.9%
Girard Ave	Berks St	Susquehanna Ave	29,700	28,900	-800	-2.7%
Girard Ave	Under I-95		2,900	3,000	100	3.4%
Girard Ave	NB Connection to Aramingo Ave		3,600	3,500	-100	-2.8%
Aramingo Ave NB	Delaware Ave	Norris St	12,500	12,800	300	2.4%
Aramingo Ave SB	Norris St	I-95 SB on-ramp	17,700	17,500	-200	-1.1%
Aramingo Ave	Dauphin St	York St	35,600	35,500	-100	-0.3%
Aramingo Ave	SB connection to Girard Ave		4,100	3,900	-200	-4.9%
Richmond St	Delaware Ave	Girard Ave	12,900	13,300	400	3.1%
Richmond St	Girard Ave	York St	13,900	14,200	300	2.2%
Sub-Total			**198,100**	**199,400**	**1,300**	**0.7%**
Total			**886,500**	**901,500**	**15,000**	**1.7%**

* New connection to Delaware Ave
** New movement in this option

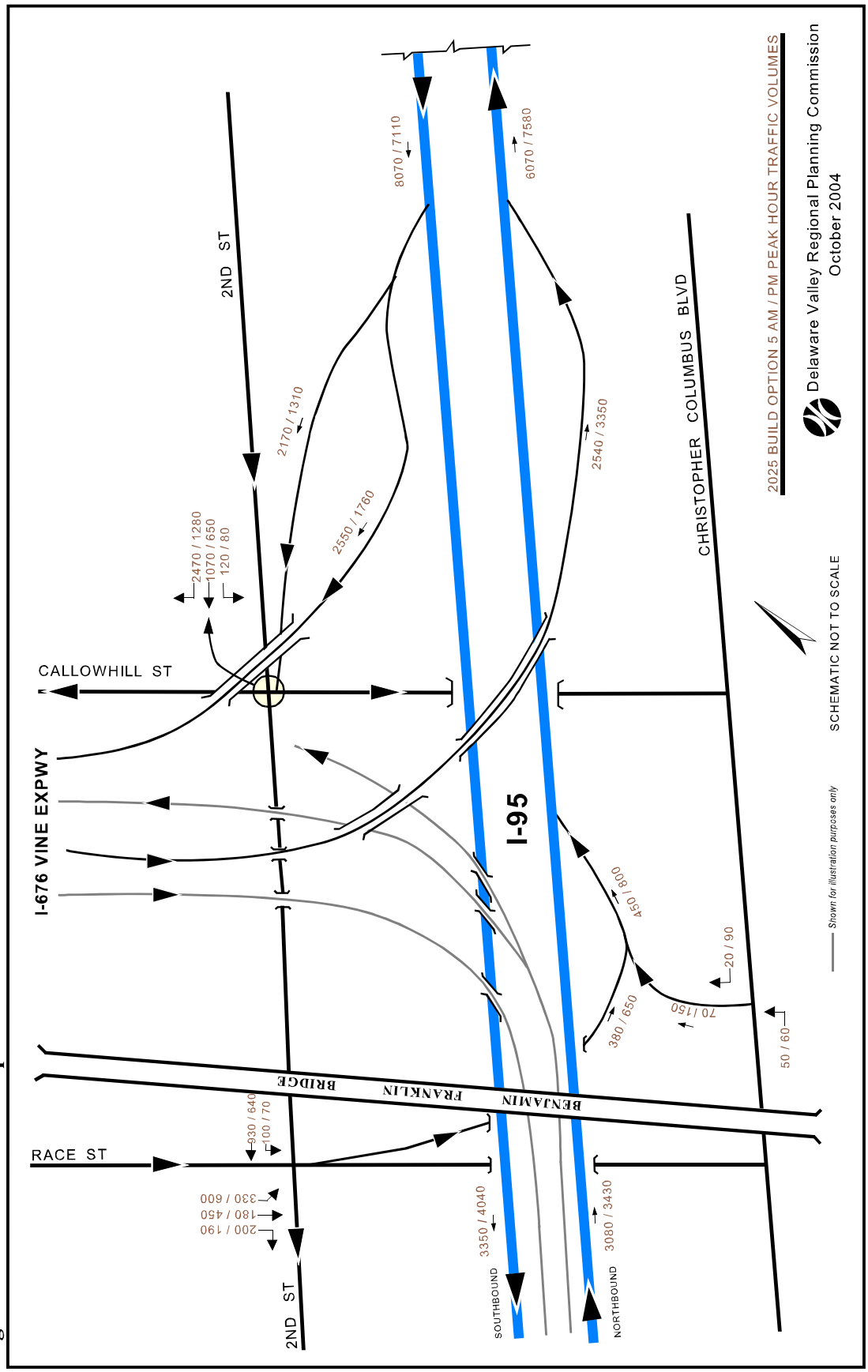
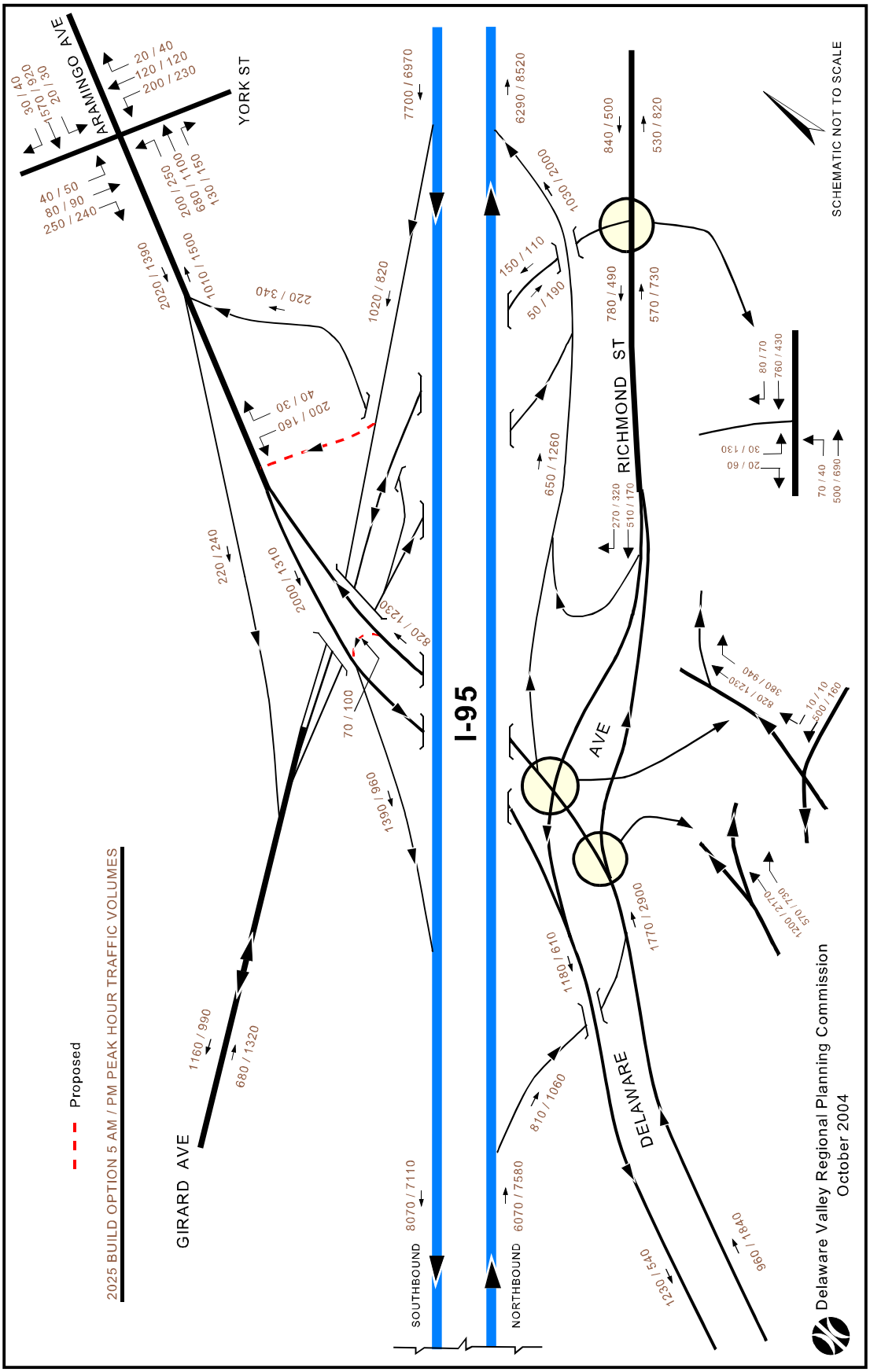


Figure 13C. 2025 Buid Option 5 AM / PM Peak Hour Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 13D. 2025 Build Option 5 AM / PM Peak Hour Traffic Volumes



of this turn opportunity increases traffic on Delaware Avenue northbound in the peak periods, but the increase is nominal. At Shackamaxon Street the increase is about five percent in both periods. Closer to the Aramingo ramp, where traffic from the I-95 northbound off-ramp to Delaware Avenue enters Delaware Avenue the increase is between two and three percent.

E. Build Option 6

This build option features the splitting of Aramingo Avenue by direction to facilitate the movement of traffic from the I-95 southbound off-ramp to Girard Avenue spur ramp to Delaware Avenue without the necessity of a traffic signal. This removes the choice, however, of turning north onto Aramingo Avenue. It also features the removal of the Delaware/Richmond avenue's northbound I-95 on-ramp, replacing it with an intersection between the new northbound Aramingo Avenue and existing Girard Avenue. The cart-path of the existing Girard Avenue connection to Aramingo Avenue becomes Aramingo Avenue northbound. A final feature is the provision for a reverse movement from Aramingo Avenue northbound to southbound, in essence giving northbound Delaware Avenue traffic access to southbound I-95 from Aramingo Avenue.

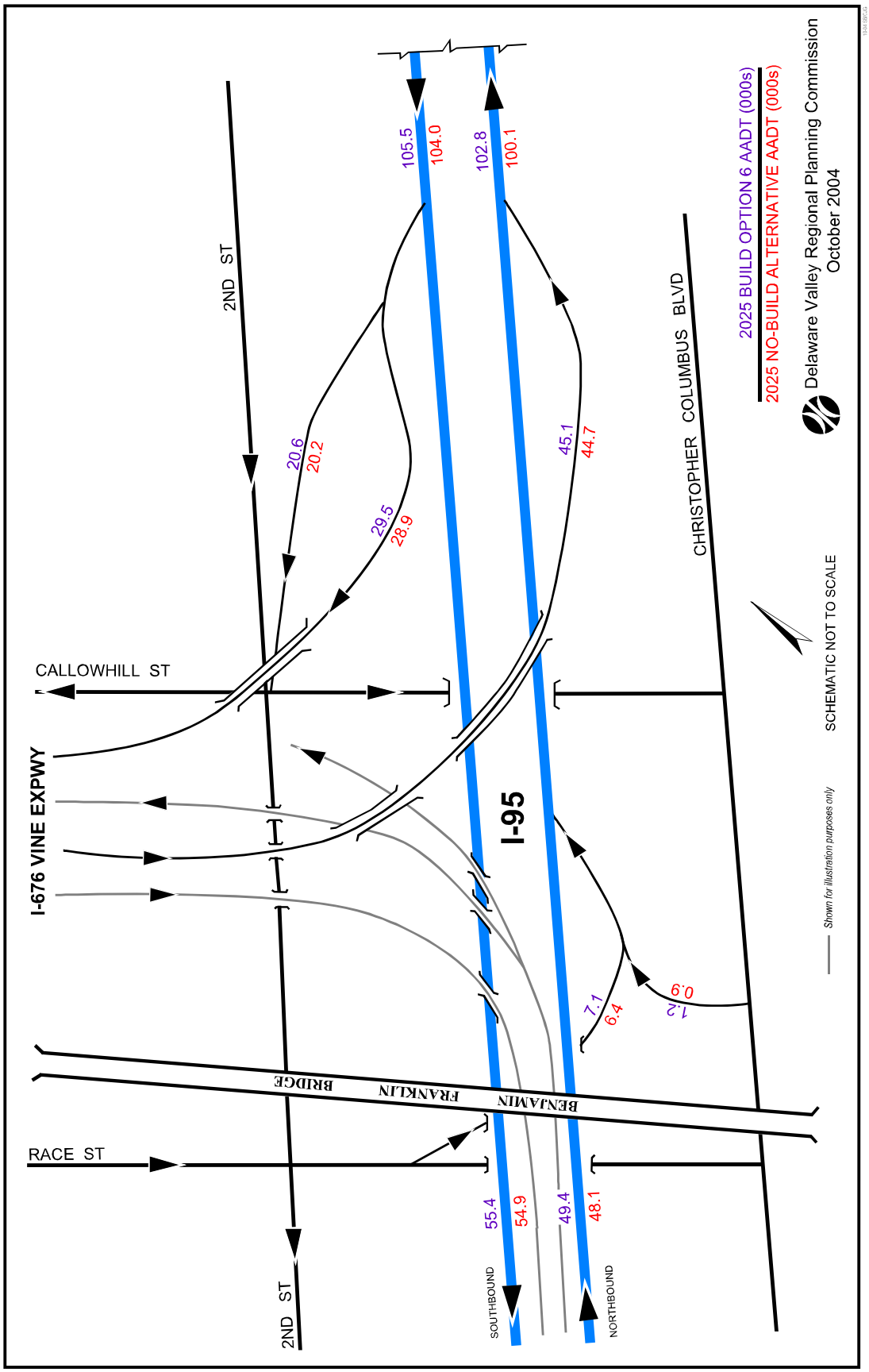
Daily traffic forecasts for this build option are presented with the no-build for comparison on ***figures 14A and 14B***, as well as in ***table 5***. As in the case of the other build alternatives, AM and PM peak hour forecasts were prepared, and are presented on ***figures 14C and 14D***.

I-95 mainline traffic increases slightly over the No-Build Alternative with this configuration. Southbound volumes increase by 900, 1,500 and 500 vpd north, between the Girard and I-676 interchanges and south of the study area, respectively. Northbound volumes grow by almost twice this amount: 1,300, 2,700 and 600 vpd for the same sections as one proceeds from south to north. The increases in the largest growth sections, however, still amount to only 1.4 and 2.7 percent for southbound and northbound directions, respectively.

Ramp volumes serving I-676 and Aramingo Avenue are only modestly affected in this scenario. Volume changes from the No-Build Alternative are all less than 2.5 percent. The spur ramp to Delaware Avenue is forecast to handle 2,900 vpd, 300 less than the no-build where the ramp offered travel in either direction on Aramingo Avenue. Combining the northbound I-95 on-ramps from Delaware/Richmond avenue's and Girard Avenue at a new intersection has a negative effect on traffic forecasts for this movement. Traffic Forecast volumes decline from 18,900 vpd for the current ramp configuration to 16,600 vpd, a loss of 12.2 percent. Some of this lost traffic appears to be entering I-95 from the Winter Street on-ramp from Delaware Avenue. Volumes on this ramp increase 300 vpd from 900 to 1,200 vpd, an increase of 33.3 percent. The Race Street on-ramp also increases in this option, growing by 700 vpd, or 10.9 percent. The shift of northbound I-95 traffic to more southerly access at Winter Street appears in the forecasts on Delaware Avenue. Whereas southbound Delaware Ave volumes increase modestly (100 to 300 vpd), northbound traffic decreases by 200 and 400 vpd near Shackamaxon and Berks streets, respectively. The effect of removing the Delaware/Richmond on-ramp to

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 14A. 2025 Build Option 6 and No-Build Alternative Average Daily Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 14B. 2025 Build Option 6 and No-Build Alternative Average Daily Traffic Volumes

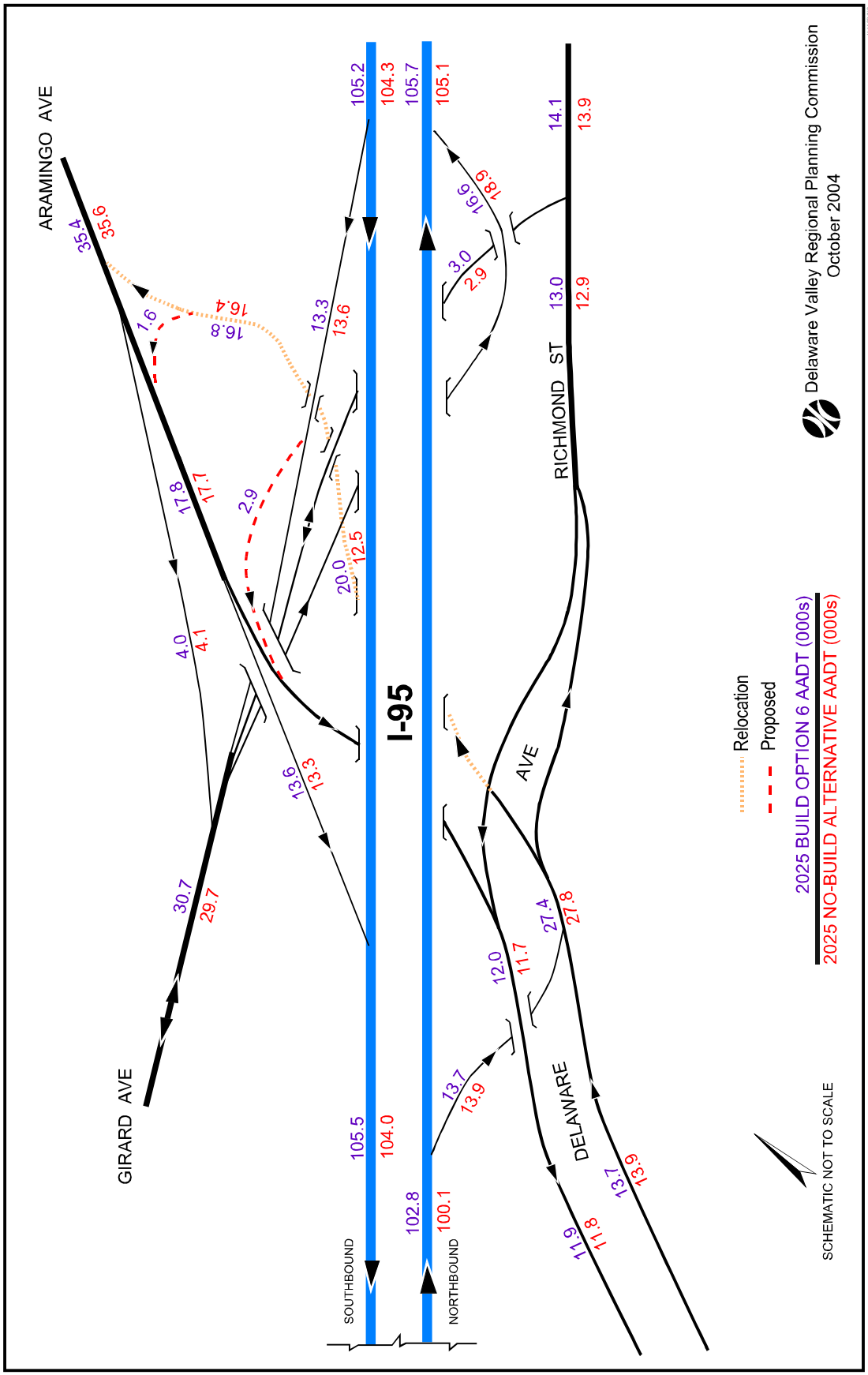
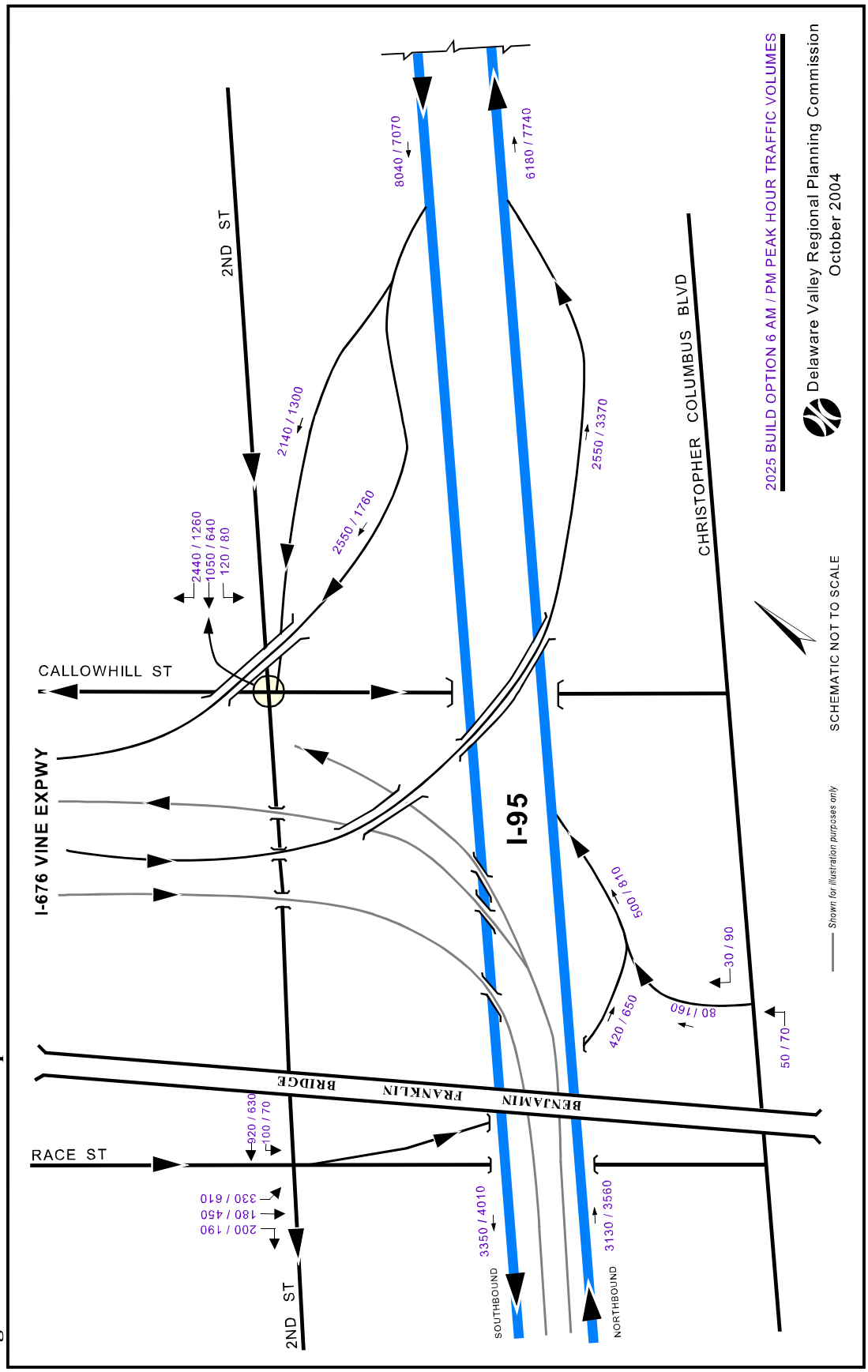


Table 5
2025 No-Build Alternative and Build Option 6 Average Daily Traffic Volumes

Highway Facility	Location From	To	2025 No-Build Forecast	Build Option 6 2025 AADT	Versus No-Build Alt Diff.	% Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	48,100	49,400	1,300	2.7%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	54,900	55,400	500	0.9%
I-95 NB	I-676 on-ramp	Girard Ave	100,100	102,800	2,700	2.7%
I-95 SB	Girard Ave on-ramp	I-676/Callowhill off-ramp	104,000	105,500	1,500	1.4%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	105,100	105,700	600	0.6%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	104,300	105,200	900	0.9%
Sub-Total			**516,500**	**524,000**	**7,500**	**1.5%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	6,400	7,100	700	10.9%
I-95 NB On-ramp	Winter St	I-95	900	1,200	300	33.3%
I-95 NB On-ramp	I-676	I-95	44,700	45,100	400	0.9%
I-95 SB Off-ramp	I-95	Callowhill St	20,200	20,600	400	2.0%
I-95 SB Off-ramp	I-95	I-676	28,900	29,500	600	2.1%
I-95 NB Off-ramp	I-95	Delaware Ave	13,900	13,700	-200	-1.4%
I-95 NB On-ramp *	Delaware/Girard intersection	I-95	18,900	16,600	-2,300	-12.2%
I-95 SB Off-ramp	I-95	Girard Ave	13,600	13,300	-300	-2.2%
I-95 SB Off-ramp	Aramingo Ave	I-95	13,300	13,600	300	2.3%
I-95 SB Off-ramp	Girard Ave off-ramp	Delaware Ave SB	N/A	2,900	2,900	N/A
Sub-Total			**160,800**	**163,600**	**2,800**	**1.7%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp	13,900	13,700	-200	-1.4%
Delaware Ave SB	I-95 NB off-ramp	Shackamaxon St	11,800	11,900	100	0.8%
Delaware Ave NB	I-95 NB off-ramp	Berks St	27,800	27,400	-400	-1.4%
Delaware Ave SB	Berks St	I-95 NB off-ramp	11,700	12,000	300	2.6%
Girard Ave	Berks St	Susquehanna Ave	29,700	30,700	1,000	3.4%
Girard Ave	Under I-95		2,900	3,000	100	3.4%
Aramingo Ave NB	Delaware Ave	Norris St	12,500	20,000	7,500	60.0%
Aramingo Ave SB	Norris St	I-95 SB on-ramp	17,700	17,800	100	0.6%
Aramingo Ave	Dauphin St	York St	35,600	35,400	-200	-0.6%
Aramingo Ave	SB connection to Girard Ave		4,100	4,000	-100	-2.4%
Aramingo Reverse move **	Aramingo Ave NB	Aramingo Ave SB	N/A	1,600	1,600	N/A
Aramingo Ave NB	Girard Ave	Aramingo reverse move **	16,400	16,800	400	2.4%
Richmond St	Delaware Ave	Girard Ave	12,900	13,000	100	0.8%
Richmond St	Girard Ave	York St	13,900	14,100	200	1.4%
Sub-Total			**210,900**	**221,400**	**10,500**	**5.0%**
Total			**888,200**	**909,000**	**20,800**	**2.3%**

* Relocated in this option

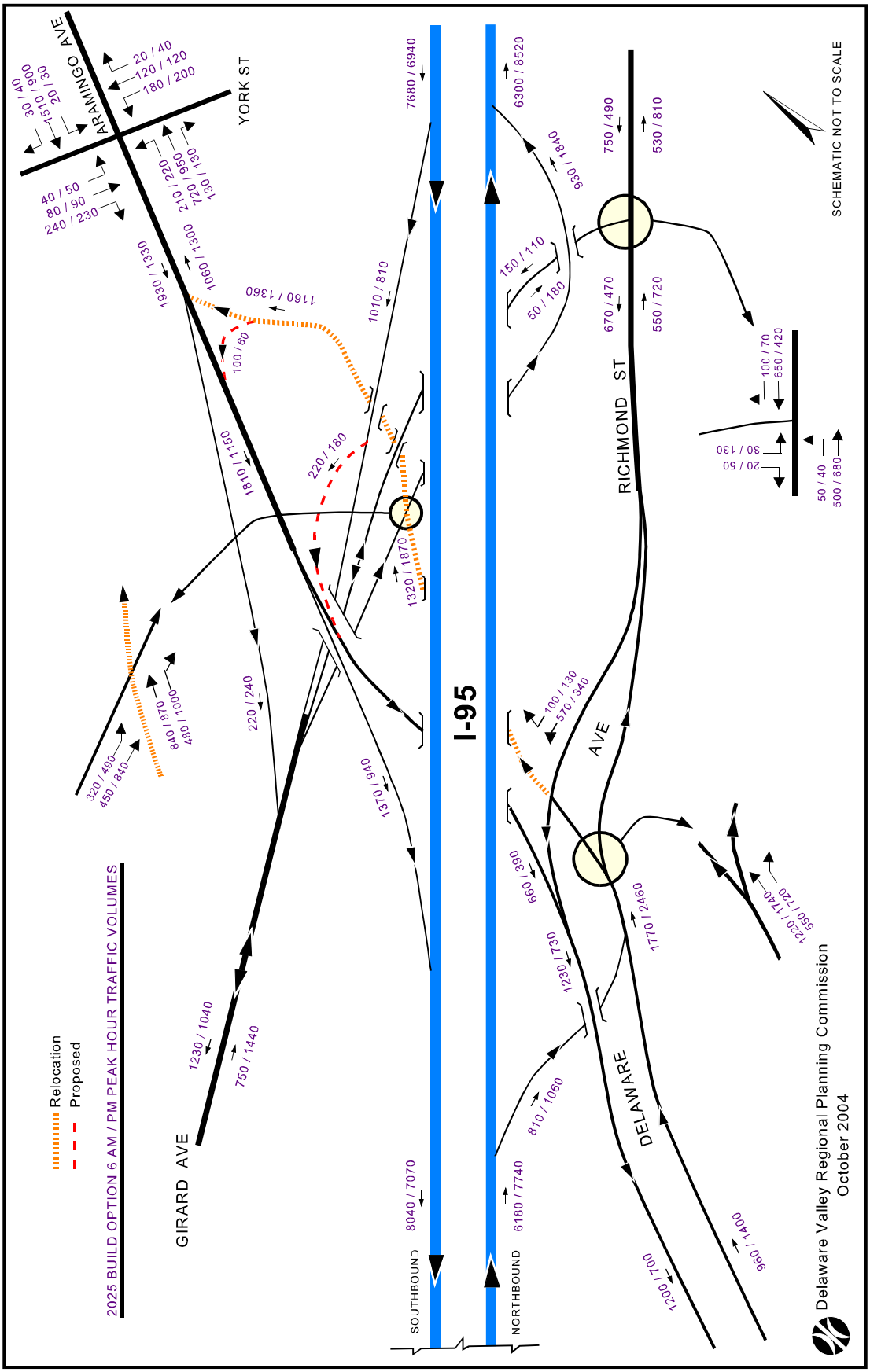
** New in this option



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 14C. 2025 Build Option 6 AM / PM Peak Hour Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 14D. 2025 Build Option 6 AM / PM Peak Hour Traffic Volumes



northbound I-95 has a marked effect on Aramingo Avenue south of the intersection with Girard Avenue. The No-Build Alternative forecast on this segment of 12,500 grows to 20,000 vpd, a 60 percent increase. North of the intersection there is little effect on volumes. A growth of only 400 vpd is forecast between this option and the no-build alternative. The reverse move to Aramingo southbound handles 1,600 vpd, partly due to the new choice of Girard Avenue traffic having access to southbound I-95 via the Aramingo Avenue ramp.

Examining the peak hour forecasts reveals the opposite effects the new Girard/northbound Aramingo Avenue intersection has on traffic destined to northbound I-95. While peak hour volumes from Delaware Avenue and Richmond Street decline by 180 and 270 vehicles in the AM and PM, respectively, volumes from Girard Avenue increase by 50 and 70 vehicles in these same periods. Together with the access to southbound I-95, the increase on Girard Avenue is 4.8 and 5.1 percent in the AM and PM peak periods, respectively.

F. Build Option 7

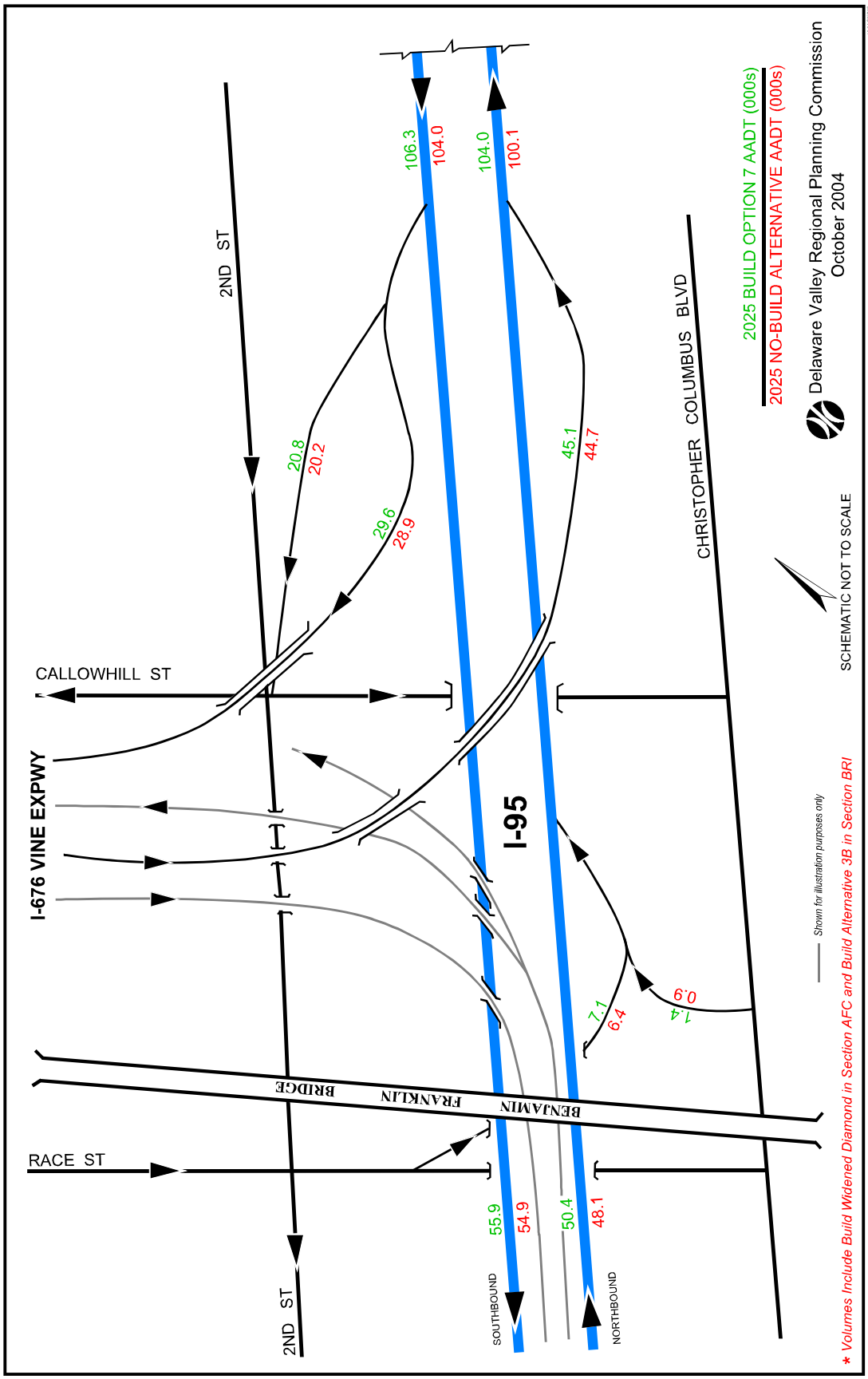
Build Option 7 was developed after preferred Build Alternatives for Sections AFC and BRI were selected. Therefore, the assumptions for Build Option 7 differ from those used in prior options.

Build Option 7 combines features from build options 4 and 6. Similar to Build Option 4, the northbound I-95 off-ramp to Delaware Avenue is moved north to a new intersection on Richmond Street. The northbound on-ramps from Delaware Avenue/Richmond Street and Girard Avenue are removed and replaced with a new on-ramp from Richmond Street at the same location where the northbound off-ramp intersects Richmond Street. From Build Option 6 the separation of Aramingo Avenue into north and southbound components is included. The reverse move from Aramingo northbound to southbound is included to give Delaware Avenue traffic access to the I-95 southbound on-ramp. As in Build Option 6, the spur ramp from the I-95 southbound off-ramp to Girard Avenue gives access only to Aramingo Avenue southbound. Daily traffic forecasts for Option 7 and the No-Build Alternative are displayed on ***figures 15A and 15B*** and presented in tabular form on ***table 6***. Peak period forecasts are presented on ***figures 15C and 15D***.

Traffic forecasts for I-95 are in line with the other build options, with between two and five percent more traffic than under the No-Build Alternative. The growth in northbound volumes is slightly higher than for southbound volumes. Traffic increases of 4.8 percent, 3.9 percent and 2.9 percent are expected for the sections south of I-676 , between the I-676 and Girard interchanges, and north of Girard Avenue, respectively. In the southbound direction, the growth is 1.8 percent, 2.2 percent and 1.8 percent for these same segments from north to south. In absolute terms, Build Option 7 adds about 3,000 vpd by direction in the Girard Avenue Interchange vicinity.

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 15A. 2025 Build Option 7 and No-Build Alternative Average Daily Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 15B. 2025 Build Option 7 and No-Build Alternative Average Daily Traffic Volumes

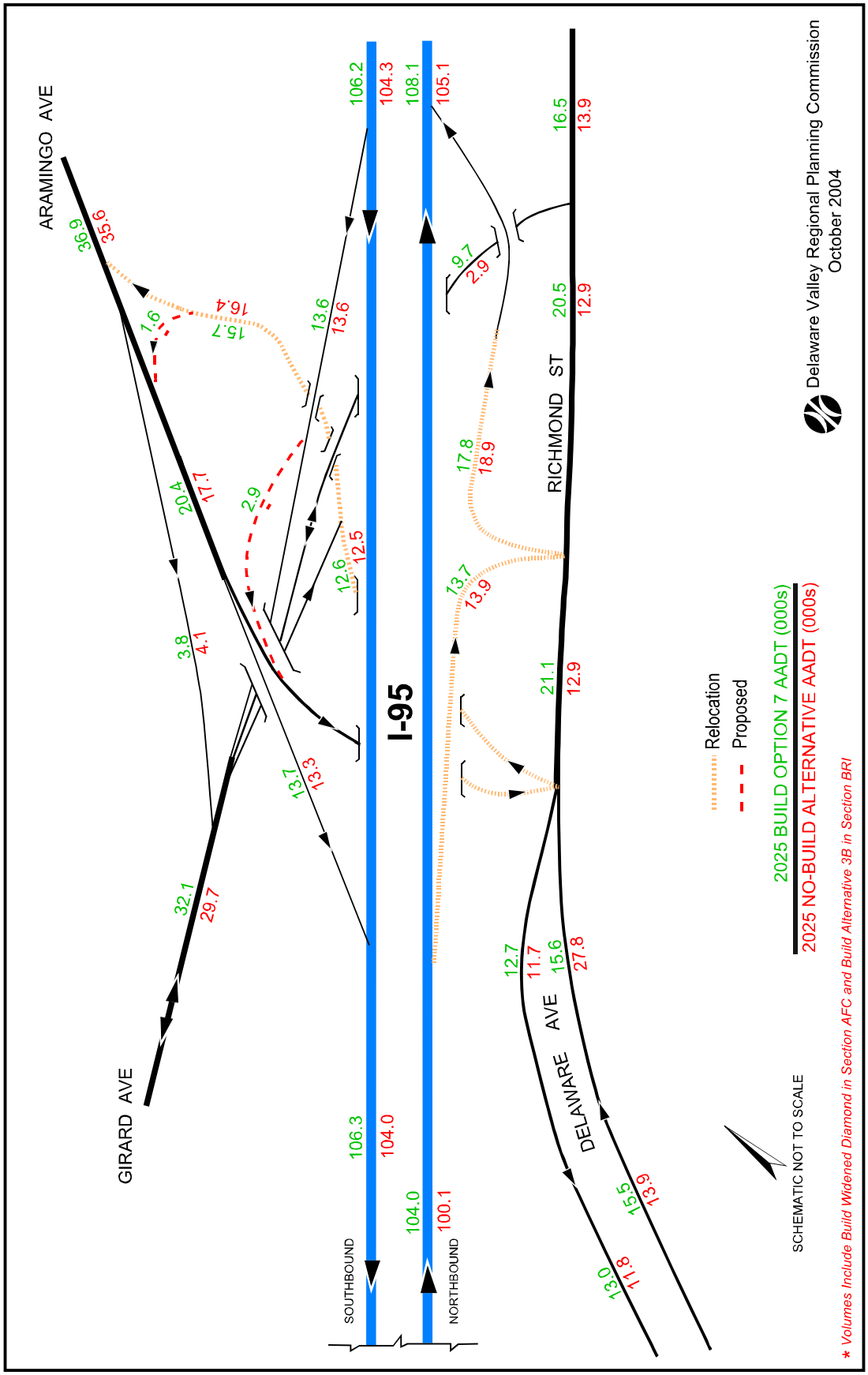


Table 6
2025 No-Build Alternative and Build Option 7 Average Daily Traffic Volumes

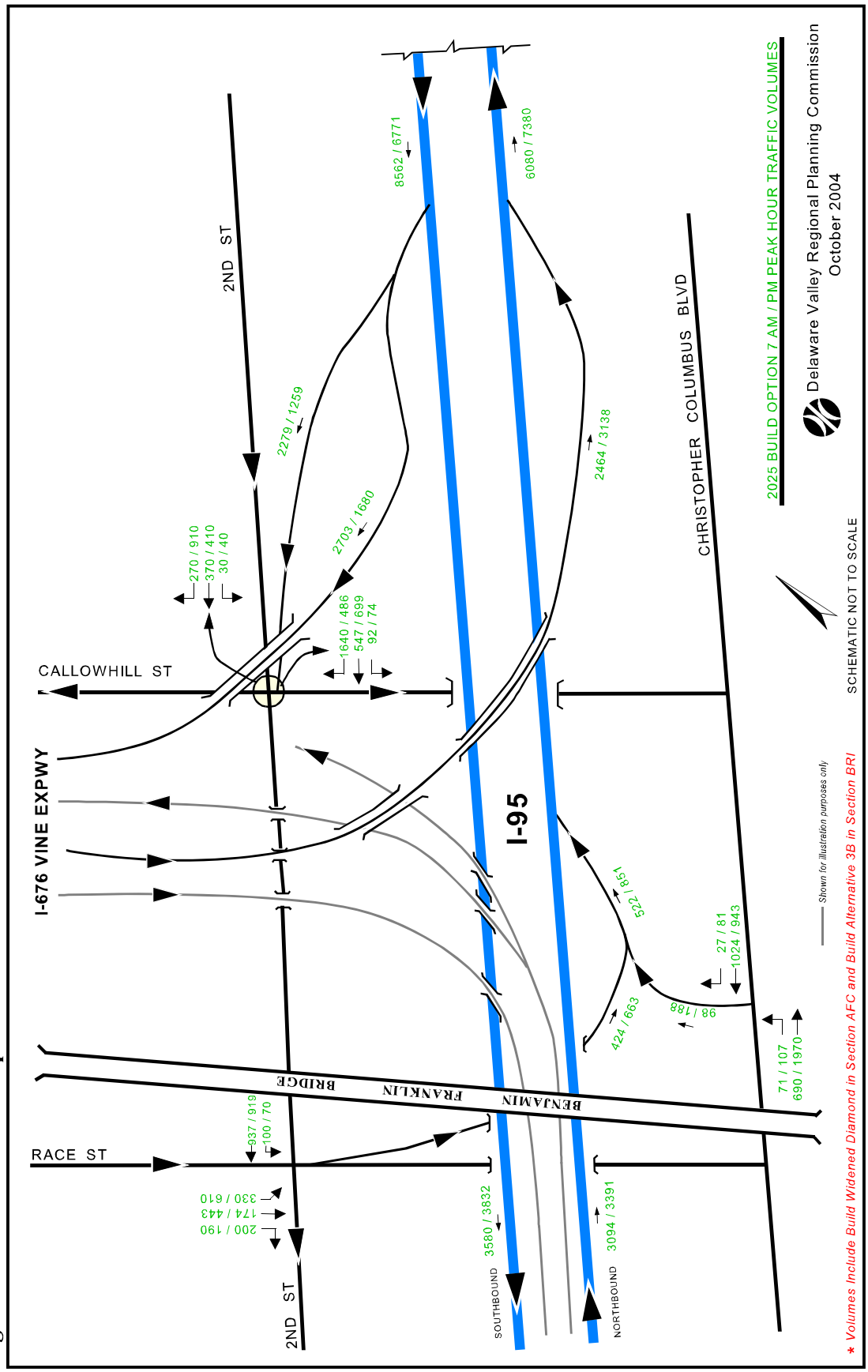
Highway Facility	Location From	To	2025 No-Build Forecast	Build Option 7 2025 AADT	Versus No-Build Alt Diff.	% Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	48,100	50,800	2,700	5.6%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	54,900	57,100	2,200	4.0%
I-95 NB	I-676 on-ramp	Girard Ave	100,100	105,600	5,500	5.5%
I-95 SB	Girard Ave on-ramp	I-676/Callowhill off-ramp	104,000	109,400	5,400	5.2%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	105,100	110,200	5,100	4.9%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	104,300	109,300	5,000	4.8%
Sub-Total			**516,500**	**542,400**	**25,900**	**5.0%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	6,400	7,300	900	14.1%
I-95 NB On-ramp	Winter St	I-95	900	1,600	700	77.8%
I-95 NB On-ramp	I-676	I-95	44,700	45,900	1,200	2.7%
I-95 SB Off-ramp	I-95	Callowhill St	20,200	21,300	1,100	5.4%
I-95 SB Off-ramp	I-95	I-676	28,900	31,000	2,100	7.3%
I-95 NB Off-ramp *	I-95	Richmond St	13,900	13,200	-700	-5.0%
I-95 NB On-ramp *	Richmond St	I-95	18,900	17,800	-1,100	-5.8%
I-95 SB Off-ramp	I-95	Girard Ave	13,600	13,400	-200	-1.5%
I-95 SB On-ramp	Aramingo Ave	I-95	13,300	13,500	200	1.5%
I-95 SB Off-ramp	Girard Ave off-ramp	Delaware Ave SB	N/A	2,800	2,800	N/A
Sub-Total			**160,800**	**167,800**	**7,000**	**4.4%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp*	13,900	15,500	1,600	11.5%
Delaware Ave SB	I-95 NB off-ramp *	Shackamaxon St	11,800	13,000	1,200	10.2%
Delaware Ave NB	I-95 NB off-ramp *	Berks St	27,800	15,600	-12,200	-43.9%
Delaware Ave SB	Berks St	I-95 NB off-ramp *	11,700	12,700	1,000	8.5%
Girard Ave	Berks St	Susquehanna Ave	29,700	31,700	2,000	6.7%
Girard Ave	Under I-95		2,900	9,400	6,500	224.1%
Aramingo Ave NB	Delaware Ave	Norris St	12,500	12,600	100	0.8%
Aramingo Ave SB	Norris St	I-95 SB on-ramp	17,700	20,200	2,500	14.1%
Aramingo Ave	Dauphin St	York St	35,600	36,900	1,300	3.7%
Aramingo Ave	SB connection to Girard Ave		4,100	3,800	-300	-7.3%
Aramingo Reverse move **	Aramingo Ave NB	Aramingo Ave SB	N/A	1,500	1,500	N/A
Aramingo Ave NB	Girard Ave	Aramingo reverse move **	16,400	15,900	-500	-3.0%
Richmond St	Delaware Ave	Girard Ave	12,900	20,800	7,900	61.2%
Richmond St	Girard Ave	York St	13,900	15,700	1,800	12.9%
Sub-Total			**210,900**	**225,300**	**14,400**	**6.8%**
Total			**888,200**	**935,500**	**47,300**	**5.3%**

* Relocated in this option

** New in this option

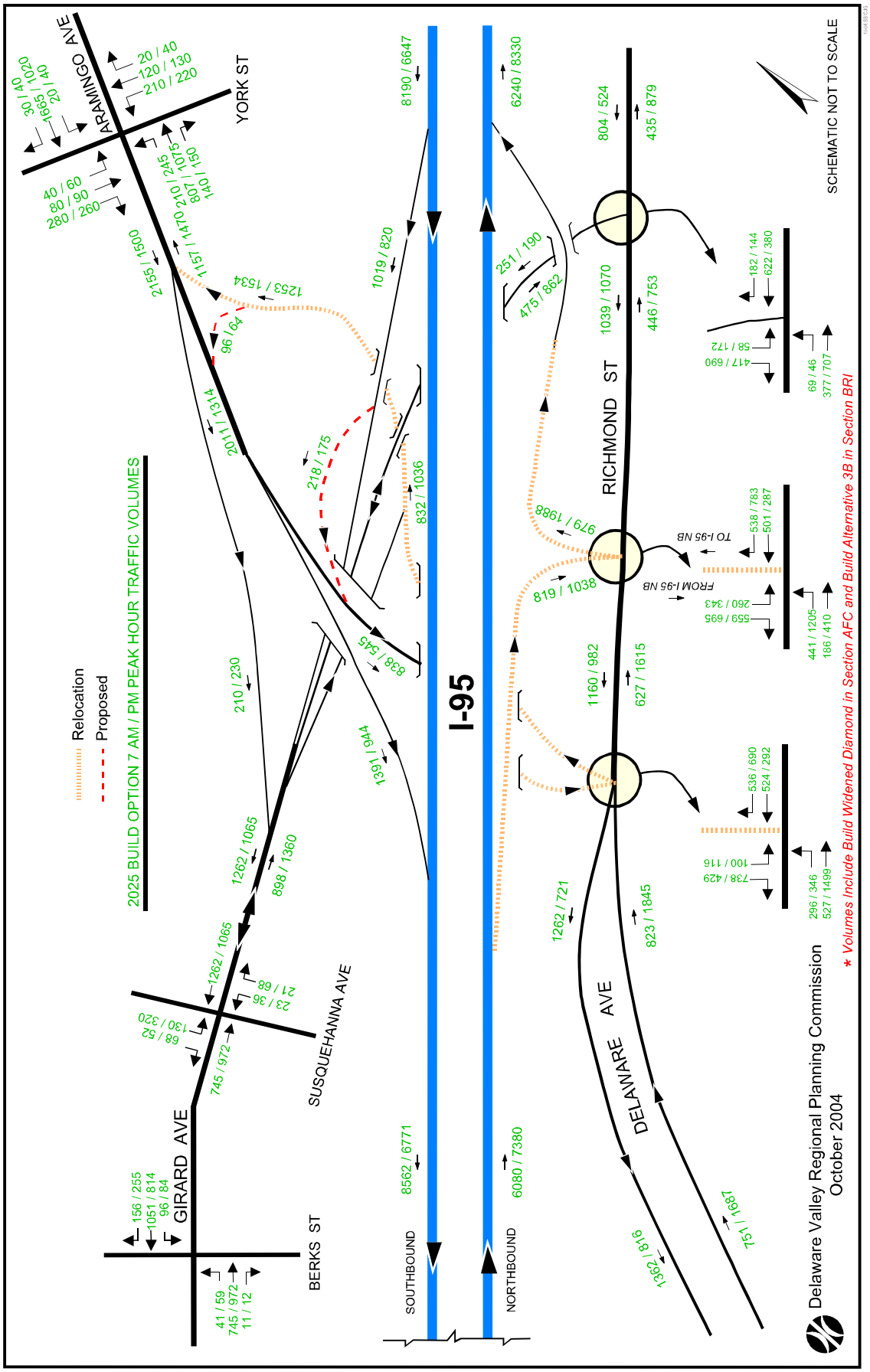
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 15C. 2025 Build Option 7 AM / PM Peak Hour Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 15D. 2025 Build Option 7 AM / PM Peak Hour Traffic Volumes



As is the case with Build Option 4, relocating the northbound I-95 off and on-ramps to Richmond Street decreases their attractiveness when compared to the no-build condition. The northbound off-ramp forecast declines by 200 vpd (1.4 percent), while the on-ramp decline is larger at 1,100 vpd (5.8 percent). These declines are compensated by increases in the forecasts for the Race and Winter streets on-ramps. The Race Street on-ramp grows by 700 vpd (10.9 percent); the absolute growth on the Winter Street ramp is small (500 vpd), but the lower current volume on this ramp translates this into a larger growth rate (55.6 percent). Volume on the spur from the I-95 southbound off-ramp to Girard Avenue is similar to the forecast in Build Option 6 (2,900 vpd). Changes to the volume on other ramps in the study area are minor, with the exception of the ramps to and from I-676 and off-ramp to Callowhill Street; these increases of 0.9 to 3.0 percent can be attributed to the higher I-95 mainline volumes.

Arterial volume traffic forecasts reflect these changes to the ramp configuration. Traffic Volumes on Delaware Avenue increase modestly, in the range of eight to twelve percent, except on the northbound segment north of where the former I-95 northbound off-ramp entered the cart-path. At this location, volumes decline by 12,200 vpd (43.9 percent), reflecting the loss of traffic from the ramp. Richmond Street sustains large increases in traffic due to the location of the new I-95 northbound ramps. Between Delaware Avenue and the ramps, volumes increase by 8,200 vpd (63.6 percent), while the growth north of Girard Avenue is somewhat less at 2,600 vpd (18.7 percent). Due to the necessity of Girard Avenue traffic bound for I-95 to travel to Richmond Street, traffic on the segment connecting to Richmond Street grows by 6,800 vpd (234.5 percent). This compares to an increase of 2,400 vpd (8.1 percent) on Girard Avenue south of the interchange. Significant growth also occurs on Aramingo Avenue southbound north of the I-95 southbound on-ramp. Increases of 2,700 vpd (15.3 percent) can partially be attributed to the reverse move from northbound to southbound Aramingo Avenue, which is forecast to have a volume of 1,600 vpd.

The effects of Option 7 on peak hour volumes vary. The higher I-95 mainline daily forecasts translate to increased peak hour volumes. At the Girard Interchange, northbound I-95 AM volumes increase about two percent while PM peak volumes remain essentially unchanged. As with the daily volumes, growth in the southbound direction is somewhat larger, at slightly over eight percent in the AM peak while declining almost one percent in the PM peak. Moving the northbound I-95 off-ramp has an effect in the PM peak, but none in the AM peak; declines are 3.9 percent in the PM peak. The reverse is true on the northbound on-ramp. Here the decline in the AM peak is 7.6 percent, while the reduction in the PM peak is only 2.5 percent. Relocating the ramps affects peak hour turning movements at the Richmond Street intersections with Delaware and Girard avenues. At the intersection of Delaware Avenue and Richmond Street, the dominant move in the No-Build Alternative was a through movement to Aramingo Avenue (and the entrance of the northbound on-ramp). Moving the ramps to Richmond Street changes the primary traffic movement on northbound Delaware Avenue to Richmond Street. In both the no-build and this build option southbound Aramingo Avenue traffic still continues to Delaware Avenue, although in the no-build situation that traffic never had access to the northbound on-

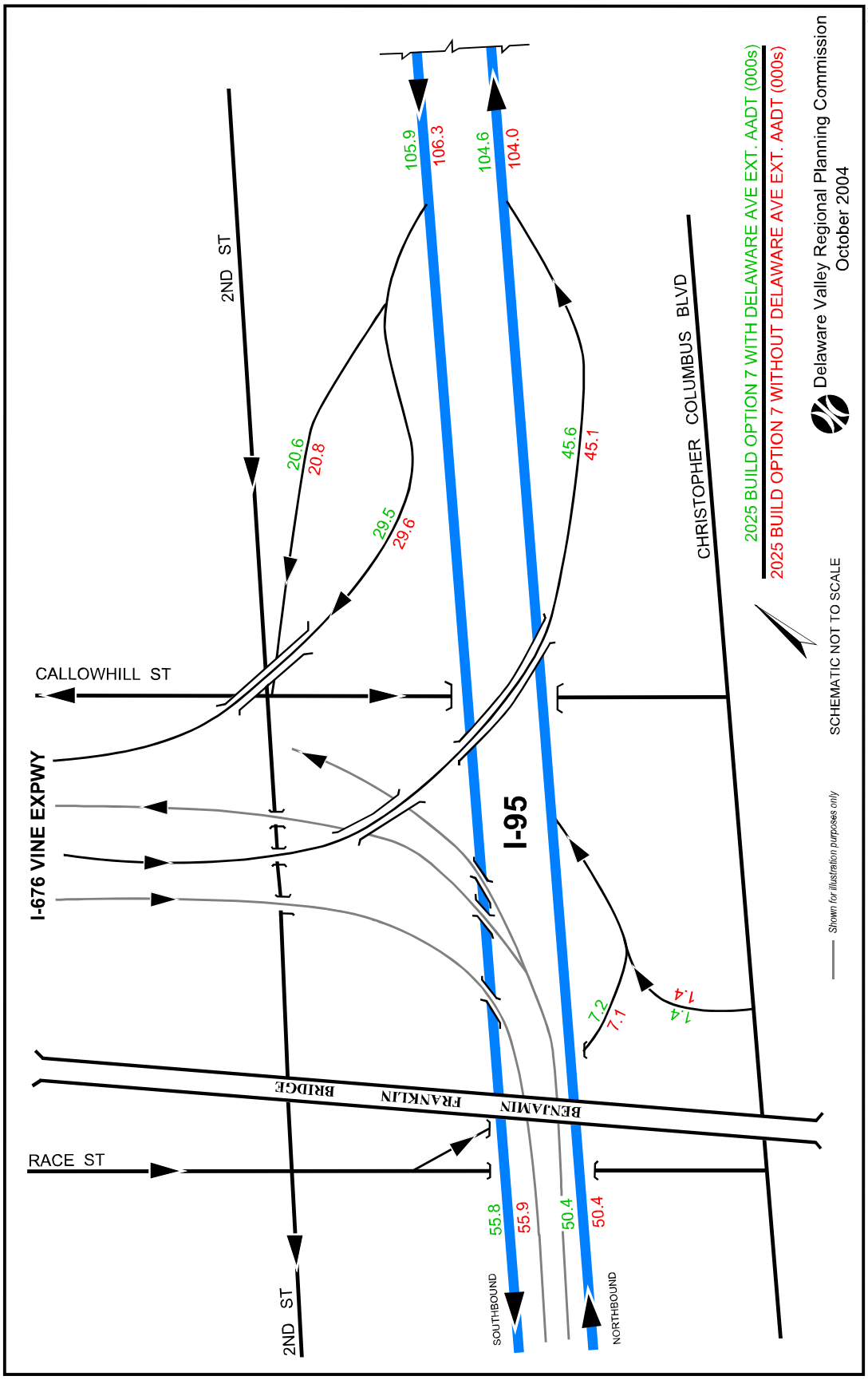
ramp. At the intersection of Girard Avenue and Richmond Street, traffic is balanced more evenly on the approaches than in the no-build case. For instance, in the No-Build Alternative, almost 87 percent of the approach traffic consists of through movements on Richmond Street. In this build option, this percentage declines to 54.0 percent.

G. Build Option 7 with Delaware Avenue Extension

This build option is the same as build option 7 as far as the configuration of I-95 and it's ramps. The purpose of this alternative was to test an extension of Delaware Avenue north. Just north of the Girard Avenue intersection with Richmond Street (renamed Delaware Avenue), Delaware Avenue diverges from Richmond Street onto a new alignment to the east of I-95. The purpose is twofold. First, it provides direct access between the Delaware Avenue waterfront south of the study area and Tioga Marine Terminal. Second, it presents an option for traffic from the Betsy Ross Bridge and neighborhoods in the vicinity of the Betsy Ross Bridge / I-95 interchange to access Center City Philadelphia via Delaware Avenue, thus removing this traffic from I-95.

Currently, the existing traffic travels on Richmond Street, which through much of this area is a two lane facility with parking on both sides and residential in character. Daily forecasts of the effects of this change are presented on ***figures 16A and 16B***, as well as in ***table 7***. Peak hour forecasts are presented on ***figures 16C and 16D*** . Although mainline I-95 traffic volumes still increase in this option versus the no-build, the increases are not as pronounced as those in Build Option 7 without the Delaware Avenue Extension. Northbound volumes south of I-676 are 50,400 versus 50,800 vpd, a difference of 400 vpd versus option 7 and 2,300 vpd when compared to the no-build. This difference increases closer to Girard Avenue. North of I-676, the difference grows to 1,000 vpd, and north of Girard Avenue, where the Delaware Avenue Extension parallels I-95, the difference is 3,300 vpd. At this point, volume is only 1,800 vpd (1.7 percent) higher than in the no-build scenario. The effect is similar southbound. Between Allegheny and Girard avenue's, 3,800 fewer vehicles use I-95 daily (109,300 vs.105,500) when the Delaware Avenue Extension is in place. The effect of the extension declines further south. South of I-676 Vine Expressway, for instance, the difference is only 1,300 vpd (57,100 vs. 55,800).

The most notable effect on I-95 ramps occurs on the northbound I-95 off and on-ramps at Richmond Street. Without the extension, the northbound off-ramp was forecast to see a decline in volume versus the No-Build Alternative (-700 vpd, or -5.0 percent). The construction of the Delaware Avenue extension reverses this trend. The forecast for this ramp increases 1,100 vpd (7.9 percent) versus the no-build alternative; this is 1,800 vpd different from build option 7 without the extension. The diversion of I-95 traffic to the new segment of Delaware Avenue is also evident on the northbound on-ramp. In Build Option 7 ramp volume declined 1,100 vpd (5.8 percent) with respect to the No-Build Alternative. This decline grows by 500 vpd (-1,600 vpd or -8.5 percent) when Delaware Avenue is extended. The effect of this roadway network change on other I-95 ramps is minimal, never accounting for more than a few hundred vehicles.



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 16A. 2025 Build Option 7 with and without Delaware Avenue Extension Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 16B. 2025 Build Option 7 with and without Delaware Avenue Extension Average Daily Traffic Volumes

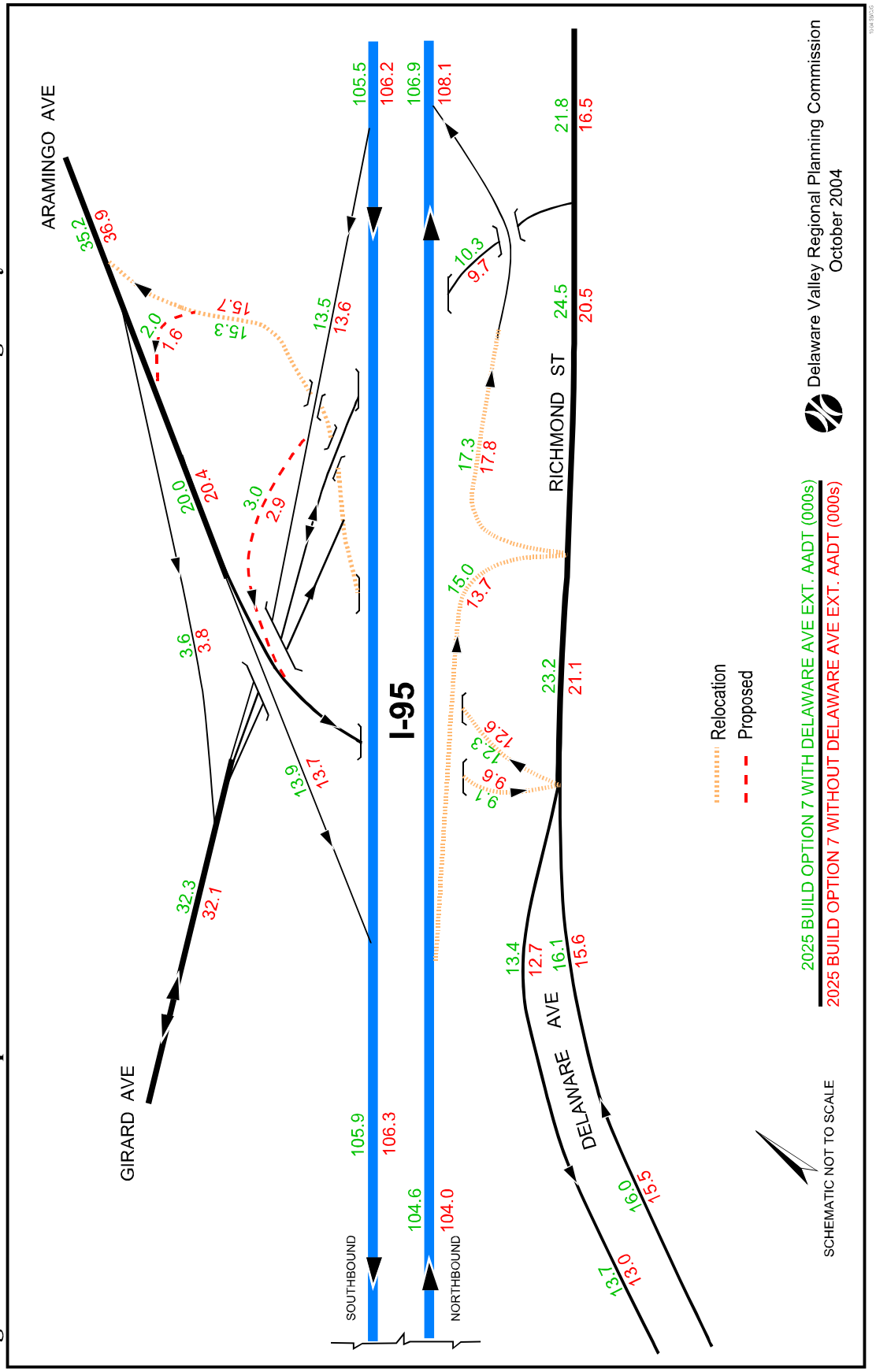


Table 7
2025 No-Build Alternative and Build Option 7 with Delaware Avenue Extension
Average Daily Traffic Volumes

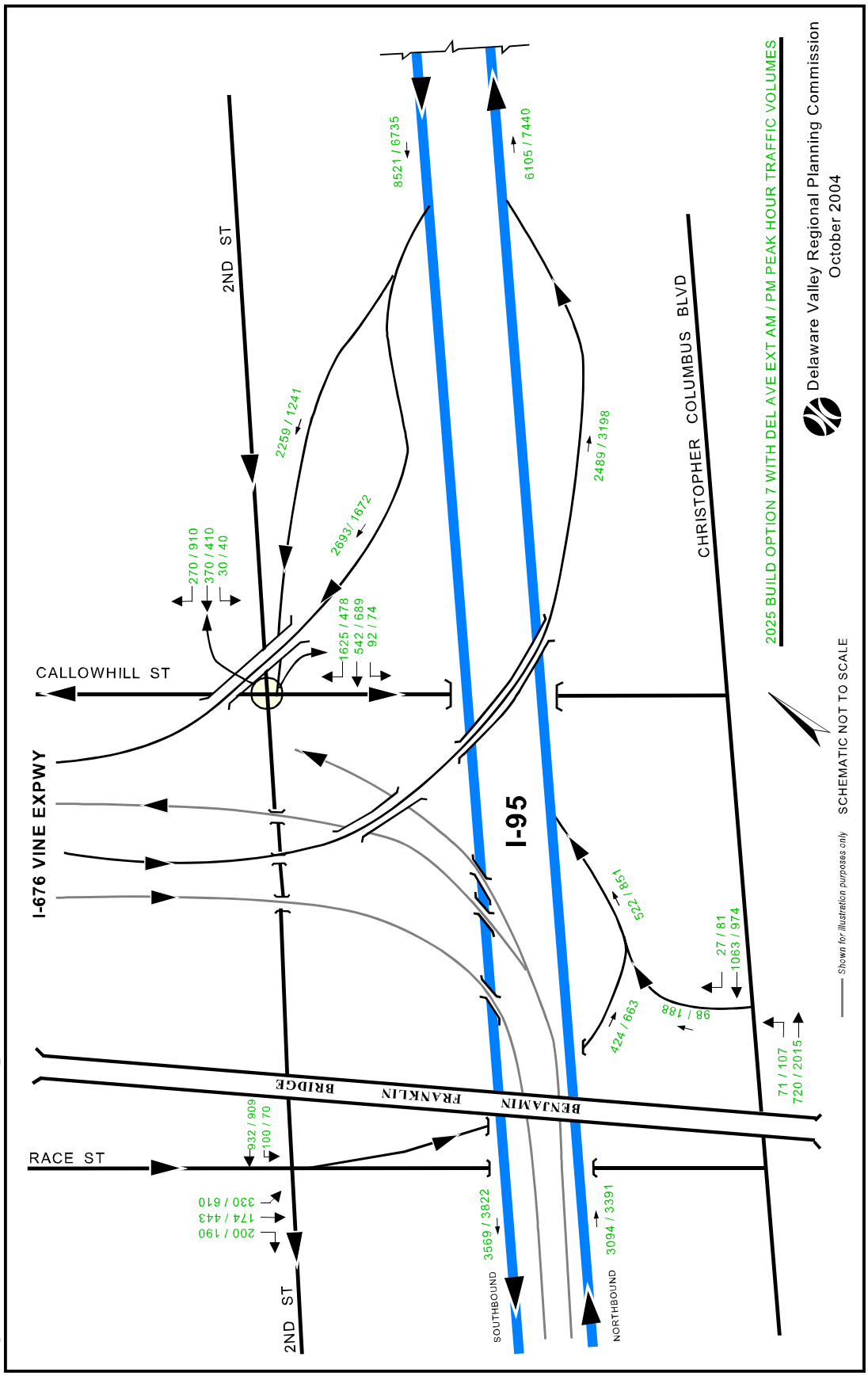
Highway Facility	Location From	To	2025 No-Build Forecast	Build Option 7 with Delaware Ave Ext 2025 AADT	Versus No-Build Alt Diff.	% Diff.
I-95 Main Line						
I-95 NB	Columbus Blvd on-ramp	Race St on-ramp	48,100	50,400	2,300	4.8%
I-95 SB	I-676/Callowhill off-ramp	I-676 on-ramp	54,900	55,800	900	1.6%
I-95 NB	I-676 on-ramp	Girard Ave	100,100	104,600	4,500	4.5%
I-95 SB	Girard Ave on-ramp	I-676/Callowhill off-ramp	104,000	105,900	1,900	1.8%
I-95 NB	Delaware/Girard on-ramp	Allegheny Ave off-ramp	105,100	106,900	1,800	1.7%
I-95 SB	Allegheny Ave on-ramp	Girard/Delaware off-ramp	104,300	105,500	1,200	1.2%
Sub-Total			**516,500**	**529,100**	**12,600**	**2.4%**
I-95 Ramps						
I-95 NB On-ramp	Race St	I-95	6,400	7,200	800	12.5%
I-95 NB On-ramp	Winter St	I-95	900	1,400	500	55.6%
I-95 NB On-ramp	I-676	I-95	44,700	45,600	900	2.0%
I-95 SB Off-ramp	I-95	Callowhill St	20,200	20,600	400	2.0%
I-95 SB Off-ramp	I-95	I-676	28,900	29,500	600	2.1%
I-95 NB Off-ramp *	I-95	Richmond St	13,900	15,000	1,100	7.9%
I-95 NB On-ramp *	Richmond St	I-95	18,900	17,300	-1,600	-8.5%
I-95 SB Off-ramp	I-95	Girard Ave	13,600	13,500	-100	-0.7%
I-95 SB Off-ramp	Aramingo Ave	I-95	13,300	13,900	600	4.5%
I-95 SB Off-ramp	Girard Ave off-ramp	Delaware Ave SB	N/A	3,000	3,000	N/A
Sub-Total			**160,800**	**167,000**	**6,200**	**3.9%**
Arterial Facilities						
Delaware Ave NB	Shackamaxon St	I-95 NB off-ramp *	13,900	16,000	2,100	15.1%
Delaware Ave SB	I-95 NB off-ramp *	Shackamaxon St	11,800	13,700	1,900	16.1%
Delaware Ave NB	I-95 NB off-ramp *	Berks St	27,800	16,100	-11,700	-42.1%
Delaware Ave SB	Berks St	I-95 NB off-ramp *	11,700	13,400	1,700	14.5%
Girard Ave	Berks St	Susquehanna Ave	29,700	32,300	2,600	8.8%
Girard Ave	Under I-95		2,900	10,300	7,400	255.2%
Aramingo Ave NB	Delaware Ave	Norris St	12,500	12,300	-200	-1.6%
Aramingo Ave SB	Norris St	I-95 SB on-ramp	17,700	20,000	2,300	13.0%
Aramingo Ave	Dauphin St	York St	35,600	35,200	-400	-1.1%
Aramingo Ave	SB connection to Girard Ave		4,100	3,600	-500	-12.2%
Aramingo Reverse move **	Aramingo Ave NB	Aramingo Ave SB	N/A	2,000	1,500	N/A
Aramingo Ave NB	Girard Ave	Aramingo reverse move **	16,400	15,300	-1,100	-6.7%
Richmond St	Delaware Ave	Girard Ave	12,900	23,200	10,300	79.8%
Richmond St	Girard Ave	York St	13,900	21,800	7,900	56.8%
Sub-Total			**210,900**	**235,200**	**23,800**	**11.5%**
Total			**888,200**	**931,300**	**43,100**	**4.9%**

* Relocated in this option

** New in this option

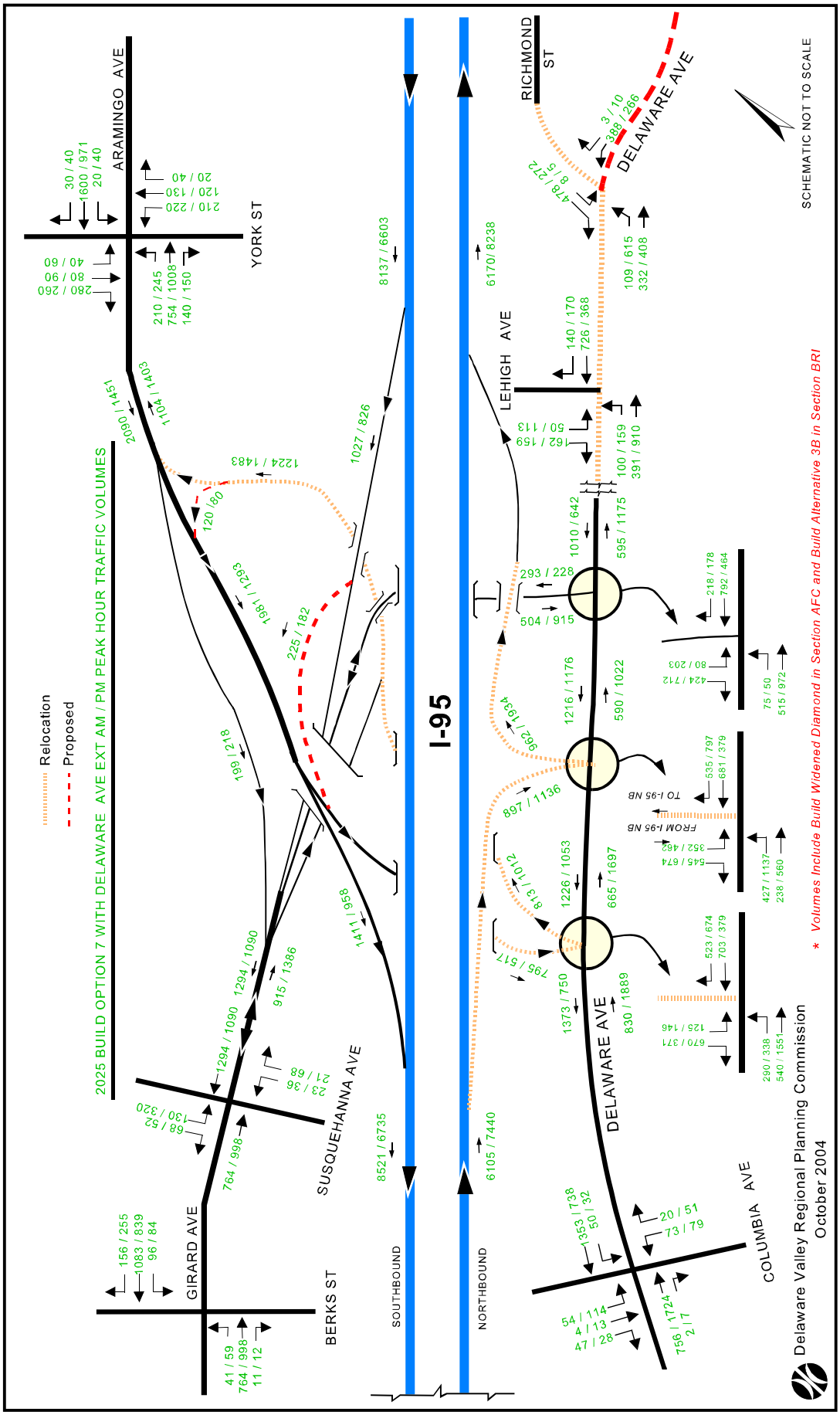
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 16C. 2025 Build Option 7 with Delaware Avenue Extension AM / PM Peak Hour Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 16D. 2025 Build Option 7 with Delaware Avenue Extension AM / PM Peak Hour Traffic Volumes



As expected, the primary impact of the Delaware Avenue Extension on the arterial network in the study area is on Delaware Avenue and Richmond Street. South of the new intersection with Aramingo Avenue, Delaware Avenue northbound volumes grow by 500 vpd with and without the extension, respectively. Southbound the increase is slightly higher at 700 vpd. Richmond Street, (renamed Delaware Avenue) in the vicinity of the I-95 ramps experiences the greatest change. South of the ramps, the growth is 2,400 vpd, while north of Girard Avenue the increase is 6,100 vpd. The volume at this location, 21,800 vpd, is 7,800 vpd (56.8 percent) greater than the No-Build Alternative volume of 13,900 vpd.

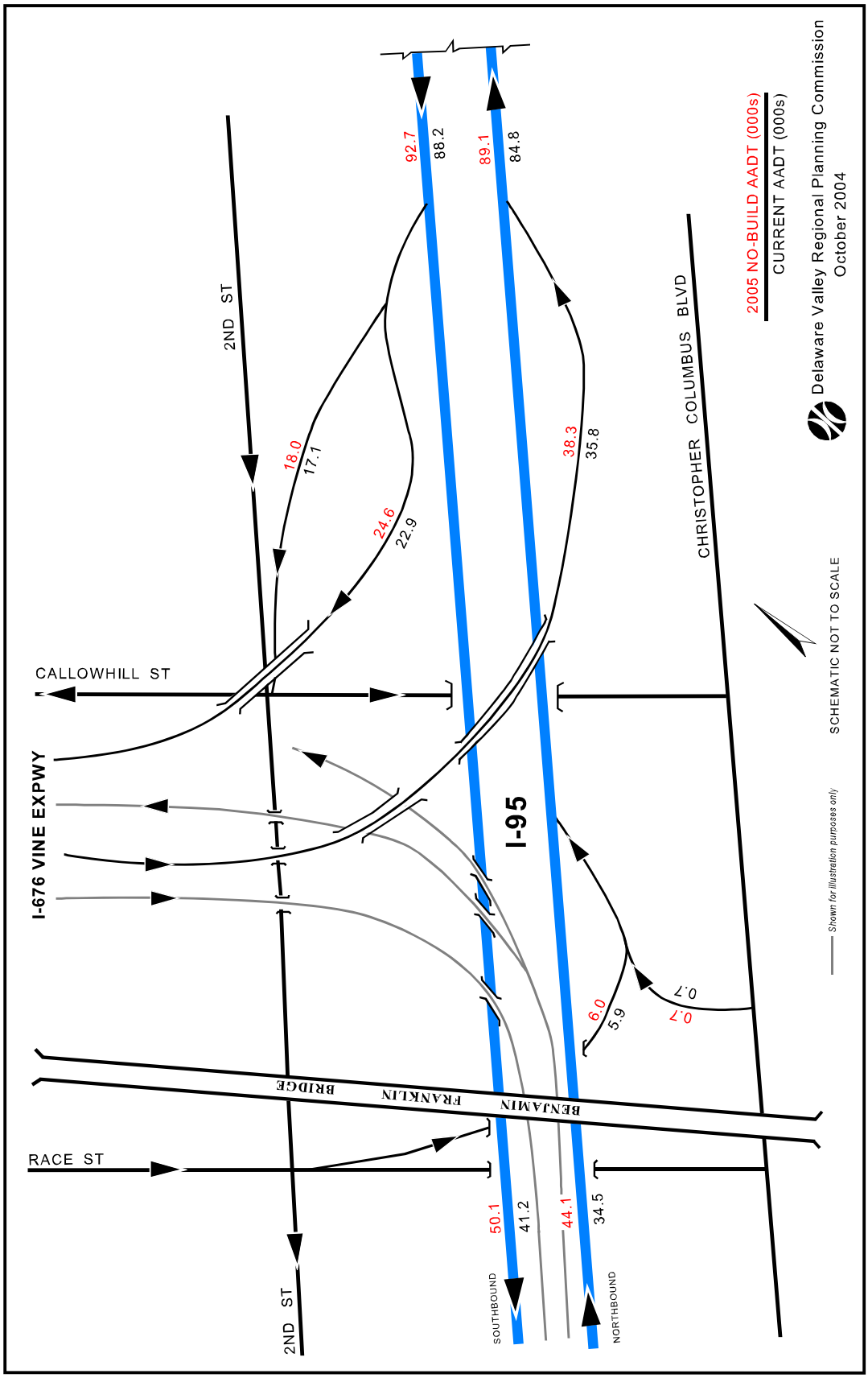
Peak hour volume increases occasioned by the construction of the Delaware Avenue Extension are pronounced close to the extended roadway. South of the intersection with Aramingo Avenue, southbound AM and PM peak volumes increase by approximately 50 vehicles. The same is true for the northbound PM peak. This same growth is evident on renamed Delaware Avenue between Aramingo Avenue and the I-95 ramps. North of the I-95 ramps, southbound AM and PM volume increases are still about 50 vehicles; however the effect of the northbound off-ramp increases AM and PM peak volumes northbound by approximately 130 and 260 vehicles, respectively. North of Girard Avenue the difference is more pronounced: Southbound volumes are 210 (AM) and 112 (PM) vehicles higher; while northbound the figures are 165 and 375 vehicles for the same periods. As with the daily volumes, the northbound off-ramp is expected to experience volume increases while the northbound on-ramp volume will decline. The northbound growth is forecast to be approximately 100 vehicles in the AM peak and 140 vehicles in the PM peak. Decreases on the on-ramp are less prominent, being about 30 and 60 vehicles in the AM and PM peak periods, respectively.

H. 2005 Traffic Forecasts

DVRPC was requested to prepare year 2005 traffic forecasts for the No-Build Alternative and Build Options 3 through 7. In the build scenarios, these forecasts represent opening year forecasts. Generally, these measure the effect of the change to the roadway network in place, but with shorter range demographic forecasts and other factors which theoretically have fewer unknowns and therefore produce more accurate forecasts.

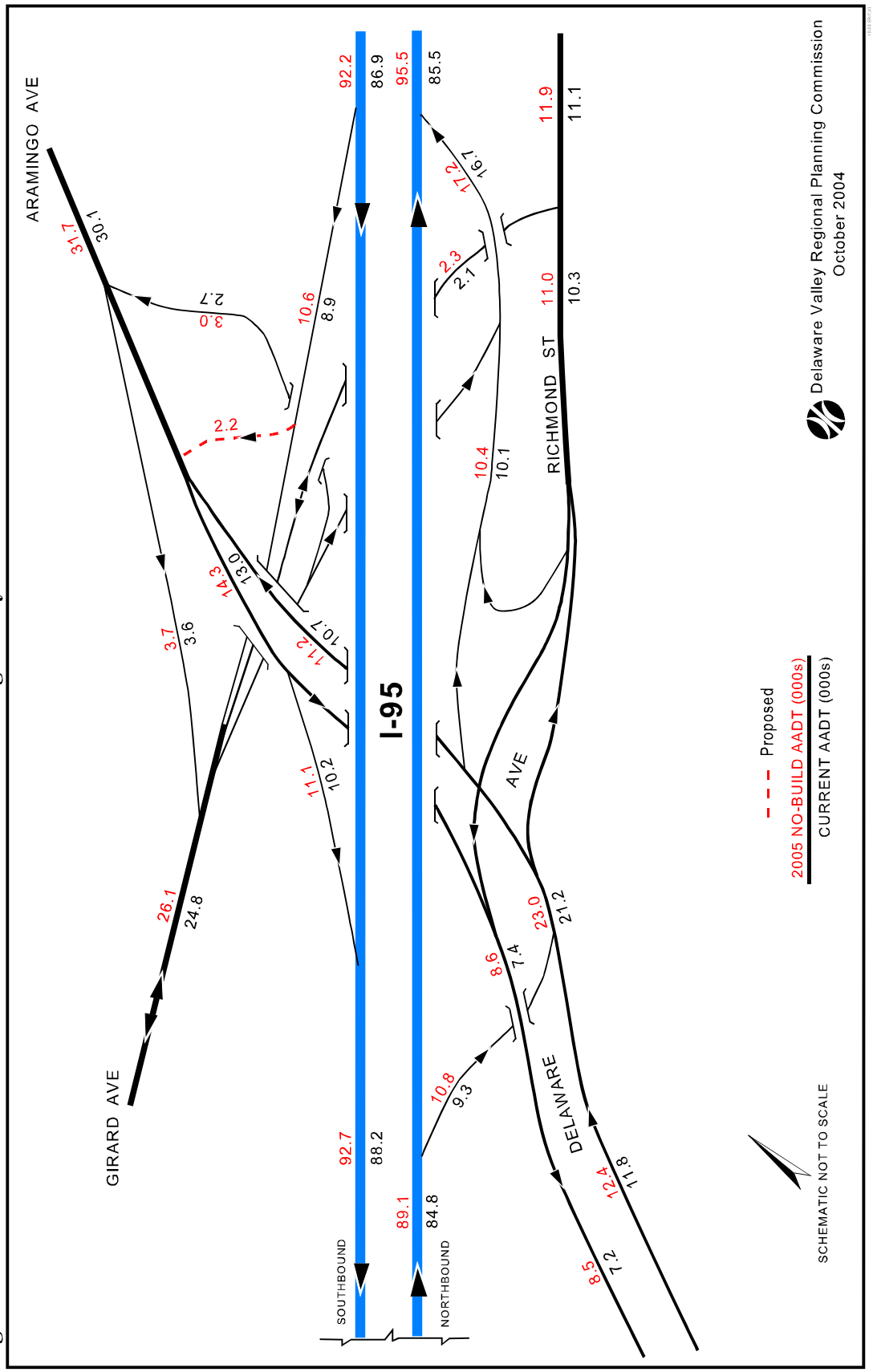
Figures 17A and 17B contrast the current AADT with the 2005 No-Build Alternative forecasts. ***Figures 17C and 17D*** present the 2005 AM and PM peak hour traffic forecasts for road segments and turning movements under the No-Build Alternative. ***Figures 18A through 18D*** present this information for Build Option 3. Likewise ***figures 19A through 19D*** present Build Option 4. Build Option 5 2005 traffic forecasts are shown on ***figures 20A through 20D***, while the same information for Build Option 6 is presented on ***figures 21A through 21D***. ***Figures 22A through 22D*** present the traffic forecasts for Build Option 7 in the year 2005. Finally, ***figures 23A through 23D*** display the traffic forecasts for Build Option 7 with Delaware Avenue Extension in the year 2010 (2010 is presented rather than 2005 to be consistent with work performed for I-95 Section AFC).

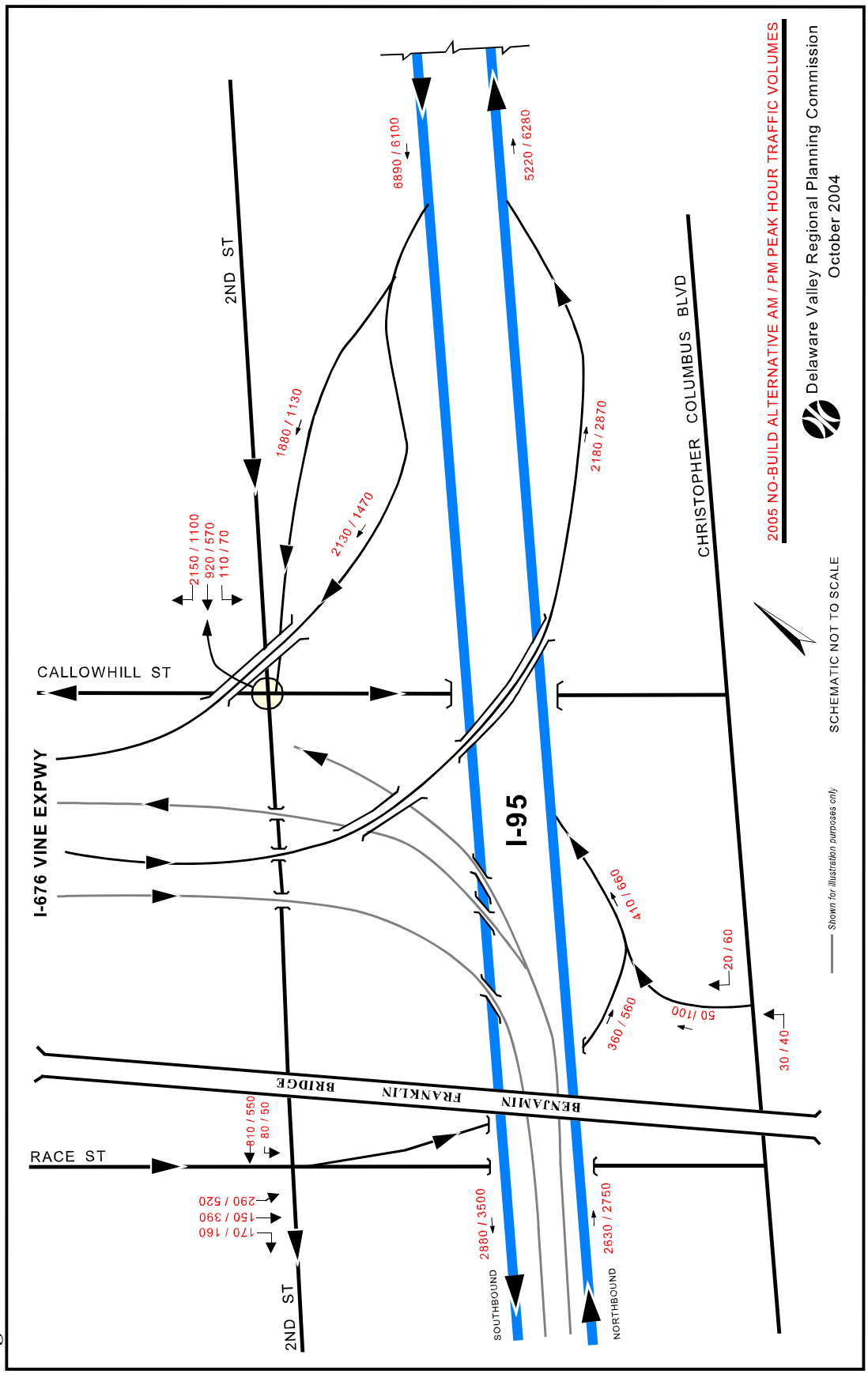
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 17A. Current & 2005 No-Build Alternative Average Daily Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 17B. Current & 2005 No-Build Alternative Average Daily Traffic Volumes



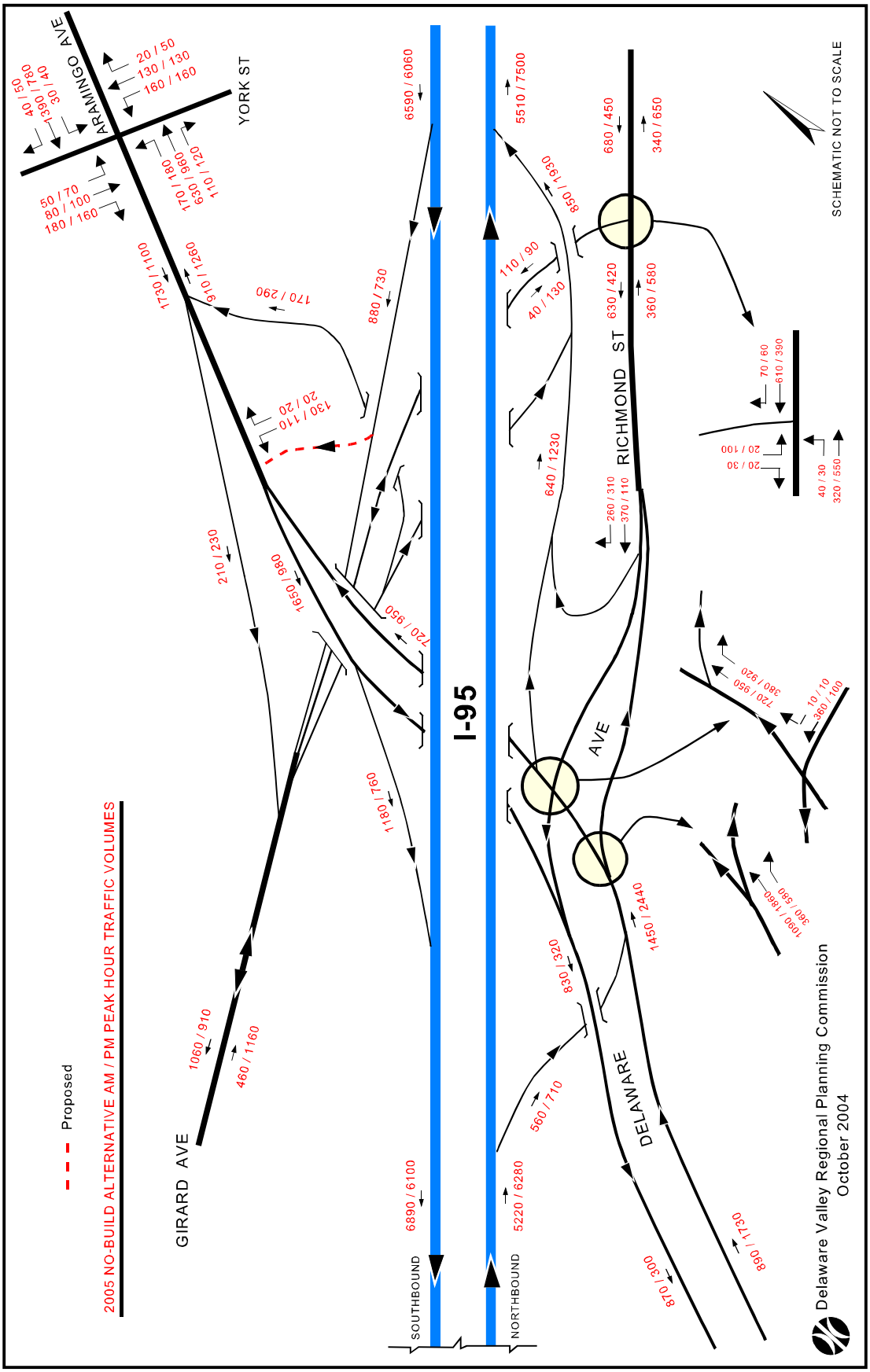


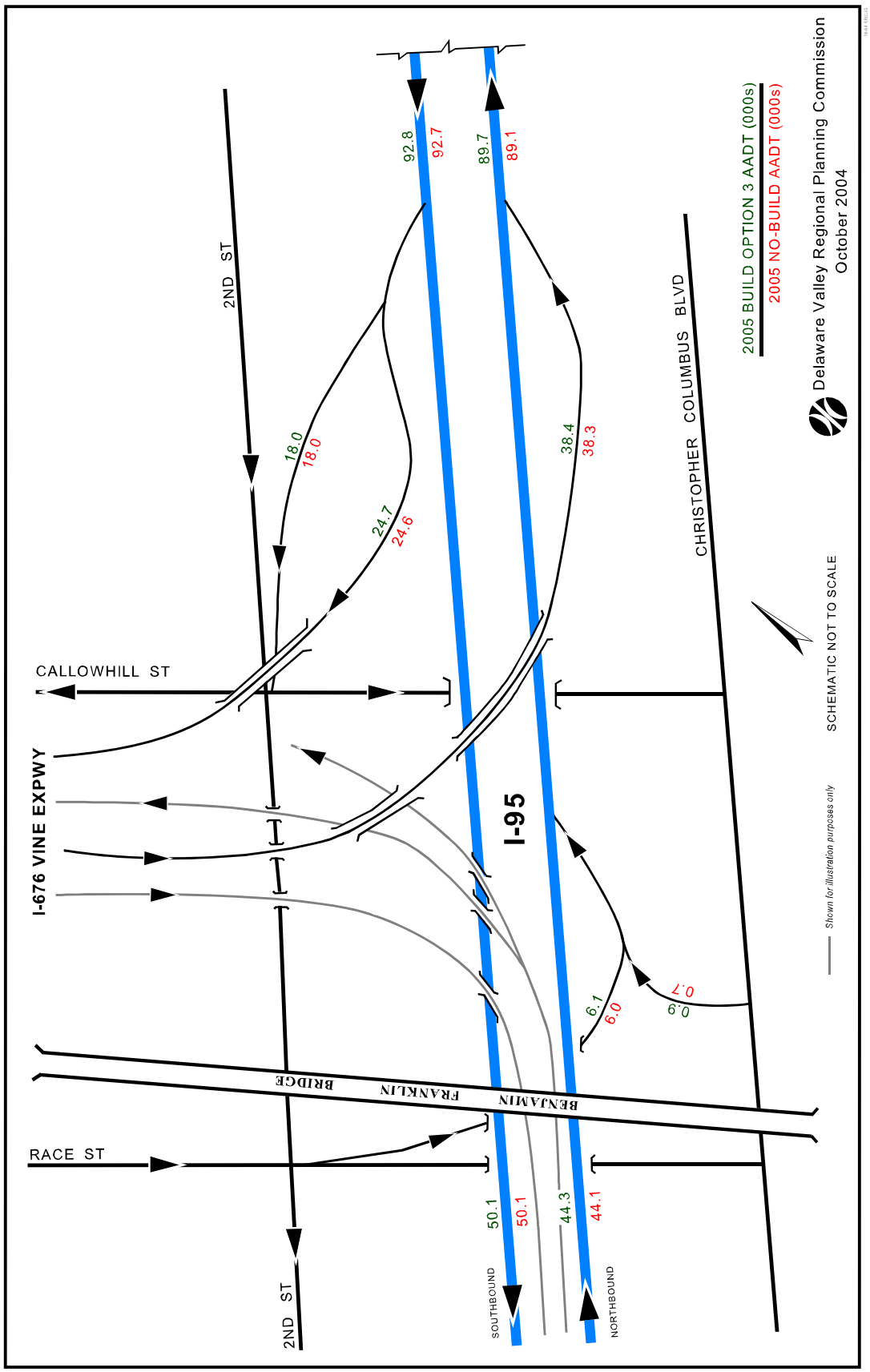
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

Figure 17C. 2005 No-Build Alternative AM / PM Peak Hour Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

Figure 17D. 2005 No-Build Alternative AM / PM Peak Hour Traffic Volumes

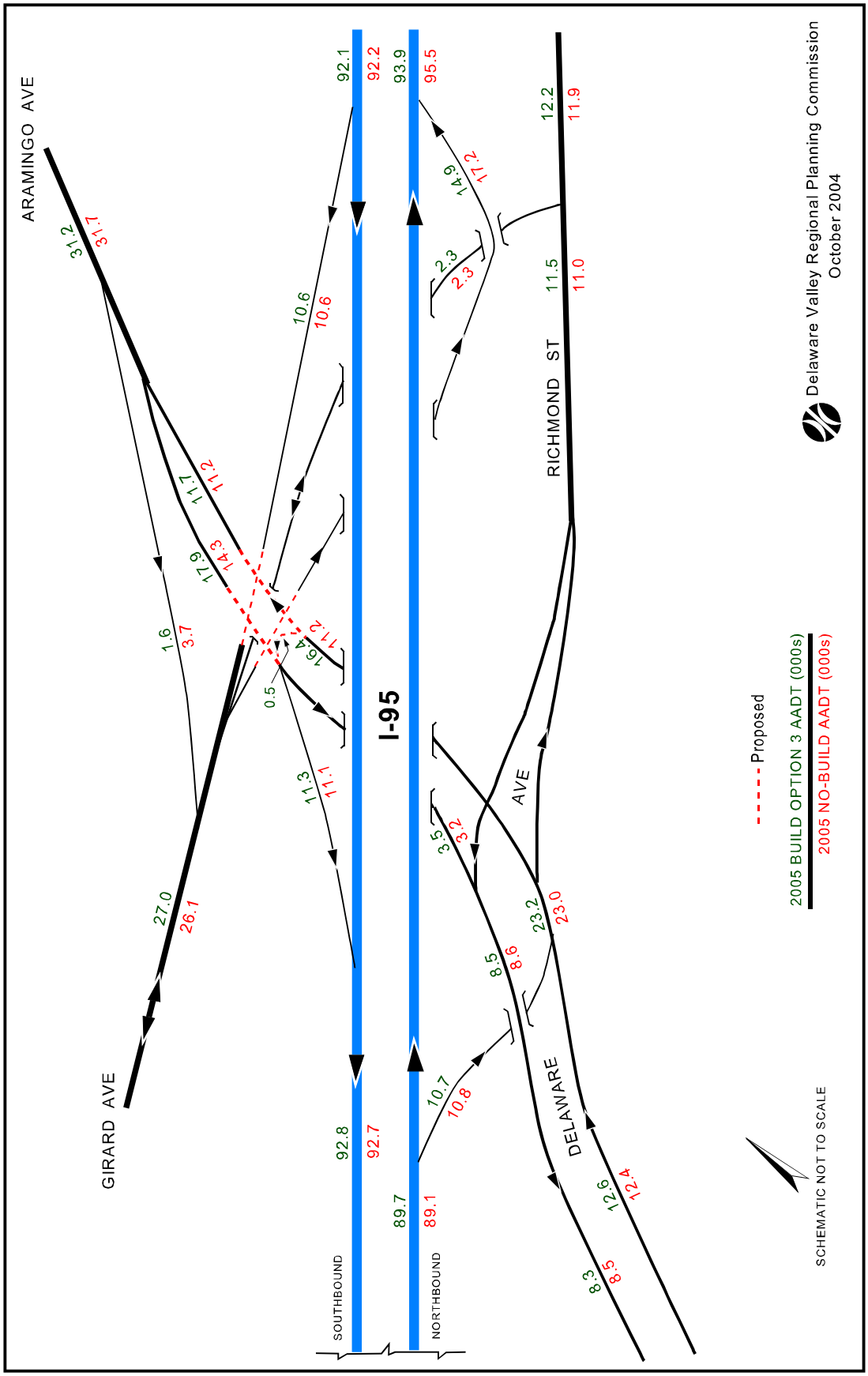


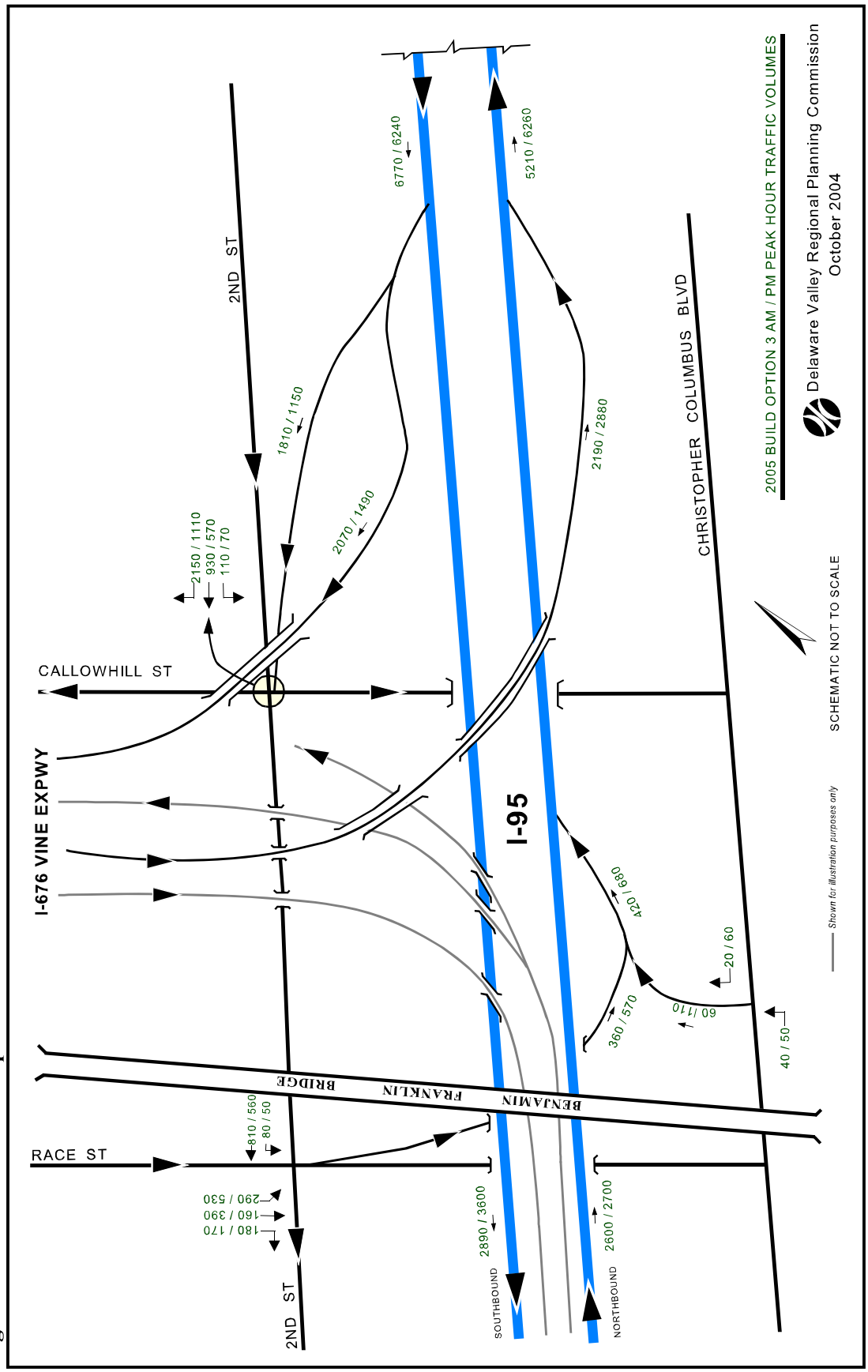


I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 18A. 2005 Build Option 3 and No-Build Alternative Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

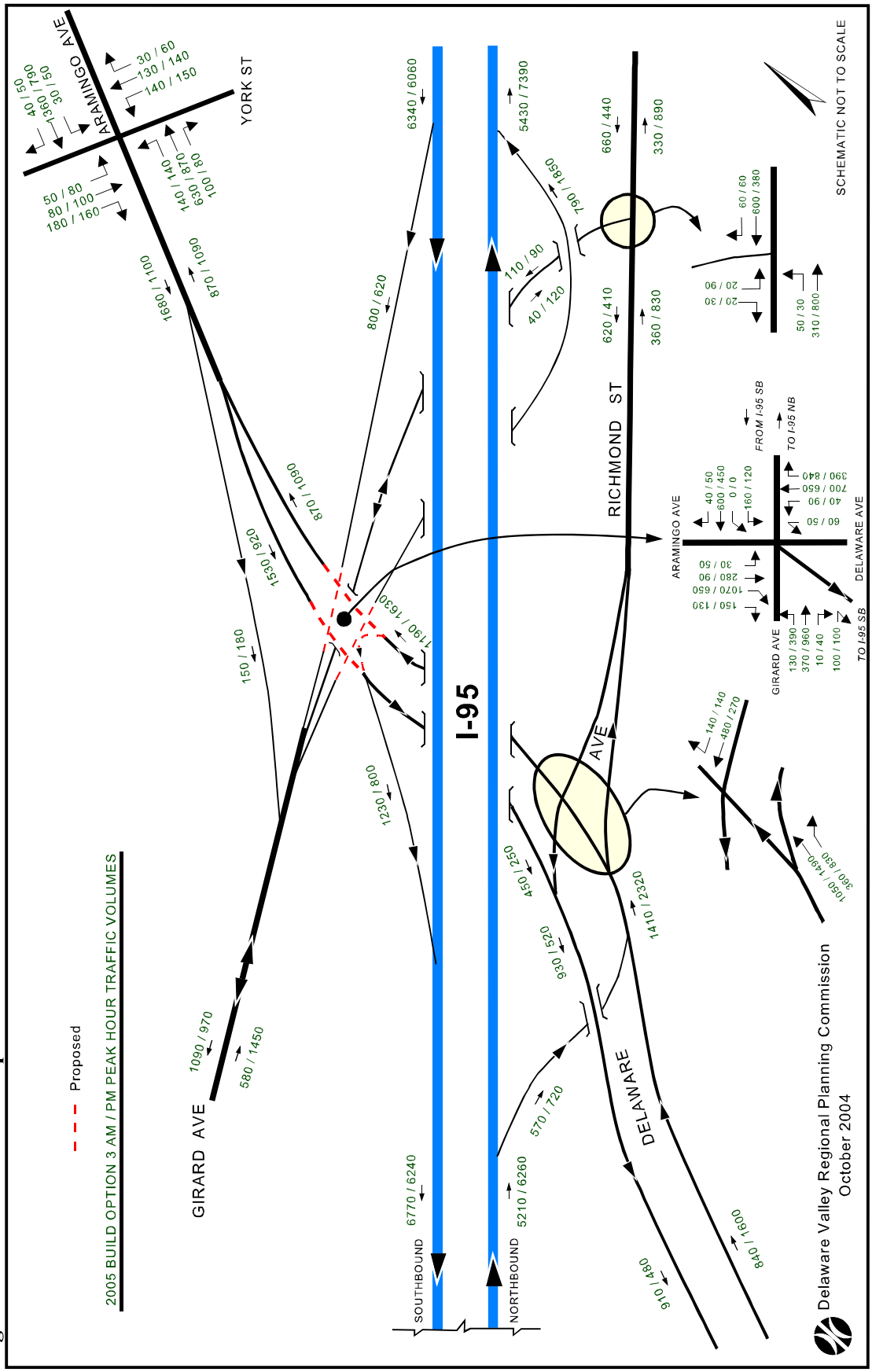
Figure 18B. 2005 Build Option 3 and No-Build Alternative Average Daily Traffic Volumes




I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study
Figure 18C. 2005 Build Option 3 AM / PM Peak Hour Traffic Volumes
2005 BUILD OPTION 3 AM / PM PEAK HOUR TRAFFIC VOLUMES
Delaware Valley Regional Planning Commission
October 2004
SCHEMATIC NOT TO SCALE
Shown for illustration purposes only
I-95
I-676 VINE EXPWY
CHRISTOPHER COLUMBUS BLVD
2ND ST
CALLOWHILL ST
RACE ST
BENJAMIN FRANKLIN BRIDGE
SOUTHBOUND
NORTHBOUND
6770 / 6240
5210 / 6260
1810 / 1150
2070 / 1490
2190 / 2880
2150 / 1110
930 / 570
110 / 70
810 / 560
80 / 50
290 / 530
160 / 390
180 / 170
2890 / 3600
2600 / 2700
360 / 570
60 / 110
20 / 60
40 / 50

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

Figure 18D. 2005 Build Option 3 AM / PM Peak Hour Traffic Volumes



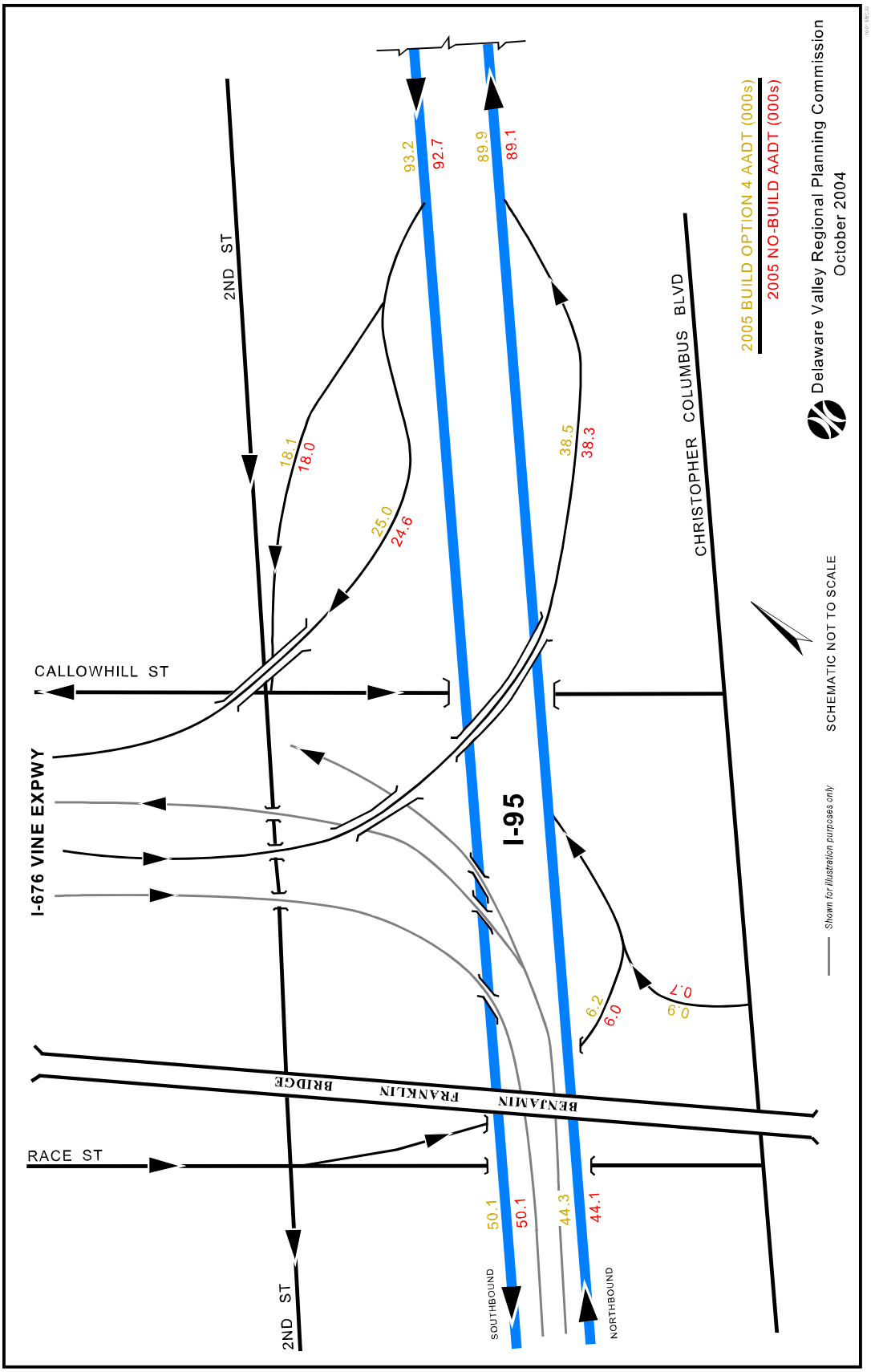
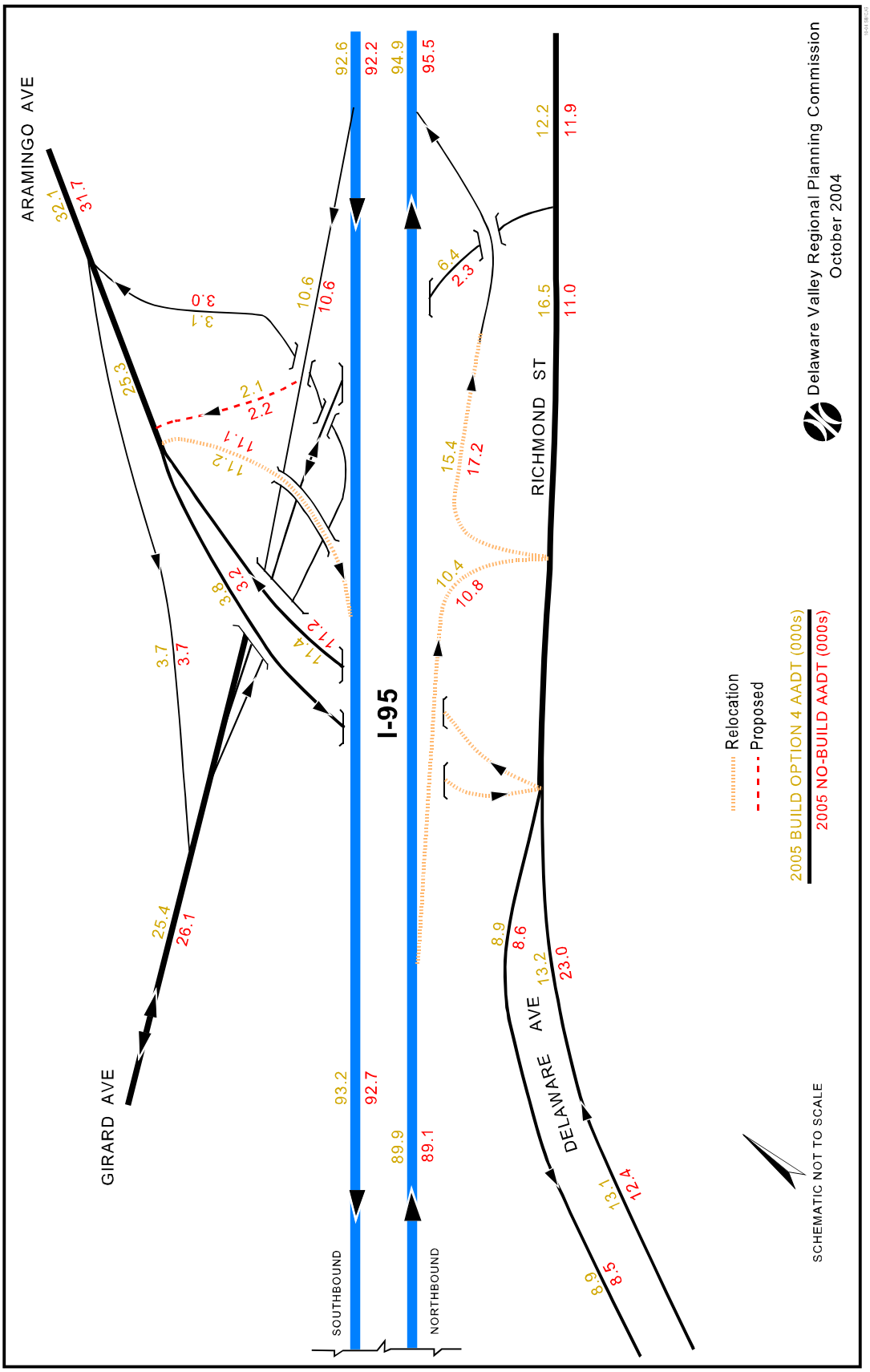


Figure 19A. 2005 Build Option 4 and No-Build Alternative Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

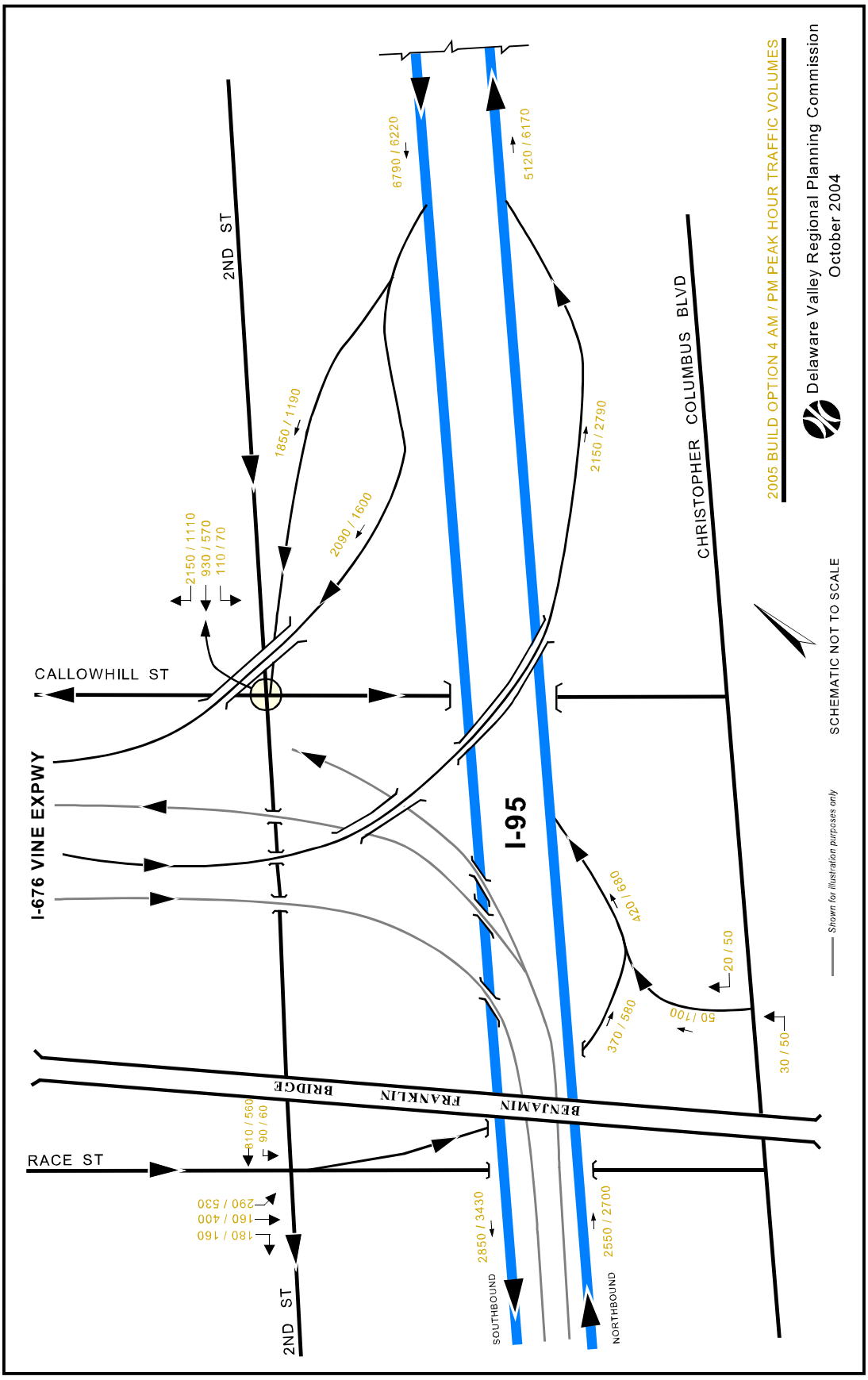
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

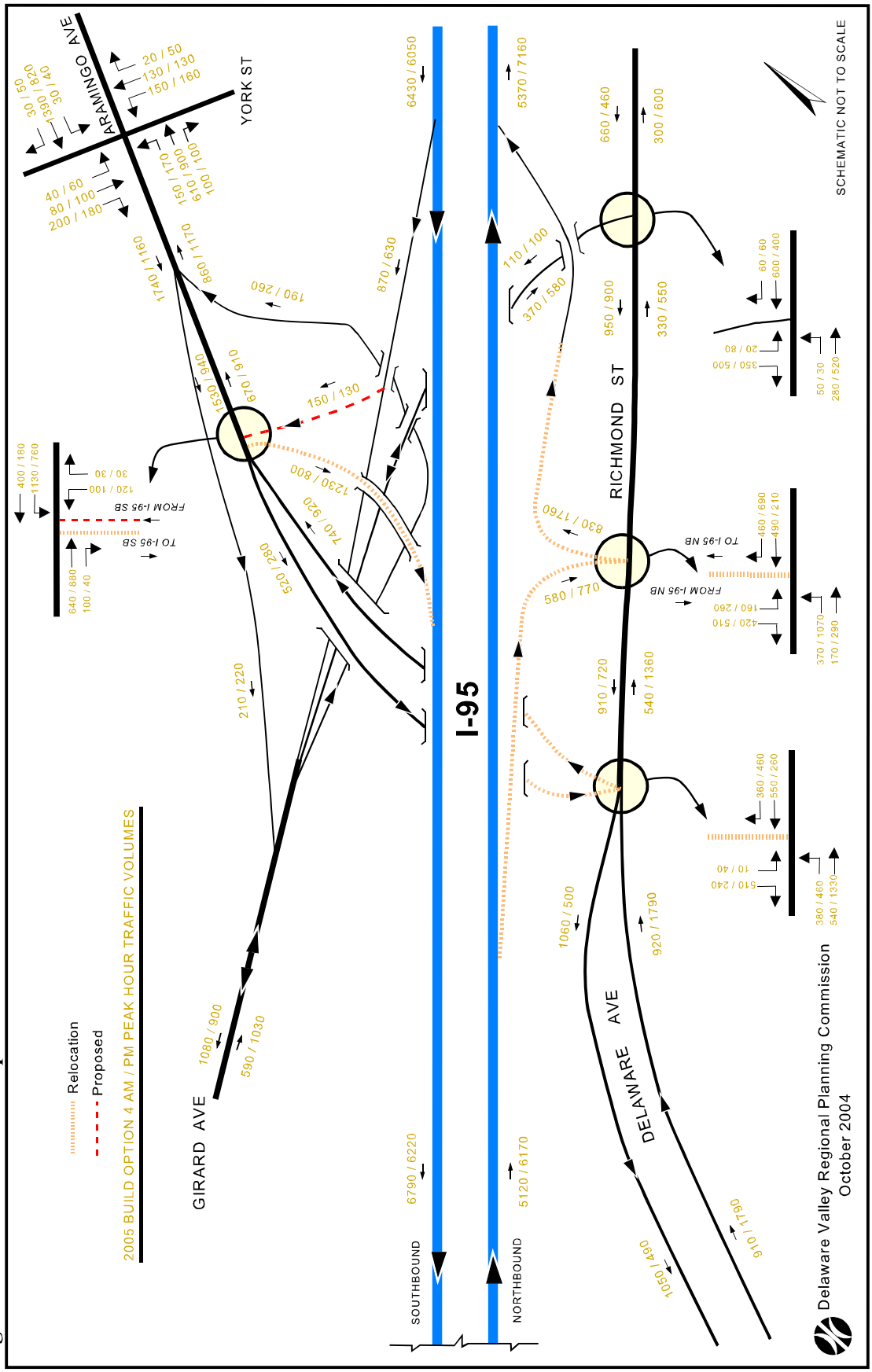
Figure 19B. 2005 Build Option 4 and No-Build Alternative Average Daily Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

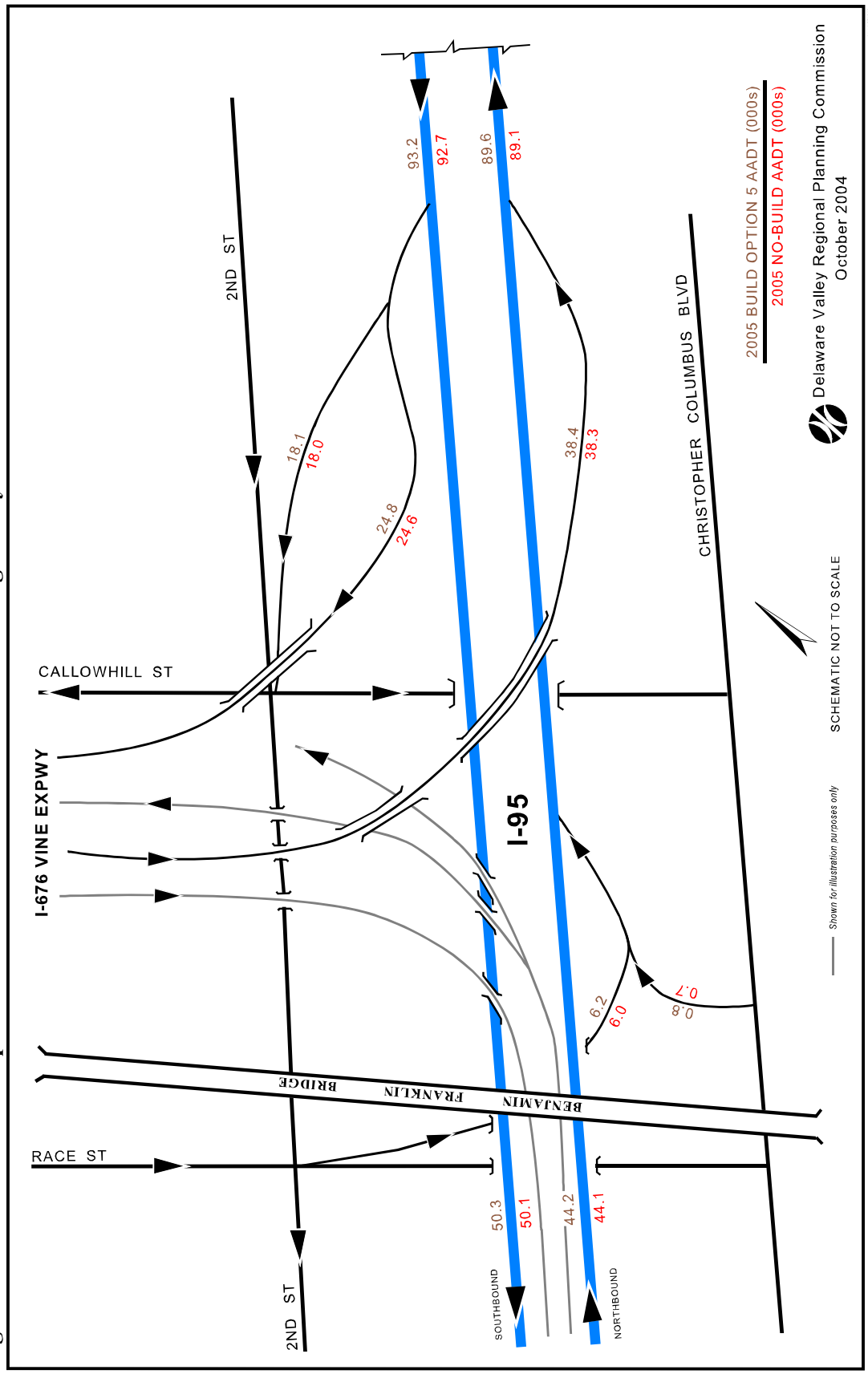
Figure 19C. 2005 Build Option 4 AM / PM Peak Hour Traffic Volumes





I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

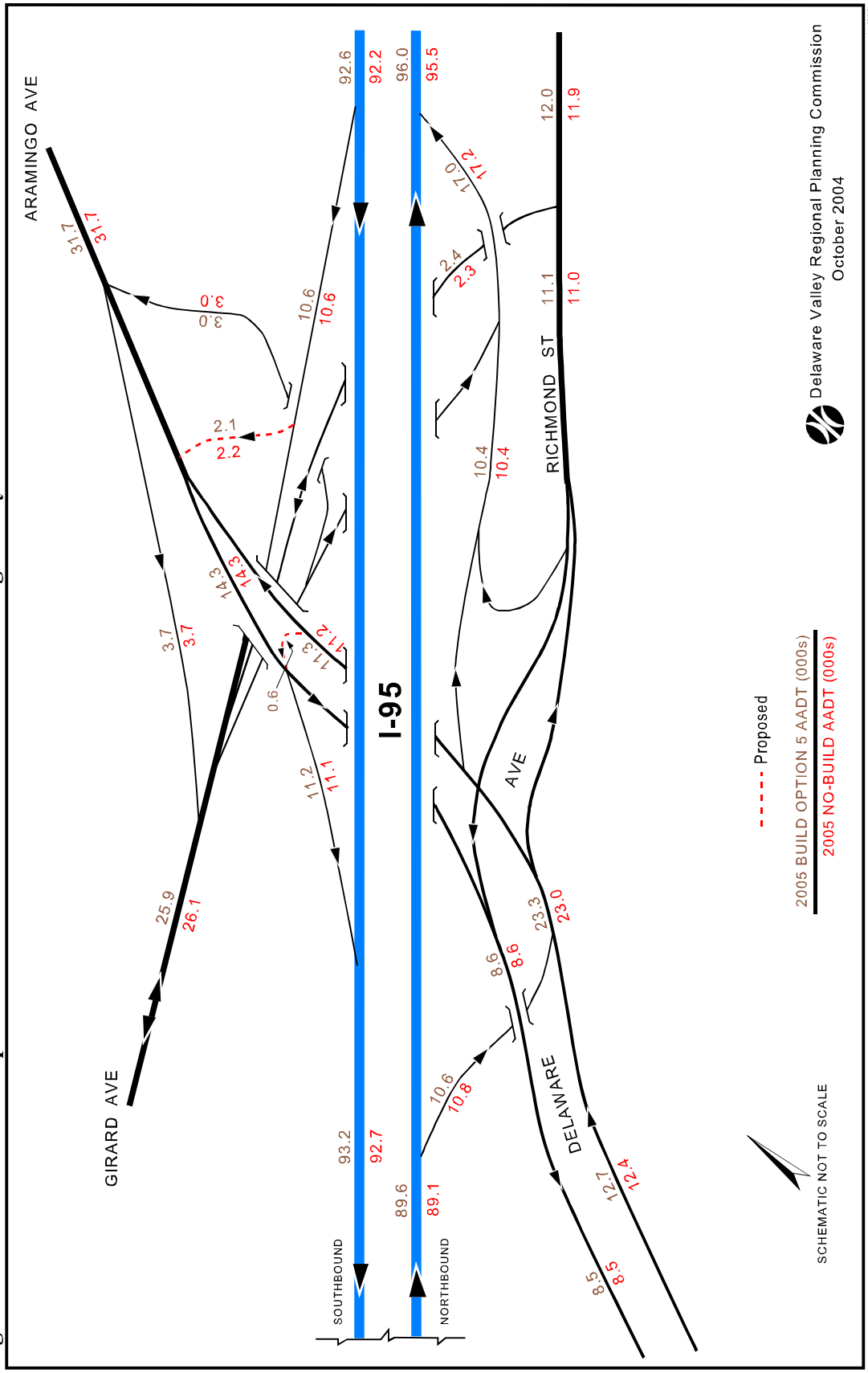
Figure 19D. 2005 Build Option 4 AM / PM Peak Hour Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 20A. 2005 Build Option 5 and No-Build Alternative Average Daily Traffic Volumes

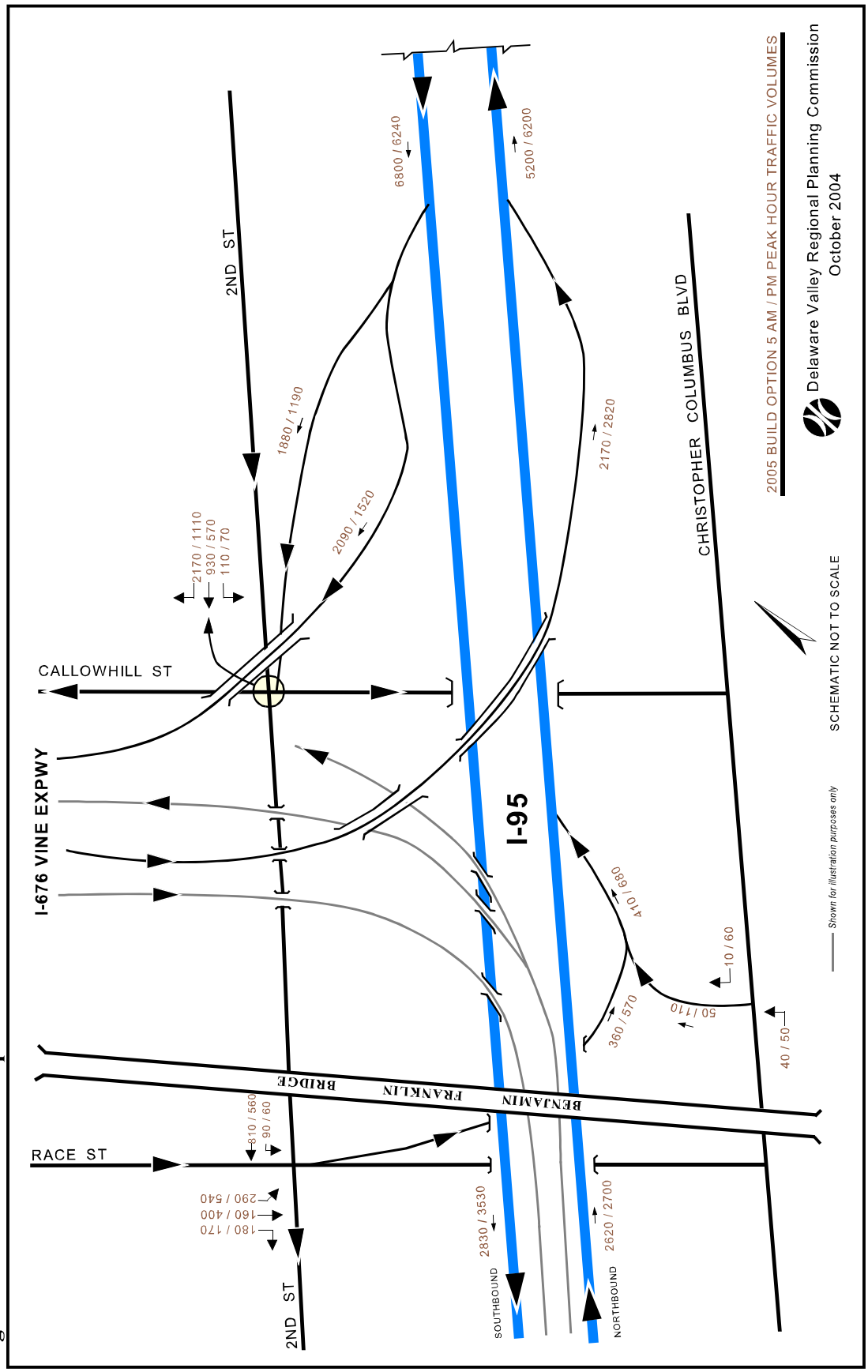
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 20B. 2005 Build Option 5 and No-Build Alternative Average Daily Traffic Volumes

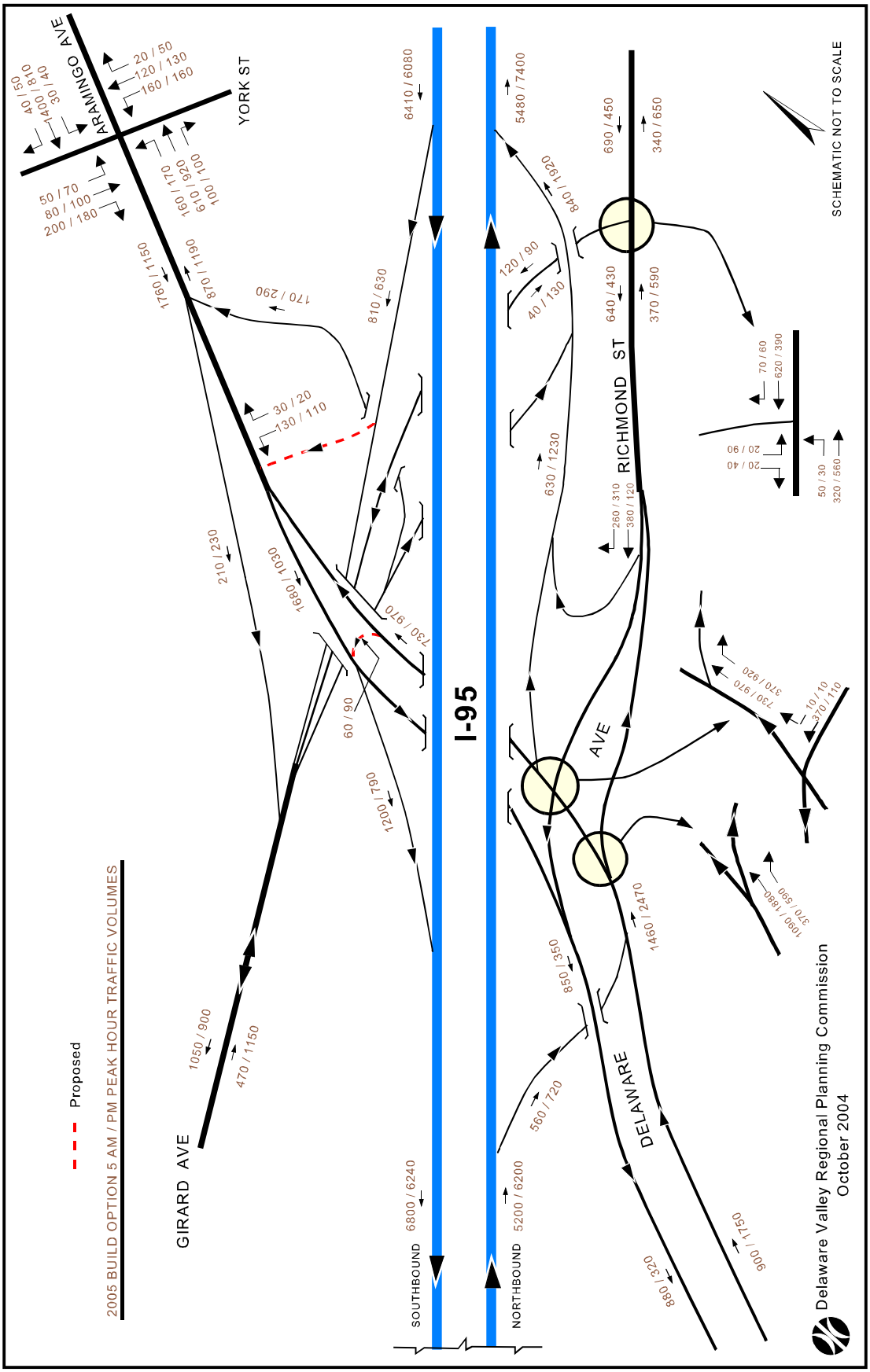


I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

Figure 20C. 2005 Build Option 5 AM / PM Peak Hour Traffic Volumes



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study
Figure 20D. 2005 Build Option 5 AM / PM Peak Hour Traffic Volumes



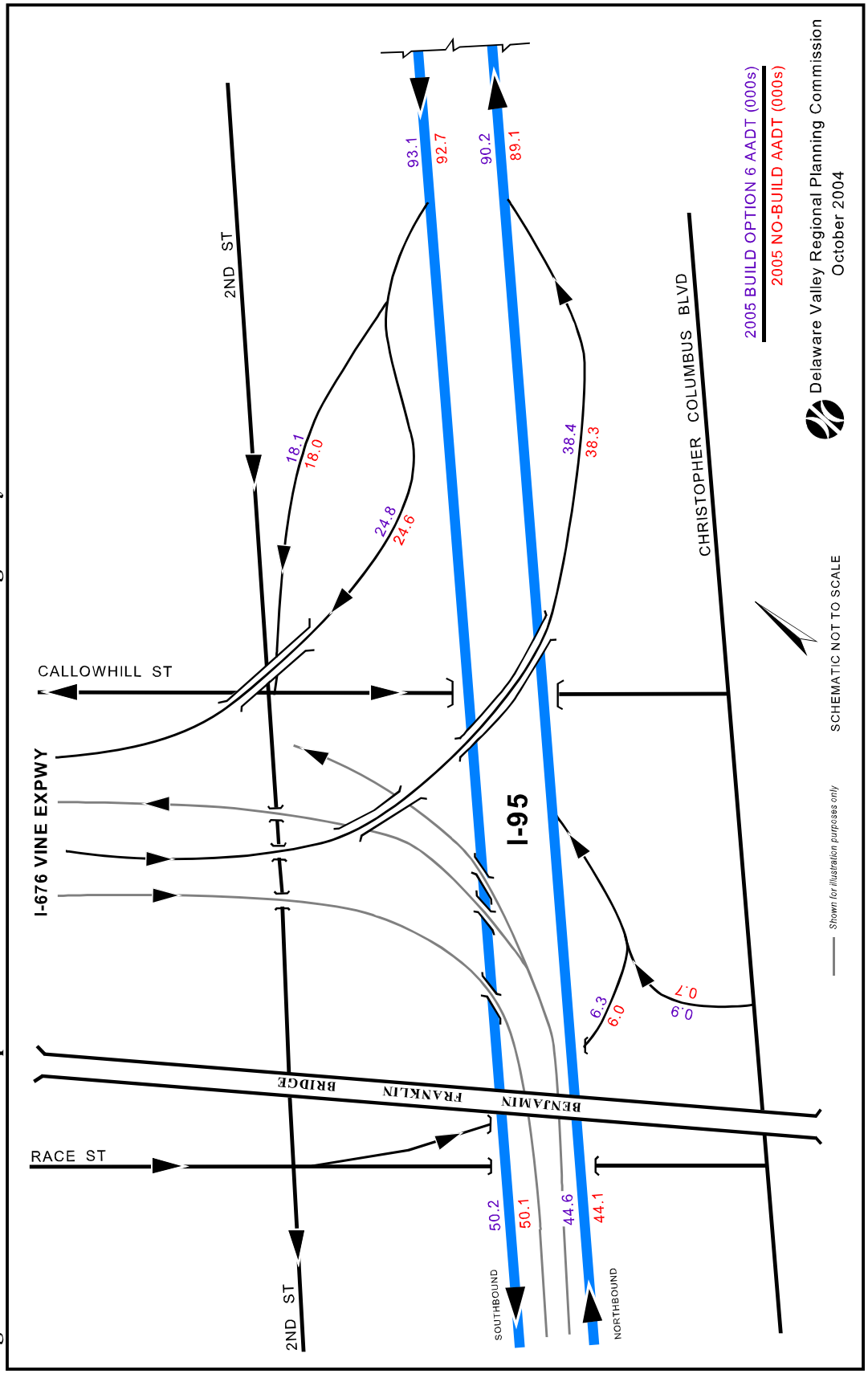
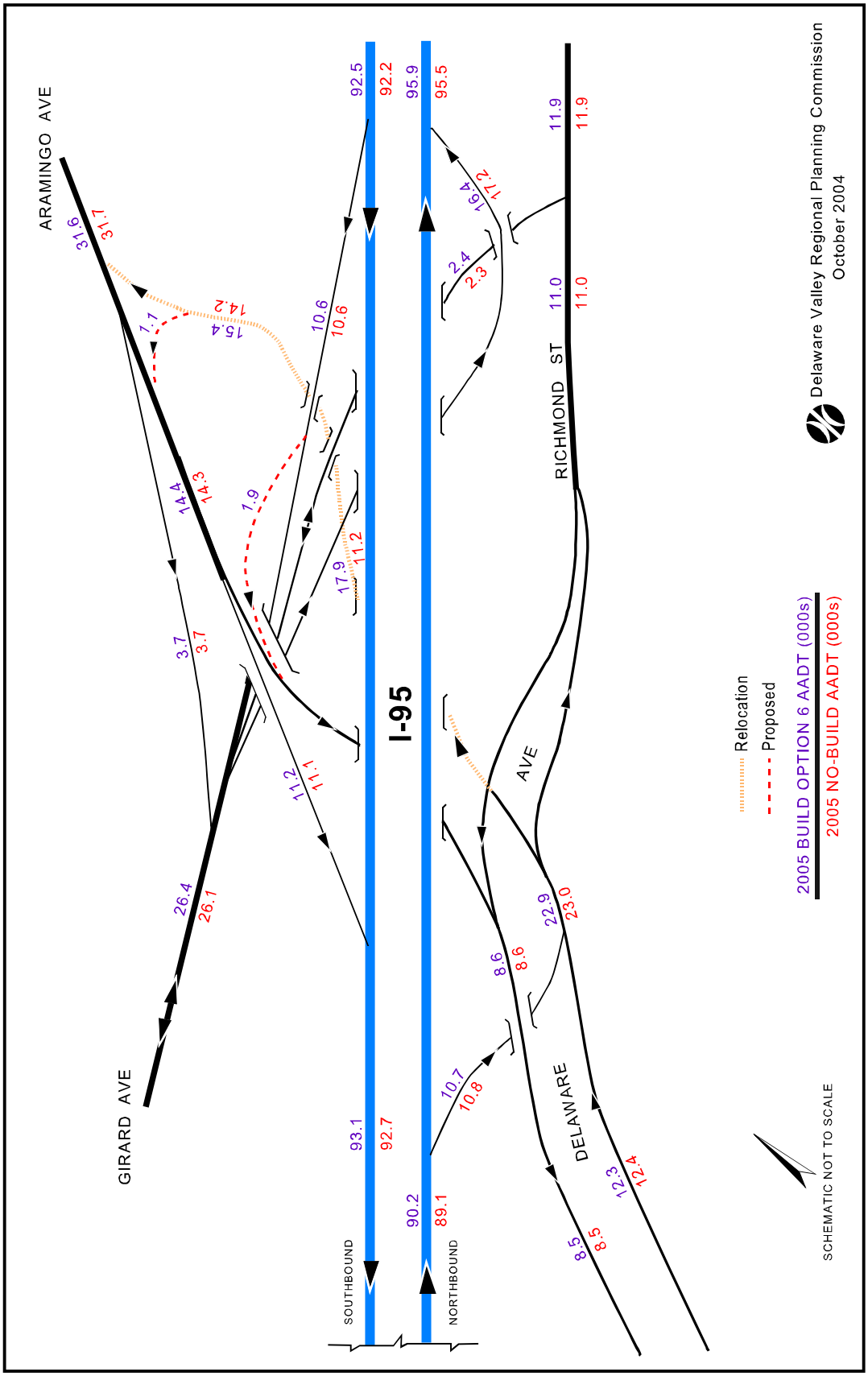


Figure 21A. 2005 Build Option 6 and No-Build Alternative Average Daily Traffic Volumes

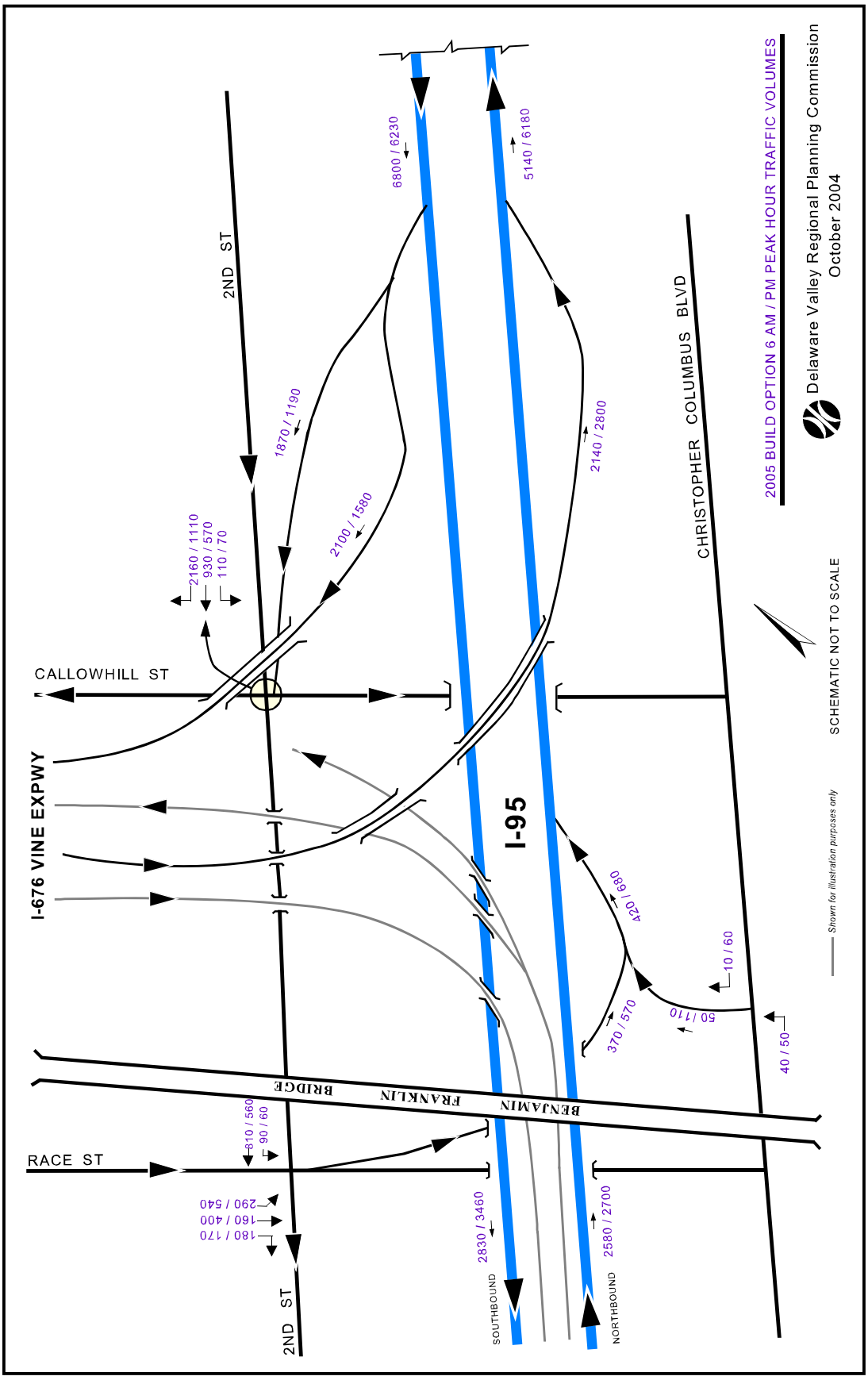
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 21B. 2005 Build Option 6 and No-Build Alternative Average Daily Traffic Volumes

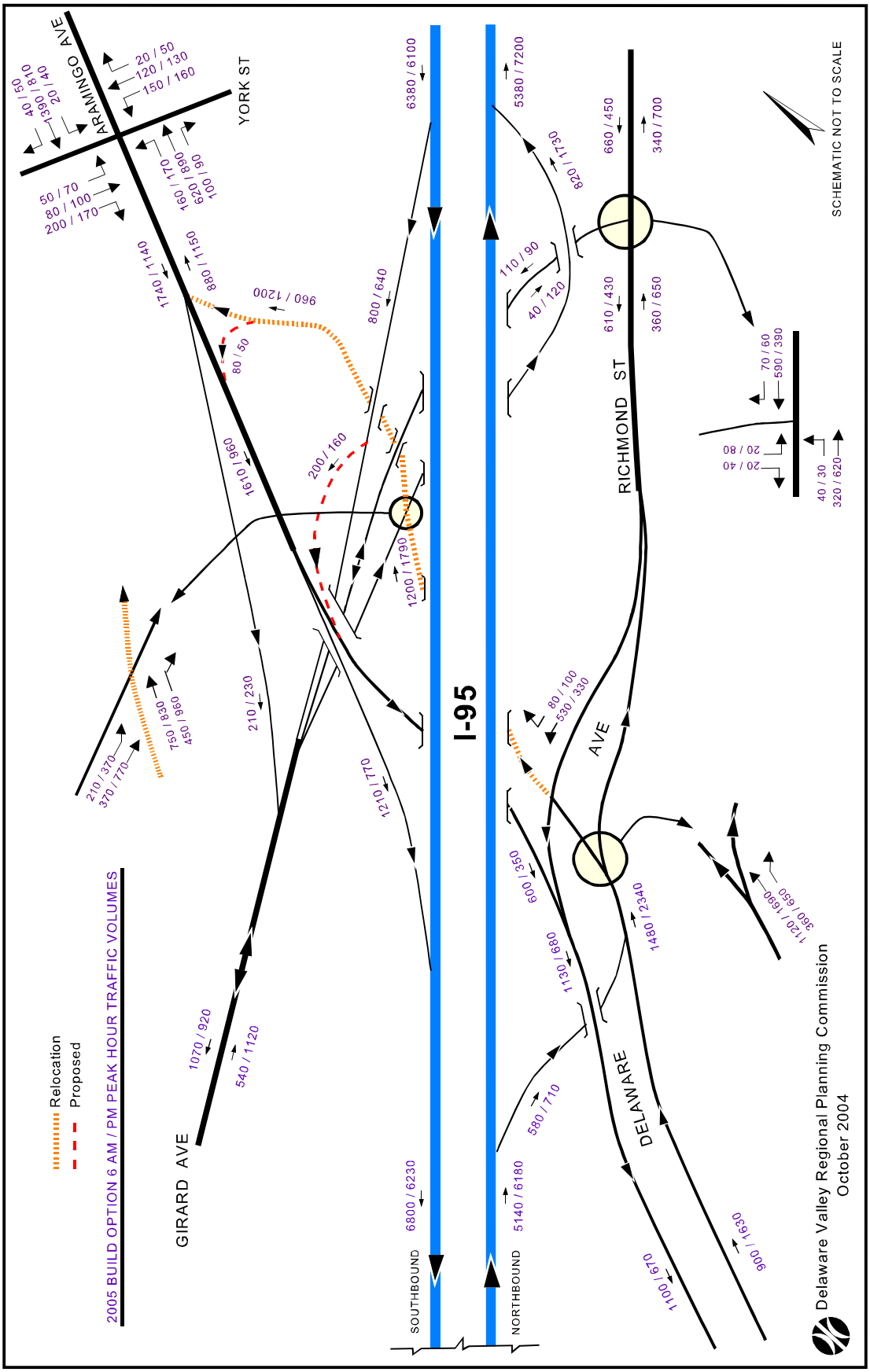


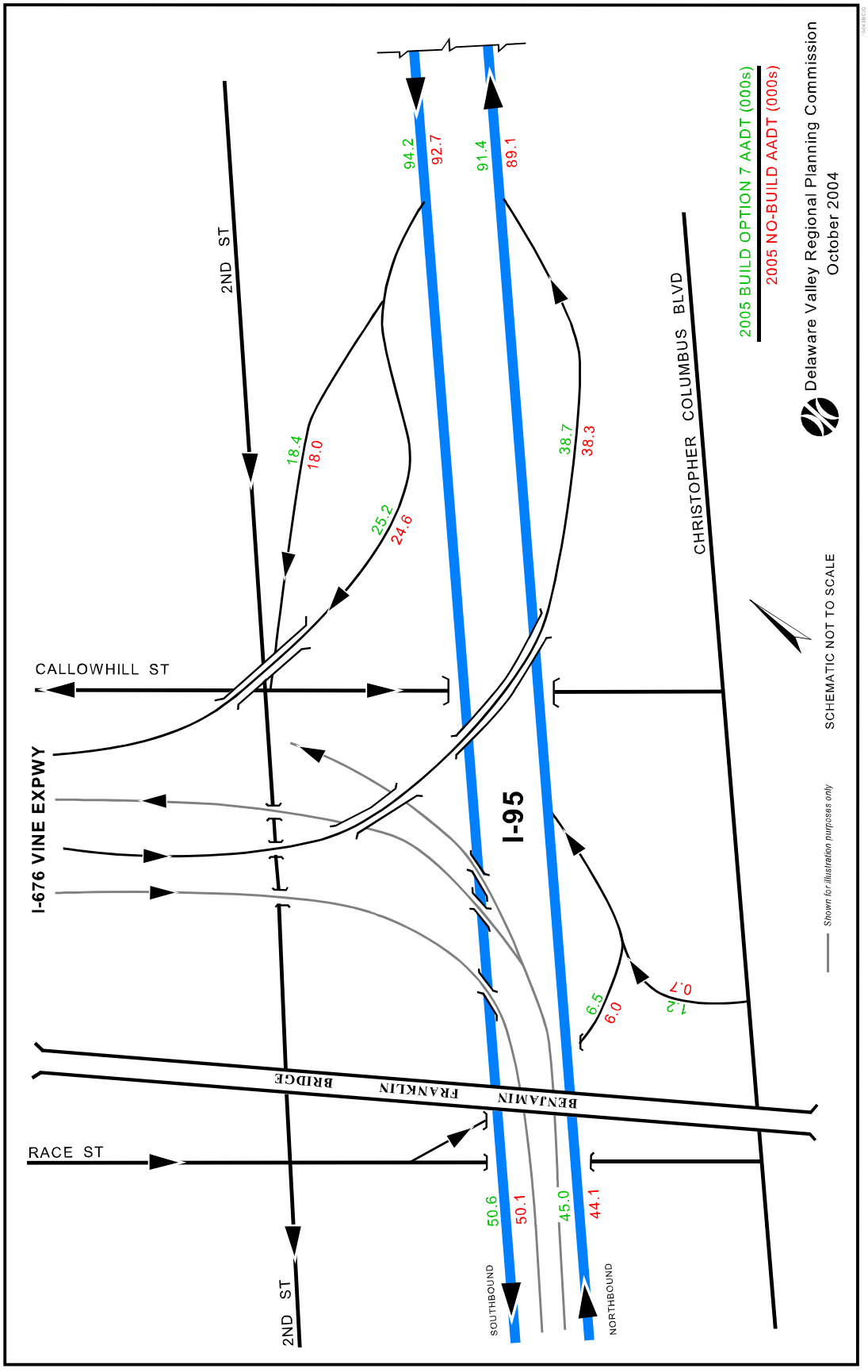
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

Figure 21C. 2005 Build Option 6 AM / PM Peak Hour Traffic Volumes



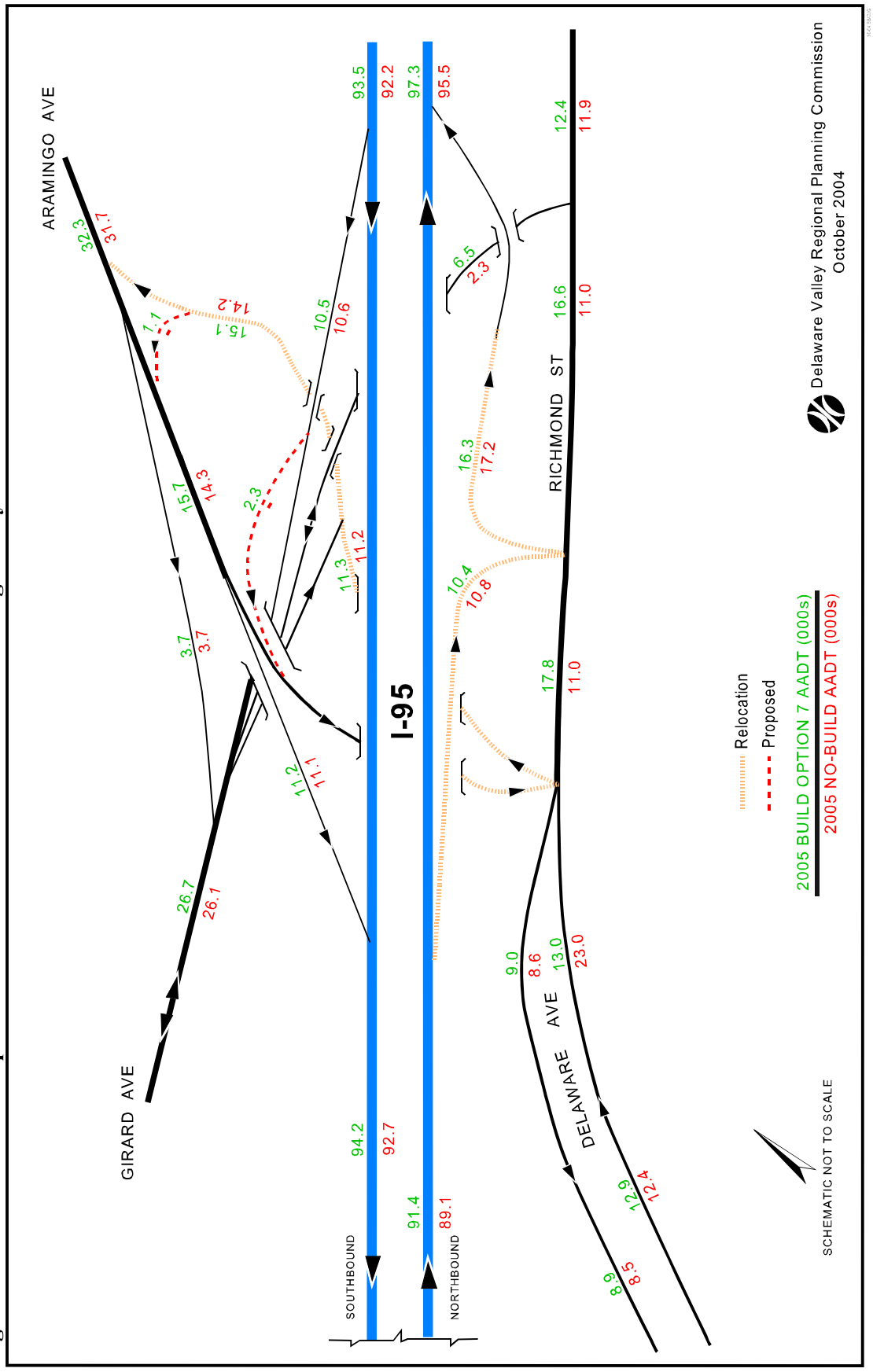
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study
Figure 21D. 2005 Build Option 6 AM / PM Peak Hour Traffic Volumes





I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 22A. 2005 Build Option 7 and No-Build Alternative Average Daily Traffic Volumes

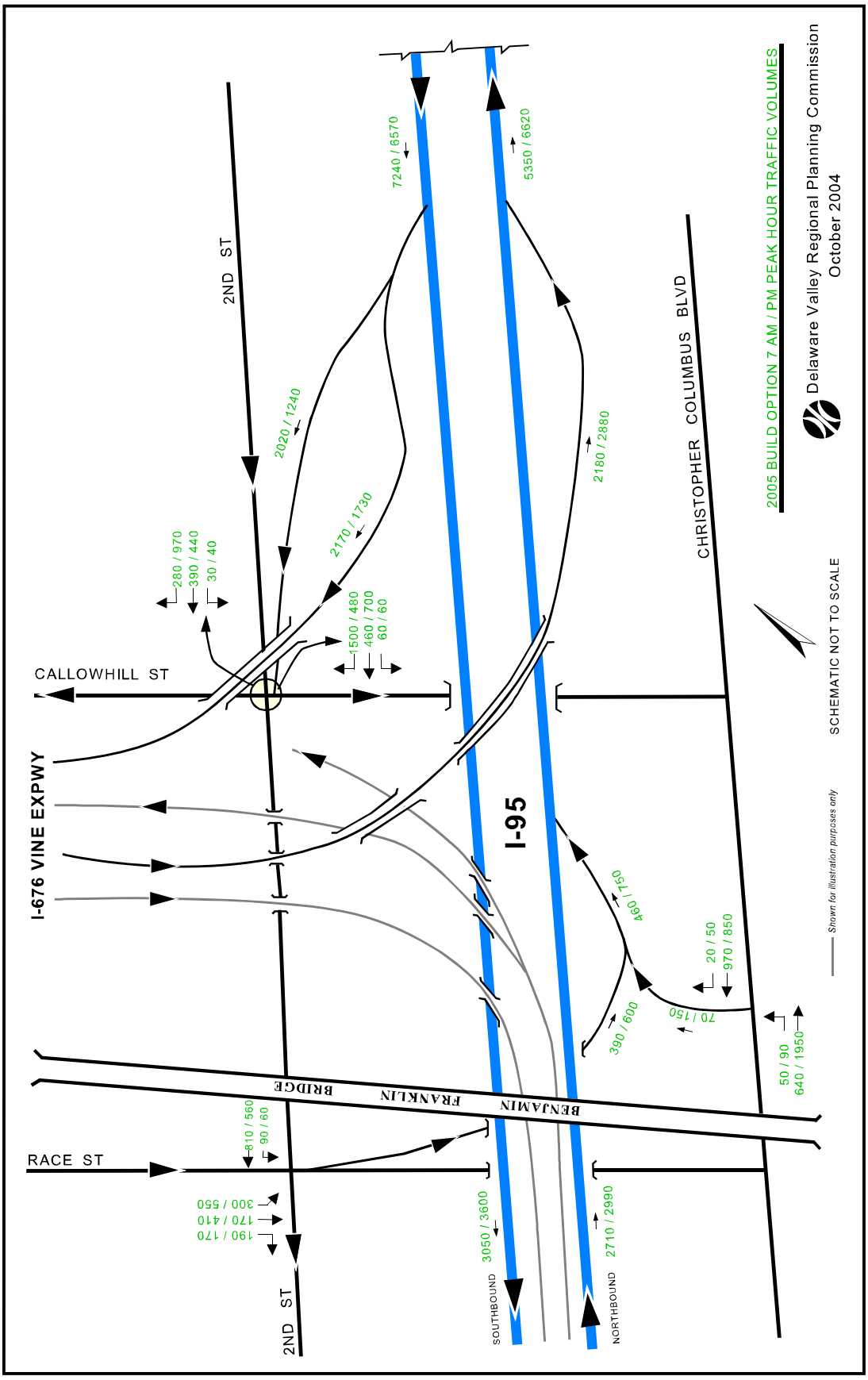


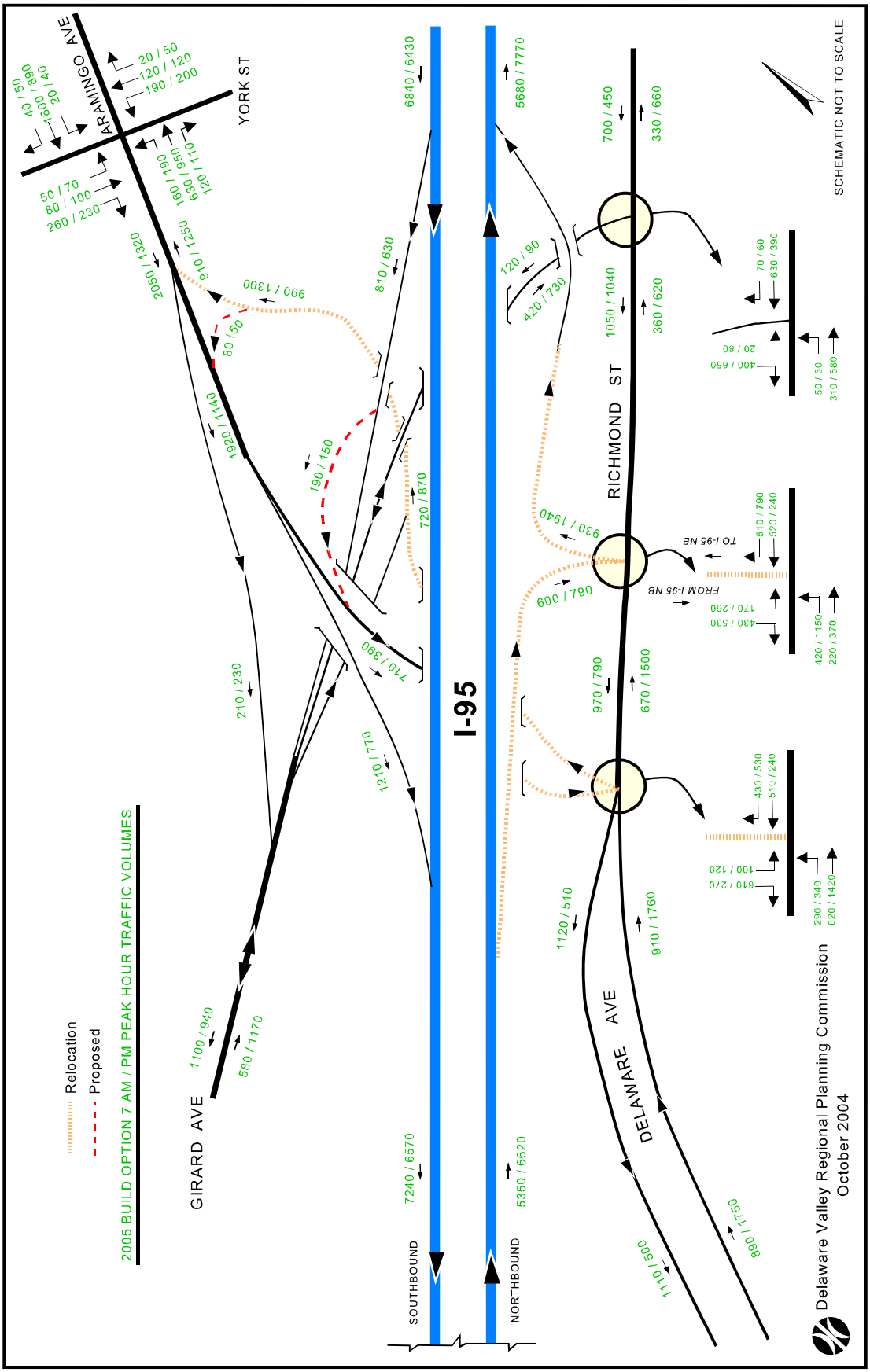
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

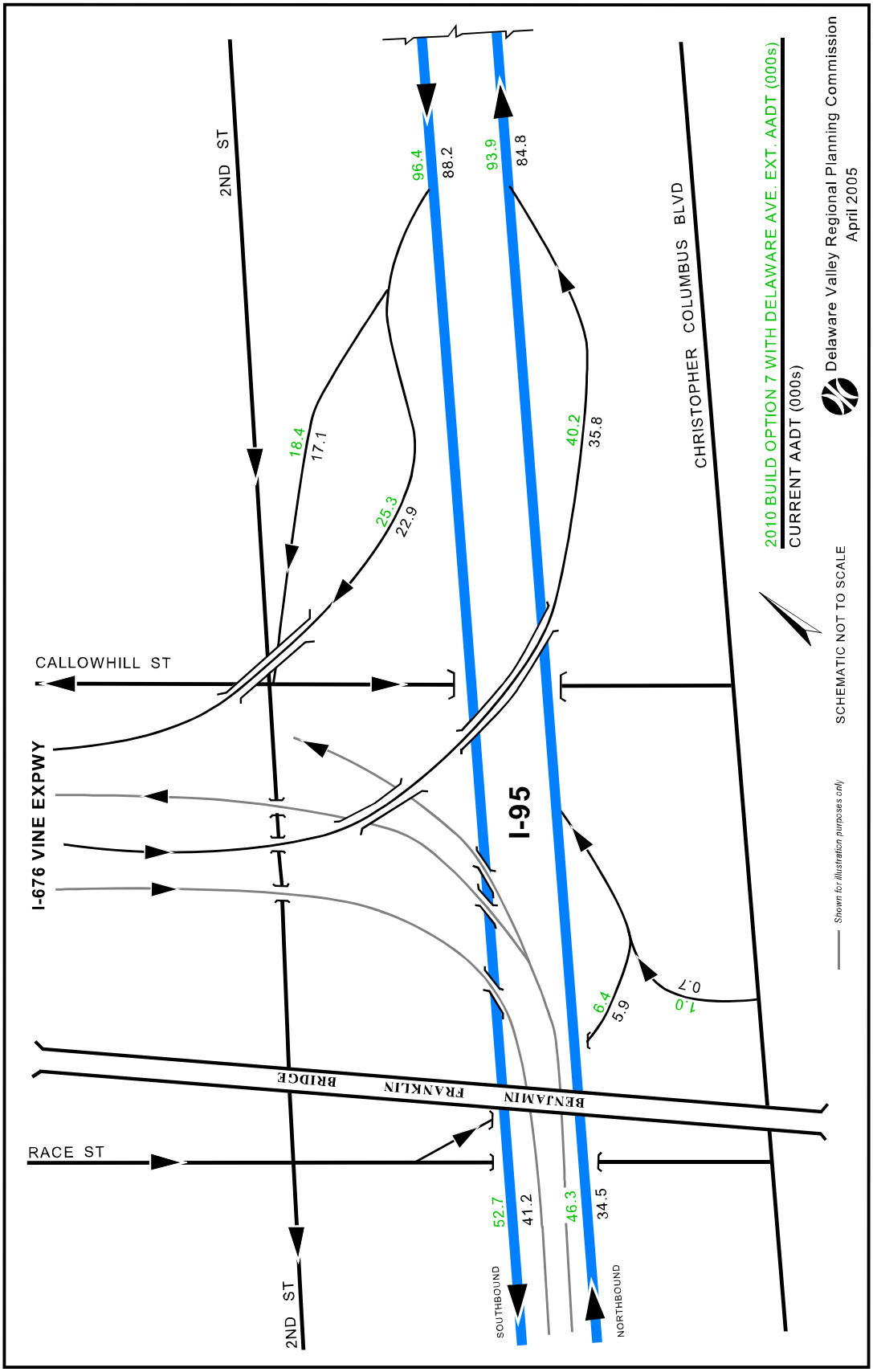
Figure 22B. 2005 Build Option 7 and No-Build Alternative Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study

Figure 22C. 2005 Build Option 7 AM / PM Peak Hour Traffic Volumes

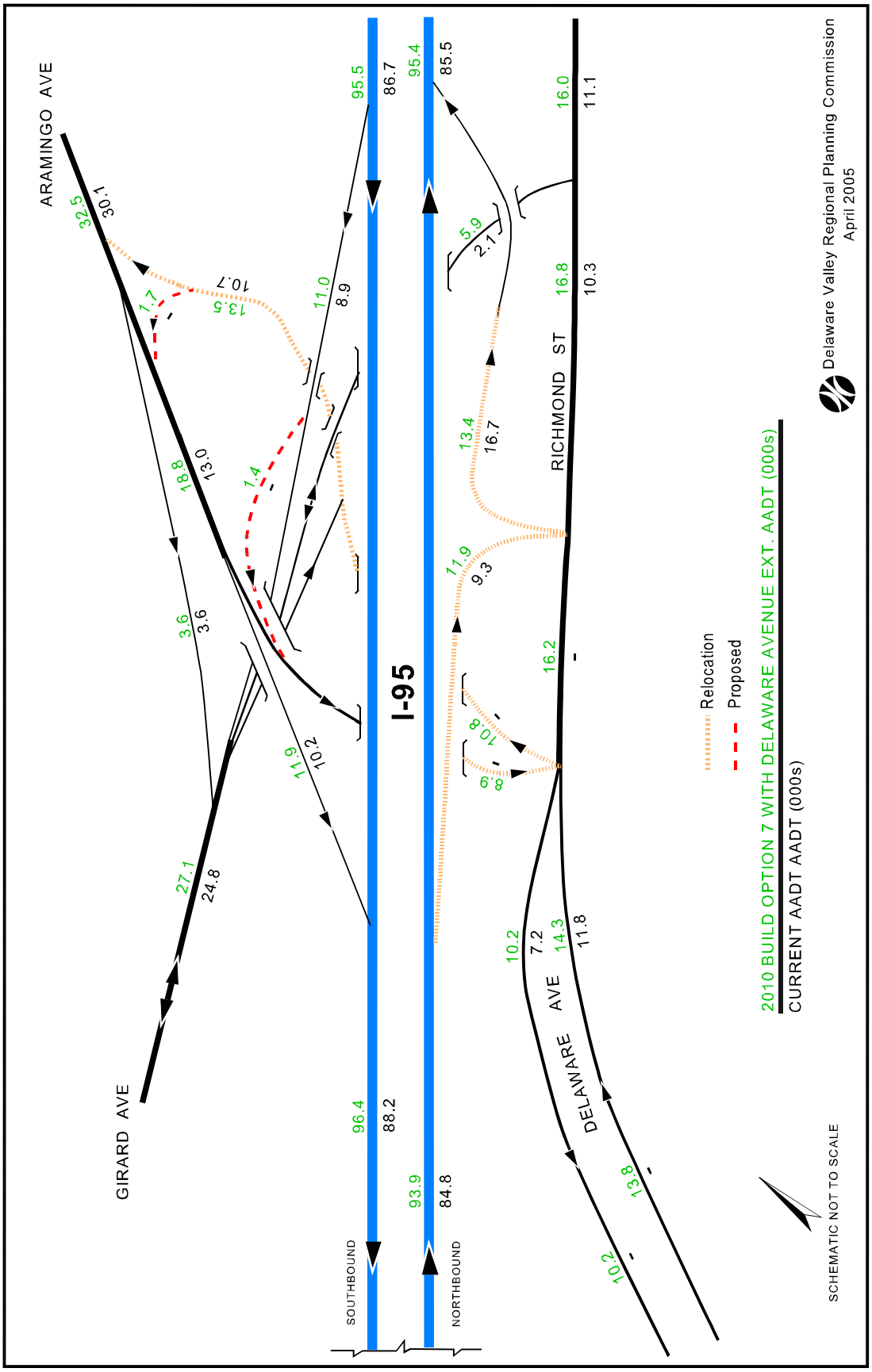



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Sections GIR Traffic Study
Figure 22D. 2005 Build Option 7 AM / PM Peak Hour Traffic Volumes
2005 BUILD OPTION 7 AM / PM PEAK HOUR TRAFFIC VOLUMES
Relocation
Proposed
GIRARD AVE
ARAMINGO AVE
YORK ST
I-95
SOUTHBOUND
NORTHBOUND
RICHMOND ST
DELAWARE AVE
TO I-95 NB
FROM I-95 NB
SCHEMATIC NOT TO SCALE
Delaware Valley Regional Planning Commission
October 2004



I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 23A. Current & 2010 Build Option 7 with Delaware Avenue Extension Average Daily Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study
Figure 23B. Current & 2010 Build Option 7 with Delaware Avenue Extension Average Daily Traffic Volumes



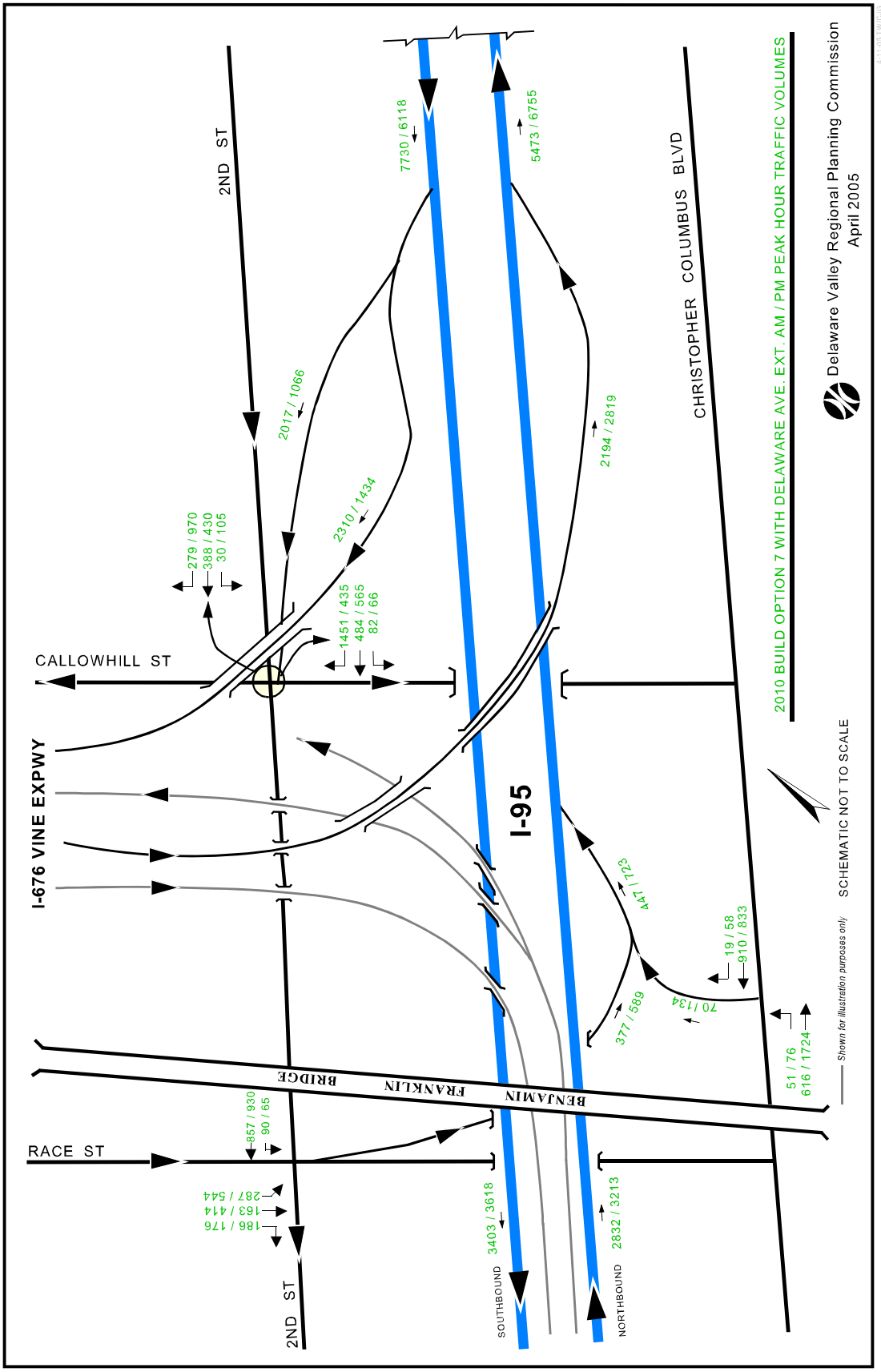
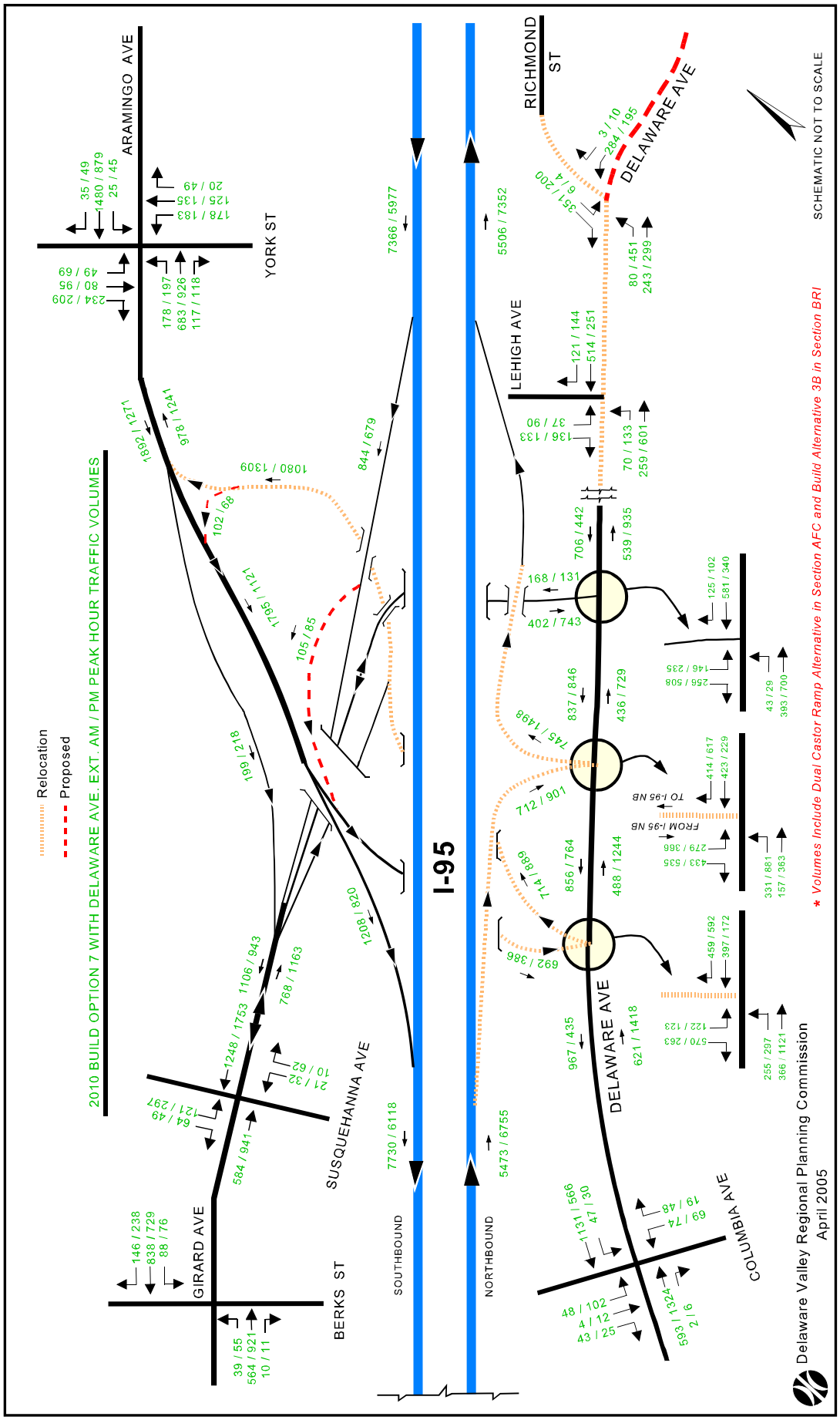


Figure 23C. 2010 Build Option 7 with Delaware Avenue Extension AM / PM Peak Hour Traffic Volumes

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Figure 23D. 2010 Build Option 7 with Delaware Avenue Extension AM/PM Peak Hour Traffic Volumes



APPENDIX A
24-HOUR MACHINE TRAFFIC COUNTS

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TABLE OF CONTENTS

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DVRPC – Travel Monitoring

DATE: 11/13/2000

ROAD: TR 95 NB DELAWARE EXPY **FROM:** I-676 WB **TO:** RACE ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 0095/0214/0500 **FC:** 11

PROJECT: CBD00-29 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 55 **LOOP OR CLASS:**

STATION ID: 4897 **DVRPC FILE #:** 30647 **COUNTER:** 9324 **WEATHER:** F

Hour Ending	Monday 11/13/00	Tuesday 11/14/00	Wednesday 11/15/00	Thursday 11/16/00	Friday 11/17/00
1 AM		610	626		
2 AM		412	390		
3 AM		366	346		
4 AM		400	460		
5 AM		558	508		
6 AM		1,252	1,222		
7 AM		2,426	2,462		
8 AM		2,896	2,860		
9 AM		2,687	2,643		
10 AM		2,400	2,458		
11 AM		1,894	1,880		
12 PM		1,906	1,916		
1 PM		1,977	1,955		
2 PM	2,076	2,092			
3 PM	2,472	2,412			
4 PM	2,881	2,891			
5 PM	2,606	2,592			
6 PM	2,576	2,516			
7 PM	1,899	1,965			
8 PM	1,574	1,552			
9 PM	1,250	1,366			
10 PM	1,236	1,213			
11 PM	998	1,064			
12 AM	816	866			
		40,313			

SEASONAL FACTOR:	.931	AADT: **34,529**	AM PEAK %:	7.2	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.92		PM PEAK %:	7.2	HOUR ENDING:	4:00 PM

DVRPC – Travel Monitoring

DATE: 11/13/2000

ROAD: TR 95 SB DELAWARE EXPY **FROM:** I-76 WB **TO:** RACE ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 0095/0215/0500 **FC:** 11

PROJECT: CBD00-29 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 55 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 30648 **COUNTER:** 9320 **WEATHER:** F

Hour Ending	Monday 11/13/00	Tuesday 11/14/00	Wednesday 11/15/00	Thursday 11/16/00	Friday 11/17/00
1 AM		554	514		
2 AM		438	405		
3 AM		492	459		
4 AM		786	642		
5 AM		1,624	1,574		
6 AM		3,269	3,092		
7 AM		3,082	3,176		
8 AM		2,624	2,700		
9 AM		2,682	2,754		
10 AM		2,755	2,686		
11 AM		2,390	2,375		
12 PM		2,446	2,436		
1 PM		2,234	2,228		
2 PM	2,770	2,884			
3 PM	3,168	3,116			
4 PM	3,447	3,510			
5 PM	3,352	3,308			
6 PM	2,657	2,714			
7 PM	1,712	1,740			
8 PM	1,456	1,449			
9 PM	1,280	1,354			
10 PM	1,104	1,154			
11 PM	850	874			
12 AM	480	619			
		48,098			

SEASONAL FACTOR:	.931	AADT: **41,197**	AM PEAK %:	6.8	HOUR ENDING:	6:00 AM
AXLE CORR. FACTOR:	.92		PM PEAK %:	7.3	HOUR ENDING:	4:00 PM

DVRPC – Travel Monitoring

DATE: 6/21/2000

ROAD: TR 95 NB DELAWARE EXPY **FROM:** ALLEGHENY AVE **TO:** GIRARD AVE

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 0095/0240/1000 **FC:** 11

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 55 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27826 **COUNTER:** **WEATHER:** F

Hour Ending	Wednesday 06/21/00	Thursday 06/22/00	Friday 06/23/00	Saturday 06/24/00	Sunday 06/25/00
1 AM		1,086			
2 AM		692			
3 AM		536			
4 AM		534			
5 AM		663			
6 AM		1,471			
7 AM		3,608			
8 AM		5,567			
9 AM		5,577			
10 AM		4,891			
11 AM		4,364			
12 PM		4,966			
1 PM		5,165			
2 PM		5,360			
3 PM		5,892			
4 PM		6,143			
5 PM		7,603			
6 PM		7,609			
7 PM		7,636			
8 PM		4,501			
9 PM		3,608			
10 PM		3,006			
11 PM		2,335			
12 AM		1,817			
		94,630			

SEASONAL FACTOR:	.904	AADT: **85,546**	AM PEAK %:	5.9	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	1		PM PEAK %:	8.1	HOUR ENDING:	7:00 PM

DVRPC – Travel Monitoring

DATE: 6/21/2000

ROAD: TR 95 SB DELAWARE EXPY **FROM:** ALLEGHENY AVE **TO:** GIRARD AVE

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 0095/0241/1000 **FC:** 11

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 55 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27825 **COUNTER:** **WEATHER:** F

Hour Ending	Wednesday 06/21/00	Thursday 06/22/00	Friday 06/23/00	Saturday 06/24/00	Sunday 06/25/00
1 AM		1,171			
2 AM		874			
3 AM		743			
4 AM		822			
5 AM		1,082			
6 AM		2,062			
7 AM		4,816			
8 AM		6,552			
9 AM		6,464			
10 AM		5,684			
11 AM		5,046			
12 PM		4,843			
1 PM		4,494			
2 PM		5,626			
3 PM		6,321			
4 PM		6,299			
5 PM		6,395			
6 PM		6,130			
7 PM		5,792			
8 PM		4,107			
9 PM		3,429			
10 PM		2,961			
11 PM		2,543			
12 AM		1,974			
		96,230			

SEASONAL FACTOR:	.904	AADT: **86,992**	AM PEAK %:	6.8	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	1		PM PEAK %:	6.6	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 8/15/2000

ROAD: TR 95 NB DELAWARE EXPY ON RAMP **FROM:** RACE ST **TO:** TR 95 NB

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8009/0260/1000 **FC:** 14

PROJECT: NA **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 28761 **COUNTER:** 9837 **WEATHER:** F

Hour Ending	Tuesday 08/15/00	Wednesday 08/16/00	Thursday 08/17/00	Friday 08/18/00	Saturday 08/19/00
1 AM		132	104		
2 AM		96	88		
3 AM		43	57		
4 AM		28	46		
5 AM		20	26		
6 AM		62	58		
7 AM		144	126		
8 AM		286	261		
9 AM		286	272		
10 AM		214			
11 AM		278			
12 PM		298			
1 PM		365			
2 PM		414			
3 PM		548			
4 PM		595			
5 PM		696			
6 PM		588			
7 PM		406			
8 PM		312			
9 PM	255	267			
10 PM	239	254			
11 PM	188	228			
12 AM	184	188			
		6,748			

SEASONAL FACTOR:	.908	AADT: **5,864**	AM PEAK %:	4.4	HOUR ENDING:	12:00 PM
AXLE CORR. FACTOR:	.957		PM PEAK %:	10.3	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 8/15/2000

ROAD: TR 95 NB DELAWARE EXPY ON RAMP **FROM:** COLUMBUS BLVD **TO:** RACE ST ON RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8009/0030/0300 **FC:** 14

PROJECT: NA **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 28762 **COUNTER:** 9784 **WEATHER:** F

Hour Ending	Tuesday 08/15/00	Wednesday 08/16/00	Thursday 08/17/00	Friday 08/18/00	Saturday 08/19/00
1 AM		30	36		
2 AM		32	58		
3 AM		22	62		
4 AM		11	19		
5 AM		4	9		
6 AM		3	6		
7 AM		11	12		
8 AM		20	24		
9 AM		25	24		
10 AM		28			
11 AM		37			
12 PM		42			
1 PM		40			
2 PM		50			
3 PM		59			
4 PM		40			
5 PM		66			
6 PM		60			
7 PM		52			
8 PM		40			
9 PM	37	44			
10 PM	44	42			
11 PM	35	40			
12 AM	40	25			
		823			

SEASONAL FACTOR:	.908	AADT: **715**	AM PEAK %:	5.1	HOUR ENDING:	12:00 PM
AXLE CORR. FACTOR:	.957		PM PEAK %:	8.	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 8/28/2000

ROAD: TR 95 NB DELAWARE EXPY ON RAMP **FROM:** TR 676 EB **TO:** TR 95 NB

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8009/0270/1840 **FC:** 14

PROJECT: NA **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 28758 **COUNTER:** 9323 **WEATHER:** F

Hour Ending	Monday 08/28/00	Tuesday 08/29/00	Wednesday 08/30/00	Thursday 08/31/00	Friday 09/01/00
1 AM		743	797		
2 AM		406	436		
3 AM		376	370		
4 AM		320	296		
5 AM		416	434		
6 AM		1,012	918		
7 AM		1,982	1,860		
8 AM		2,360	2,198		
9 AM		2,126	2,156		
10 AM		1,762	1,856		
11 AM		1,833	1,820		
12 PM		2,001			
1 PM		2,000			
2 PM		2,309			
3 PM	2,728	2,668			
4 PM	2,972	3,090			
5 PM	2,991	2,938			
6 PM	2,956	2,924			
7 PM	2,398	2,656			
8 PM	2,050	2,012			
9 PM	1,522	1,502			
10 PM	1,288	1,348			
11 PM	1,180	1,334			
12 AM	1,029	1,127			
		41,245			

SEASONAL FACTOR:	.908	AADT: **35,840**	AM PEAK %:	5.7	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	7.5	HOUR ENDING:	4:00 PM

DVRPC – Travel Monitoring

DATE: 8/15/2000

ROAD: TR 95 SB DELAWARE EXPY OFF RAMP **FROM:** TR 95 SB **TO:** CALLOWHILL ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8009/0520/1075 **FC:** 14

PROJECT: NA **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 28756 **COUNTER:** 9838 **WEATHER:** F

Hour Ending	Tuesday 08/15/00	Wednesday 08/16/00	Thursday 08/17/00	Friday 08/18/00	Saturday 08/19/00
1 AM		182	224		
2 AM		102	94		
3 AM		103	96		
4 AM		78	78		
5 AM		148	152		
6 AM		580	568		
7 AM		1,419	1,359		
8 AM		1,784	1,756		
9 AM		2,054	2,014		
10 AM		1,519			
11 AM		1,207			
12 PM		1,133			
1 PM		978			
2 PM		1,048			
3 PM		1,156			
4 PM		1,084			
5 PM		1,204			
6 PM		1,234			
7 PM		1,198			
8 PM		652			
9 PM	470	241			
10 PM	383	174			
11 PM	439	197			
12 AM	346	171			
		19,646			

SEASONAL FACTOR:	.908	AADT: **17,072**	AM PEAK %:	10.5	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	6.3	HOUR ENDING:	6:00 PM

DVRPC – Travel Monitoring

DATE: 8/15/2000

ROAD: TR 95 SB DELAWARE EXPY OFF RAMP **FROM:** TR 95 SB **TO:** TR 676 WB

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8009/0510/2720 **FC:** 14

PROJECT: NA **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 28757 **COUNTER:** 9838 **WEATHER:** F

Hour Ending	Tuesday 08/15/00	Wednesday 08/16/00	Thursday 08/17/00	Friday 08/18/00	Saturday 08/19/00
1 AM		408	346		
2 AM		296	326		
3 AM		224	224		
4 AM		246	254		
5 AM		339	418		
6 AM		1,146	1,056		
7 AM		2,189	2,294		
8 AM		2,306	2,266		
9 AM		2,259	2,268		
10 AM		1,764			
11 AM		1,544			
12 PM		1,436			
1 PM		1,318			
2 PM		1,332			
3 PM		1,578			
4 PM		1,494			
5 PM		1,452			
6 PM		1,483			
7 PM		1,362			
8 PM		851			
9 PM	659	396			
10 PM	520	276			
11 PM	542	341			
12 AM	588	318			
		26,358			

SEASONAL FACTOR:	.908	AADT: **22,904**	AM PEAK %:	8.7	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	6.	HOUR ENDING:	3:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: TR 95 NB ON RAMP **FROM:** RICHMOND AVE ON RAMP **TO:** GIRARD AVE RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8011/0010/0800 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** NORTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27751 **COUNTER:** 9835 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		83	98		
2 AM		50	72		
3 AM		50	66		
4 AM		27	76		
5 AM		43	58		
6 AM		109	117		
7 AM		242	254		
8 AM		436			
9 AM		470			
10 AM	446	442			
11 AM	392	782			
12 PM	369	601			
1 PM	427	432			
2 PM	478	443			
3 PM	606	639			
4 PM	1,048	1,132			
5 PM	1,280	1,334			
6 PM	1,443	1,310			
7 PM	650	724			
8 PM	314	460			
9 PM	281	277			
10 PM	232	286			
11 PM	200	262			
12 AM	126	235			
		10,869			

SEASONAL FACTOR:	.972	AADT: **10,110**	AM PEAK %:	7.2	HOUR ENDING:	11:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	12.3	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: TR 95 SB OFF RAMP **FROM:** TR 95 SB **TO:** GIRARD AVE

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8011/0500/0500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** SOUTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27757 **COUNTER:** 9786 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		95	106		
2 AM		50	76		
3 AM		43	38		
4 AM		43	38		
5 AM		70	62		
6 AM		227	218		
7 AM		642	672		
8 AM		734	738		
9 AM		704			
10 AM	676	686			
11 AM	638	703			
12 PM	532	524			
1 PM	438	476			
2 PM	446	491			
3 PM	509	539			
4 PM	595	575			
5 PM	600	590			
6 PM	545	552			
7 PM	460	470			
8 PM	376	398			
9 PM	290	277			
10 PM	262	292			
11 PM	196	242			
12 AM	132	174			
		9,597			

SEASONAL FACTOR:	.972	AADT: **8,927**	AM PEAK %:	7.6	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	6.1	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: TR 95 SB ON RAMP **FROM:** ARAMINGO AVE SB **TO:** TR 95 SB

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 8011/0250/0200 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** SOUTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27746 **COUNTER:** 9765 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		86	90		
2 AM		40	52		
3 AM		44	55		
4 AM		60	82		
5 AM		132	140		
6 AM		337	330		
7 AM		896	932		
8 AM		1,170	1,174		
9 AM		1,027			
10 AM		548			
11 AM	498	464			
12 PM	494	498			
1 PM	575	517			
2 PM	568	564			
3 PM	666	610			
4 PM	692	716			
5 PM	687	764			
6 PM	606	600			
7 PM	475	506			
8 PM	437	422			
9 PM	322	328			
10 PM	248	270			
11 PM	192	250			
12 AM	156	158			
		11,007			

SEASONAL FACTOR:	.972	AADT: **10,239**	AM PEAK %:	10.6	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	6.9	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: CHRISTOPHER COLUMBUS BLVD NB **FROM:** SHACKAMAXON ST **TO:** TR 95 NB OFF RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0120/2500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27747 **COUNTER:** 9787 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		104	332		
2 AM		62	192		
3 AM		45	158		
4 AM		28	72		
5 AM		33	36		
6 AM		68	70		
7 AM		166	142		
8 AM		520			
9 AM	687	612			
10 AM	620	480			
11 AM	506	597			
12 PM	448	691			
1 PM	550	535			
2 PM	602	568			
3 PM	806	806			
4 PM	1,374	1,366			
5 PM	1,772	1,656			
6 PM	1,830	1,624			
7 PM	669	864			
8 PM	317	506			
9 PM	265	338			
10 PM	263	376			
11 PM	227	321			
12 AM	144	358			
		12,724			

SEASONAL FACTOR:	.972	AADT: **11,836**	AM PEAK %:	5.4	HOUR ENDING:	12:00 PM
AXLE CORR. FACTOR:	.957		PM PEAK %:	13.	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: CHRISTOPHER COLUMBUS BLVD SB **FROM:** SHACKAMAXON ST **TO:** TR 95 NB OFF RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0121/2500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27748 **COUNTER:** 9868 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		40	65		
2 AM		32	46		
3 AM		37	54		
4 AM		31	42		
5 AM		42	46		
6 AM		88	88		
7 AM		441	430		
8 AM		885			
9 AM		997			
10 AM	438	606			
11 AM	326	831			
12 PM	313	492			
1 PM	328	346			
2 PM	355	381			
3 PM	344	365			
4 PM	342	362			
5 PM	352	381			
6 PM	288	314			
7 PM	230	264			
8 PM	150	199			
9 PM	138	153			
10 PM	113	187			
11 PM	84	166			
12 AM	72	142			
		7,782			

SEASONAL FACTOR:	.972	AADT: **7,239**	AM PEAK %:	12.8	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	4.9	HOUR ENDING:	2:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: CHRISTOPHER COLUMBUS BLVD NB **FROM:** TR 95 NB OFF RAMP **TO:** RICHMOND ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0130/1000 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: 24844 **DVRPC FILE #:** 27749 **COUNTER:** 9833 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		273	292		
2 AM		159	240		
3 AM		148	188		
4 AM		106	115		
5 AM		147	176		
6 AM		258	295		
7 AM		660	612		
8 AM		1,046			
9 AM	1,187	1,176			
10 AM	1,180	1,184			
11 AM	1,098	1,143			
12 PM	990	1,076			
1 PM	1,153	1,140			
2 PM	1,272	1,198			
3 PM	1,508	1,461			
4 PM	2,046	1,982			
5 PM	2,244	2,258			
6 PM	2,256	2,254			
7 PM	1,339	1,336			
8 PM	852	911			
9 PM	682	750			
10 PM	576	804			
11 PM	514	638			
12 AM	372	660			
		22,768			

SEASONAL FACTOR:	.972	AADT: **21,179**	AM PEAK %:	5.2	HOUR ENDING:	10:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	9.9	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: CHRISTOPHER COLUMBUS BLVD SB **FROM:** TR 95 NB OFF RAMP **TO:** RICHMOND ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0131/1000 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: 24844 **DVRPC FILE #:** 27750 **COUNTER:** 9867 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		58	104		
2 AM		32	80		
3 AM		40	56		
4 AM		41	63		
5 AM		45	52		
6 AM		104	108		
7 AM		480	452		
8 AM		916			
9 AM	948	967			
10 AM	637	620			
11 AM	734	778			
12 PM	526	499			
1 PM	368	386			
2 PM	358	399			
3 PM	382	368			
4 PM	349	340			
5 PM	331	354			
6 PM	295	332			
7 PM	264	264			
8 PM	187	220			
9 PM	157	174			
10 PM	130	208			
11 PM	96	178			
12 AM	82	139			
		7,942			

SEASONAL FACTOR:	.972	AADT: **7,388**	AM PEAK %:	12.2	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	5.	HOUR ENDING:	2:00 PM

DVRPC – Travel Monitoring

DATE: 11/18/1998

ROAD: GIRARD AVE **FROM:** ARAMINGO AVE **TO:** RICHMOND ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2008/0070/0500 **FC:** 14

PROJECT: PAP98 **COUNT DIR:** BOTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 25 **LOOP OR CLASS:**

STATION ID: 25259 **DVRPC FILE #:** 4663 **COUNTER:** 9489 **WEATHER:** F

Hour Ending	Wednesday 11/18/98	Thursday 11/19/98	Friday 11/20/98	Saturday 11/21/98	Sunday 11/22/98
1 AM		18	12		
2 AM		17	10		
3 AM		9	7		
4 AM		15	11		
5 AM		11	6		
6 AM		26	17		
7 AM		83	87		
8 AM		149			
9 AM		181			
10 AM		130			
11 AM		136			
12 PM		152			
1 PM	144	141			
2 PM	137	157			
3 PM	140	159			
4 PM	177	174			
5 PM	201	248			
6 PM	183	178			
7 PM	113	120			
8 PM	86	92			
9 PM	85	83			
10 PM	44	50			
11 PM	30	25			
12 AM	29	15			
		2,369			

SEASONAL FACTOR:	.925	AADT: **2,104**	AM PEAK %:	7.6	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	.96		PM PEAK %:	10.5	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: ARAMINGO AVE NB **FROM:** GIRARD AVE RAMP **TO:** TR 95 SB ON RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2009/0010/1500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27744 **COUNTER:** 9948 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		156	176		
2 AM		82	106		
3 AM		82	95		
4 AM		58	62		
5 AM		82	75		
6 AM		157	168		
7 AM		376	332		
8 AM		555	504		
9 AM		606			
10 AM		676			
11 AM	592	746			
12 PM	576	666			
1 PM	616	588			
2 PM	666	650			
3 PM	738	716			
4 PM	886	870			
5 PM	966	940			
6 PM	891	872			
7 PM	648	709			
8 PM	508	548			
9 PM	401	460			
10 PM	330	404			
11 PM	282	321			
12 AM	199	227			
		11,547			

SEASONAL FACTOR:	.972	AADT: **10,741**	AM PEAK %:	6.5	HOUR ENDING:	11:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	8.1	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: ARAMINGO AVE SB **FROM:** GIRARD AVE RAMP **TO:** TR 95 SB ON RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2009/0011/1500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27745 **COUNTER:** 9834 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		101	120		
2 AM		43	72		
3 AM		49	70		
4 AM		68	94		
5 AM		136	157		
6 AM		372	361		
7 AM		1,056	1,096		
8 AM		1,566	1,534		
9 AM		1,438			
10 AM		800			
11 AM	611	713			
12 PM	631	650			
1 PM	712	660			
2 PM	706	739			
3 PM	804	728			
4 PM	832	850			
5 PM	854	918			
6 PM	731	756			
7 PM	570	607			
8 PM	524	502			
9 PM	381	389			
10 PM	298	356			
11 PM	227	313			
12 AM	183	207			
		14,017			

SEASONAL FACTOR:	.972	AADT: **13,039**	AM PEAK %:	11.2	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	6.5	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: ARAMINGO AVE NB **FROM:** CUMBERLAND ST **TO:** GIRARD AVE RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2009/0010/2500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27742 **COUNTER:** 9866 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		182	238		
2 AM		92	140		
3 AM		96	107		
4 AM		64	96		
5 AM		92	120		
6 AM		188	213		
7 AM		442	447		
8 AM		668			
9 AM	756	718			
10 AM	780	839			
11 AM	778	849			
12 PM	811	866			
1 PM	806	812			
2 PM	848	834			
3 PM	946	942			
4 PM	1,144	1,160			
5 PM	1,238	1,226			
6 PM	1,126	1,102			
7 PM	833	879			
8 PM	661	702			
9 PM	510	532			
10 PM	392	504			
11 PM	340	383			
12 AM	232	326			
		14,498			

SEASONAL FACTOR:	.972	AADT: **13,486**	AM PEAK %:	6.	HOUR ENDING:	12:00 PM
AXLE CORR. FACTOR:	.957		PM PEAK %:	8.5	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: ARAMINGO AVE SB **FROM:** CUMBERLAND ST **TO:** GIRARD AVE RAMP

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2009/0011/2500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27743 **COUNTER:** 9766 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		142	162		
2 AM		66	96		
3 AM		70	90		
4 AM		88	116		
5 AM		157	174		
6 AM		408	408		
7 AM		1,204	1,228		
8 AM	1,749	1,790			
9 AM	1,727	1,691			
10 AM	954	1,016			
11 AM	846	944			
12 PM	880	883			
1 PM	984	928			
2 PM	932	990			
3 PM	1,054	978			
4 PM	1,110	1,081			
5 PM	1,129	1,143			
6 PM	982	1,015			
7 PM	827	877			
8 PM	734	710			
9 PM	589	566			
10 PM	409	476			
11 PM	316	389			
12 AM	240	268			
		17,880			

SEASONAL FACTOR:	.972	AADT: **16,632**	AM PEAK %:	10.	HOUR ENDING:	8:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	6.4	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: RICHMOND ST NB **FROM:** GIRARD ARAMINGO AVE RAMP **TO:** NORRIS ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0140/0500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27753 **COUNTER:** 9629 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		45	64		
2 AM		29	35		
3 AM		17	26		
4 AM		18	20		
5 AM		26	24		
6 AM		56	68		
7 AM		138	120		
8 AM		304	308		
9 AM		346			
10 AM		276			
11 AM	417	434			
12 PM	322	300			
1 PM	270	258			
2 PM	260	268			
3 PM	336	342			
4 PM	554	561			
5 PM	670	676			
6 PM	620	623			
7 PM	219	252			
8 PM	168	150			
9 PM	99	113			
10 PM	74	126			
11 PM	87	85			
12 AM	64	100			
		5,543			

SEASONAL FACTOR:	.972	AADT: **5,156**	AM PEAK %:	7.8	HOUR ENDING:	11:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	12.2	HOUR ENDING:	5:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: RICHMOND ST SB **FROM:** TR 95 NB ON RAMP **TO:** NORRIS ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0141/0500 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27754 **COUNTER:** 9946 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		34	42		
2 AM		28	28		
3 AM		18	34		
4 AM		20	28		
5 AM		30	36		
6 AM		102	105		
7 AM		311	286		
8 AM		552	520		
9 AM		571			
10 AM		488			
11 AM	174	462			
12 PM	227	305			
1 PM	231	256			
2 PM	257	281			
3 PM	280	276			
4 PM	294	315			
5 PM	273	308			
6 PM	270	306			
7 PM	229	241			
8 PM	185	194			
9 PM	154	126			
10 PM	112	114			
11 PM	85	97			
12 AM	50	64			
		5,499			

SEASONAL FACTOR:	.972	AADT: **5,115**	AM PEAK %:	10.4	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	5.7	HOUR ENDING:	4:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: RICHMOND ST NB **FROM:** NORRIS ST **TO:** CUMBERLAND ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0140/1200 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** NORTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27755 **COUNTER:** 9989 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		41	61		
2 AM		27	41		
3 AM		14	24		
4 AM		21	24		
5 AM		18	27		
6 AM		37	44		
7 AM		222	201		
8 AM		274	249		
9 AM		347			
10 AM		327			
11 AM		408			
12 PM		383			
1 PM	298	311			
2 PM	265	283			
3 PM	349	322			
4 PM	578	552			
5 PM	737	710			
6 PM	772	744			
7 PM	306	305			
8 PM	180	167			
9 PM	121	116			
10 PM	97	144			
11 PM	77	97			
12 AM	60	97			
		5,967			

SEASONAL FACTOR:	.972	AADT: **5,551**	AM PEAK %:	6.8	HOUR ENDING:	11:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	12.5	HOUR ENDING:	6:00 PM

DVRPC – Travel Monitoring

DATE: 3/6/2000

ROAD: RICHMOND ST SB **FROM:** TR 95 NB ON RAMP **TO:** CUMBERLAND ST

COUNTY: PHILADELPHIA **MCD:** 239 - PHILADELPHIA **SR/SEG/OFF:** 2001/0141/1200 **FC:** 14

PROJECT: 042-221 **COUNT DIR:** SOUTH **TRAFFIC DIR:** BOTH **SPEED LIMIT:** 35 **LOOP OR CLASS:**

STATION ID: **DVRPC FILE #:** 27756 **COUNTER:** 9949 **WEATHER:** F

Hour Ending	Monday 03/06/00	Tuesday 03/07/00	Wednesday 03/08/00	Thursday 03/09/00	Friday 03/10/00
1 AM		36	47		
2 AM		29	26		
3 AM		20	34		
4 AM		22	26		
5 AM		42	48		
6 AM		112	106		
7 AM		346	312		
8 AM		593	618		
9 AM		625			
10 AM		515			
11 AM		533			
12 PM	261	314			
1 PM	256	264			
2 PM	296	315			
3 PM	292	299			
4 PM	332	338			
5 PM	306	330			
6 PM	300	313			
7 PM	256	272			
8 PM	216	222			
9 PM	175	136			
10 PM	120	116			
11 PM	91	106			
12 AM	56	68			
		5,966			

SEASONAL FACTOR:	.972	AADT: **5,550**	AM PEAK %:	10.5	HOUR ENDING:	9:00 AM
AXLE CORR. FACTOR:	.957		PM PEAK %:	5.7	HOUR ENDING:	4:00 PM

APPENDIX B
INTERSECTION TURNING MOVEMENT COUNTS

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TABLE OF CONTENTS

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DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: CITY OF PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: I-95 SB OFF RAMP & CALLOWHILL ST

DATE: 10/30/02
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: A-AM

AM INTERVAL COUNTS

		I-95 SB OFF RAMP								CALLOWHILL ST										
STARTING		1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME		L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 7:15		0	0	0	0	10	104	327	441	0	0	0	0	0	0	0	0	441	0	441
7:15 7:30		0	0	0	0	12	96	353	461	0	0	0	0	0	0	0	0	461	0	461
7:30 7:45		0	0	0	0	16	125	385	526	0	0	0	0	0	0	0	0	526	0	526
7:45 8:00		0	0	0	0	15	110	418	543	0	0	0	0	0	0	0	0	543	0	543
8:00 8:15		0	0	0	0	19	138	390	547	0	0	0	0	0	0	0	0	547	0	547
8:15 8:30		0	0	0	0	25	147	470	642	0	0	0	0	0	0	0	0	642	0	642
8:30 8:45		0	0	0	0	29	175	492	696	0	0	0	0	0	0	0	0	696	0	696
8:45 9:00		0	0	0	0	25	126	421	572	0	0	0	0	0	0	0	0	572	0	572
9:00 9:30		0	0	0	0	18	162	684	864	0	0	0	0	0	0	0	0	864	0	864
9:30 10:00		0	0	0	0	15	164	568	747	0	0	0	0	0	0	0	0	747	0	747
10:00 10:30		0	0	0	0	11	121	465	597	0	0	0	0	0	0	0	0	597	0	597
10:30 11:00		0	0	0	0	16	112	396	524	0	0	0	0	0	0	0	0	524	0	524
11:00 11:30		0	0	0	0	20	97	390	507	0	0	0	0	0	0	0	0	507	0	507
11:30 12:00		0	0	0	0	20	104	332	456	0	0	0	0	0	0	0	0	456	0	456
	TOTALS	0	0	0	0	251	1781	6091	8123	0	0	0	0	0	0	0	0	8123	0	8123
	P.H. am																			
	P.H. pm																			

HOURLY VOLUMES

	I-95 SB OFF RAMP								CALLOWHILL ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 8:00	0	0	0	0	53	435	1483	1971	0	0	0	0	0	0	0	0	1971	0	1971
8:00 9:00	0	0	0	0	98	586	1773	2457	0	0	0	0	0	0	0	0	2457	0	2457
9:00 10:00	0	0	0	0	33	326	1252	1611	0	0	0	0	0	0	0	0	1611	0	1611
10:00 11:00	0	0	0	0	27	233	861	1121	0	0	0	0	0	0	0	0	1121	0	1121
11:00 12:00	0	0	0	0	40	201	722	963	0	0	0	0	0	0	0	0	963	0	963
TOTALS	0	0	0	0	251	1781	6091	8123	0	0	0	0	0	0	0	0	8123	0	8123

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: CITY OF PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: I-95 SB OFF RAMP & CALLOWHILL RD

DATE: 10/29/02
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: A-PM

PM INTERVAL COUNTS

	I-95 SB OFF RAMP								CALLOWHILL RD										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 12:30	0	0	0	0	29	107	74	210	0	0	0	0	0	0	0	0	210	0	210
12:30 1:00	0	0	0	0	22	103	93	218	0	0	0	0	0	0	0	0	218	0	218
1:00 1:30	0	0	0	0	18	93	92	203	0	0	0	0	0	0	0	0	203	0	203
1:30 2:00	0	0	0	0	19	87	82	188	0	0	0	0	0	0	0	0	188	0	188
2:00 2:30	0	0	0	0	15	114	77	206	0	0	0	0	0	0	0	0	206	0	206
2:30 3:00	0	0	0	0	12	119	82	213	0	0	0	0	0	0	0	0	213	0	213
3:00 3:30	0	0	0	0	11	107	107	225	0	0	0	0	0	0	0	0	225	0	225
3:30 4:00	0	0	0	0	17	154	115	286	0	0	0	0	0	0	0	0	286	0	286
4:00 4:15	0	0	0	0	11	62	48	121	0	0	0	0	0	0	0	0	121	0	121
4:15 4:30	0	0	0	0	5	82	55	142	0	0	0	0	0	0	0	0	142	0	142
4:30 4:45	0	0	0	0	8	77	57	142	0	0	0	0	0	0	0	0	142	0	142
4:45 5:00	0	0	0	0	10	85	48	143	0	0	0	0	0	0	0	0	143	0	143
5:00 5:15	0	0	0	0	12	86	64	162	0	0	0	0	0	0	0	0	162	0	162
5:15 5:30	0	0	0	0	9	92	59	160	0	0	0	0	0	0	0	0	160	0	160
5:30 5:45	0	0	0	0	7	88	62	157	0	0	0	0	0	0	0	0	157	0	157
5:45 6:00	0	0	0	0	7	79	55	141	0	0	0	0	0	0	0	0	141	0	141
TOTALS	0	0	0	0	212	1535	1170	2917	0	6567	0	0	0	0	0	0	2917	0	2917
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	I-95 SB OFF RAMP								CALLOWHILL RD										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 1:00	0	0	0	0	51	210	167	428	0	0	0	0	0	0	0	0	428	0	428
1:00 2:00	0	0	0	0	37	180	174	391	0	0	0	0	0	0	0	0	391	0	391
2:00 3:00	0	0	0	0	27	233	159	419	0	0	0	0	0	0	0	0	419	0	419
3:00 4:00	0	0	0	0	28	261	222	511	0	0	0	0	0	0	0	0	511	0	511
4:00 5:00	0	0	0	0	34	306	208	548	0	0	0	0	0	0	0	0	548	0	548
5:00 6:00	0	0	0	0	35	345	240	620	0	0	0	0	0	0	0	0	620	0	620
TOTALS	0	0	0	0	212	1535	1170	2917	0	0	0	0	0	0	0	0	2917	0	2917

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: CITY OF PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: 2ND ST & CALLOWHILL ST

DATE: 10/30/02
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: A2-AM

AM INTERVAL COUNTS

STARTING TIME	2ND ST 1-NORTHBOUND L	S	R	TOTAL	2-SOUTHBOUND L	S	R	TOTAL	CALLOWHILL ST 3-EASTBOUND L	S	R	TOTAL	4-WESTBOUND L	S	R	TOTAL	N-S TOTAL	E-W TOTAL	TOTAL
7:00 7:15	0	0	0	0	4	90	68	162	0	0	0	0	0	0	0	0	162	0	162
7:15 7:30	0	0	0	0	7	101	74	182	0	0	0	0	0	0	0	0	182	0	182
7:30 7:45	0	0	0	0	7	103	76	186	0	0	0	0	0	0	0	0	186	0	186
7:45 8:00	0	0	0	0	8	115	75	198	0	0	0	0	0	0	0	0	198	0	198
8:00 8:15	0	0	0	0	6	104	70	180	0	0	0	0	0	0	0	0	180	0	180
8:15 8:30	0	0	0	0	5	95	66	166	0	0	0	0	0	0	0	0	166	0	166
8:30 8:45	0	0	0	0	4	91	63	158	0	0	0	0	0	0	0	0	158	0	158
8:45 9:00	0	0	0	0	3	88	60	151	0	0	0	0	0	0	0	0	151	0	151
9:00 9:30	0	0	0	0	25	114	71	210	0	0	0	0	0	0	0	0	210	0	210
9:30 10:00	0	0	0	0	9	104	94	207	0	0	0	0	0	0	0	0	207	0	207
10:00 10:30	0	0	0	0	6	97	88	191	0	0	0	0	0	0	0	0	191	0	191
10:30 11:00	0	0	0	0	5	101	91	197	0	0	0	0	0	0	0	0	197	0	197
11:00 11:30	0	0	0	0	7	111	96	214	0	0	0	0	0	0	0	0	214	0	214
11:30 12:00	0	0	0	0	6	123	109	238	0	0	0	0	0	0	0	0	238	0	238
TOTALS	0	0	0	0	102	1437	1101	2640	0	0	0	0	0	0	0	0	2640	0	2640
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

STARTING TIME	2ND ST 1-NORTHBOUND L	S	R	TOTAL	2-SOUTHBOUND L	S	R	TOTAL	CALLOWHILL ST 3-EASTBOUND L	S	R	TOTAL	4-WESTBOUND L	S	R	TOTAL	N-S TOTAL	E-W TOTAL	TOTAL
7:00 8:00	0	0	0	0	26	409	293	728	0	0	0	0	0	0	0	0	728	0	728
8:00 9:00	0	0	0	0	18	378	259	655	0	0	0	0	0	0	0	0	655	0	655
9:00 10:00	0	0	0	0	34	218	165	417	0	0	0	0	0	0	0	0	417	0	417
10:00 11:00	0	0	0	0	11	198	179	388	0	0	0	0	0	0	0	0	388	0	388
11:00 12:00	0	0	0	0	13	234	205	452	0	0	0	0	0	0	0	0	452	0	452
TOTALS	0	0	0	0	102	1437	1101	2640	0	0	0	0	0	0	0	0	2640	0	2640

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: CITY OF PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: 2ND ST & CALLOWHILL RD

DATE: 10/30/02
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: A2-PM

PM INTERVAL COUNTS

	2ND ST								CALLOWHILL RD										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 12:30	0	0	0	0	14	95	333	442	0	0	0	0	0	0	0	0	442	0	442
12:30 1:00	0	0	0	0	17	113	344	474	0	0	0	0	0	0	0	0	474	0	474
1:00 1:30	0	0	0	0	15	115	350	480	0	0	0	0	0	0	0	0	480	0	480
1:30 2:00	0	0	0	0	18	101	348	467	0	0	0	0	0	0	0	0	467	0	467
2:00 2:30	0	0	0	0	16	92	344	452	0	0	0	0	0	0	0	0	452	0	452
2:30 3:00	0	0	0	0	12	102	356	470	0	0	0	0	0	0	0	0	470	0	470
3:00 3:30	0	0	0	0	17	100	339	456	0	0	0	0	0	0	0	0	456	0	456
3:30 4:00	0	0	0	0	18	137	362	517	0	0	0	0	0	0	0	0	517	0	517
4:00 4:15	0	0	0	0	10	87	259	356	0	0	0	0	0	0	0	0	356	0	356
4:15 4:30	0	0	0	0	9	85	254	348	0	0	0	0	0	0	0	0	348	0	348
4:30 4:45	0	0	0	0	11	98	261	370	0	0	0	0	0	0	0	0	370	0	370
4:45 5:00	0	0	0	0	10	106	250	366	0	0	0	0	0	0	0	0	366	0	366
5:00 5:15	0	0	0	0	12	114	269	395	0	0	0	0	0	0	0	0	395	0	395
5:15 5:30	0	0	0	0	11	122	267	400	0	0	0	0	0	0	0	0	400	0	400
5:30 5:45	0	0	0	0	14	117	251	382	0	0	0	0	0	0	0	0	382	0	382
5:45 6:00	0	0	0	0	12	113	253	378	0	0	0	0	0	0	0	0	378	0	378
TOTALS	0	0	0	0	216	1697	4840	6753	0	6567	0	0	0	0	0	0	6753	0	6753
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	2ND ST								CALLOWHILL RD										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 1:00	0	0	0	0	31	208	677	916	0	0	0	0	0	0	0	0	916	0	916
1:00 2:00	0	0	0	0	33	216	698	947	0	0	0	0	0	0	0	0	947	0	947
2:00 3:00	0	0	0	0	28	194	700	922	0	0	0	0	0	0	0	0	922	0	922
3:00 4:00	0	0	0	0	35	237	701	973	0	0	0	0	0	0	0	0	973	0	973
4:00 5:00	0	0	0	0	40	376	1024	1440	0	0	0	0	0	0	0	0	1440	0	1440
5:00 6:00	0	0	0	0	49	466	1040	1555	0	0	0	0	0	0	0	0	1555	0	1555
TOTALS	0	0	0	0	216	1697	4840	6753	0	0	0	0	0	0	0	0	6753	0	6753

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street: 2ND ST; East-West Street: & RACE ST/ I-95 ON RAMP

DATE: 2/5/02
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: B-AM

AM INTERVAL COUNTS

	2ND ST								RACE ST/ I-95 ON RAMP										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WES BOUNI				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 7:15	0	0	0	0	13	116	0	129	36	18	17	71	0	0	0	0	129	71	200
7:15 7:30	0	0	0	0	16	139	0	155	48	21	25	94	0	0	0	0	155	94	249
7:30 7:45	0	0	0	0	12	136	0	148	61	25	38	124	0	0	0	0	148	124	272
7:45 8:00	0	0	0	0	14	151	0	165	60	28	44	132	0	0	0	0	165	132	297
8:00 8:15	0	0	0	0	18	172	0	190	89	38	32	159	0	0	0	0	190	159	349
8:15 8:30	0	0	0	0	20	201	0	221	64	39	35	138	0	0	0	0	221	138	359
8:30 8:45	0	0	0	0	18	193	0	211	73	31	51	155	0	0	0	0	211	155	366
8:45 9:00	0	0	0	0	20	205	0	225	54	41	49	144	0	0	0	0	225	144	369
9:00 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	131	1313	0	1444	485	241	291	1017	0	0	0	0	1444	1017	2461
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	2ND ST								RACE ST/ I-95 ON RAMP										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 8:00	0	0	0	0	55	542	0	597	205	92	124	421	0	0	0	0	597	421	1018
8:00 9:00	0	0	0	0	76	771	0	847	280	149	167	596	0	0	0	0	847	596	1443
9:00 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	131	1313	0	1444	485	241	291	1017	0	0	0	0	1444	1017	2461

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: 2ND ST & RACE ST/ I-95 ON RAMP

DATE: 2/07/02
DAY: FRIDAY
WEATHER: FAIR

FILE NUMBER: B-PM

PM INTERVAL COUNTS

	2ND ST								RACE ST/ I-95 ON RAMP										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 4:15	0	0	0	0	11	75	0	86	95	72	37	204	0	0	0	0	86	204	290
4:15 4:30	0	0	0	0	10	107	0	117	110	79	36	225	0	0	0	0	117	225	342
4:30 4:45	0	0	0	0	18	133	0	151	122	96	43	261	0	0	0	0	151	261	412
4:45 5:00	0	0	0	0	14	141	0	155	102	73	37	212	0	0	0	0	155	212	367
5:00 5:15	0	0	0	0	10	127	0	137	148	115	39	302	0	0	0	0	137	302	439
5:15 5:30	0	0	0	0	11	129	0	140	139	95	39	273	0	0	0	0	140	273	413
5:30 5:45	0	0	0	0	24	90	0	114	112	81	42	235	0	0	0	0	114	235	349
5:45 6:00	0	0	0	0	22	89	0	111	97	88	45	230	0	0	0	0	111	230	341
TOTALS	0	0	0	0	120	891	0	1011	925	699	318	1942	0	0	0	0	1011	1942	2953
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	2ND ST								RACE ST/ I-95 ON RAMP										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 5:00	0	0	0	0	53	456	0	509	429	320	153	902	0	0	0	0	509	902	1411
5:00 6:00	0	0	0	0	67	435	0	502	496	379	165	1040	0	0	0	0	502	1040	1542
TOTALS	0	0	0	0	120	891	0	1011	925	699	318	1942	0	0	0	0	1011	1942	2953

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street: DELAWARE AVE; East-West Street: & SUMMER ST

DATE: 2/6/02
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: A-AM

AM INTERVAL COUNTS

STARTING TIME	DELAWARE AVE 1-NORTHBOUND L	S	R	TOTAL	2-SOUTHBOUND L	S	R	TOTAL	SUMMER ST 3-EASTBOUND L	S	R	TOTAL	4-WESTBOUND L	S	R	TOTAL	N-S TOTAL	E-W TOTAL	TOTAL
7:00 7:15	6	0	0	6	0	0	3	3	0	0	0	0	0	0	0	0	9	0	9
7:15 7:30	7	0	0	7	0	0	2	2	0	0	0	0	0	0	0	0	9	0	9
7:30 7:45	7	0	0	7	0	0	2	2	0	0	0	0	0	0	0	0	9	0	9
7:45 8:00	0	0	0	0	0	0	9	9	0	0	0	0	0	0	0	0	9	0	9
8:00 8:15	8	0	0	8	0	0	3	3	0	0	0	0	0	0	0	0	11	0	11
8:15 8:30	7	0	0	7	0	0	3	3	0	0	0	0	0	0	0	0	10	0	10
8:30 8:45	4	0	0	4	0	0	4	4	0	0	0	0	0	0	0	0	8	0	8
8:45 9:00	10	0	0	10	0	0	4	4	0	0	0	0	0	0	0	0	14	0	14
9:00 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	49	0	0	49	0	0	30	30	0	0	0	0	0	0	0	0	79	0	79
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

STARTING TIME	DELAWARE AVE 1-NORTHBOUND L	S	R	TOTAL	2-SOUTHBOUND L	S	R	TOTAL	SUMMER ST 3-EASTBOUND L	S	R	TOTAL	4-WESTBOUND L	S	R	TOTAL	N-S TOTAL	E-W TOTAL	TOTAL
7:00 8:00	20	0	0	20	0	0	16	16	0	0	0	0	0	0	0	0	36	0	36
8:00 9:00	29	0	0	29	0	0	14	14	0	0	0	0	0	0	0	0	43	0	43
9:00 10:00	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 11:00	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 12:00	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	49	0	0	49	0	0	30	30	0	0	0	0	0	0	0	0	79	0	79

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: DELAWARE AVE & SUMMER ST

DATE: 2/6/02
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: A-PM

PM INTERVAL COUNTS

	DELAWARE AVE								SUMMER ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 4:15	3	0	0	3	0	0	5	5	0	0	0	0	0	0	0	0	8	0	8
4:15 4:30	2	0	0	2	0	0	5	5	0	0	0	0	0	0	0	0	7	0	7
4:30 4:45	2	0	0	2	0	0	7	7	0	0	0	0	0	0	0	0	9	0	9
4:45 5:00	4	0	0	4	0	0	10	10	0	0	0	0	0	0	0	0	14	0	14
5:00 5:15	11	0	0	11	0	0	13	13	0	0	0	0	0	0	0	0	24	0	24
5:15 5:30	13	0	0	13	0	0	16	16	0	0	0	0	0	0	0	0	29	0	29
5:30 5:45	7	0	0	7	0	0	12	12	0	0	0	0	0	0	0	0	19	0	19
5:45 6:00	10	0	0	10	0	0	10	10	0	0	0	0	0	0	0	0	20	0	20
TOTALS	52	0	0	52	0	0	78	78	0	0	0	0	0	0	0	0	130	0	130
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	DELAWARE AVE								SUMMER ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 5:00	11	0	0	11	0	0	27	27	0	0	0	0	0	0	0	0	38	0	38
5:00 6:00	41	0	0	41	0	0	51	51	0	0	0	0	0	0	0	0	92	0	92
TOTALS	52	0	0	52	0	0	78	78	0	0	0	0	0	0	0	0	130	0	130

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: ARAMINGO AVE & YORK AVE

DATE: 12/13/01
DAY: THURSDAY
WEATHER: FAIR

FILE NUMBER: A-2AM

AM INTERVAL COUNTS

	ARAMINGO AVE								YORK AVE										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 7:15	27	104	17	148	3	268	5	276	8	25	37	70	18	7	5	30	424	100	524
7:15 7:30	38	99	16	153	10	253	8	271	8	22	39	69	28	18	3	49	424	118	542
7:30 7:45	32	114	19	165	1	342	5	348	11	22	45	78	33	21	3	57	513	135	648
7:45 8:00	20	124	14	138	11	367	7	385	10	26	49	85	35	25	2	62	523	147	670
8:00 8:15	34	123	18	175	14	342	19	375	10	14	41	65	41	25	7	73	550	138	688
8:15 8:30	23	109	19	151	7	299	7	313	18	20	49	87	28	55	5	88	464	175	639
8:30 8:45	18	101	19	138	12	323	5	340	8	16	36	60	29	19	4	52	478	112	590
8:45 9:00	23	75	12	110	11	303	5	319	3	10	35	48	22	11	10	43	429	91	520
9:00 9:30	78	214	47	339	27	441	26	494	18	37	61	116	68	29	19	116	833	232	1065
9:30 10:00	70	204	28	302	35	319	23	377	27	29	56	112	49	53	17	119	679	231	910
10:00 10:30	60	188	42	290	30	278	24	332	33	37	58	128	60	62	19	141	622	269	891
10:30 11:00	50	156	33	239	29	278	25	332	32	35	64	131	37	35	19	91	571	222	793
11:00 11:30	49	173	28	250	29	249	33	311	23	38	52	113	63	42	30	135	561	248	809
11:30 12:00	52	225	35	312	17	265	15	297	25	41	56	122	59	48	27	134	609	256	865
TOTALS	554	2009	347	2910	236	4327	207	4770	234	372	678	1284	570	450	170	1190	7680	2474	10154
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	ARAMINGO AVE								YORK AVE										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 8:00	97	441	66	604	25	1230	25	1280	37	95	170	302	114	71	13	198	1884	500	2384
8:00 9:00	98	408	68	574	44	1267	36	1347	39	60	161	260	120	110	26	256	1921	516	2437
9:00 10:00	148	418	75	641	62	760	49	871	45	66	117	228	117	82	36	235	1512	463	1975
10:00 11:00	110	344	75	529	59	556	49	664	65	72	122	259	97	97	38	232	1193	491	1684
11:00 12:00	101	398	63	562	46	514	48	608	48	79	108	235	122	90	57	269	1170	504	1674
TOTALS	554	2009	347	2910	236	4327	207	4770	234	372	678	1284	570	450	170	1190	7680	2474	10154

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: ARAMINGO AVE & YORK ST

DATE: 12/13/01
DAY: THURSDAY
WEATHER: FAIR

FILE NUMBER: A-2PM

PM INTERVAL COUNTS

	ARAMINGO AVE								YORK ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 12:30	74	255	51	380	24	305	26	355	32	61	60	153	64	55	30	149	735	302	1037
12:30 1:00	83	248	55	386	37	292	29	358	34	51	68	153	66	38	29	133	744	286	1030
1:00 1:30	75	240	55	370	22	296	33	351	26	51	65	142	76	55	31	162	721	304	1025
1:30 2:00	73	242	54	369	32	325	22	379	42	43	63	148	62	48	29	139	748	287	1035
2:00 2:30	71	249	52	372	27	276	30	333	42	69	63	174	67	57	33	157	705	331	1036
2:30 3:00	101	316	57	474	20	284	20	324	43	51	69	163	69	53	34	156	798	319	1117
3:00 3:30	97	346	37	480	26	318	24	368	33	75	86	194	73	59	24	156	848	350	1198
3:30 4:00	51	428	42	521	25	431	20	476	43	55	79	177	65	64	20	149	997	326	1323
4:00 4:15	25	236	17	278	9	168	29	206	16	36	40	92	31	31	7	69	484	161	645
4:15 4:30	31	182	37	250	15	171	15	201	14	32	44	90	26	30	14	70	451	160	611
4:30 4:45	41	205	23	269	16	201	13	230	22	32	51	105	30	46	23	99	499	204	703
4:45 5:00	29	211	21	261	11	176	20	207	27	26	38	91	21	27	15	63	468	154	622
5:00 5:15	44	253	24	321	11	200	13	224	18	24	28	70	40	33	10	83	545	153	698
5:15 5:30	36	241	20	297	11	174	15	200	16	22	26	64	37	35	13	85	497	149	646
5:30 5:45	41	238	18	297	9	165	12	186	16	21	24	61	32	37	13	82	483	143	626
5:45 6:00	46	222	19	287	6	171	9	186	17	25	27	69	39	33	12	84	473	153	626
TOTALS	918	4112	582	5612	301	3953	330	4584	441	674	831	1946	798	701	337	1836	10196	3782	13978
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	ARAMINGO AVE								YORK ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 1:00	157	503	106	766	61	597	55	713	66	112	128	306	130	93	59	282	1479	588	2067
1:00 2:00	148	482	109	739	54	621	55	730	68	94	128	290	138	103	60	301	1469	591	2060
2:00 3:00	172	565	109	846	47	560	50	657	85	120	132	337	136	110	67	313	1503	650	2153
3:00 4:00	148	774	79	1001	51	749	44	844	76	130	165	371	138	123	44	305	1845	676	2521
4:00 5:00	126	834	98	1058	51	716	77	844	79	126	173	378	108	134	59	301	1902	679	2581
5:00 6:00	167	954	81	1202	37	710	49	796	67	92	105	264	148	138	48	334	1998	598	2596
TOTALS	918	4112	582	5612	301	3953	330	4584	441	674	831	1946	798	701	337	1836	10196	3782	13978

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: ARAMINGO AVE & RICHMOND ST

DATE: 12/13/01
DAY: THURSDAY
WEATHER: FAIR

FILE NUMBER: A-1AM

AM INTERVAL COUNTS

	ARAMINGO AVE												RICHMOND ST						
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 7:15	136	0	27	163	0	0	0	0	0	0	0	0	30	0	0	30	163	30	193
7:15 7:30	144	0	30	174	0	0	0	0	0	0	0	0	41	0	0	41	174	41	215
7:30 7:45	140	0	26	166	0	0	0	0	0	0	0	0	33	0	0	33	166	33	199
7:45 8:00	155	0	40	40	0	0	0	0	0	0	0	0	50	0	0	50	40	50	90
8:00 8:15	168	0	42	210	0	0	0	0	0	0	0	0	64	0	1	65	210	65	275
8:15 8:30	180	0	33	213	0	0	0	0	0	0	0	0	70	0	1	71	213	71	284
8:30 8:45	107	0	30	137	0	0	0	0	0	0	0	0	76	0	0	76	137	76	213
8:45 9:00	118	0	29	147	0	0	0	0	0	0	0	0	70	0	0	70	147	70	217
9:00 9:30	264	0	56	320	0	0	0	0	0	0	0	0	89	0	0	89	320	89	409
9:30 10:00	243	0	83	326	0	0	0	0	0	0	0	0	88	0	0	88	326	88	414
10:00 10:30	221	0	98	319	0	0	0	0	0	0	0	0	60	0	0	60	319	60	379
10:30 11:00	188	0	80	268	0	0	0	0	0	0	0	0	51	0	0	51	268	51	319
11:00 11:30	176	0	79	255	0	0	0	0	0	0	0	0	52	0	0	52	255	52	307
11:30 12:00	175	0	77	252	0	0	0	0	0	0	0	0	48	0	0	48	252	48	300
TOTALS	2260	0	730	2990	0	0	0	0	0	0	0	0	822	0	2	824	2990	824	3814
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	ARAMINGO AVE												RICHMOND ST						
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
7:00 8:00	420	0	123	543	0	0	0	0	0	0	0	0	154	0	0	154	543	154	697
8:00 9:00	573	0	134	707	0	0	0	0	0	0	0	0	280	0	2	282	707	282	989
9:00 10:00	507	0	139	646	0	0	0	0	0	0	0	0	177	0	0	177	646	177	823
10:00 11:00	409	0	178	587	0	0	0	0	0	0	0	0	111	0	0	111	587	111	698
11:00 12:00	351	0	156	507	0	0	0	0	0	0	0	0	100	0	0	100	507	100	607
TOTALS	2260	0	730	2990	0	0	0	0	0	0	0	0	822	0	2	824	2990	824	3814

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: PHILADELPHIA
MUNICIPALITY: PHILADELPHIA

INTERSECTION: North-South Street East-West Street
STREETS: ARAMINGO AVE & RICHMOND ST

DATE: 12/13/01
DAY: THURSDAY
WEATHER: FAIR

FILE NUMBER: A-1PM

PM INTERVAL COUNTS

	ARAMINGO AVE								RICHMOND ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 12:30	258	0	88	346	0	0	0	0	0	0	0	0	36	0	1	37	346	37	383
12:30 1:00	278	0	111	389	0	0	0	0	0	0	0	0	40	0	0	40	389	40	429
1:00 1:30	271	0	124	395	0	0	0	0	0	0	0	0	52	0	0	52	395	52	447
1:30 2:00	265	0	136	401	0	0	0	0	0	0	0	0	45	0	2	47	401	47	448
2:00 2:30	336	0	177	513	0	0	0	0	0	0	0	0	38	0	1	39	513	39	552
2:30 3:00	378	0	216	594	0	0	0	0	0	0	0	0	59	0	1	60	594	60	654
3:00 3:30	209	0	236	445	0	0	0	0	0	0	0	0	52	0	1	53	445	53	498
3:30 4:00	400	0	401	801	0	0	0	0	0	0	0	0	38	0	1	39	801	39	840
4:00 4:15	189	0	209	398	0	0	0	0	0	0	0	0	17	0	1	18	398	18	416
4:15 4:30	196	0	226	422	0	0	0	0	0	0	0	0	25	0	2	27	422	27	449
4:30 4:45	195	0	220	415	0	0	0	0	0	0	0	0	27	0	1	28	415	28	443
4:45 5:00	198	0	225	423	0	0	0	0	0	0	0	0	20	0	1	21	423	21	444
5:00 5:15	245	0	233	478	0	0	0	0	0	0	0	0	18	0	0	18	478	18	496
5:15 5:30	250	0	230	480	0	0	0	0	0	0	0	0	25	0	1	26	480	26	506
5:30 5:45	259	0	222	481	0	0	0	0	0	0	0	0	16	0	0	16	481	16	497
5:45 6:00	248	0	217	465	0	0	0	0	0	0	0	0	16	0	0	16	465	16	481
TOTALS	4175	0	3271	7446	0	0	0	0	0	0	0	0	524	0	13	537	7446	537	7983
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	ARAMINGO AVE								RICHMOND ST										
STARTING	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
12:00 1:00	536	0	199	735	0	0	0	0	0	0	0	0	76	0	1	77	735	77	812
1:00 2:00	536	0	260	796	0	0	0	0	0	0	0	0	97	0	2	99	796	99	895
2:00 3:00	714	0	393	1107	0	0	0	0	0	0	0	0	97	0	2	99	1107	99	1206
3:00 4:00	609	0	637	1246	0	0	0	0	0	0	0	0	90	0	2	92	1246	92	1338
4:00 5:00	778	0	880	1658	0	0	0	0	0	0	0	0	89	0	5	94	1658	94	1752
5:00 6:00	1002	0	902	1904	0	0	0	0	0	0	0	0	75	0	1	76	1904	76	1980
TOTALS	4175	0	3271	7446	0	0	0	0	0	0	0	0	524	0	13	537	7446	537	7983

I-95 Interchange Enhancement and Reconstruction
I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study

Publication No.: 05003

Date Published: June 2005

Geographic Area Covered: Delaware Expressway (I-95), Girard Avenue, I-676 Vine Expressway,and Lower Northeast Philadelphia neighborhoods of Fishtown, Kensington and Port Richmond with the Society Hill neighborhood of Center City Philadelphia

Key Words: Traffic Volumes, Peak Hour Traffic, Travel Forecast, I-95, Delaware Expressway, Girard Avenue, Aramingo Avenue, Richmond Street, I-676 Vine Expressway, Philadelphia

ABSTRACT
This report presents traffic forecasts and analysis for the Girard Avenue and I-676 Vine Expressway Interchange complex along I-95 in the Northern Liberties and Penn Treaty sections of Philadelphia. The report examines the impacts of 2025 and 2005 traffic volumes on I-95, interchange ramps for Girard Avenue and I-676 Vine Expressway, and also the local roadway system for the No-Build (Base Case) Alternative and five different Build options. The "Base Case" or No-Build Alternative, eliminates the lane drop on I-95 southbound at Girard Avenue while adding a connection from the southbound Girard Avenue off-ramp to Aramingo Avenue, and five build options, which would reconfigure the I-95 on and off-ramps as well as make other improvements to the Aramingo Avenue/Girard Avenue Interchange. The report also briefly describes the methodology used to develop the traffic forecasts.

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