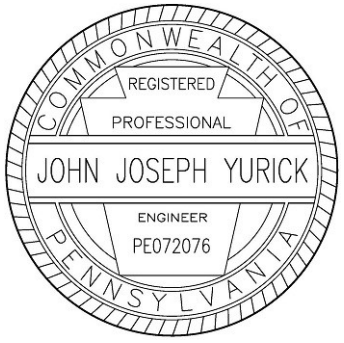
Transportation Impact Study

Steelworks Mixed-Use Redevelopment

Phoenixville Borough, Chester County, PA







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Executive Summary

The applicant proposes to redevelop a series of properties, including the Barto Property, on the north/west side of Bridge Street (S.R. 0113), including 375 apartments and 40,600 square feet of retail space, to be located along Bridge Street (S.R. 0113) between Wheatland Street and Hall Street in the Borough of Phoenixville, Chester County, Pennsylvania (**Figure 1A**). Access to the site is proposed to be provided via one unsignalized access along Bridge Street (S.R. 0113) and an access along Hall Street, which is proposed to be extended to the west from its existing terminus at Bridge Street (S.R. 0113) and ultimately to Paradise Street. A site plan, prepared by Czop/Specter, Inc. and dated September 18, 2020 is shown in **Figure 2**.

A Scoping Meeting Application was submitted to PennDOT and the Borough of Phoenixville on August 11, 2016. The scope approval was received on September 30, 2016. A copy of the approved scoping application is included in **Appendix A**.

The scope of this transportation impact study is based on the scoping application coordination, as well as PennDOT's guidelines, per the Department's Publication 282, Appendix A *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, dated July 2017, and the requirements of the Borough Ordinance.

The purpose of this transportation impact study is to evaluate the traffic impacts of the proposed redevelopment. The scope of this study includes an evaluation of the existing weekday morning, weekday afternoon, and Saturday midday peak hours, as well as the future 2022 build-out year and future 2027 design year, five years beyond the anticipated build-out year, both without and with the development at the following study intersections:

- Bridge Street (S.R. 0113) and Church Street
- Bridge Street (S.R. 0113) and Hall Street
- Bridge Street (S.R. 0113) and Walnut Street
- Bridge Street (S.R. 0113) and Buchanan Street
- Bridge Street (S.R. 0113) and Wheatland Street
- Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)
- Bridge Street (S.R. 0113) and Proposed Access

Based on trip generation data compiled for Multifamily Housing (Mid-Rise) (ITE Land Use Code 221), High-Turn (Sit-Down) Restaurant (ITE Land Use Code 932), and Strip Retail Plaza (ITE Land Use Code 822) contained in the Institute of Transportation Engineers (ITE) publication entitled, Trip Generation Manual, 11th Edition, the proposed development will generate a total of approximately **234 "new" trips during the weekday morning peak hour, 207 "new" trips during the weekday afternoon peak hour, and 296 "new" trips during the Saturday midday peak hour**.

The additional peak hour traffic associated with the proposed redevelopment will adversely impact some of the study intersections and will result in increased delays from various traffic movements and overall intersection

operations to varying degrees without any transportation improvements. Further, several intersections will require mitigation according to PennDOT guidelines as well as Borough ordinance requirements.

The following improvements and considerations are recommended in conjunction with the Steelworks redevelopment:

- Provide a three-lane cross-section along Bridge Street (S.R. 0113) generally between the western site access (plus taper) and Hall Street (approximately) in order to accommodate a continuous center-turn lane This continuous lane will provide area for left-turning vehicles into the site access, Buchanan Street, Walnut Street, and the Hall Street extension; reducing stacking through the corridor. The center turn-left will also facilitate a two-stage movement for left-turns onto Bridge Street, thereby reducing side street delays. Furthermore, in order to reduce travel speeds along Bridge Street and provide an aesthetic streetscape element as well as a pedestrian refuge area, portions of the center turn lane can be replaced by a center median at select locations. *The applicant has submitted a conceptual layout plan of the proposed roadway improvements that will need to be reviewed and approved by PennDOT and the Borough.*

- The applicant should design the proposed fourth western leg (i.e., Hall Street Extension) at the existing Bridge Street (S.R. 0113)/Hall Street intersection to provide access to the site and to adjacent properties. As such, we recommend the following design elements for the new intersection approach:
    - The proposed extension of Hall Street should be designed in accordance with local road standards. Pending further extension of Hall Street, the terminus should provide adequate turn-around area for vehicles.
    - It is anticipated that this roadway will ultimately provide an access route for emergency vehicles so there may be a future need for an emergency-vehicle traffic control signal (as an interim or permanent condition) should full signalization not be warranted/approved at the intersection of Bridge Street (S.R. 0113) and Hall Street. Also, intersection geometry should accommodate the turning maneuvers of the Borough's largest emergency vehicle including egress movements onto Bridge Street.
    - Provide six-foot sidewalks along at least one side of the Hall Street extension.
    - The applicant should provide a northbound left-turn lane along Bridge Street (S.R. 0113) onto Hall Street.
    - The applicant should provide separate left and right-turn lanes with right-turn channelization island along the Hall Street extension egress.
    - Beyond the turning lanes along the Hall Street extension at Bridge Street, the applicant should provide a 26-foot wide cartway along the Hall Street extension with one travel lane in each direction.
    - In addition to providing access easements to adjacent properties to the north and west of the proposed Hall Street extension, access should be provided to the adjacent property to the north, currently occupied by Uncle B's Bar B Q to the Hall Street extension and their existing access to Bridge Street (S.R. 0113) should be eliminated.

- Based on future traffic volume projections, a traffic signal is warranted at the intersection, and therefore, we recommend that the applicant provide signalization at the intersection, pending PennDOT review and approval. If approved by PennDOT, the traffic signal should be installed with equipment to coordinate with adjacent traffic signals along Bridge Street (S.R. 0113). Additionally, emergency pre-emption equipment should be provided along all approaches. ADA compliant pedestrian accommodations should be provided to cross all legs, as feasible. Should the signal not be warranted/approved until after build-out, the signal should operate as an emergency signal until full signalization is warranted.
- In order for the future traffic volumes to satisfy traffic signal warrants, as noted above, the following conditions were assumed:
  - Build out of the Steelworks mixed-use development. It was assumed based on information provided from the applicant that the eastern parking facility accessing the future Hall Street extension will be restricted to residents of the building while the western parking area will accommodate both retail and residential users, be separated from the eastern parking area, and provide direct access to Bridge Street only.
  - Build out of the Steelpointe residential community and completion of the Paradise Street and Hall Street Extension projects.

- In order to improve operations along the corridor, a peak hour restriction should be implemented to restrict Wheatland Street left-turns onto Bridge Street (S.R. 0113) during peak hours, at a minimum. These left-turns can be diverted and completed at the signalized intersection of Bridge Street (S.R. 0113) and Hall Street.

- The applicant should develop a safety mitigation strategy for the intersection of Bridge Street (S.R. 0113) and Buchanan Street which evaluates safety improvements such as realignment, roadway striping, and signage in order to reduce the number of crashes at the intersection caused by the horizontal curvature. Based on the conceptual roadway improvement plan submitted by the applicant, several improvements along the Bridge Street corridor are proposed and include:
  - Restriping to provide a three-lane cross-section between the western property boundary and Hall Street to the east;
  - A short, raised median on the eastbound approach to Buchanan Street with pedestrian crossing (and refuge area);
  - Radii adjustments to narrow the roadway cartway through the intersection to slow traffic;
  - A potential pedestrian signal or flashing device at Buchanan Street
  - Curve warning signage through the horizontal curve to enhance vehicle guidance.
    - NOTE: The driveways along Bridge Street (S.R. 0113) on the southwest corner of the intersection of Bridge Street (S.R. 0113) and Buchanan Street have been recently closed using temporary devices after the property was converted from the gas station use to the current real estate office. Any modifications/ improvements along Bridge Street (S.R. 0113) would not further restrict access to this property as access will continue to be provided via Buchanan Street.

- The proposed redevelopment results in an overall level-of-service impact at the intersection of Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023), which requires mitigation per PennDOT criteria. Given the complexity of the existing intersection, a comprehensive solution is required, including the potential for a roundabout at this location. The scale and cost of these improvements is beyond the reasonable responsibility of the applicant to address, and therefore, an Alternative Transportation Plan (ATP) will be completed under separate cover. The ATP will highlight the various transportation network improvements proposed by the applicant. The Borough should continue to plan for the improvements detailed in the *Nutt Road Traffic Evaluation*, prepared by McMahon Associates, Inc. and dated March 8, 2017.

- A parking management plan should be provided for the site to document parking regulations/ restrictions, etc. As part of the plan, the applicant should explore the feasibility of providing a pick-up/drop-off area for ride share and delivery services.

- The applicant should consider bicycle parking/storage to further encourage alternative modes of transportation for its residents and visitors.

- Based on the site plan and renderings, it appears that widening of site frontage is proposed to provide a more expansive sidewalk area across the site frontage along with landscaping and street trees, and several on-street parking stalls.

- The applicant should explore the feasibility of providing ADA curb ramp upgrades to the non-compliant study intersections, as identified herein, in order to provide an accessible pedestrian route along Bridge Street (S.R. 0113) and to nearby SEPTA bus stops, and as determined appropriate by the Borough.

- The applicant should explore the feasibility of providing a bus shelter at the existing bus stop at the Bridge Street (S.R. 0113)/Church Street intersection. The applicant and Borough should coordinate with SEPTA to determine if the existing bus route should be rerouted along Bridge Street and past the site given the proposed density of the site and other nearby new developments.

- The site accesses should be designed to provide adequate sight distance. The access and sight distance lines and values should be depicted on the land development and Highway Occupancy Permit Plans, as required by PennDOT and the Borough. The proposed accesses should consist of the following features:

  <u>Proposed Site Access and Bridge Street (S.R. 0113)</u>

  - Classified as a medium volume driveway based on the anticipated daily traffic volumes.
  - Provide one ingress lane and one egress lane for the access.
  - A left-turn lane is warranted per PennDOT criteria, and therefore, provide a dedicated 75-foot long eastbound Bridge Street (S.R. 0113) left-turn lane.

- Provide stop control on the site access approach.
- Provide ADA compliant pedestrian facilities to cross the access approach.
- Evaluate sight line impacts by the proposed on-street parking along the site frontage during detailed access design.

Proposed Site Access along Hall Street Extension

- Provide one ingress lane and one egress lane for the access.
- Provide one ingress lane and one egress lane.
- Provide stop control on the site access approach.
- Provide ADA compliant pedestrian facilities and crosswalks.
- It is noted that the initial segment of the Hall Street Extension will function as a site access until the roadway is extended to Paradise Street. The design recommendations for the Bridge Street/Hall Street intersection were previously described.

The following items are noted for the consideration of the Borough as it reviews the Steelworks redevelopment project:

- Pending submission and review of a parking management plan by the applicant, the on-site parking supply appears sufficient for the proposed land uses.

- The proposed redevelopment results in some movements at the study intersections degrading to below LOS C, and therefore, are considered deficient based on Borough guidelines. However, the applicant has agreed to make a number of improvements to the surrounding roadway network that will benefit traffic operations, circulation, and safety.

- Maneuverability of trash and recycling vehicles as well as resident loading areas should be further reviewed.

- Due to the anticipated increase in pedestrian traffic generated by the site, including likely pedestrian crossings of Bridge Street, it is recommended that a designated pedestrian crossing be further evaluated. It may be desirable to provide a signalized pedestrian crossing or an overhead flashing device at the Buchanan Street intersection.

- The site frontage should provide an extension of the Borough's Streetscape plan and provide supplementary and consistent elements (e.g., street lighting, benches, street trees, trash receptacles, etc.)

- Access to Bridge Street (S.R. 0113), improvements to any roadway along State roadways, and any traffic signalization (or pedestrian signals) of any intersection will require a Highway Occupancy Permit and approval from PennDOT.

Existing Transportation Settings and Conditions

The proposed development will be located along Bridge Street (S.R. 0113) between Wheatland Street and Hall Street in the Borough of Phoenixville, Chester County, Pennsylvania **(Figure 1A)**. The existing roadways and intersections in the vicinity of the site, which comprise the study area roadway network, are described in this section.

Roadway Characteristics

The study area roadway network and characteristics are summarized below in **Table 1**.

Table 1. Existing Roadway Characteristics

Roadway Name (Jurisdiction)	Average Daily Traffic Volumes (vehicles per day)	Roadway Classification		Travel Lanes (per direction)	Posted Speed Limit (mph)
		Smart Transportation (1)	PennDOT/ Borough (2)		
Bridge Street (S.R. 0113 – State)	*East of SR 0023* 9,969 (3)	Regional Arterial	Urban – Principal Arterial	1	25
Bridge Street (S.R. 1019 – State)	*West of SR 0023* 7,205 (3)	Community Collector	Urban – Major Collector	1	25
Nutt Road (S.R. 0023 – State)	*North of SR 1019* 9,969 (3) *South of SR 1019* 10,750 (3)	Regional Arterial	Urban - Minor Arterial Urban – Principal Arterial	1	25
Church Street (Borough)	n/a	Local	Local	1	25
Hall Street (Borough)	n/a	Local	Local	1	25
Buchanan Street (Borough)	n/a	Local	Local	1	25
Wheatland Street (Borough)	n/a	Local	Local	1	25

(1) Based on Table 1.2 – Roadway Typologies in the PennDOT *Publication 13M, Design Manual Part 2*.
(2) Based on the roadway classifications provided on PennDOT's Traffic Information Repository (TIRe) website.
(3) Based on traffic data from PennDOT's Traffic Information Repository (TIRe) website.

The following key intersections in the vicinity of the site comprise the study area:

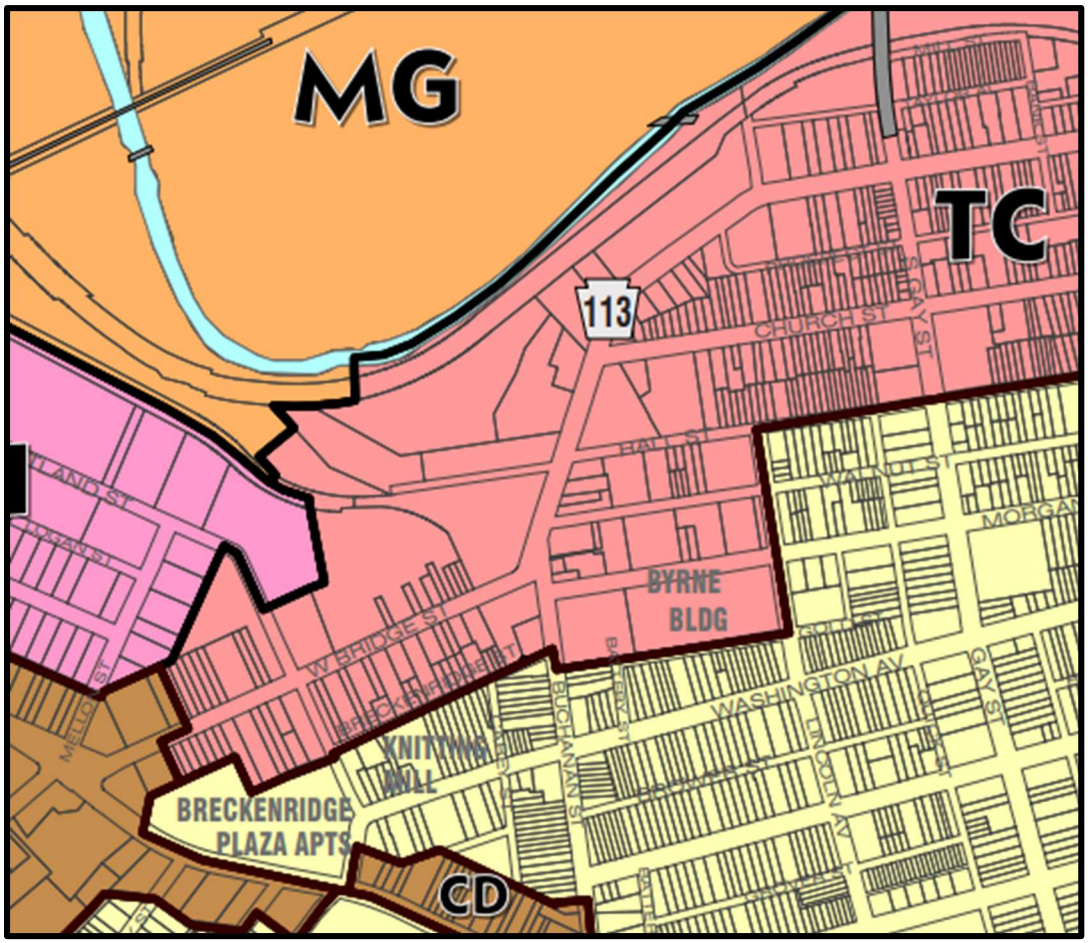
- Bridge Street (S.R. 0113) and Church Street
- Bridge Street (S.R. 0113) and Hall Street
- Bridge Street (S.R. 0113) and Walnut Street
- Bridge Street (S.R. 0113) and Buchanan Street
- Bridge Street (S.R. 0113) and Wheatland Street

- Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)

The study intersections were reviewed and agreed upon by PennDOT District 6-0 and the Borough of Phoenixville. The existing characteristics of the study intersections including field sketches and signal permit plans are provided in **Appendix B**.

Land Use Context

The proposed development is located in the Borough of Phoenixville, within the TC – Town Center Zoning District as seen in the Borough of Phoenixville Zoning Map below.



Source: Borough of Phoenixville Zoning Map, last amended December 10, 2019

Area Transit Services

SEPTA Bus Route 99 – Phoenixville to Norristown Transportation Center runs along Bridge Street (S.R. 0113) in the westbound direction and Church Street in the eastbound direction. The closest bus stop to the proposed redevelopment is located at the intersection of Bridge Street (S.R. 0113) and Church, directly opposite the

proposed redevelopment. SEPTA Bus Route 139 is also nearby with a bus stop at the intersection of Church Street and Main Street.

Pedestrian-Bicycle Facilities

Sidewalk is currently provided along both sides of Bridge Street (S.R. 0113), Nutt Road (S.R. 0023), Wheatland Street, Hall Street, Buchanan Street, and Church Street within the study area.

The signalized intersection of Nutt Road (S.R. 0023) and Bridge Street (S.R. 0113) provides striped crosswalks, curb ramps, pedestrian push buttons, and pedestrian signal heads to cross the southern and eastern legs of the intersection.

The signalized intersection of Bridge Street (S.R. 0113) and Church Street provides marked crosswalks, curb ramps, pedestrian push buttons, and pedestrian signal heads to cross the northern and eastern legs of the intersection.

Based on the Walk Phoenixville – Pedestrian Accessibility Study, some of the study intersections have been identified as potentially not meeting ADA requirements, as shown in **Figure 1B**.

Traffic Count Data

Daily traffic counts were obtained from PennDOT's Traffic Information Repository (TIRe) website. The traffic count data is provided in **Appendix C**.

Due to the ongoing COVID-19 pandemic, manual turning movement counts could not be completed at the study intersections. However, manual turning movements were conducted at many of the study intersections within the last three years as part of other land development applications. For intersections without manual turning movement counts, StreetLight Insights data, which compiles anonymized personal location data to estimate turning movement counts at intersections, was utilized. The usage of Streetlight data has been approved by PennDOT for use within other transportation impact studies within District 6-0.

StreetLight Data uses smartphone and GPS sensors to provide continuous traffic count data for any roadway network and intersection within the United States. This data was utilized to generate turning movement estimates during time periods prior to the coronavirus shutdowns. The manual turning movement counts utilized in this study have been compiled from StreetLight data for the average peak period traffic volumes for weekdays, Tuesday through Thursday, and Saturdays in September and October 2019.

For study intersections in which weekday peak hour traffic counts were not previously completed, the StreetLight data was utilized to estimate turning movements at the intersection and the through volumes along

Bridge Street (S.R. 0113) were balanced from adjacent intersections with previously completed manual turning movement counts.

Table 2 below provides a summary of the collected traffic data by study intersection.

Table 2. Data Collection Summary

Intersection	Peak Hour	Data Source	Collection Date
Bridge Street (S.R. 0113) and Church Street	Weekday AM	StreetLight	Sept – Oct 2019
	Weekday PM		
	Saturday Midday		
Bridge Street (S.R. 0113) and Hall Street	Weekday AM	Manual Turning Movement	January 2020
	Weekday PM		
	Saturday Midday	StreetLight	Sept – Oct 2019
Bridge Street (S.R. 0113) and Walnut Street	Weekday AM	StreetLight	Sept – Oct 2019
	Weekday PM		
	Saturday Midday		
Bridge Street (S.R. 0113) and Buchanan Street	Weekday AM	Manual Turning Movement	October 2019
	Weekday PM		
	Saturday Midday	StreetLight	Sept – Oct 2019
Bridge Street (S.R. 0113) and Wheatland Street	Weekday AM	Manual Turning Movement	October 2016
	Weekday PM		
	Saturday Midday	StreetLight	Sept – Oct 2019
Bridge Street (S.R. 0113) and Nutt Road	Weekday AM	Manual Turning Movement	May 2018
	Weekday PM		
	Saturday Midday	StreetLight	Sept – Oct 2019

The results of these traffic counts are tabulated and provided in **Appendix D**. The highest interval during these traffic count periods constitutes the peak hours that are the basis of this traffic analysis.

The traffic volumes were balanced upwardly (i.e. more conservatively) as needed between the study intersections. The resultant peak hour traffic volumes are depicted in **Figure 3A** for the weekday morning, weekday afternoon, and Saturday midday peak hours. The traffic volumes in Figure 3A were then analyzed to determine the existing operating conditions, and the results of this analysis are shown in **Figure 3B**. Specific details regarding the analysis results and traffic operations are provided later in this report.

Crash Summary

Reportable crash data for the five-year period between January 1, 2015 and December 31, 2019 was obtained from PennDOT at the study intersections. PennDOT defines a reportable crash as any crash that involves the following:

1. Injury to or death of any person, or

2. Damage to any vehicle involved to the extent that it cannot be driven under its own power in its customary manner without further damage or hazard to the vehicle, other traffic elements, or the roadway, and therefore requires towing.

In addition, PennDOT considers a crash occurrence of five reportable, correctable crashes over a continuous 12-month period to be a threshold value. If there are five or more reportable, correctable crashes, PennDOT criteria indicates the intersection should be examined to determine whether corrective improvements are necessary to reduce the crash occurrence. A summary of the reportable crash data is provided in **Table 3**, below.

Table 3. Reportable Crash Summary
January 2015 to December 2019

Location	Crash Frequency Per Year					Total	Average Per Year
	2015	2016	2017	2018	2019		
Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)	3	2	0	0	1	6	1.2
Bridge Street (S.R. 0113) and Wheatland Street	0	0	0	1	1	2	0.4
Bridge Street (S.R. 0113) and Buchanan Street	1	1	0	3	1	6	1.2
Bridge Street (S.R. 0113) and Walnut Street	2	0	0	0	0	2	0.4
Bridge Street (S.R. 0113) and Hall Street	0	0	1	0	0	1	0.2
Bridge Street (S.R. 0113) and Church Street	1	1	0	0	1	3	0.6
Total	***7***	***4***	***1***	***4***	***4***	***20***	***4.0***

While there was no 12-month period in which five or more correctable crashes occurred at any one intersection, a pedestrian was struck at the intersection of Bridge Street (S.R. 0113) and Church Street, resulting in a suspected serious injury. Additionally, four of the five crashes at the intersection of Bridge Street (S.R. 0113) and Buchanan Street were vehicles hitting fixed objects due to the existing curvature along Bridge Street (S.R. 0113).

In order to address the crash pattern at the Bridge Street (S.R. 0113)/Buchanan Street intersection, it is recommended to install appropriate curve warning devices subject to PennDOT approval. For example, these improvements could include:

- Install advance curve warning signs with advisory speed plaques
- Install curve warning signs at the curve
- Install dashed centerline double yellow markings through the intersection
- Evaluate the overhead street lighting and upgrade equipment, as necessary
- Provide traffic calming elements to reduce travel speeds through the intersection

PennDOT has recently added a Highway Safety Improvement Project (HSIP) to several intersections along the Nutt Road (S.R. 0023) corridor, including at the intersection with Bridge Street (S.R. 0113). As such, it is expected

that several safety improvement measures will be installed in the near future to address safety issues at the intersection. In the near term, it is recommended to adjust the overhead lane control along the westbound Bridge Street (S.R. 0113) approach to reflect the current shared left-turn/through and separate right-turn lane configuration. In addition, the Borough and PennDOT should plan to improve the intersection in accordance with the recommendations of the recent *Nutt Road Traffic Evaluation*, prepared by McMahon Associates, Inc. and dated March 8, 2017.

Site Characteristics

This section presents the details regarding the proposed site, including the incremental increase in traffic volumes generated by the development during the peak hours and the distribution of site traffic to the study area roadways, as well as the proposed site access configuration, traffic control, and sight distance requirements.

Trip Generation

Traffic volumes generated by the proposed development were prepared based on trip generation data compiled from numerous studies contained in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 11th Edition*. **Table 4** presents the anticipated vehicular trip generation for the proposed redevelopment. Detailed trip generation calculations are provided in **Appendix E**.

Table 4. Vehicular Trip Generation

Land Use	Trip Type	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Saturday Midday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
Proposed Redevelopment	Total	4,345	124	186	310	231	180	411	237	228	465
	-Internal	-1,026	-20	-20	-40	-76	-76	-152	-58	-58	-116
	-Pass-by	-448	-19	-17	-36	-32	-20	-52	-29	-24	-53
	New	2,871	85	149	234	123	84	207	150	146	296

For the purposes of this evaluation, the traffic generation for the retail component assumed approximately 10,150 square feet (or approximately 25 percent) of the total 40,600 square feet retail will be reserved for restaurant(s) and the remaining space will be occupied by typical retailers. If the retail/restaurant split changes significantly, an updated traffic impact analysis may be needed. Furthermore, the traffic generation methodology accounts for internalized trip generation between residents and the non-residential uses on site.

Further, based on a review of ITE data, the apartments may generate up to 30 to 60 pedestrian trips during the commuter peak hours. Although there is no available pedestrian trip generation for the retail or restaurant land uses, it is anticipated that the future commercial tenants will also generate a significant number of pedestrian trips and the numbers will depend on the type of tenants. Pass-by trips associated with the commercial land uses were also considered.

Trip Distribution and Assignment

Site-generated traffic will approach and depart the site via different routes depending on factors such as the existing traffic patterns, location of major roadways, and the location of the development's site access. The distribution percentages for the anticipated directions of approach and departure and traffic assignment

percentages are illustrated in **Figure 4A and 4B**. Application of the percentages illustrated in Figure 4A and 4B to the new peak hour trips contained in Table 4, provides an estimate of site traffic to be added to the study area. The site-generated traffic is also shown in **Figure 4C** for the weekday morning, weekday afternoon, and Saturday midday peak hours. **Figure 4D** illustrates the pass-by trip assignment for the entire site.

Site Access Configuration and Traffic Control

Access to the site is proposed via one unsignalized driveway located along Bridge Street (S.R. 0113), approximately 400 feet west of Buchanan Street and one unsignalized driveway located along the proposed Hall Street Extension, approximately 240 feet west of Bridge Street (S.R. 0113) per the current site plan. The recommendations for the proposed access designs, including auxiliary turn lanes, traffic control, and geometric design, were based on industry accepted criteria and guidelines.

The need for left- and right-turn deceleration lanes was based on the current PennDOT guidelines in accordance with *Publication 46, Chapter 11 – Traffic Studies*. **Table 5** summarizes the results of the auxiliary turn lane warrants for the site access intersections along Bridge Street (S.R. 0113).

Table 5 – Turn Lane Warrant Summary

Intersection	Auxiliary Lane Warrant	Warrant Satisfied? (1)	Required Lane Length (1)	Proposed Lane Length
Site Access and Bridge Street (S.R. 0113)	Eastbound Left	YES	75’	75’
	Westbound Right	YES	75’	-
Hall Street Extension and Bridge Street (S.R. 0113)	Northbound Left	YES	75’	75’
	Westbound Right	NO	Not Required	-

(1) Based on PennDOT Publication 46, *Traffic Engineering Manual*, Chapter 11.16

In order to provide left-turn lanes along Bridge Street (S.R. 0113) without creating an hour-glass design, it is recommended that applicant explore the feasibility of providing a consistent three-lane cross section along Bridge Street (S.R. 0113) across the entire site frontage.

While a right-turn lane is warranted at the proposed site access along Bridge Street (S.R. 0113) it is not recommended to be provided in order to maintain the character of the roadway, to maximize on-street parking, and based on the projected acceptable intersection traffic operations.

The various warrant/guideline analysis worksheets are contained in **Appendix F**.

Additionally, the geometric designs of the proposed site accesses were preliminarily evaluated based on guidelines contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads*, as well as local PennDOT District policies.

Based on the results of this evaluation, the following access configurations and traffic controls are recommended, subject to the detailed engineering of the site accesses:

Proposed Site Access and Bridge Street (S.R. 0113)

- Classified as a medium volume driveway based on the anticipated daily traffic volumes.
- Provide one ingress lane and one egress lane for the access.
- A left-turn lane is warranted per PennDOT criteria, and therefore, provide a dedicated 75-foot long eastbound Bridge Street (S.R. 0113) left-turn lane.
- Provide stop control on the site access approach.
- Provide ADA compliant pedestrian facilities to cross the access approach.
- Evaluate sight line impacts by the proposed on-street parking along the site frontage during detailed access design.

Proposed Site Access along Hall Street Extension

- Provide one ingress lane and one egress lane for the access.
- Provide one ingress lane and one egress lane.
- Provide stop control on the site access approach.
- Provide ADA compliant pedestrian facilities and crosswalks.

It is noted that the initial segment of the Hall Street Extension will function as a site access until the roadway is extended to Paradise Street. The interim design recommendations for the Bridge Street/Hall Street intersection are as follows:

- The applicant should design the proposed fourth western leg (i.e., Hall Street Extension) at the existing Bridge Street (S.R. 0113)/Hall Street intersection to provide access to the site and to adjacent properties.
- The proposed extension of Hall Street should be designed in accordance with local road standards. Pending further extension of Hall Street, the terminus should provide adequate turn-around area for vehicles.
- It is anticipated that this roadway will ultimately provide an access route for emergency vehicles so there may be a future need for an emergency-vehicle traffic control signal (as an interim or permanent condition) should full signalization not be warranted/approved at the intersection of Bridge Street (S.R. 0113) and Hall Street. Also, intersection geometry should accommodate the turning maneuvers of the Borough's largest emergency vehicle including egress movements onto Bridge Street.
- Provide six-foot sidewalks along at least one side of the Hall Street extension.
- The applicant should provide a northbound left-turn lane along Bridge Street (S.R. 0113) onto Hall Street.
- The applicant should provide separate left and right-turn lanes with right-turn channelization island along the Hall Street extension egress.
- Beyond the turning lanes along the Hall Street extension at Bridge Street, the applicant should provide a 26-foot wide cartway along the Hall Street extension with one travel lane in each direction.

- In addition to providing access easements to adjacent properties to the north and west of the proposed Hall Street extension, access should be provided to the adjacent property to the north, currently occupied by Uncle B's Bar B Q to the Hall Street extension and their existing access to Bridge Street (S.R. 0113) should be eliminated.
- Until traffic signals are warranted and installed, emergency pre-emption equipment should be provided along all approaches in conjunction with the completion of the Hall Street Extension.
- ADA compliant pedestrian accommodations should be provided to cross all legs, as feasible.

Sight Distance

Sight distance field measurements and an evaluation were performed at the proposed access intersection along Bridge Street (S.R. 0113) and at the intersection of the proposed Hall Street Extension and Bridge Street (S.R 0113). Generally, the travel speed, roadway grades and profiles, and the number of travel lanes play a role in determining if safe sight distances are available for egress and ingress at the proposed accesses. The existing sight distances at the proposed access intersection were measured and compared to PennDOT's sight distance requirements. These sight distance requirements are contained in *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads*.

Table 6 summarizes the available sight distance measurements, as well as PennDOT's sight distance requirements at the proposed access and intersection locations. As shown in Table 6, all of the existing available sight distances at the site access intersection meet PennDOT's desirable sight distance criteria. The applicant should ensure that elements of the site design, such as signage, streetscaping, and parking, do not introduce a sight distance obstruction for each of the proposed access locations. Furthermore, the site access along the new Hall Street Extension should be designed to provide adequate sight distance in accordance with the aforementioned requirements.

The actual available sight distances should be verified during detailed engineering of the site accesses, including the impacts of the proposed on-street parking along the property frontage.

Table 6. Sight Distance Evaluation

Site Access and Bridge Street (S.R. 0113)

Movement	Direction	Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Available Sight Distance (feet)
				Desirable[1]	Acceptable[2]	
Exiting	Looking Left	25	+1%	250	160	300'+
	Looking Right	25	-1%	195	164	300'+
Left turn	Looking Ahead	25	+1%	190	160	300'+
Entering	From the Rear	25	-1%	n/a	164	300'+

Hall Street Extension and Bridge Street (S.R. 0113) (interim site access)

Movement	Direction	Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Available Sight Distance (feet)
				Desirable[1]	Acceptable[2]	
Exiting	Looking Left	25	+1.8%	250	158	300'+
	Looking Right	25	-1.6%	195	166	300'+
Left turn	Looking Ahead	25	+1.8%	190	158	300'+
Entering	From the Rear	25	-1.6%	n/a	166	300'+

(1) Based on the desirable sight distance requirements contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads* and the posted speed limit, unless otherwise noted.

(2) Based on the safe stopping sight distance requirements contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads* and the posted speed limit.

Future Traffic Conditions

This section presents the future build-out year 2022 and PennDOT design year 2027, or five years after the build-out year traffic conditions, both without and with the proposed redevelopment, which is anticipated to be completed and occupied by 2022. The future 2022 build-out year and 2027 PennDOT design year without-redevelopment traffic volumes were estimated by increasing the existing traffic volumes to account for regional growth, as described below. The incremental increase due to the anticipated trip generation for the site was then added, resulting in the future 2022 build-out year and 2027 PennDOT design year with development traffic volumes.

Regional Traffic Growth

To account for regional traffic growth, the existing traffic volumes were increased by an annual traffic growth rate of 0.48 percent per year compounded for three years to 2022 and eight years to 2027, or 1.45 percent total to 2022 and 3.91 percent total to 2027. This growth rate is consistent with the traffic growth rate recommended by the PennDOT Bureau of Planning and Research Growth Factors for August 2020 to July 2021 for similar, Urban Non-Interstate roadways in Chester County.

Local Traffic Growth

To account for local traffic growth, Phoenixville Borough, Schuylkill Township, and East Pikeland Township were contacted to identify any other nearby future developments. Based upon coordination with these municipalities, the existing traffic volumes were also increased to include traffic to be generated by nearby approved developments. A total of 20 nearby developments were included in the future traffic projections.

Information regarding the nearby approved developments, obtained from Phoenixville Borough, Schuylkill Township, and East Pikeland Township, and detailed traffic volume projection worksheets are provided in **Appendix G**.

Paradise Street Connection

As part of the French Creek West development, Paradise Street will be extended from its existing terminus north of Wheatland Street across the French Creek to N. Main Street. This connection was assumed in future without- and with-development conditions in which existing traffic will be diverted from Bridge Street (S.R. 0113) to this new connection.

Hall Street Connection

Based on coordination with the Borough, the applicant will construct the Hall Street connection which will extend Hall Street from Bridge Street (S.R. 0113) to Paradise Street. This connection will provide relief to the Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023) intersection by providing a new connection between Nutt Road (S.R. 0023) and the Phoenixville Borough central business district. By providing this connection, it was assumed that five percent of southbound Nutt Road (S.R. 0023) left-turns and five percent of westbound Bridge Street (S.R. 0113) right-turns would divert from the intersection of Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023) and utilize the new connection.

Future Traffic Conditions

The total background growth and nearby approved development traffic volumes were then added to the existing traffic volumes, resulting in the future 2022 and 2027 without-redevelopment traffic volumes. Next, the site generated traffic volumes, as shown in Figures 4B and 4D, were added to the future 2022 and 2027 without-redevelopment traffic volumes, resulting in the future 2022 and 2027 with-development traffic volumes.

The resultant future 2022 peak hour traffic volumes without-redevelopment are illustrated in **Figure 5A**, and the future 2022 with-redevelopment peak hour traffic volumes are illustrated in **Figure 5B** for the weekday morning, weekday afternoon, and Saturday midday peak hours. These traffic volumes were then analyzed to determine the future 2022 without- and with-redevelopment traffic operating conditions, and the results of this analysis are shown in **Figures 5C and 5D**.

The resultant future 2027 peak hour traffic volumes without-redevelopment are illustrated in **Figure 6A**, and the future 2027 with-redevelopment peak hour traffic volumes are illustrated in **Figure 6B** for the weekday morning, weekday afternoon, and Saturday midday peak hours. These traffic volumes were then analyzed to determine the future 2027 without- and with-redevelopment traffic operating conditions, and the results of this analysis are shown in **Figures 6C and 6D**.

Capacity/Level-of-Service Results

The peak hour traffic volumes were analyzed to determine the existing and future traffic operating conditions, both without and with the proposed redevelopment, in accordance with the standard techniques contained in the current *Highway Capacity Manual (6th Edition)* for both signalized and unsignalized intersections. The HCM 6th Edition Methodology within Synchro 10.3 (build 151, rev. 0) traffic analysis software was utilized in the traffic analyses.

These standard capacity/level-of-service analysis techniques, which calculate total control delay, are described in **Appendix H** for both signalized and unsignalized intersections, as well as the correlation between average total control delay and the respective level-of-service (LOS) criteria for each intersection type.

According to PennDOT's *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permit Plans,* the following procedures and assumptions were utilized:

- For signalized intersections, the Pennsylvania base saturation flow rate (Exhibit 10-9) and Pennsylvania traffic signal control calibration parameters (Exhibit 10-10) outlined in PennDOT's *Publication 46, Traffic Engineering Manual*, were used.

- For unsignalized intersections, the base critical headways at TWSC intersections (Exhibit 10-11) and base follow-up headways at TWSC intersections (Exhibit 10-12) outlined in PennDOT's *Publication 46, Traffic Engineering Manual*, were used.

- All traffic signal timings at signalized intersections were optimized in without-development conditions.

- If the evaluation of without-development to with-development conditions indicates that the overall intersection level-of-service has dropped, mitigation will be required if the increase in delay is greater than 10 seconds. If the overall intersection delay increase is less than or equal to 10 seconds, mitigation of the intersection will not be required.

The existing, future build-out year 2022 and PennDOT design year 2027 traffic conditions, both without and with the proposed development, are summarized in **Figures 3B, 5C, 5D, 6C, and 6D**, respectively while the detailed capacity/level-of-service analysis worksheets are provided in **Appendices I, J, K, L, and M**.

As illustrated in **Figures 3B, 5C, 5D, 6C, and 6D**, with the proposed site and with the site related improvement recommendations, most study intersections will satisfy PennDOT's level-of-service criteria. **Table 7** below summarizes the overall levels of service for the study, as well as PennDOT LOS mitigation requirements. In terms of **the borough's LOS requirements**, it is noted that each of the study intersections would require mitigation due to LOS drops (below LOS C) or increases in delay for LOS F movements with the exception of the Bridge Street intersections at Church Street and Walnut Street. The detailed results of the level-of-service analysis are contained in the matrices provided in **Table 8** and the 95th percentile queue matrices are provided in **Table 9.**

Table 7. Overall Intersection Levels-of-Service

Weekday Morning Peak Hour

Intersection	Overall Level-of-Service (Delay in Seconds)		Delay Increase[2]	PennDOT Required Mitigation	Overall Level-of-Service (Delay in Seconds)
	2027 Without Development	2027 With Development[1]			With Development and Mitigation Improvements
Bridge Street (S.R. 0113) and Church Street	A (2.2)	A (3.0)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Hall Street	A (0.9)	A (4.3)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Walnut Street	A (0.1)	A (0.1)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Buchanan Street	A (1.9)	A [3] (1.3)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Wheatland Street	A (1.5)	A (1.5)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)	D (35.0)	E (65.5)	+30.5 seconds	**YES**	SEE ALTERNATIVE TRANSPORTATION PLAN

Weekday Afternoon Peak Hour

Intersection	Overall Level-of-Service (Delay in Seconds)		Delay Increase[2]	PennDOT Required Mitigation	Overall Level-of-Service (Delay in Seconds)
	Without Development	With Development[1]			With Development and Mitigation Improvements
Bridge Street (S.R. 0113) and Church Street	A (3.8)	A (3.9)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Hall Street	A (1.0)	A (5.3)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Walnut Street	A (0.0)	A (0.0)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Buchanan Street	A (6.5)	A [3] (3.5)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Wheatland Street	A (2.0)	A (2.2)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)	E (63.1)	F (82.0)	+18.9 seconds	**YES**	SEE ALTERNATIVE TRANSPORTATION PLAN

Saturday Midday Peak Hour

Intersection	Overall Level-of-Service (Delay in Seconds)		Delay Increase[2]	PennDOT Required Mitigation	Overall Level-of-Service (Delay in Seconds)
	Without Development	With Development[1]			With Development and Mitigation Improvements
Bridge Street (S.R. 0113) and Church Street	A (3.7)	A (3.9)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Hall Street	A (0.6)	C (22.3)	+21.7 seconds	**YES**	SEE BELOW
Bridge Street (S.R. 0113) and Walnut Street	A (0.2)	A (0.2)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Buchanan Street	D (27.7)	A [3] (4.7)	No LOS Drop	NO	-
Bridge Street (S.R. 0113) and Wheatland Street	A (7.0)	B (11.1)	+4.1 seconds	NO	-
Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)	F (92.0)	F (145.4)	+53.4 seconds	**YES**	SEE ALTERNATIVE TRANSPORTATION PLAN

(1) With-development base conditions without improvements.

(2) Based on the difference in delay from without-development to with-development conditions, in accordance with PennDOT's level of service requirements.

(3) Center-left-turn lane will accommodate two-stage left-turn movements and result in reduced side street delays as reported.

As shown in Table 7, the intersection of Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023) is projected to experience a degradation in overall delay between future without- and future with-redevelopment conditions which requires mitigation per PennDOT criteria. Given the complexity of the existing intersection, a comprehensive solution is required, including the potential for a roundabout at this location. The scale and cost of these improvements is beyond the reasonable responsibility of the applicant to address, and therefore, the applicant will prepare an Alternative Transportation Plan which will be subject to PennDOT review and approval. The Borough should continue to plan for the improvements detailed in the *Nutt Road Traffic Evaluation*, prepared by McMahon Associates, Inc. and dated March 8, 2017.

Additionally, during the interim condition for which the Hall Street Extension is not fully completed and only serves the residential portion of the proposed development, the minor street approaches to Bridge Street experience delay during all three peak hours. However, in the interim condition a traffic signal is not warranted. Further analysis has been completed which is detailed later in this report regarding the future operations for this intersection.

A graphic depiction of the preliminary corridor improvements in shown in **Figure 7**. It is recommended that a conceptual layout of the suggested roadway improvements be prepared to verify their feasibility so they can be properly integrated with the site design.

Queuing Analysis

A queuing analysis was completed at the study intersections based on the HCM 6th Edition methodology. Based on the queuing analysis, queues are accommodated within the existing and proposed intersection spacing and lane storages with the exception of the intersection of Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023). As stated previously, this intersection Will be evaluated in an Alternative Transportation Plan.

Matrices summarizing the results of the queuing analysis are provided in **Table 9**.

Gap Study

A gap study was completed along Bridge Street (S.R. 0113) at Hall Street in order to measure the useable gaps in the existing traffic stream. As noted in Figure 6D, proposed Hall Street extension exiting approaches along Bridge Street (S.R. 0113) are projected to operate with delay during the weekday afternoon peak hour.

Table 10 below summarizes the results of the gap studies at the two locations.

Table 10. Gap Study Results
Combined Gaps - Weekday Afternoon Peak Hour

Intersection	Useable Gaps	Projected Exiting Left-Turn Volume (1)
Bridge Street (S.R. 0113) at Hall Street	154	*Hall Street Extension: 45* *Hall Street: 32*

(1) As illustrated in Figure 6B.

As shown in Table 10 above, a sufficient number of combined gaps exist within the Bridge Street (S.R. 0113) traffic stream to accommodate the exiting left-turn movements at Hall Street, and therefore, is expected to operate acceptably in the interim condition in which the Hall Street Extension is not fully constructed and the stub operates as access to the residential portion of the site only. The gap study data and calculations are provided in **Appendix N.**

Bridge Street (S.R. 0113) and Hall Street Signal Warrant Evaluation

A traffic signal warrant analysis was conducted in accordance with PennDOT criteria contained in the Department's *Publication 212, Official Traffic Control Devices*, for the Four-Hour and Eight-Hour Vehicular

Volume Warrants, which is based on the guidelines contained in the Federal Highway Administration's, *Manual on Uniform Traffic Control Devices (MUTCD)*.

This traffic signal warrant analysis included the weekday morning (6:00 AM – 10:00 AM) and weekday afternoon (3:00 PM – 7:00 PM) peak periods and included traffic projections as noted within this TIS as well as the following additions:

- In order to improve operations at the intersection of Bridge Street (S.R. 0113) and Wheatland Street, a peak hour left-turn restriction would be put in place to ban left-turn egress. As such, all existing left-turn traffic as well as left-turning traffic generated by the soon to be completed 723 Wheatland Street development was assumed to divert to the new Hall Street connection.

- The Borough is aware of a preliminary plan to provide additional development along the Hall Street extension. As no formal land development plans have been submitted, this development was not included as a background development within this TIS. However, in order to plan for development along Hall Street, traffic generated by the development was considered within the traffic signal warrant evaluation.

These additional projections are dependent on completion of the Hall Street connection to Paradise Street as well as future development, and therefore, were not included in the TIS traffic volume projections.

Table 11 summarizes the results of the traffic signal warrant analysis.

Table 11 – Traffic Signal Warrant Analysis Summary

Intersection	Warrant Evaluated	Warrant Met?
Bridge Street (S.R. 0113) and Hall Street	Four-Hour Vehicular Volume	YES
	Eight-Hour Vehicular Volume	4 of 8 Hours Satisfied

As shown in Table 11 above, a traffic signal will ultimately be warranted at the intersection, and therefore, we recommend that the applicant provide for the future signalization at the intersection, pending PennDOT review and approval. If approved by PennDOT, the traffic signal should be installed with equipment to coordinate with adjacent traffic signals along Bridge Street (S.R. 0113). Additionally, emergency pre-emption equipment should be provided along all approaches. ADA compliant pedestrian accommodations should be provided to cross all legs, as feasible. An emergency flashing beacon should be considered as an interim improvement should the traffic signal not be installed at that time.

With signalization, the intersection will operate at acceptable level-of-service and all vehicular queues can be accommodated within the proposed lane storages and intersection spacings.

Traffic signal warrant analysis worksheets, volume projections, and capacity analysis worksheets are provided in **Appendix O.**

Multimodal and Parking Considerations

As traffic and congestion increase throughout the region, it is critical that Phoenixville plan to encourage non-vehicular travel within the borough. As such, the section discusses existing multimodal conditions, potential impacts due to the proposed development, and recommendations to maintain a highly walkable environment, encourage non-vehicular travel, and provide access to nearby transit. In addition, parking for the site is also addressed below.

Parking Evaluation

The proposed on-site parking supply appears sufficient for the proposed land uses and may provide more parking than would be required by the estimated peak parking demand based on the ITE publication *Parking Generation Manual, Fifth Edition*. A parking management plan should be submitted by the applicant that details if/how the parking within proposed on-site parking garage and surface lot will be reserved for residents or available for use by customers/employees of the commercial space (or if other downtown parking can be accommodated on site). The plan should document any parking regulations/restrictions/fares, etc. As part of the plan, the applicant should explore the feasibility of providing a pick-up/drop-off area for ride share and delivery services within the parking areas.

The applicant should consider bicycle parking/storage to further encourage alternative modes of transportation for its residents and visitors.

Pedestrian Facilities

The site plans indicate an expansive sidewalk improvement along the site frontage. The proposed sidewalk should complement the existing Bridge Street Streetscape plan and provide similar elements. In addition, the building frontage should be designed in such a way that it provides for a comfortable pedestrian experience.

Transit Facilities

Although there is no current SEPTA bus route along the Bridge Street (S.R. 0113) along the site frontage, there is a SEPTA bus route in the immediate area with a stop at the Bridge Street (S.R. 0113)/Church Street intersection. It is suggested that the applicant upgrade ADA curb ramps in the immediate area of the site and to nearby SEPTA bus stops to provide an accessible route for its residents and customers. Also, consideration of a bus shelter at the nearby bus stop should be given. Lastly, the applicant or Borough should coordinate with SEPTA to determine if the existing bus route should be rerouted past the proposed development given the proposed density.

Conclusions and Recommendations

The following improvements and considerations are recommended in conjunction with the Steelworks redevelopment:

- Provide a three-lane cross-section along Bridge Street (S.R. 0113) generally between the western site access (plus taper) and Hall Street (approximately) in order to accommodate a continuous center-turn lane This continuous lane will provide area for left-turning vehicles into the site access, Buchanan Street, Walnut Street, and the Hall Street extension; reducing stacking through the corridor. The center turn-left will also facilitate a two-stage movement for left-turns onto Bridge Street, thereby reducing side street delays. Furthermore, in order to reduce travel speeds along Bridge Street and provide an aesthetic streetscape element as well as a pedestrian refuge area, portions of the center turn lane can be replaced by a center median at select locations. *The applicant has submitted a conceptual layout plan of the proposed roadway improvements that will need to be reviewed and approved by PennDOT and the Borough.*

- The applicant should design the proposed fourth western leg (i.e., Hall Street Extension) at the existing Bridge Street (S.R. 0113)/Hall Street intersection to provide access to the site and to adjacent properties. Upon completion of the project and the Hall Street Extension, it is anticipated that a traffic signal will be warranted. An emergency flashing beacon should be considered as an interim improvement should the traffic signal not be installed immediately.

- In order to improve operations along the corridor, a peak hour restriction should be implemented to restrict Wheatland Street left-turns onto Bridge Street (S.R. 0113) during peak hours, at a minimum. These left-turns can be diverted and completed at the signalized intersection of Bridge Street (S.R. 0113) and Hall Street.

- The applicant should develop a safety mitigation strategy for the intersection of Bridge Street (S.R. 0113) and Buchanan Street which evaluates safety improvements such as realignment, roadway striping, and signage in order to reduce the number of crashes at the intersection caused by the horizontal curvature. Based on the conceptual roadway improvement plan submitted by the applicant, several improvements along the Bridge Street corridor are proposed.

- The proposed redevelopment results in an overall level-of-service impact at the intersection of Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023), which requires mitigation per PennDOT criteria. Given the complexity of the existing intersection, a comprehensive solution is required, including the potential for a roundabout at this location. The scale and cost of these improvements is beyond the reasonable responsibility of the applicant to address, and therefore, an Alternative Transportation Plan (ATP) will be completed under separate cover. The ATP will highlight the various transportation network improvements proposed by the applicant. The Borough should continue to plan for the improvements detailed in the *Nutt Road Traffic Evaluation*, prepared by McMahon Associates, Inc. and dated March 8, 2017.

- A parking management plan should be provided for the site to document parking regulations/restrictions, etc. As part of the plan, the applicant should explore the feasibility of providing a pick-up/drop-off area for ride share and delivery services.

- The applicant should consider bicycle parking/storage to further encourage alternative modes of transportation for its residents and visitors.

- Based on the site plan and renderings, it appears that widening of site frontage is proposed to provide a more expansive sidewalk area across the site frontage along with landscaping and street trees, and several on-street parking stalls.

- The applicant should explore the feasibility of providing ADA curb ramp upgrades to the non-compliant study intersections, as identified herein, in order to provide an accessible pedestrian route along Bridge Street (S.R. 0113) and to nearby SEPTA bus stops, and as determined appropriate by the Borough.

- The applicant should explore the feasibility of providing a bus shelter at the existing bus stop at the Bridge Street (S.R. 0113)/Church Street intersection. The applicant and Borough should coordinate with SEPTA to determine if the existing bus route should be rerouted beyond the proposed development area given the proposed density of the site and other nearby new developments.

- The site accesses should be designed to provide adequate sight distance. The access and sight distance lines and values should be depicted on the land development and Highway Occupancy Permit Plans, as required by PennDOT and the Borough. The proposed accesses should consist of the following features:

  <u>Proposed Site Access and Bridge Street (S.R. 0113)</u>
  - Classified as a medium volume driveway based on the anticipated daily traffic volumes.
  - Provide one ingress lane and one egress lane for the access.
  - A left-turn lane is warranted per PennDOT criteria, and therefore, provide a dedicated 75-foot long eastbound Bridge Street (S.R. 0113) left-turn lane.
  - Provide stop control on the site access approach.
  - Provide ADA compliant pedestrian facilities to cross the access approach.
  - Evaluate sight line impacts by the proposed on-street parking along the site frontage during detailed access design.

  <u>Proposed Site Access along Hall Street Extension</u>
  - Provide one ingress lane and one egress lane for the access.
  - Provide one ingress lane and one egress lane.
  - Provide stop control on the site access approach.

- Provide ADA compliant pedestrian facilities and crosswalks.
- It is noted that the initial segment of the Hall Street Extension will function as a site access until the roadway is extended to Paradise Street. The design recommendations for the Bridge Street/Hall Street intersection were previously described.

The following items are noted for the consideration of the Borough as it reviews the Steelworks redevelopment project:

- Pending submission and review of a parking management plan by the applicant, the on-site parking supply appears sufficient for the proposed land uses.

- The proposed redevelopment results in some movements at the study intersections degrading to below LOS C, and therefore, are considered deficient based on Borough guidelines. However, the applicant has agreed to make a number of improvements to the surrounding roadway network that will benefit traffic operations, circulation, and safety.

- Maneuverability of trash and recycling vehicles as well as resident loading areas should be further reviewed.

- Due to the anticipated increase in pedestrian traffic generated by the site, including likely pedestrian crossings of Bridge Street, it is recommended that a designated pedestrian crossing be further evaluated. It may be desirable to provide a signalized pedestrian crossing or an overhead flashing device at the Buchanan Street intersection

- The site frontage should provide an extension of the Borough's Streetscape plan and provide supplementary and consistent elements (e.g., street lighting, benches, street trees, trash receptacles, etc.)

- Access to Bridge Street (S.R. 0113), improvements to any roadway along State roadways, and any traffic signalization (or pedestrian signals) of any intersection will require a Highway Occupancy Permit and approval from PennDOT.

Since Bridge Street (S.R. 0113) is a state road, the proposed site access and Hall Street Extension along Bridge Street (S.R. 0113) will be subject to the review and approval of PennDOT for issuance of a Highway Occupancy Permit.

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)

Time Period			Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year				2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition			Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	EB	Left	D 39.6	D 37.4	C 34.9	D 37.4	D 35.1	E 69.2	E 57.9	E 58.8	E 67.8	E 60.7	D 39.1	D 49.8	D 40.6	D 51.1	D 41.5
		Thru	D 37.7	C 34.6	C 33.9	C 34.3	C 34.0	D 54.8	D 44.9	D 46.4	D 45.8	D 47.6	D 44.0	E 55.2	E 60.3	E 58.5	E 64.3
	WB	Left/ Thru	E 56.9	D 54.1	F 220.2	D 54.7	F 235.5	E 70.2	D 52.3	F 178.0	E 59.0	F 211.9	C 33.5	F 92.4	F 546.2	F 117.1	F 642.9
		Right	C 15.2	C 15.8	C 15.8	C 16.3	C 16.3	F 131.7	F 148.1	F 140.1	F 174.8	F 165.0	F 124.4	F 141.1	F 154.6	F 166.1	F 182.6
Nutt Road (S.R. 0023)	NB	Left	E 61.8	E 63.3	E 63.3	E 65.0	E 65.0	E 55.8	E 56.2	E 56.2	E 56.6	E 56.6	D 50.1	D 50.0	D 50.0	D 49.9	D 49.9
		Thru	E 63.0	E 61.8	E 61.6	E 61.7	E 61.5	F 187.1	F 102.2	F 124.8	F 110.7	F 133.9	F 91.5	F 139.3	F 170.3	F 150.0	F 181.4
	SB	Left	C 30.1	C 25.7	C 25.5	C 24.0	C 24.4	C 31.4	F 113.0	F 105.8	F 122.2	F 113.8	F 143.1	F 161.9	F 181.1	F 173.9	F 194.4
		Thru	D 38.3	C 30.3	C 27.4	C 26.8	C 25.4	B 16.7	C 24.0	C 24.0	C 24.6	C 24.6	D 36.7	E 56.3	E 56.3	E 62.9	E 62.9
Overall			D 39.2	D 36.3	E 63.9	D 35.0	E 65.5	E 65.0	E 58.5	E 75.2	E 63.1	F 82.0	E 60.2	F 84.1	F 131.3	F 92.0	F 145.4

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Wheatland Street

Time Period			Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year				2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition			Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R 0113)	EB	Left	B	B	B	B	B	B	B	B	B	B	A	B	B	B	B
		Thru	10.1	10.5	10.5	10.3	10.6	10.3	10.5	10.5	10.5	10.6	0.0	10.4	10.7	10.4	10.8
		Right															
	WB	Left	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
		Thru	10.2	10.4	10.4	10.4	10.5	10.2	10.4	10.5	10.4	10.6	11.3	11.7	12.1	11.8	12.3
		Right															
Wheatland Street	SB	Left	C	D	D	D	D	D	D	E	E	E	F	F	F	F	F
		Thru	24.5	30.0	30.0	28.1	32.0	28.6	34.6	38.3	37.7	42.7	52.4	94.1	164.9	112.4	195.9
		Right															
Overall			A	A	A	A	A	A	A	A	A	A	A	A	A	A	B
			0.9	1.5	1.5	1.5	1.5	1.3	1.9	2.0	2.0	2.2	3.0	6.0	9.4	7.0	11.1

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Site Access

Time Period		Weekday Morning Peak Hour		Weekday Afternoon Peak Hour		Saturday Midday Peak Hour	
Design Year		2022 Build-Out Year	2027 Design Year	2022 Build-Out Year	2027 Design Year	2022 Build-Out Year	2027 Design Year
Development Condition		w/ Dev [1]	w/ Dev [1]	w/ Dev [1]	w/ Dev [1]	w/ Dev [1]	w/ Dev [1]
Bridge Street (S.R. 0113)	EB Left	B 12.4	B 12.4	B 12.1	B 12.1	B 13.0	B 13.3
	EB Thru	(1)	(1)	(1)	(1)	(1)	(1)
	WB Thru / WB Right	(2)	(2)	(2)	(2)	(2)	(2)
Site Access	SB Left	C 17.2	C 17.3	C 18.2	C 18.5	D 27.6	D 28.2
Overall		A 1.1	A 1.0	A 1.1	A 1.1	A 2.1	A 2.1

(1) The applicant is proposing to widen Bridge Street (S.R. 0113) to provide a three-lane cross section along the entire site frontage.

(2) Movement operates at free-flow conditions.

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Buchanan Street

Time Period		Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition		Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]	Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]	Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]
Bridge Street (S.R. 0113)	EB Thru	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	EB Right															
	WB Left	A 9.5	A 9.6	A 9.6	A 9.6	A 9.6	A 9.9	B 10.1	B 10.2	B 10.2	B 10.3	A 0.0	B 11.3	B 11.7	B 11.4	B 11.8
	WB Thru			(2)		(2)			(2)		(2)			(2)		(2)
Buchanan Street	NB Left	C 17.4	C 22.9	B 14.7	C 20.7	C 15.5	D 25.6	D 33.6	C 19.8	E 38.1	C 21.1	F 69.6	F 141.3	E 36.2	F 217.6	E 39.4
	NB Right															
Overall		A 1.5	A 1.9	A 1.2	A 1.9	A 1.3	A 4.4	A 5.7	A 3.3	A 6.5	A 3.5	A 9.0	C 18.0	A 4.3	D 27.7	A 4.7

(1) The applicant is proposing to widen Bridge Street (S.R. 0113) to provide a three-lane cross section along the entire site frontage.

(2) Movement operates at free-flow conditions.

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Walnut Street

Time Period		Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition		Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]	Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]	Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]
Bridge Street (S.R. 0113)	EB Thru	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	EB Right															
	WB Left	A 9.7	A 9.9	A 9.9	A 9.9	A 10.0	B 10.4	B 10.7	B 10.8	B 10.8	B 10.9	B 11.9	B 12.4	B 12.8	B 12.5	B 13.0
	WB Thru			(1)		(1)			(1)		(1)			(1)		(1)
Overall		A 0.1	A 0.1	A 0.1	A 0.1	A 0.1	A 0.0	A 0.0	A 0.0	A 0.0	A 0.0	A 0.2	A 0.2	A 0.2	A 0.2	A 0.2

(1) The applicant is proposing to widen Bridge Street (S.R. 0113) to provide a three-lane cross section along the entire site frontage.

(2) Movement operates at free-flow conditions.

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Hall Street

Time Period			Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year				2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition			Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]	Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]	Existing	w/o Dev	w/Dev [1]	w/o Dev	w/Dev [1]
Bridge Street (S.R. 0113)	EB	Left	(2)	(2)	B 10.9	(2)	B 11.3	(2)	(2)	B 10.5	(2)	B 10.5	(2)	(2)	B 11.8	(2)	B 11.8
		Thru			(2)		(2)			(2)		(2)			(2)		(2)
	WB	Thru	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
		Right															
Hall Street	NB	Left	C	C	D	C	E	C	D	F	D	F	D	E	F	E	F
		Thru															
		Right	19.6	21.6	32.6	22.9	37.4	22.1	25.2	53.3	26.9	53.3	32.7	37.7	615.8	39.9	753.6
	SB	Left	-	-	F 53.7	-	F 64.4	-	-	F 89.3	-	F 89.3	-	-	F 686.3	-	F 881.9
		Right	-	-	B 11.6	-	B 12.0	-	-	B 10.6	-	B 10.6	-	-	B 12.0	-	B 12.0
Overall			A 0.8	A 0.8	A 3.7	A 0.9	A 4.3	A 0.9	A 1.0	A 5.3	A 1.0	A 5.3	A 0.5	A 0.5	C 17.9	A 0.6	C 22.3

(1) The applicant is proposing to widen Bridge Street (S.R. 0113) to provide a three-lane cross section along the entire site frontage.

(2) Movement operates at free-flow conditions.

Table 8 - Level of Service Matrices

Bridge Street (S.R. 0113) and Church Street

Time Period		Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition		Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	EB Thru	A 2.0	A 2.2	A 2.2	A 2.1	A 2.3	A 2.7	A 2.9	A 3.0	A 3.0	A 3.1	A 3.4	A 3.8	A 4.2	A 3.9	A 4.3
	EB Right	A 1.6	A 1.6	A 1.6	A 1.6	A 1.6	A 2.1	A 2.1	A 2.1	A 2.2	A 2.2	A 2.1	A 2.1	A 2.1	A 2.1	A 2.1
	WB Left	A 2.0	A 2.2	A 2.2	A 2.1	A 2.3	A 3.0	A 3.3	A 3.4	A 3.4	A 3.6	A 4.1	A 4.8	A 5.3	A 5.0	A 5.6
	WB Thru	A 2.6	A 2.8	A 2.8	A 2.7	A 2.9	A 2.9	A 2.9	A 3.1	A 3.0	A 3.2	A 3.3	A 3.5	A 3.9	A 3.6	A 4.0
Church Street	NB Left	C 31.4	C 31.4	C 31.4	C 31.4	C 31.4	D 42.2	D 41.8	D 41.8	D 41.7	D 41.7	D 37.7	D 37.7	D 37.7	D 37.8	D 37.8
	NB Right															
Overall		A 2.1	A 2.9	A 2.3	A 2.2	A 2.4	A 3.6	A 3.8	A 3.9	A 3.8	A 3.9	A 3.3	A 3.6	A 4.8	A 3.7	A 3.9

Table 9 - 95th Percentile Queue Matrices

Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)

Time Period			Current Storage [1]	Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year					2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition				Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	EB	Left	100'	63	65	63	68	63	190	190	193	205	198	135	170	150	178	158
		Thru	*3,500'*	215	230	238	233	240	333	355	370	365	383	360	453	475	475	510
		Right																
	WB	Left/ Thru	*2,050'*	438	490	1088 [2]	503	1143 [2]	310	328	615 [2]	350	683 [2]	168	373	993 [2]	420	1068 [2]
		Right	250'	65	63	63	65	65	475	470	450	523	498	450	453	490	500	540
Nutt Road (S.R. 0023)	NB	Left	725'	118	123	123	128	128	83	85	85	88	88	103	103	103	105	105
		Thru	*2,600'*	448	498	520	505	530	1230	1010	1165	1073	1233	843	1163	1365	1235	1440
		Right																
	SB	Left	350'	358	323	313	318	313	393	690	658	733	695	815	878	963	930	1023
		Thru	*2,250'*	760	730	695	700	683	358	483	483	495	495	653	868	868	930	930
		Right																

(1) Distance to adjacent signalized intesections shown in italics.

(2) The Transportation Research Board's Highway Capacity and Quality Service committee has stated that shared left-turn/through lanes are not modeled correctly by the current Highway Capacity Manual procedures. Given the relatively small amount of traffic added to this movement by the proposed development, this change in queue is likely significantly overestimated.

Table 9 - 95th Percentile Queue Matrices

Bridge Street (S.R. 0113) and Wheatland Street

Time Period			Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year				2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition			Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R 0113)	EB	Left	0	0	0	0	0	25	25	25	25	25	0	0	0	0	0
		Thru															
		Right															
	WB	Left	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
		Thru															
		Right															
Wheatland Street	SB	Left	25	28	28	25	30	25	38	43	43	48	68	118	158	133	170
		Thru															
		Right															

Table 9 - Level of Service Matrices

Bridge Street (S.R. 0113) and Site Access

Time Period		Weekday Morning Peak Hour		Weekday Afternoon Peak Hour		Saturday Midday Peak Hour	
Design Year		2022 Build-Out Year	2027 Design Year	2022 Build-Out Year	2027 Design Year	2022 Build-Out Year	2027 Design Year
Development Condition		w/ Dev	w/ Dev	w/ Dev	w/ Dev	w/ Dev	w/ Dev
Bridge Street (S.R. 0113)	EB Left	25	25	25	25	25	25
	EB Thru	-	-	-	-	-	-
	WB Thru	-	-	-	-	-	-
	WB Right						
Site Access	SB Left	25	25	25	25	50	50
	SB Right						

Table 9 - 95th Percentile Queue Matrices

Bridge Street (S.R. 0113) and Buchanan Street

Time Period		Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition		Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	EB Thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	EB Right															
	WB Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB Thru			-		-			-		-			-		-
Buchanan Street	NB Left	28	43	25	38	25	90	120	73	138	78	185	273	123	340	133
	NB Right															

Table 9 - 95th Percentile Queue Matrices

Bridge Street (S.R. 0113) and Walnut Street

Time Period		Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition		Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	NB Thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NB Right															
	SB Left	0	0	0	0	0	0	0	0	0	0	25	25	25	25	25
	SB Thru			-		-			-		-			-		-

Table 9 - 95th Percentile Queue Matrices

Bridge Street (S.R. 0113) and Hall Street

Time Period			Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year				2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition			Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	EB	Left	-	-	25	-	25	-	-	25	-	25	-	-	25	-	25
		Thru			-		-			-		-			-		-
	WB	Thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Right															
Hall Street	NB	Left	25	25	25	25	30	25	25	45	25	45	25	25	83	25	90
		Thru															
		Right															
	SB	Left	-	-	45	-	53	-	-	60	-	60	-	-	93	-	98
		Right			25		25			25		25			25		25

Table 9 - 95th Percentile Queue Matrices

Bridge Street (S.R. 0113) and Church Street

Time Period			Weekday Morning Peak Hour					Weekday Afternoon Peak Hour					Saturday Midday Peak Hour				
Design Year		Current Storage [1]		2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year			2022 Build-Out Year		2027 Design Year	
Development Condition			Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	w/o Dev	w/Dev
Bridge Street (S.R. 0113)	EB Thru	*2,050'*	25	28	28	25	30	58	68	73	70	75	80	95	110	100	115
	EB Right	125'	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	WB Left	75'	0	0	0	0	0	25	25	25	25	25	25	25	25	25	25
	WB Thru	*975'*	40	45	45	43	48	65	70	80	73	83	78	83	98	85	100
Church Street	NB Left/Right	*850'*	25	25	25	25	25	73	73	73	75	75	45	48	48	48	48

(1) Distance to adjacent signalized intersections shown in italics.



FIGURE 1A

Site Location Map

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/11/04) I:\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 1A.dwg

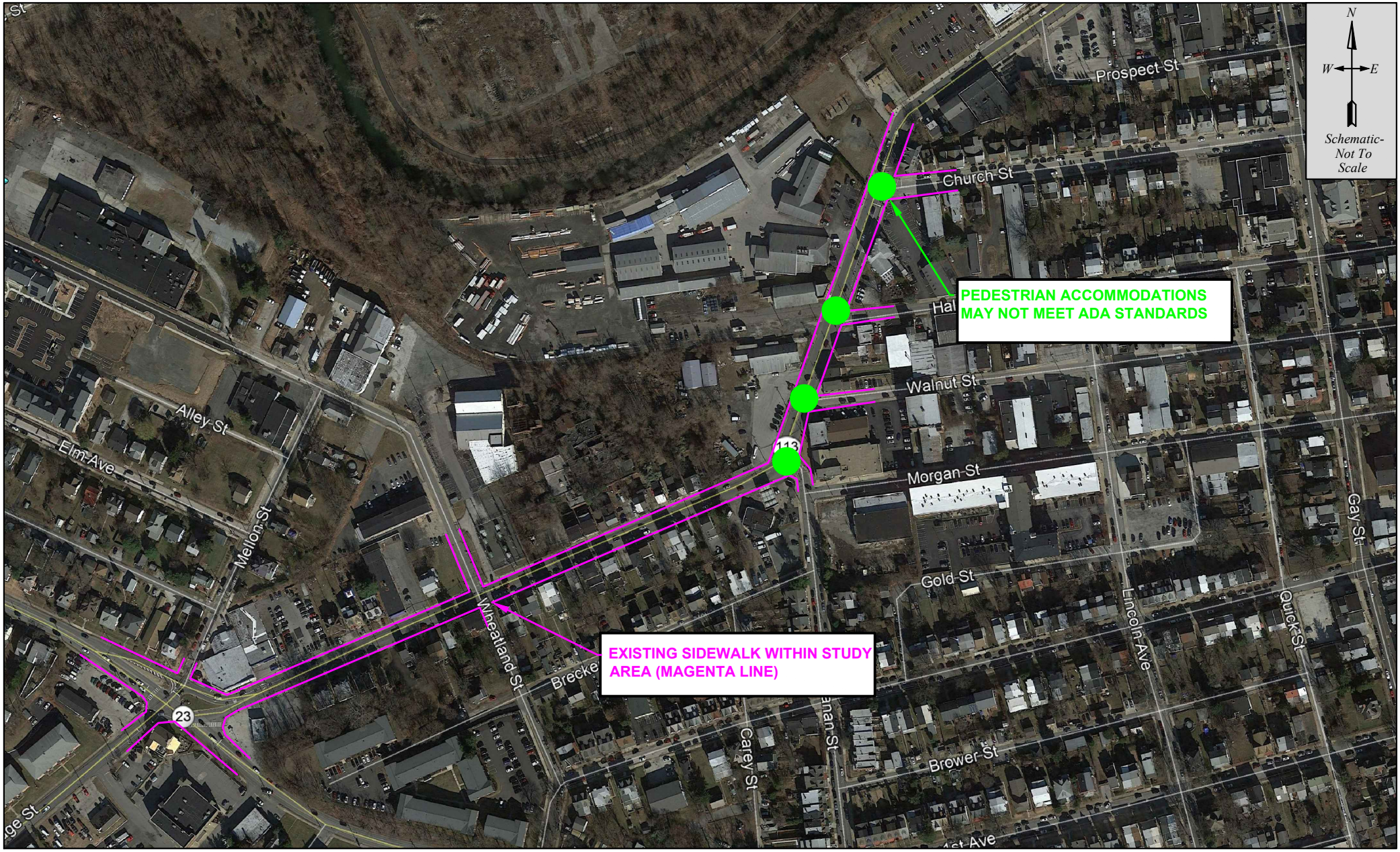


FIGURE 1B

Preliminary Considerations for Pedestrian Improvements

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

McMAHON

(2020/11/04) I:\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 1B.dwg

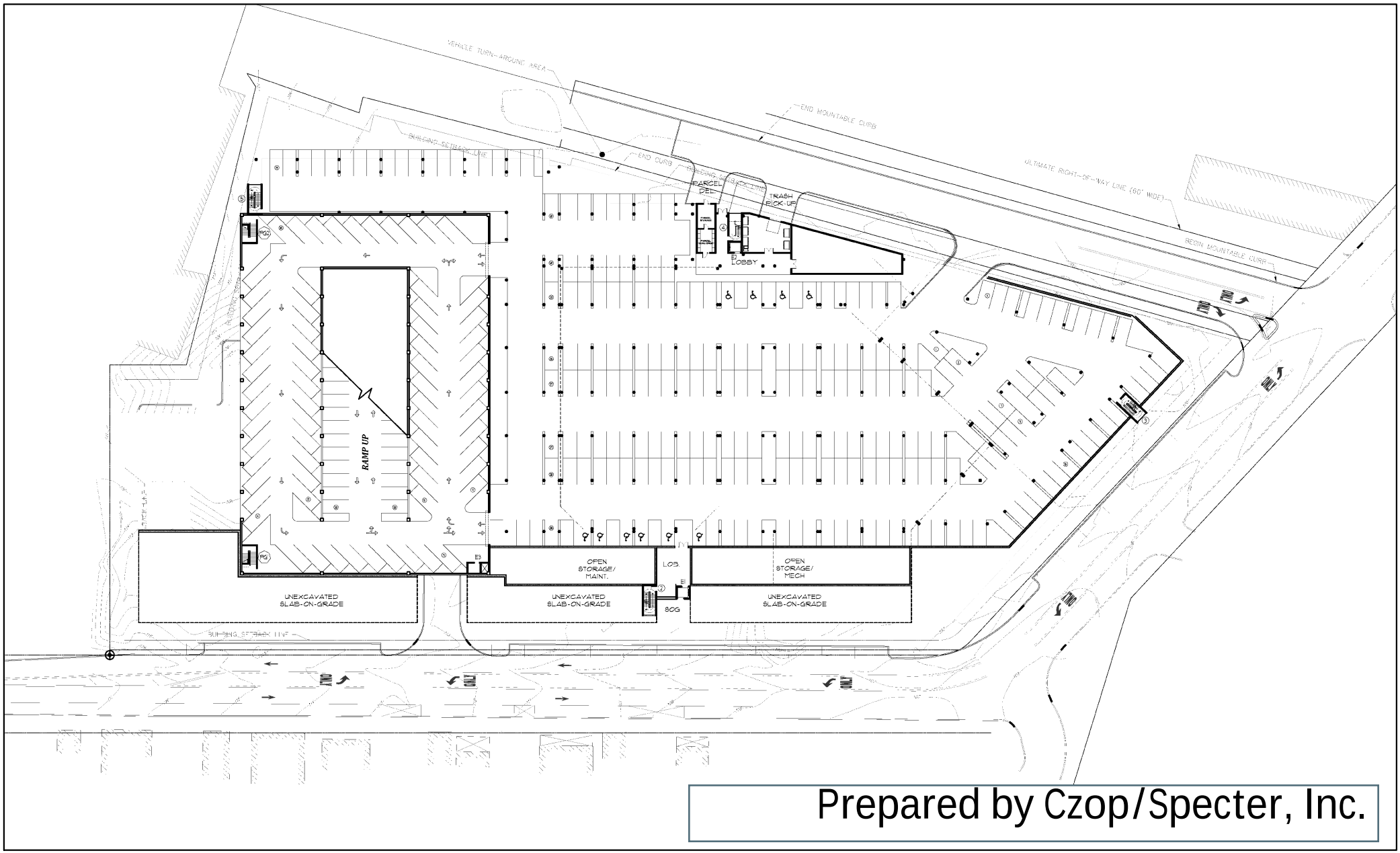


FIGURE 2

Site Plan

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

McMAHON

(2020/11/04) I:\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 2.dwg

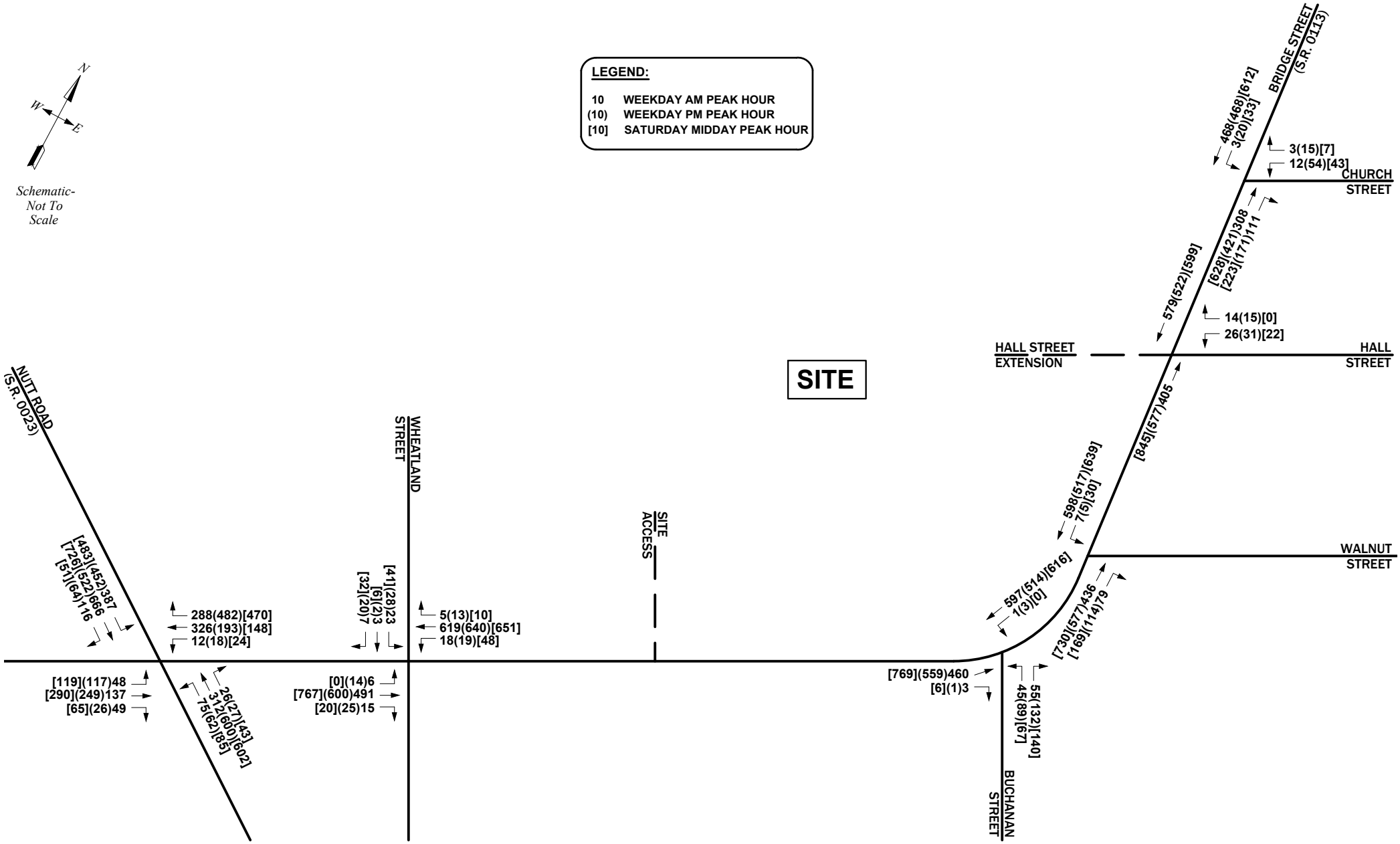


FIGURE 3A

Existing Peak Hour Traffic Volumes

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 3A.dwg

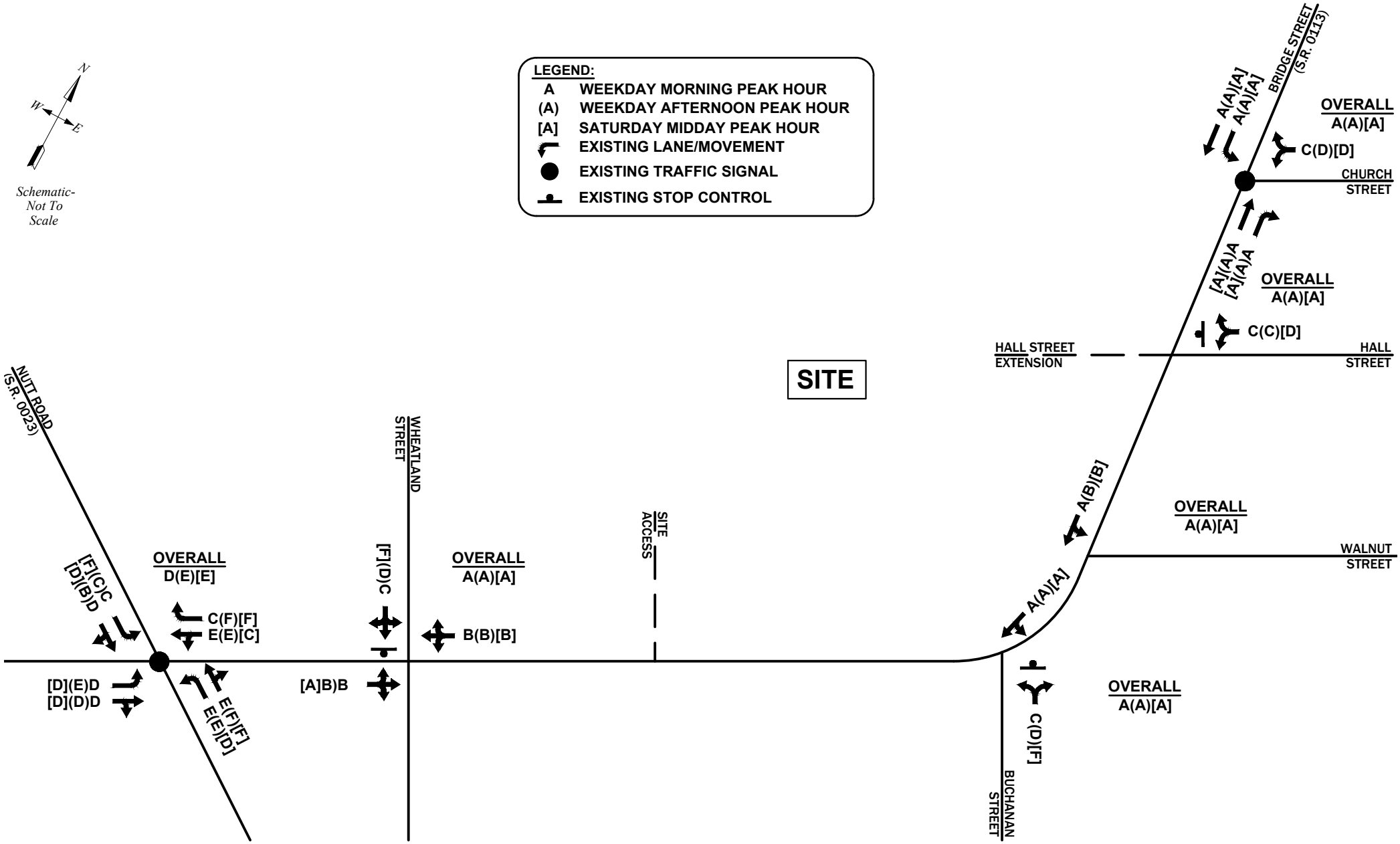


FIGURE 3B

Existing Peak Hour Levels-of-Service

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/11/03) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 3B.dwg

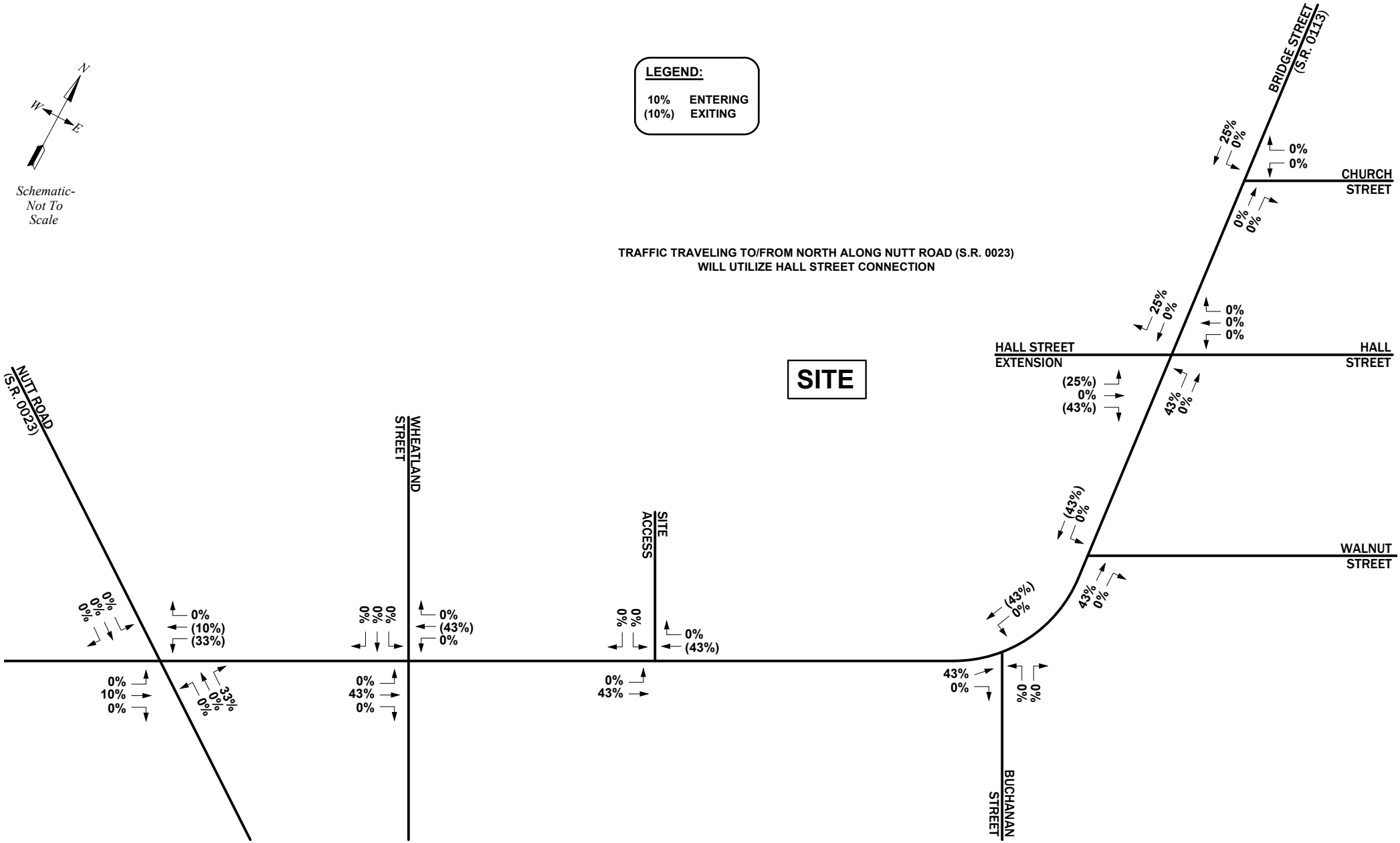


FIGURE 4A

New Site Trip Distribution (Residential)

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2021-09 Revised TIS\Figure 4A.dwg

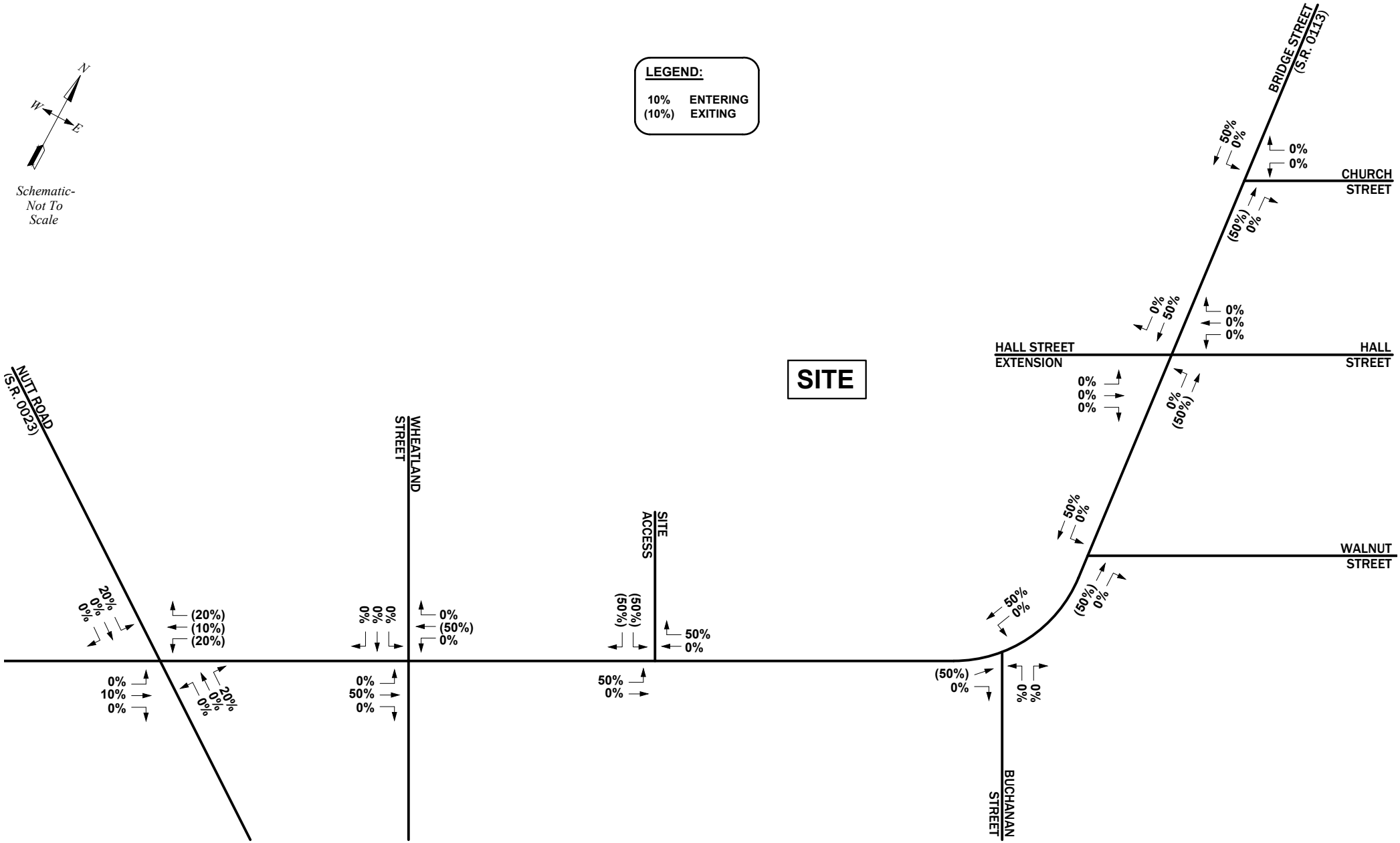


FIGURE 4B

New Site Trip Distribution (Commercial)

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2021-09 Revised TIS\Figure 4B.dwg

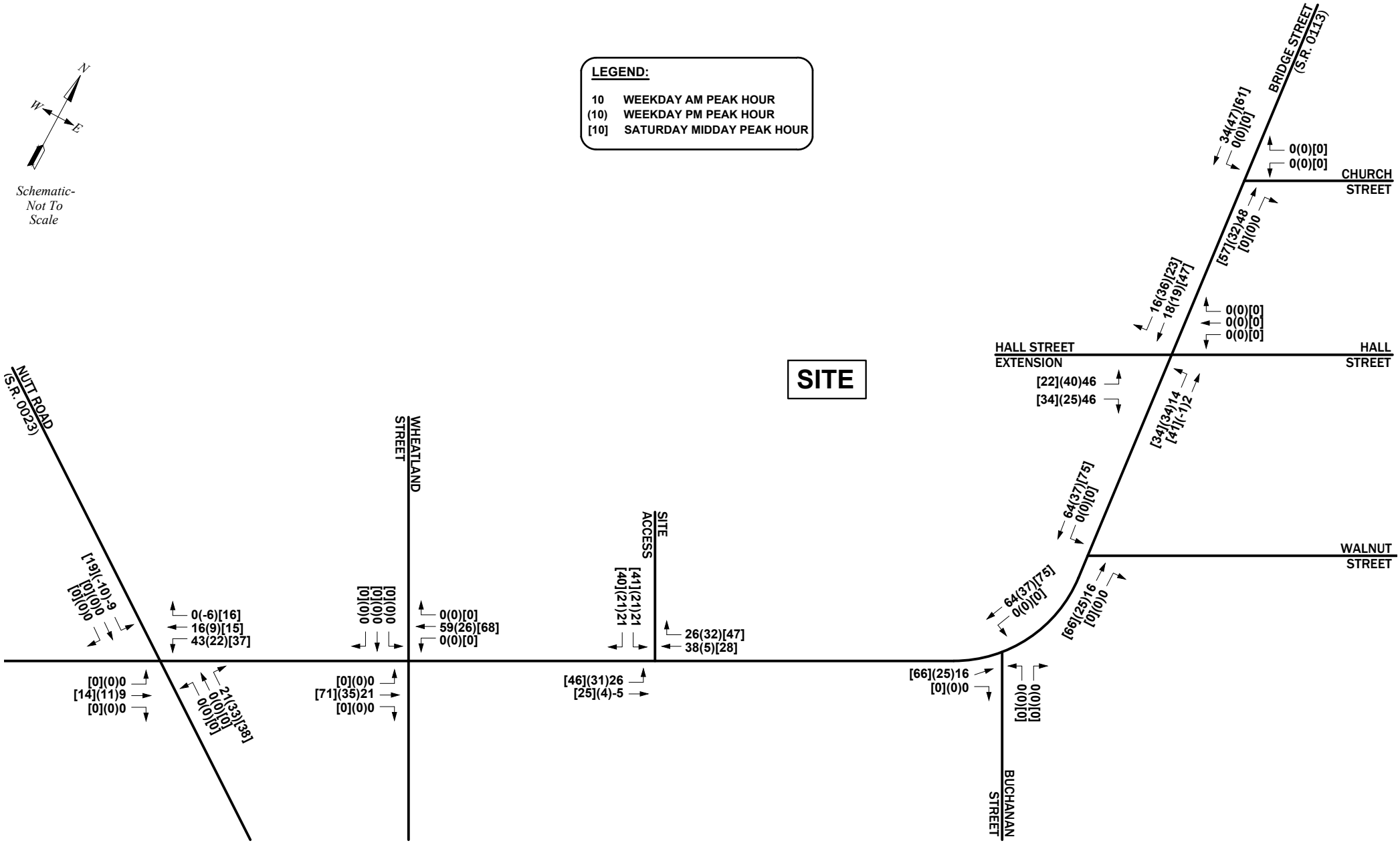


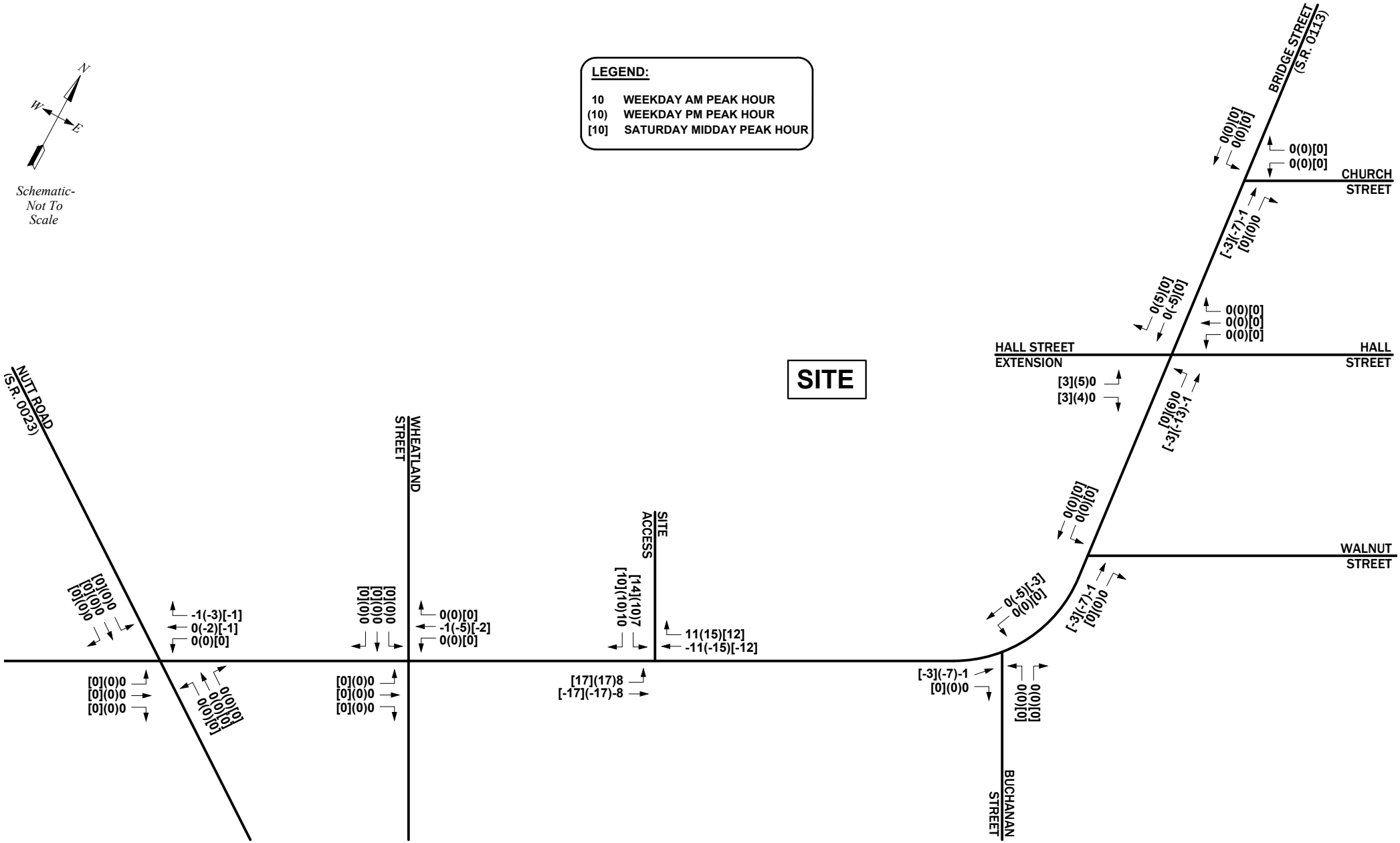
FIGURE 4C

New Site Trip Assignment

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2021-09 Revised TIS\Figure 4C.dwg


LEGEND:
10 WEEKDAY AM PEAK HOUR
(10) WEEKDAY PM PEAK HOUR
[10] SATURDAY MIDDAY PEAK HOUR
N
W
E
Schematic-
Not To
Scale
SITE
NUTT ROAD
(S.R. 0023)
WHEATLAND
STREET
SITE
ACCESS
BRIDGE STREET
(S.R. 0113)
CHURCH
STREET
HALL STREET
EXTENSION
HALL
STREET
WALNUT
STREET
BUCHANAN
STREET
-1(-3)[-1]
0(-2)[-1]
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-1(-5)[-2]
0(0)[0]
11(15)[12]
-11(-15)[-12]
[14](10)7
[10](10)10
[17](17)8
[-17](-17)-8
[3](5)0
[3](4)0
0(-5)[-3]
0(0)[0]
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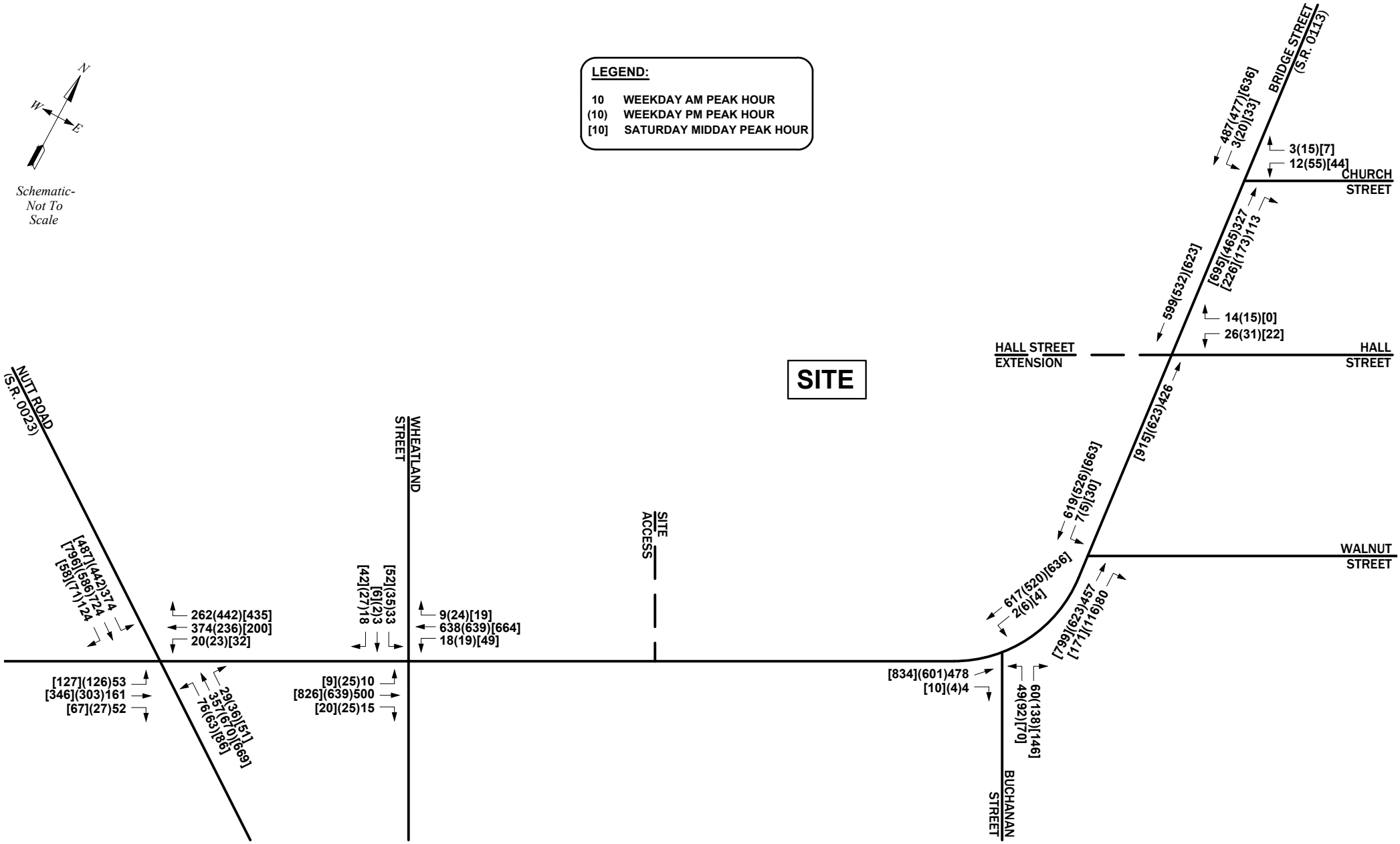


FIGURE 5A

2022 Future without Redevelopment Peak Hour Traffic Volumes

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 5A.dwg

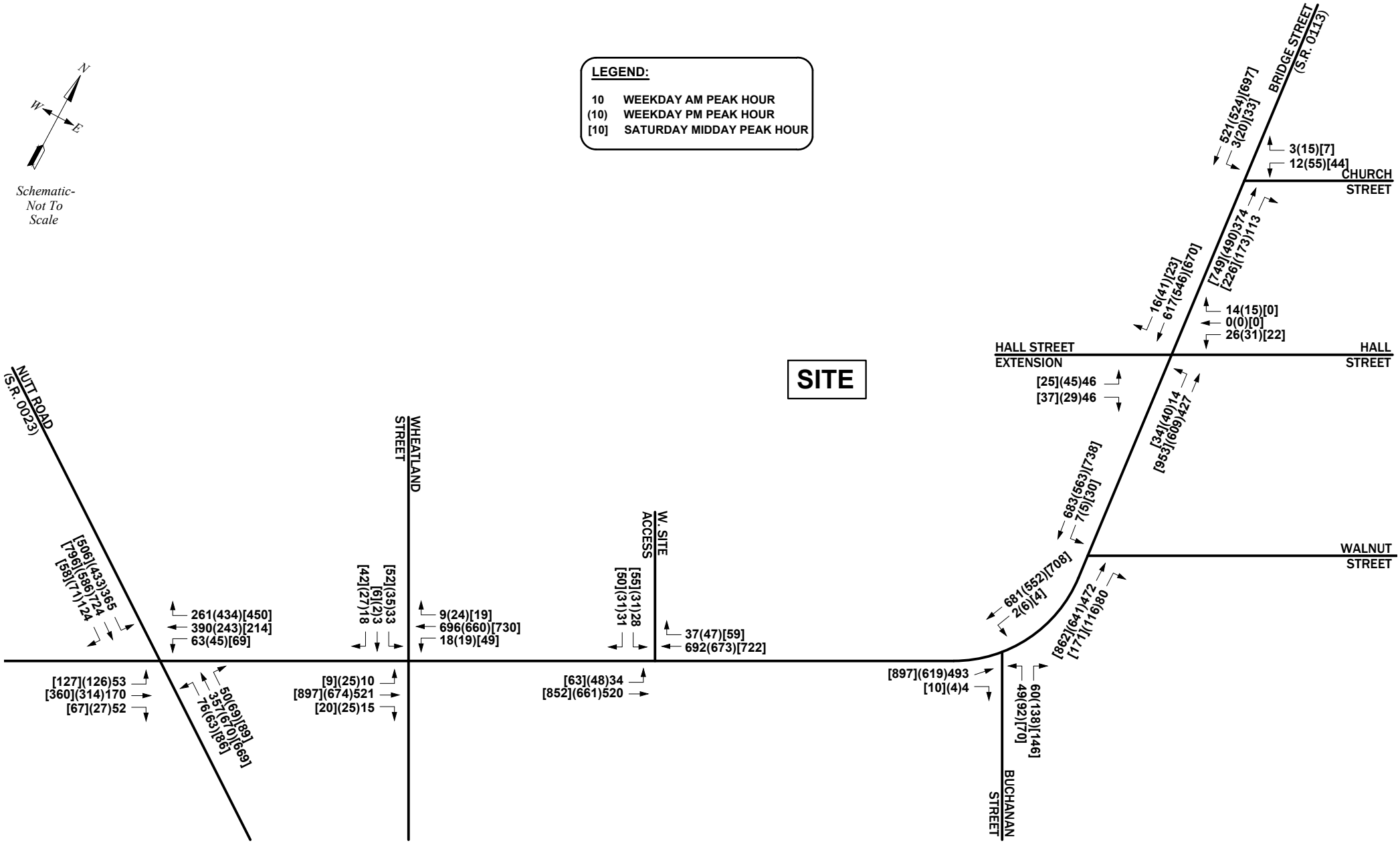


FIGURE 5B

2022 Future with Redevelopment Peak Hour Traffic Volumes

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2021-09 Revised TIS\Figure 5B.dwg

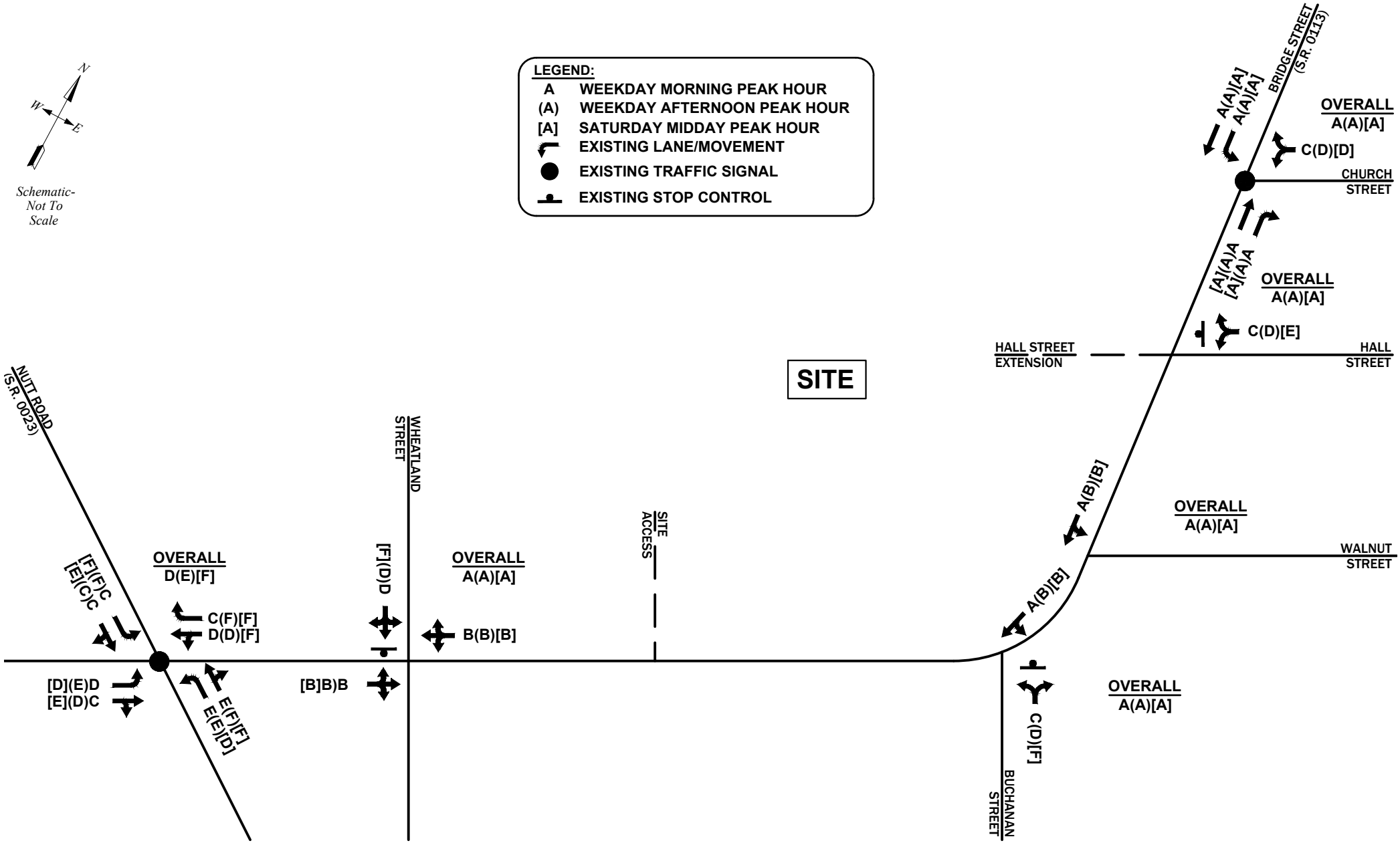


FIGURE 5C

2022 Future without Redevelopment Peak Hour Levels-of-Service

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

McMAHON

(2020/11/03) I:\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 5C.dwg

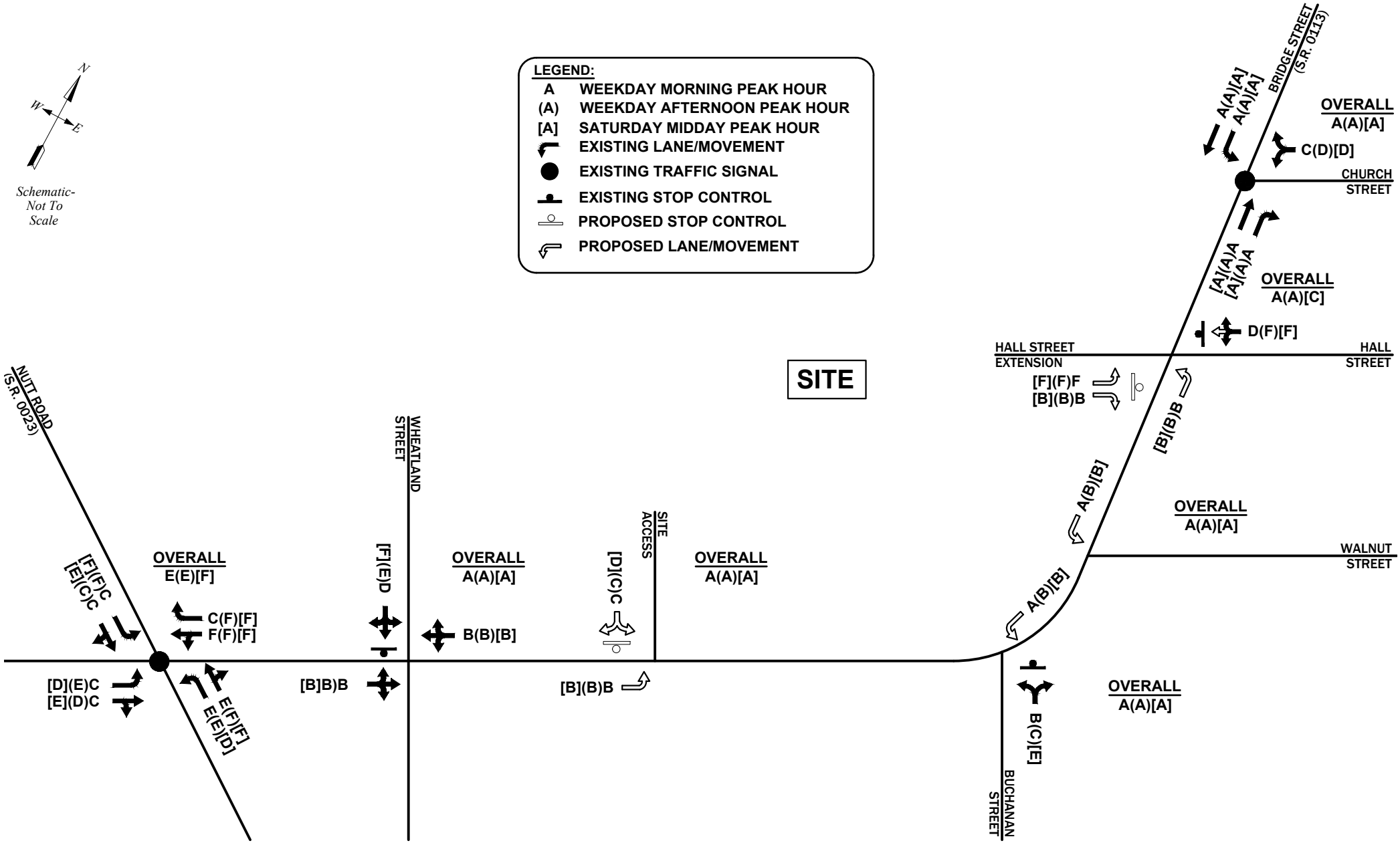


FIGURE 5D

2022 Future with Redevelopment Peak Hour Levels-of-Service

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2022/01/14) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2022-01 Revised TIS\Figure 5D.dwg

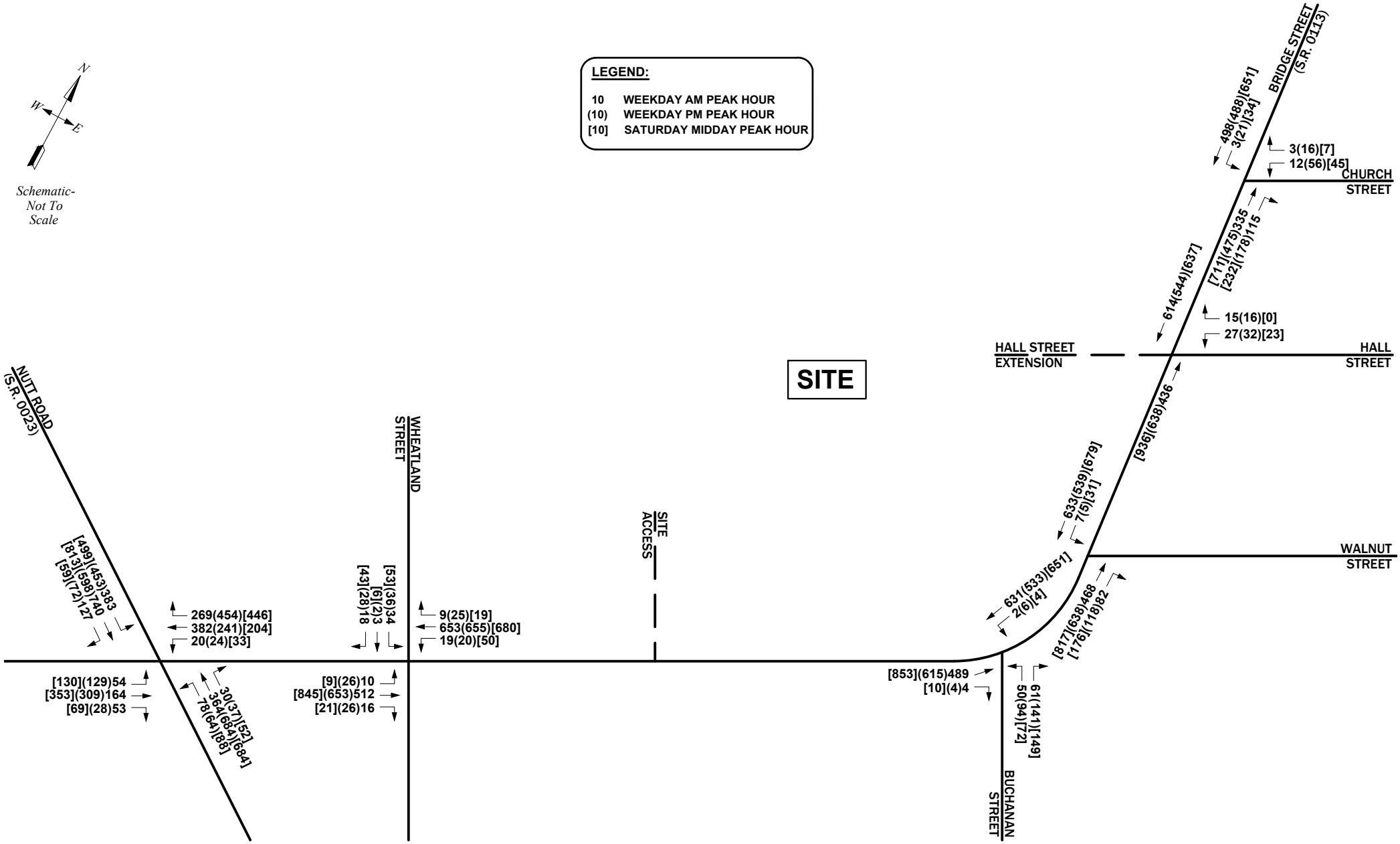


FIGURE 6A

2027 Future without Redevelopment Peak Hour Traffic Volumes

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2020-10 TIS\Figure 6A.dwg

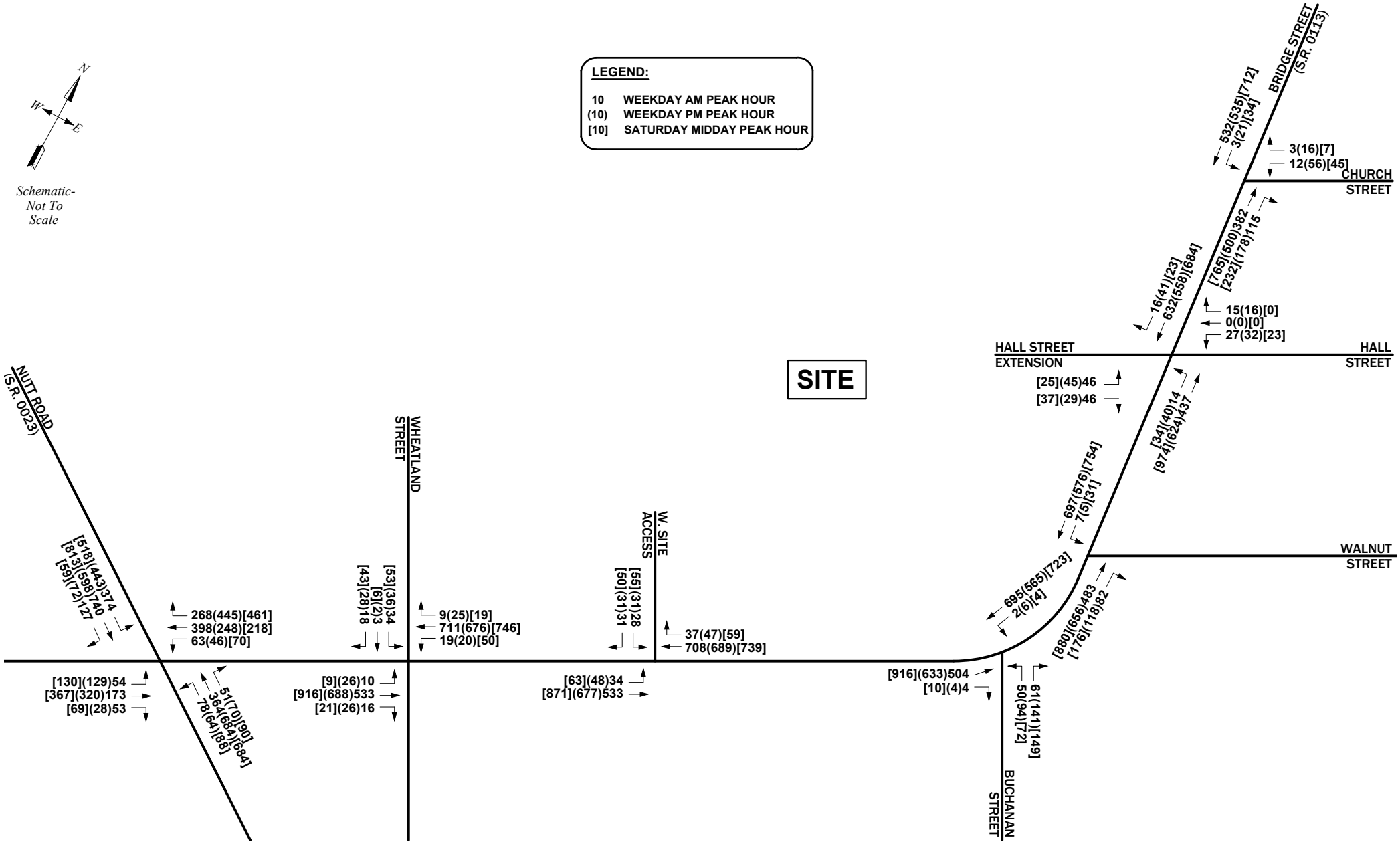


FIGURE 6B

2027 Future with Redevelopment Peak Hour Traffic Volumes

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2020/10/15) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2021-09 Revised TIS\Figure 6B.dwg

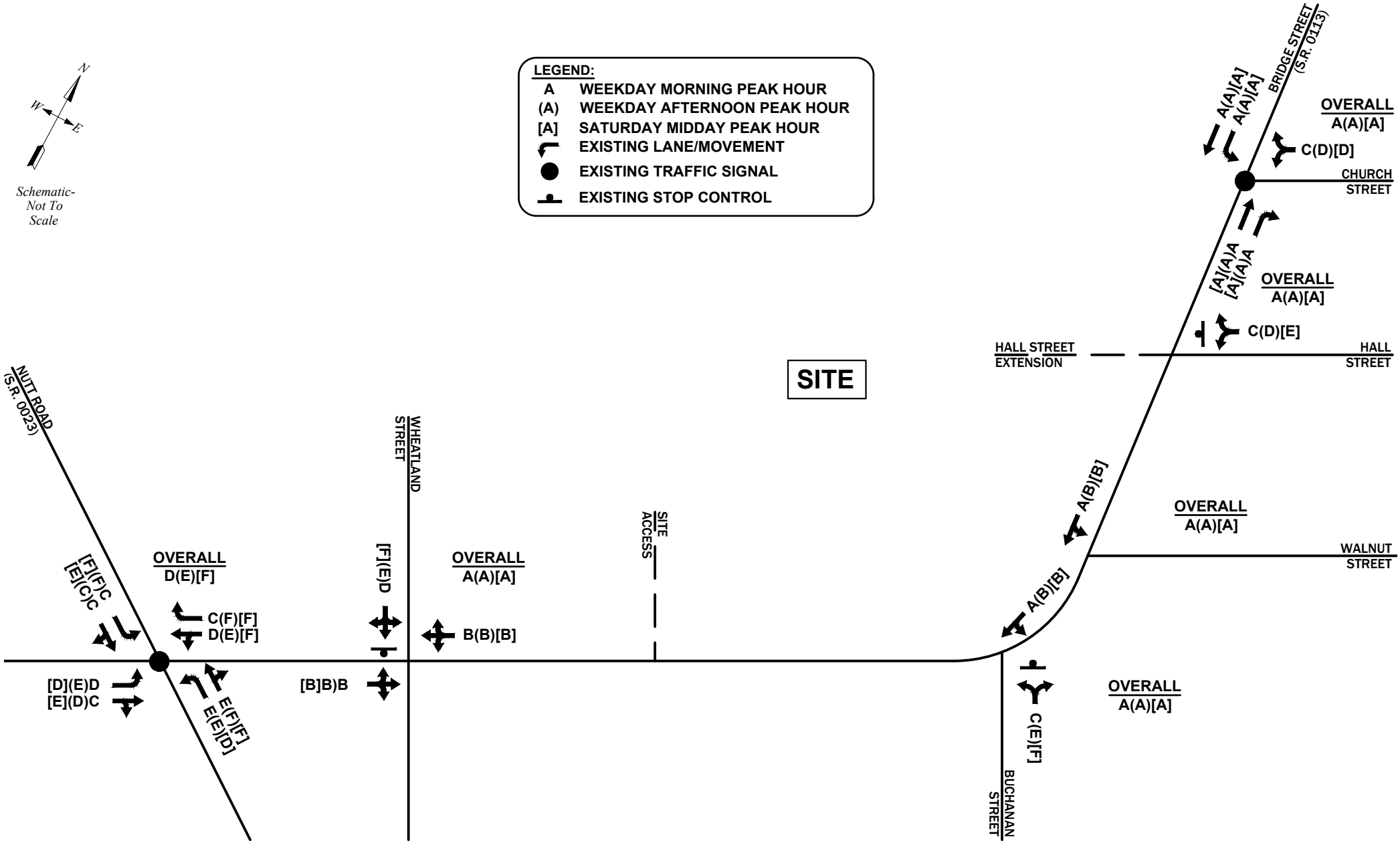


FIGURE 6C

2027 Future without Redevelopment Peak Hour Levels-of-Service

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

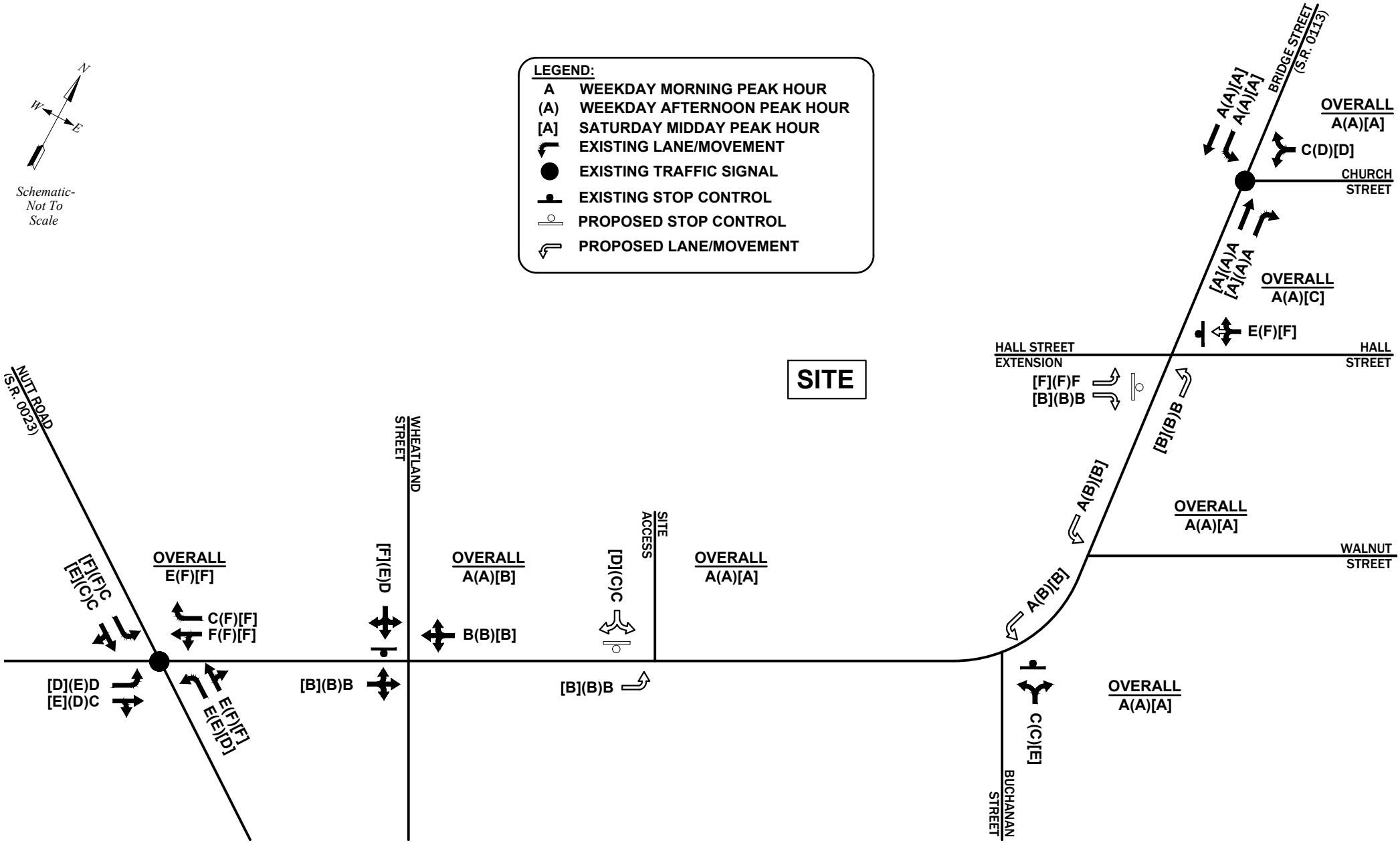


FIGURE 6D

2027 Future with Redevelopment Peak Hour Levels-of-Service

STEELWORKS

BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PA

(2022/01/14) \\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Graphics\2022-01 Revised TIS\Figure 6D.dwg

LEGEND

- LEGAL RIGHT-OF-WAY
- EXISTING FEATURES
- EXISTING TRAFFIC SIGNAL
- PROPOSED ACCESS EASEMENT
- PROPOSED BUILDING
- PROPOSED PAVEMENT MARKINGS
- PROPOSED PLCC CURBING
- PROPOSED CONCRETE MOUNTABLE CURB
- PROPOSED SIDEWALK/ADA RAMPS
- PROPOSED SIGN
- PROPOSED STREET LIGHTING
- PROPOSED STREET TREE
- PROPOSED BENCH
- PROPOSED TRASH RECEPTACLE
- PROPOSED BICYCLE HITCHING POST

0 50 100 FEET

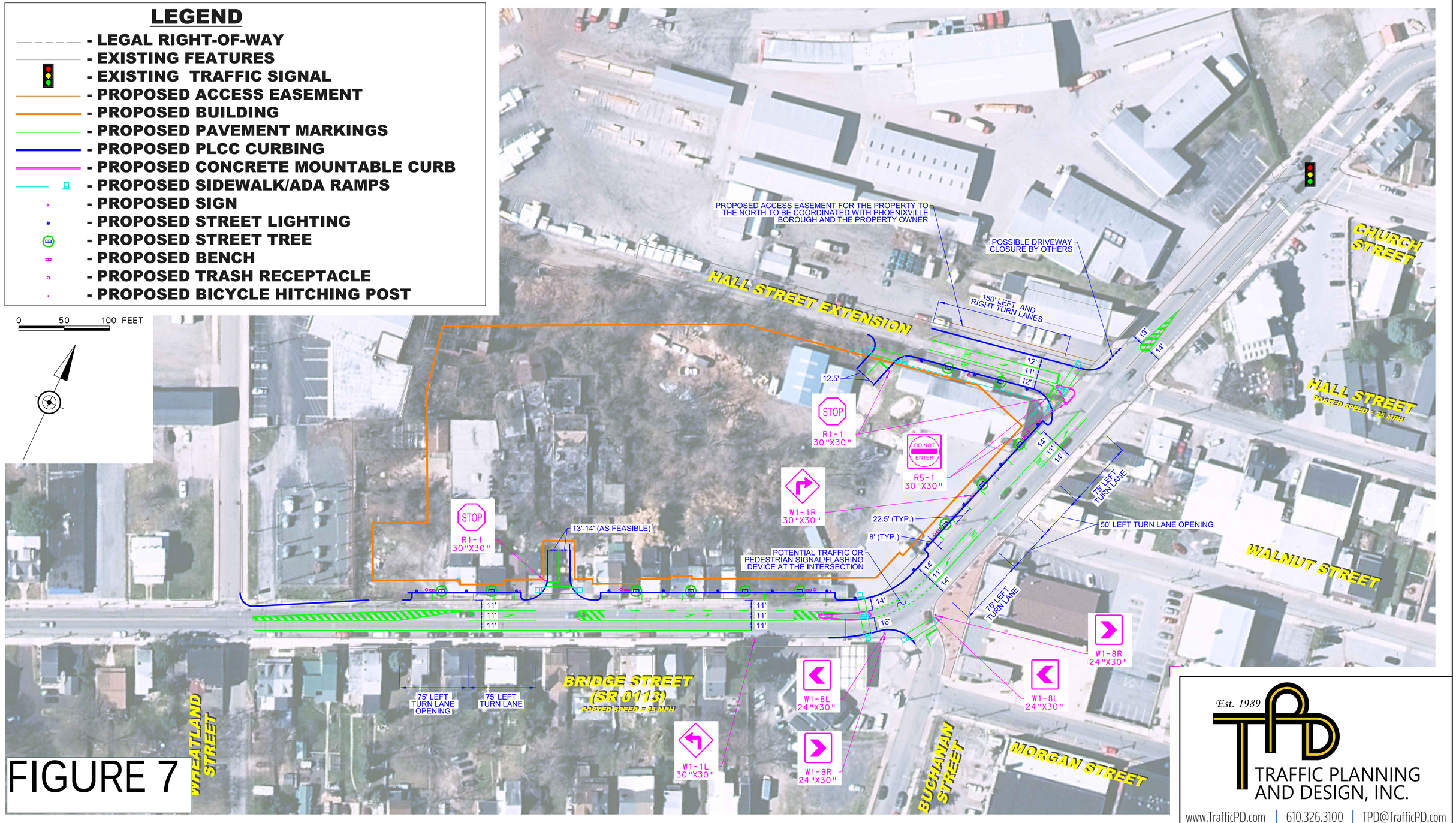


FIGURE 7

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2/25/2021

CONCEPT PLAN NOTES

- THESE NOTES ARE AN INTEGRAL PART OF THIS CONCEPT PLAN. THIS CONCEPT PLAN HAS BEEN PREPARED AT CLIENT'S REQUEST, IS CONCEPTUAL AND PRELIMINARY IN NATURE, AND SHALL NOT BE USED FOR PURPOSES OF CONSTRUCTION OR ANY OTHER USE. THIS PLAN IS SUBJECT TO CHANGE AND REFINEMENT AS THE DESIGN IS FURTHER DEVELOPED AND REVIEWED BY MUNICIPALITIES, AGENCIES, AND OTHERS.
- ENGINEER DOES NOT MAKE ANY REPRESENTATION REGARDING THE ACCURACY OF THE INFORMATION CONTAINED HEREIN AND ACCEPTS NO LIABILITY FOR THE INFORMATION CONTAINED HEREIN.
- CLIENT MUST OBTAIN WRITTEN APPROVAL FROM PREPARER PRIOR TO RELEASE OF THIS PLAN TO ANY THIRD PARTY. ANY OTHER USE BY A THIRD PARTY IS STRICTLY PROHIBITED.
- THIS CONCEPT PLAN IS BASED ON UNVERIFIED SURVEY/MAPPING INFORMATION PROVIDED TO PREPARER BY OTHERS. FINAL PROJECT DESIGN SHALL BE BASED ON ACTUAL SURVEY PREPARED UNDER THE SUPERVISION AND CONTROL OF A PROFESSIONAL LICENSED SURVEYOR.
- ANY RIGHT-OF-WAY LINES OR PROPERTY LINES DEPICTED ON THIS PLAN ARE UNVERIFIED AND MUST BE CONFIRMED BY A PROFESSIONAL LICENSED SURVEYOR. EVEN IF NOT DEPICTED HEREIN, RIGHT-OF-WAY OR EASEMENT ACQUISITIONS MAY BE NECESSARY AS PART OF THIS PROJECT. FINAL RIGHT-OF-WAY OR EASEMENT ACQUISITIONS SHALL BE BASED ON ENGINEERED AND APPROVED PLANS.
- ANY UTILITY FACILITIES DEPICTED ON THIS PLAN ARE UNVERIFIED AND MUST BE CONFIRMED THROUGH SURVEY AND UTILITY RESEARCH. SUBSURFACE UTILITY ENGINEERING MAY BE NECESSARY TO ACCURATELY LOCATE UNDERGROUND UTILITY FACILITIES. EVEN IF NOT DEPICTED HEREIN, UTILITY RELOCATIONS MAY BE NECESSARY AS PART OF THIS PROJECT. UTILITY RELOCATIONS SHALL BE BASED ON ENGINEERED AND APPROVED PLANS.
- ANY ENVIRONMENTAL RESOURCES DEPICTED ON THIS PLAN ARE UNVERIFIED AND MUST BE CONFIRMED THROUGH RESEARCH, FIELD SURVEYS, AND STUDIES. EVEN IF NOT DEPICTED HEREIN, ENVIRONMENTAL RESOURCES MAY BE IMPACTED AS PART OF THIS PROJECT. THIS CONCEPT PLAN DOES NOT PURPORT TO CONSIDER ALL ENVIRONMENTAL RESOURCE IMPACTS THAT MAY BE REQUIRED DUE TO ANY PROPOSED IMPROVEMENTS.
- ANY ROADWAY STRUCTURES (E.G. BRIDGES, CULVERTS, RETAINING WALLS) DEPICTED ON THIS PLAN ARE UNVERIFIED AND MUST BE CONFIRMED THROUGH RESEARCH, FIELD SURVEYS, AND STUDIES. EVEN IF NOT DEPICTED HEREIN, ROADWAY STRUCTURES MAY BE IMPACTED AS PART OF THIS PROJECT. THIS CONCEPT PLAN DOES NOT PURPORT TO CONSIDER ALL IMPACTS TO ROADWAY STRUCTURES THAT MAY BE REQUIRED DUE TO ANY PROPOSED IMPROVEMENTS.
- ALTHOUGH NOT NECESSARILY DEPICTED ON THIS CONCEPT PLAN, DRAINAGE AND STORMWATER MANAGEMENT IMPROVEMENTS MAY BE NECESSARY IN ORDER TO IMPLEMENT ANY PROPOSED IMPROVEMENTS.
- ALL DOCUMENTS, DESIGNS, DRAWINGS AND SPECIFICATIONS ("INSTRUMENTS OF SERVICE") PREPARED SPECIFICALLY FOR THIS PROJECT BY PREPARER ("ENGINEER") ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR USE BY CLIENT OR ANYONE ELSE ON FURTHER DEVELOPMENT OF THE PROJECT OR ON ANY OTHER PROJECT. IN ACCEPTING AND UTILIZING INSTRUMENTS OF SERVICE, OR ANY FORM OF ELECTRONIC MEDIA GENERATED AND PROVIDED BY ENGINEER WITH RESPECT TO THIS PROJECT, ANY REUSE OR MODIFICATION OF INSTRUMENTS OF SERVICE WITHOUT WRITTEN CONSENT BY ENGINEER FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ENGINEER. CLIENT AGREES TO WAIVE ALL CLAIMS AGAINST ENGINEER RESULTING IN ANY WAY FROM ANY UNAUTHORIZED CHANGES OR REUSE OF INSTRUMENTS OF SERVICE BY ANYONE OTHER THAN ENGINEER. IN ADDITION, CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY, DEFEND AND HOLD ENGINEER HARMLESS FROM ANY DAMAGE, LIABILITY, OR COST, INCLUDING REASONABLE ATTORNEYS' FEES AND COSTS OF DEFENSE, ARISING FROM ANY UNAUTHORIZED REUSE OR CHANGES TO INSTRUMENTS OF SERVICE.
- ALL STREETSCAPE ITEMS DEPICTED ON THIS PLAN ARE FOR CONCEPTUAL PURPOSES ONLY AND ARE NOT TO BE CONSIDERED AS A REPRESENTATION OF FINAL CONDITIONS.

Est. 1989
TRAFFIC PLANNING AND DESIGN, INC.
www.TrafficPD.com | 610.326.3100 | TPD@TrafficPD.com

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	CHESTER	0113		1 OF 1
PHOENIXVILLE BOROUGH				

STEELWORKS - BRIDGE STREET CONCEPT

02/12/2021

Appendix A

Correspondence

pennsylvania
DEPARTMENT OF TRANSPORTATION

Date: 06/09/2021

Subject: Highway Occupancy Permit Application No. 243437, Cycle No.1 - Returned For Revisions

To: Steelworks Acquisition L.P.
184 Bridge Street
Phoenixville, PA 19460

From: PennDOT Engineering District 6-0
7000 Geerdes Boulevard
King of Prussia, PA 19406

Dear Applicant,

PennDOT has reviewed your application for completeness, consistency and compliance with applicable Department Regulations. This review has identified issues that must be addressed in order for our review to continue.

The Department's review comments are attached.

Once the comments have been addressed, please resubmit the application and associated material for further review.

Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found. This will help expedite the review. For guidance on HOP applications refer to 67 PA Code, Chapter 441, Chapter 459 and PennDOT Publication 282, "Highway Occupancy Permit Guidelines". Additional comments may follow upon review of the resubmitted application.

If you have any questions regarding this matter, you may contact Andrew J. Parker, PE, PTOE, at (484) 873-2408.

pennsylvania
DEPARTMENT OF TRANSPORTATION

Response Comments
Date: 06/09/2021
Application Number: 243437, Cycle No.1

Form Letter Notes

(1) * Upon resubmission, the applicant's engineer should put together a letter that describes how each comment has been addressed and where each can be found in the plan set. A copy of these comments and any previously submitted plans should also be provided. Further, if the applicants engineer has made any design changes independent of PennDOT reviewer comments, they must include a section in the response-to-comments letter that describes the additional design changes.

* Additional comments may follow upon review of the resubmitted application. If you have any questions pertaining to the technical aspects of this review, please contact the Department's representative, Andrew Parker, PE, PTOE of McCormick Taylor, Inc. at 484-873-2408 or ajparker@mccormicktaylor.com. Please reference the HOP Application number in all correspondence.

* For guidance on Highway Occupancy Permit applications refer to PA Code Title 67, Chapter 441, Chapter 459 and PennDOT Publication 282. This will help expedite the review.

General

(1) Comments for this review are only associated with the plans and documents attached for this cycle. Additional comments may follow upon review of the updated plans and documents of the resubmitted application.

(2) The Department requests the applicant initiate a meeting between the applicant team (including TPD), the Borough of Phoenixville (including McMahon Associates), and PennDOT to discuss this project, it's potential impacts and mitigation measures, and each entity's role moving forward. To arrange this meeting, please contact the Department and the Department's consultant by email (fhanney@pa.gov, slapenta@pa.gov, davidadams@pa.gov, and ajparker@mccormicktaylor.com).

(3) Regarding the intersection of PA 113 & PA 23, the Department agrees with the assessment that a comprehensive solution is required to simplify the intersection and improve operations. In the with development scenario, the intersection experiences significant delay increases. This is a major concern and needs to be addressed. As per PennDOT Policies and Procedures for Transportation Impact Studies, fair share contributions alone are not acceptable. Develop and submit an Alternative Transportation Plan as described in the Policies and Procedures document. Additional

coordination with the municipality and PennDOT will be required to determine an appropriate solution. The final recommendations of this ATP will be as a result of whatever understandings and agreements are reached once we have full coordination with the borough and their comprehensive plan.

(4) The Department has been made aware of a master planning effort by Phoenixville Borough which will eventually connect the re-established Hall St shown on the submitted HOP plans to an extension of Paradise ST to create an alternate route connecting SR 0023/0113 to SR 113 (Bridge St) immediately adjacent to this site. This plan also envisions signalization of Hall St once this new connection is complete. The current TIS discusses possibly signalizing Buchanan ST which the Department would concur with in the absence of this potential new connector Rd coming out at Hall and being signalized. If this planning effort is not going to move forward and Buchanan is to be the new signalized intersection the Department will require the site access be aligned with Buchanan ST and does not accept that this cannot be accommodated as this will be an entirely new building and thus its design can be modified to incorporate such an access. If the planning effort is moving forward then the site access may remain as proposed. Due to the many moving parts of this project, the borough's planning effort and the potential Department safety project at the intersection of SR 0113 and SR 0023 we are strongly recommending a meeting be scheduled between the borough, PennDOT, Steelworks L.P. representatives and McMahon Associates who prepared the borough's planning study. Until we have clear direction and have all stakeholders on the same page we cannot conclude this HOP, its access scheme or scope of improvement's responsibility.

(5) Will condition when plans are sent in.

(6) PLEASE SUBMIT A CHECK FOR $50.00 MADE PAYABLE TO PENNDOT-ATTN: MARY ELLEN CULHANE, PERMITS SUPERVISOR, 7000 GEERDES BLVD. KING OF PRUSSIA, PA. 19406. PLEASE INCLUDE THE APPLICATION NUMBER ON THE CHECK FOR OUR REFERENCE.

(7) APPLICANT MUST APPLY FOR A BUSINESS PARTNER ID (BPID). THE BPID IS TO BE USED IN THE ESTABLISHMENT OF A BILLING ACCOUNT FOR THE INVOICING OF INSPECTION COSTS.

FOR INFORMATION ON OBTAINING A BPID, PLEASE VISIT:
HTTPS://WWW.DOT14.STATE.PA.US/EPS/HOME/MANAGEBPREGISTRATION.JSP
(PLEASE MAKE SURE THAT YOU FOLLOW THE INSTRUCTIONS THAT ARE IN THE PINK AREA).

AFTER A BPID IS OBTAINED AND ACTIVATED BY YOUR SYSTEM ADMINISTRATOR,

(THIS IS A 2 STEP PROCESS THAT MUST BE DONE IN ORDER FOR PENNDOT TO BILL FOR PERMIT INSPECTION COSTS AT A LATER DATE), PLEASE PROVIDE THE FOLLOWING INFORMATION IN THE APPLICANT CONTACT AREA.

-BPID
-CONTACT INFORMATION (NAME/TITLE/PHONE/EMAIL) FOR A GENERAL CONTACT PERSON (PERSON THAT TYPICALLY DEALS WITH THE HIGHWAY OCCUPANCY PERMIT APPLICATION PROCESS).
-CONTACT INFORMATION (NAME/TITLE/PHONE/EMAIL) FOR A BILLING CONTACT PERSON (PERSON THAT TYPICALLY DEALS WITH THE HIGHWAY OCCUPANCY PERMIT INVOICING PROCESS).

(8) PLEASE SUBMIT A CHECK FOR $50.00 MADE PAYABLE TO PENNDOT-ATTN: MARY ELLEN CULHANE, PERMITS SUPERVISOR, 7000 GEERDES BLVD. KING OF PRUSSIA, PA. 19406. PLEASE INCLUDE THE APPLICATION NUMBER ON THE CHECK FOR OUR REFERENCE.

(9) PLEASE BE ADVISED: THE DEPARTMENT IS NOW REQUIRING A COST ESTIMATE BE ENTERED INTO EPS PRIOR TO HOP ISSUANCE. THIS COST ESTIMATE MUST INCLUDE ALL WORK PROPOSED WITHIN THE DEPARTMENT'S RIGHT-OF-WAY INCLUDING SIGNAL EQUIPMENT, ALL ROADWAY WORK, PAVEMENT MARKINGS AND SIOGNAGE PLUS A 15% CONTINGENCY TO BE ENTERED INTO THE "FEE INFORMATION & ESTIMATE CONSTRUCTION COST" SECTION IN THE APPLICATION SETUP BOX. FURTHER, THIS SECTION REQUIRES THE COST ESTIMATE TO BE BROKEN DOWN INTO SITE FRONTAGE COSTS AND OFF SITE IMPROVEMENTS COSTS. PLEASE ENTER THIS INFORMATION IN THE MANNER REQUIRED. THIS COST ESTIMATE WILL BE THE BASIS FOR THE VALUE OF THE LETTER OF CREDIT THE DEPARTMENT WILL REQUIRE AS SECURITY PRIOR TO THE START OF ACTUAL CONSTRUCTION.

(10) Please note that the comments in this review are based on the TIS and Concept Plan as submitted, but some of the comments herein may not apply once the proposed site access is revised as we recommend.

Application

(1) Provide documentation of access agreement between the applicant and the property north of Hall Street Extension along PA 113.

Transportation Impact Study/Transportation Impact Assessment

(1) The following comments pertain to the Transportation Impact Study (TIS) prepared by McMahon Associates, Inc., dated November 23, 2020. Please note that these comments are based on the TIS as submitted, but some of these comments may not apply once the proposed site access is revised as we recommend.

a. Based on the information provided, the Department preliminarily supports the installation of a full traffic signal at the intersection of PA 113 & Buchanan Street should the ultimate plan for Hall St signalization not move forward. The final determination of whether or not to signalize the intersection will be based on additional discussion at the requested coordination meeting and review of additional materials to be provided. As stated in a different comment of this review, the proposed site access driveway must be relocated east to become the 4th leg of this intersection if signalized. Coordinate with the municipality on removal of the existing crosswalk across Buchanan Street at Morgan Street. It is undesirable to have a second uncontrolled crossing on Buchanan Street in the immediate area of a traffic signal.

b. In the traffic signal warrant analysis for PA 113 & Buchanan Street, indicate Warrant 1 (eight-hour vehicular volume) as applicable and provide the pages for this warrant in the TIS. Also, please provide PDFs of the Traffic Volume Input tab of the Excel workbook.

(2) TIS continued...

c. Based on Table 8, the Hall Street approaches at PA 113 have unacceptable levels of delay in the Saturday midday peak hour with development. Since actual operating delay may be impacted by nearby traffic signals, the LOS/delay should be confirmed through SimTraffic simulation. If SimTraffic reveals similar delays as shown in Table 8, additional mitigation or an alternative access scheme will be required.

d. Provide electronic Synchro files as EPS attachments for proper review. This is District policy. Please note that Synchro files for this submission were not received in time for thorough review. Comments will be provided in the next cycle.

e. The Executive Summary states that the development includes 41,500 square feet of retail space, but the Trip Generation section indicates a total of 37,000 square feet of retail space. Revise as needed.

f. The trip generation must include weekday AM peak hour trips for high-turnover (sit-down) restaurant as the restaurant may be open for breakfast service.

g. Table 7 (Overall Intersection Levels-of-Service) is missing the intersection of PA 113 & Proposed Access. Revise as needed.

h. Page 18 of the TIS states with the proposed site and with the site related improvement recommendations, all study intersections will satisfy PennDOTs level-of-service criteria. This is not accurate. Multiple intersections would require mitigation as per Department LOS/delay requirements and no improvements are provided. Revise as needed.

i. In Table 7 (Saturday Midday Peak Hour), the indication that PA 113 & Hall Street has No LOS Drop and does not require mitigation per Department regulations is misleading and inaccurate. While the TIS narrative can be used to provide additional context and supporting data, the table should be revised for consistency with the capacity analysis results and appliable Department regulations.

(3) TIS continued...

j. Comparing the weekday AM/PM manual turning movement count at PA 113 & Buchanan Street to Figure 3A (Existing Peak Hour Traffic Volumes), some volumes on PA 113 are lower on the figure than in the raw traffic count data. Revise for consistency or provide justification since the TIS narrative states that traffic volumes were balanced upward.

k. Provide Turn Lane Warrant and Length Analysis for westbound PA 113 right-turn lane at Hall Street. Only left-turn lane analysis was provided.

l. Figure 5B appears to be mislabeled. Revise as needed.

Sight Distance- Driveways/Local Roads

(1) With respect to the proposed access along PA 113, the Department is concerned that the on-street parking along the site frontage could potentially block sight distance for exiting vehicles. Evaluate the PA 113 site frontage and ensure future on-street parking does not restrict the required sight distance at the proposed access location. Show the sight lines on the plans and if it is found that the removal of parking spaces is needed to achieve the required sight distance, then they must be identified for removal accordingly. That said, as stated in a different comment of this review, the Department recommends that proposed site access driveway be relocated east to be a 4th leg of the Bridge Street & Buchanon Street intersection (to be signalized).

Roadway Geometrics

(1) The following comments pertain to the Bridge Street Concept Plan, prepared by Traffic Planning And Design, Inc., dated February 12, 2021. Please note that these comments are based on the

Concept Plan as submitted, but some of these comments may not apply once the proposed site access is revised as we recommend.

a. While we recommend relocating the proposed western site driveway to the east to become the 4th leg of the intersection of Bridge Street & Buchanon Street, if it ends up staying where its currently proposed then the access must be modified to include a separate right turn lane on the egress of the western site access to PA 113. The driveway approach shows significant delay in the Saturday midday peak hour. The left and right turn lanes should be separated by a channelizing island, and the separate site access would remain unsignalized.
b. Since the driveways along PA 113 on the southwest corner of Buchanan Street have been closed (former gas station driveways), it appears that the curbed median island can be extended farther to the west.
c. Determine if advisory speed plaques are warranted for the turn warning signs. See MUTCD Section 2C.08.
d. Given the location of the PA 113 & Buchanan Street intersection, the turn warning sign should be combined with the side road warning sign to create a combination horizontal alignment/intersection sign. See MUTCD Section 2C.11.
e. Due to the short length of the curve, it appears that large arrow (W1-6) signs will be more effective than chevron signs.

Signs

(1) Coordinate projects/schedules between this HOP and the HSIP project (as referenced on TIS page 11) to resolve issues with overhead lane use control and pavement marking legends for westbound PA 113 approaching PA 23. The issues should be corrected as soon as possible. Upon resubmission, provide an update on this along with documentation of coordination.

Signal Section (Publication 46, 148 And 149)

(1) a. Any proposed signal would be required to integrate with the existing Siemens Tactics system.
b. At the SR 0023 & SR 0113 intersection, coordinate projects/schedules between HSIP and HOP to get lane alignment/assignment optimized.

Communication Design

(1) Department records indicate that PennDOT Fiber Optic facilities are present within the proposed limits of work and may be impacted by the anticipated improvements. Be advised that if fiber optic

facilities are affected, the applicant is responsible for the relocation of the fiber, testing of the fiber communications both prior to relocation and after the relocation of the fiber indicated on the approved plans, and the associated costs. Any relocation will need to be performed by a communications contractor that is acceptable to the District Traffic Unit and the Highway Occupancy Permit will not be issued until the fiber optic impact has been reviewed and the relocation scheme ultimately approved by the Department.

McMAHON ASSOCIATES, INC.
835 Springdale Drive, Suite 200
Exton, PA 19341
p 610-594-9995 | f 610-594-9565

PRINCIPALS
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Christopher K. Bauer, P.E., PTOE
Mark A. Roth, P.E.
John R. Wichner, P.E., PTOE

FOUNDER
Joseph W. McMahon, P.E.

MEMORANDUM

TO: Jean Krack, Manager
Phoenixville Borough

FROM: John J. Yurick, P.E., PTOE, PTP, Borough Traffic Engineer
McMahon Associates, Inc.

SUBJECT: Steelworks (Barto) Mixed-Use Development
Traffic Impact Study Scoping Memorandum

DATE: August 24, 2020

McMahon Associates, Inc. has prepared this transportation impact study scoping memorandum for the proposed Steelworks mixed-use development of 41,500 square feet of retail space and 375 apartment units, located on the north side of Bridge Street (S.R. 0113) between Hall Street and Wheatland Street in Phoenixville Borough, Chester County. The purpose of the study will be to evaluate the traffic impact of the site on surrounding roadways, as well as determine appropriate access to the redeveloped property. McMahon will complete the study while updating the materials that were prepared by the applicant's team and previously submitted to PennDOT. As such, McMahon will utilize and update the data and analysis from this traffic study to the extent feasible.

In order to complete the transportation impact study and satisfy Borough requirements, we propose the scope described herein, which satisfies the Borough requirements (SALDO Section 22-602). It is noted that since access to a State highway is proposed, Highway Occupancy Permit (HOP) approvals from PennDOT will be required, which will require completion of a Transportation Impact Study in accordance with PennDOT's guidelines, as contained in *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*. The requirements of PennDOT, as well as the scoping recommendations previously provided to the applicant will be addressed with this study, as appropriate. It further noted that the scope of this study does not include submissions to PennDOT, nor does it include further coordination or response to department comments.

Site Trip Generation

Preliminary traffic volumes to be generated by the proposed mixed-use development of 41,500 square feet of retail space and 375 apartment units were prepared based on trip generation data compiled from numerous

studies contained in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 10th Edition*. **Table 1** presents the anticipated vehicular trip generation for the proposed development.

Table 1. Vehicular Trip Generation [1]

Land Use	Size	Daily[2]	Weekday Morning Peak Hour[3]			Weekday Afternoon Peak Hour[3]			Saturday Midday Peak Hour[2]		
			In	Out	Total	In	Out	Total	In	Out	Total
Apartments[2]	375 Units	2,042	32	93	125	96	62	158	80	84	164
- Internal Trips[3]		-347	-1	-1	-2	-38	-14	-52	-24	-8	-32
External Trips		1,695	31	92	123	58	48	106	56	76	132
Retail[4]	41,500 S5.f.	3,306	107	66	173	136	147	283	161	148	309
- Internal Trips[3]		-347	-1	-1	-2	-14	-38	-52	-8	-24	-32
External Trips		2,959	106	65	171	122	109	231	153	124	277
- Pass-By Trips[5]		-710	-25	-16	-41	-42	-37	-79	-40	-32	-72
New Trips		2,249	81	49	130	80	72	152	113	92	205
Total Trips		**5,348**	**139**	**159**	**298**	**232**	**209**	**441**	**241**	**232**	**473**
- Internal Trips[3]		**-694**	**-2**	**-2**	**-4**	**-52**	**-52**	**-104**	**-32**	**-32**	**-64**
External Trips		**4,654**	**137**	**157**	**294**	**180**	**157**	**337**	**209**	**200**	**409**
- Pass-By Trips[5]		**-710**	**-25**	**-16**	**-41**	**-42**	**-37**	**-79**	**-40**	**-32**	**-72**
New Trips		**3,944**	**112**	**141**	**253**	**138**	**120**	**258**	**169**	**168**	**337**

(1) Based on the ITE publication, *Trip Generation Manual, 10th Edition.*
(2) ITE Land Use Code 221 for Multi-Family Housing (Mid-Rise).
(3) Based on the methodology contained in the ITE publication *Trip Generation Handbook, Third Edition*.
(4) ITE Land Use Code 820 for Shopping Center.
(5) 34 percent during the weekday afternoon peak hour and 26 percent during the Saturday midday peak hour, based on the ITE publication *Trip Generation Handbook, Third Edition.* Assumed to be 24 percent (i.e., 10 percent less than the weekday afternoon peak hour) during the weekday morning peak hour and on a daily basis.

These trip generation assumptions are preliminary and will be refined and updated, as necessary, upon further review of the development plan.

Transportation Impact Study Scope

In order to evaluate the transportation impacts of the proposed redevelopment project and address the study requirements of the borough and PennDOT, the following scope is proposed:

Study Intersections

- Bridge Street (S.R. 0113) and Church Street
- Bridge Street (S.R. 0113) and Hall Street
- Bridge Street (S.R. 0113) and Walnut Street
- Bridge Street (S.R. 0113) and Buchanan Street
- Bridge Street (S.R. 0113) and Wheatland Street
- Bridge Street (S.R. 0113) and Nutt Road (S.R. 0023)/Mellon Street
- Bridge Street (S.R. 0113) and Proposed Driveway(s)

Traffic Data Collection

Due to the ongoing COVID-19 pandemic, and combination of recently collected traffic count data and traffic data provided by StreetLight Insights will be utilized in order to determine the existing traffic volumes at the study intersections. The StreetLight web-based platform utilizes anonymized personal location data in order to estimate turning movement counts for intersections based on historical data and has recently been approved for other projects by PennDOT. At this time, it is expected that traffic counts recently conducted at the Bridge Street intersections with Wheatland Street, Buchanan Street, and Hall Street can be utilized while the remaining intersections will utilize the StreetLight data.

Study Peak Periods

- Weekday morning commuter peak period (6:00 AM to 10:00 AM))
- Weekday afternoon commuter peak period (3:00 PM to 7:00 PM)
- Saturday midday peak period (11:00 AM to 1:00 PM)

Please note some previously collected traffic counts were not completed during the full commuter peak periods prescribed by the Borough's ordinance. However, based on recent traffic counts conducted by our office at nearby intersections, the peak traffic volumes at the study intersections are likely captured within the peak periods of the previously conducted traffic counts. McMahon will utilize Streetlight data to verify actual peak hours and make any necessary adjustments to historic traffic counts.

1. Establish existing traffic volumes utilizing recent traffic count data and StreetLight data, as described above for the six study intersections during the three study peak periods.

2. Identify existing or proposed pedestrian facilities, bicycle facilities, and public transit facilities within the study area, and any potential development impacts to such facilities.

3. Evaluate the existing traffic operating conditions, including detailed capacity/level-of-service and queuing analysis for the three peak hours for the study intersections.

4. Review available crash data from PennDOT for the study area intersections and summarize any potential trends or appropriate countermeasures to address any adverse conditions. It is understood that the borough has concerns regarding the crash history at the Bridge Street/Buchanan Street intersection. If preparation of a conceptual layout of improvements or a more detailed safety analysis is recommended upon review of the crash data, then McMahon will prepare an additional work order request for borough approval.

5. Forecast peak hour traffic volumes without-development for the future build-out year (2023) and PennDOT design year (2028), based upon PennDOT traffic growth data for the study area roadways and traffic generated by any other proposed developments located within the vicinity of the study area. Borough staff will provide information regarding area developments for consideration in the traffic study. The applicant must verify the anticipated build-out year for this project prior to commencement of the study.

6. Identify area roadway improvements proposed in conjunction with other developments or by PennDOT, if any.

7. Evaluate future build-out and PennDOT design year traffic conditions without-development, including detailed capacity/level-of-service and queuing analysis at the study intersections for the three peak hours.

8. Estimate the daily and peak hour site trip generation based on the new Institute of Transportation Engineers publication, *Trip Generation, 10th Edition,* as shown above in Table 1.

   Note: Our office will confirm the specific characteristics of the site with the applicant in order to confirm the appropriate trip generation assumptions.

9. Prepare site trip distributions based on existing traffic patterns and the locations of the site accesses, and assign the development-generated traffic to the study area roadway network for the three peak hours, resulting in future with-development traffic volumes.

10. Evaluate future build-out and PennDOT design year traffic conditions with-development, including detailed capacity/level-of-service and queuing analysis at the study intersections and site accesses for the three peak hours. Identify recommended improvements to achieve acceptable levels of service or mitigate the traffic impact of the development at the study intersection, per Borough requirements.

    In addition, the traffic analysis will assume the completion of the Paradise Street connection through the French Creek West development with regard to the resultant reduction in traffic along Bridge Street.

11. Evaluate the site access intersections and provide design recommendations (in narrative format), including auxiliary turn lane analyses and sight distance requirements. It is noted that the study will evaluation one site access scenario, and that additional scenarios can be evaluated as an additional service.

12. Complete a review of the internal site layout with regard to traffic operations and parking supply. It is noted that the borough would like to utilize existing rights-of-way to create an emergency access for the new fire station along Wheatland Street to access Hall Street and Bridge Street, which will be discussed briefly in the report. Detailed shared use parking calculations can be provided upon request and as a separate out-of-scope service.

13. Complete a review of the off-site public parking supply in the vicinity of the site based on previous parking studies conducted by the Borough (a detailed parking study is not included as part of this scope).

14. The traffic analysis will be updated to address the technical comments in PennDOT's August 23, 2019 Highway Occupancy Permit review letter. A response letter will be provided to the applicant for submission to PennDOT.

15. Prepare a transportation impact study containing our analysis results, major findings, conclusions/recommendations in accordance with Section 22-602 of the borough's Subdivision and Land Development Ordinance. The report, inclusive of traffic count data and other technical

appendices, will be provided in electronic format to all parties. The applicant will be responsible to make submissions to outside agencies, as necessary.

16. A separate Nutt Road/Paradise Street operational analysis will be completed to assume recent development projects and planned roadway connections to determine any updates necessary to the prior report's findings or recommendations for planning purposes.

Exclusions

Supplemental services not specifically described above, including but not limited to, additional data collection, additional traffic analysis, study scope changes, changes to the traffic study assumptions, development staging, response to review comments, conceptual improvements plans and cost estimates, and meetings/ hearings, etc. are not included in the scope, but will be provided, as necessary and as authorized, on a time-and-materials basis, as necessary and as authorized based on our attached *Standard Provisions for Professional Services*. It is reminded that the applicant will also be responsible for all electronic submissions to PennDOT, if necessary, and addressing agency review comments are not part of this scope or fee.

Schedule

At this time, we are ready to begin field work and obtaining StreetLight data upon written notice to proceed by the borough. We anticipate that the study can be completed within four to five weeks from notice to proceed, assuming all necessary information is provided in a timely manner.

Please contact our office if you have any questions regarding this scoping memorandum.

cc: Owen Hyne, P.E., CEA, Remington & Vernick

OS-2 (11-15)

pennsylvania
DEPARTMENT OF TRANSPORTATION

September 30, 2016

PHOENIXVILLE BOROUGH, CHESTER COUNTY
BRIDGE STREET (S.R. 0113) AND HALL STREET
HIGHWAY OCCUPANCY PERMIT APPLICATION NO. pre1323
STEELWORKS LLC
TRAFFIC LOG NO.: C16-008XP
SCOPING APPLICATION REVIEW

Guido W. DiMartino, P.E.
Traffic Planning and Design, Inc.
2500 E. High Street, Suite 650
Pottstown, PA 19464

Dear Mr. DiMartino:

The Department has reviewed the Scoping Application submission for compliance with applicable Department Regulations. This preliminary review has identified deficiencies that must be addressed in order for your application submission to be processed as efficiently as possible.

The Department understands that the provided analysis is preliminary in nature. As such, the Department reserves the right to make future additional comments based on the formal submission of a complete Transportation Impact Study (TIS).

Our comments on your preliminary submission are as follows:

SCOPING COMMENTS

1. The PennDOT project number, C16-008XP, for this scoping application review must be referenced when the formal Highway Occupancy Permit (HOP) application is submitted.
2. Unless requested by the municipality, a meeting does not appear to be warranted at this time.
3. Please note that District 6-0 is accepting TIS submissions via EPS. This will provide a more efficient and timely review of the submissions for the applicants while also assisting the Department with document management. Note that utilizing EPS will require a formal permit application be made for the access; therefore, submissions should be sure to include:
   a. A transmittal letter including responses to Scoping comments or comments from previous reviews
   b. Scoping Meeting Request Form (if previously submitted)
   c. Minutes of the Scoping meeting or any previous minutes
   d. Forms M950-MPC and M950-AA (as appropriate)
   e. Previously completed municipal reviews (if any)

f. Electronic copies of capacity analysis files (e.g. HCS or Synchro)

4. The following Scoping elements appear acceptable:
   a. Study Type (TIS)
   b. Description of Proposed Development
   c. Development Schedule
   d. Study Area Type (Urban)
   e. Analysis Periods (AM Peak, PM Peak, Sat Midday Peak)
   f. Analysis Type (Synchro)
   g. Sight Distance Analysis
   h. Turn Lane/Length Analysis
   i. Queuing Analysis
5. Add the following intersections to the Study Area:
   a. Bridge Street (S.R. 0113) & Wheatland Street
   b. Bridge Street (S.R. 0113) & Nutt Road (S.R. 0023) & Mellon Street
6. All weekday traffic counts should be conducted while local schools are in session.
7. Regarding trip generation for the proposed retail space (ITE Land Use 820), verify that the use of average rates instead of fitted curve equations is appropriate for this site. Otherwise, trip generation calculations, including internal trips and pass-by trips, appear to be acceptable.
8. Utilize the PennDOT Bureau of Planning and Research (BPR) growth rate data from August 2016 to July 2017 for urban non-interstate roadways in Chester County.
9. The applicant should coordinate with Phoenixville Borough regarding any other proposed development projects that may need to be accounted for in the base traffic volumes.
10. The Department will comment on the assumed Trip Distribution and Assignment when submitted.
11. The TIS should include gap studies for the following left turn movements:
    a. eastbound lefts from the proposed Hall Street Extension to northbound Bridge Street (S.R. 0113)
    b. eastbound lefts from the proposed central driveway / parking garage access to northbound Bridge Street (S.R. 0113)
12. The TIS should include crash analyses for the most recent five-year period at all intersections within the study area.
13. The proposed use should accommodate non-automobile traffic. As such, the Pedestrian and Transit evaluation should consider, at a minimum:
    a. ADA compliance along the site frontage.
    b. Accessibility to/from existing and/or future SEPTA stops.

c. Potential need for a mid-block pedestrian crossing across Bridge Street (S.R. 0113) within the site frontage. The nearest existing crosswalk across Bridge Street (S.R. 0113) appears to be north of Church Street.

14. With respect to the access design and formal permit application, please ensure that the following items are addressed:

a. Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for all driveways. Sight distance values obtained from the use of reduction factors which fall below the Safe Stopping Sight Distance will not be accepted by the Department. It is the designer's responsibility to ensure that this minimum requirement is satisfied.

b. It should be understood that in accordance with PennDOT Strike-Off Letter 470-10-03 and pursuant to section 421 of the State Highway Law (36 P.S. § 670-421) the installation of drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities.

c. Truck turning templates must be provided to ensure that the driveway intersection can safely accommodate a WB-62 design vehicle. If the largest permitted vehicle type to utilize the proposed site access is smaller than the WB-62, then a note must be included on the plans indicating the vehicle size and the truck turning templates for that vehicle size must be provided; the largest permitted vehicle size will become a condition of the permit.

d. ADA compliance within the limits of work (along the access frontage at a minimum) must be evaluated in the final design (i.e. new/modified facilities, impact to SEPTA bus stops, etc.).

e. Consistent with current Department Policy, applicants for Highway Occupancy Permits must apply for an EPS Business Partner ID (BPID). The BPID is to be used in the establishment of a billing account for the invoicing of inspection costs. For information on obtaining a BPID, you may visit:

https://www.dot14.state.pa.us/EPS/home/manageBPRegistration.jsp

[Please make sure that you follow the instructions that are in the "PINK" area]. After a BPID is obtained and activated by the system administrator, please provide the following information in the applicant contact information tab under "Applicant Team":

i) BPID (please ensure that the BPID is searchable through the "looking glass" feature)

ii) Contact information (name/title/phone/email) for a "general" contact person (person that typically deals with the Highway Occupancy Permit application process)

iii) Contact information (name/title/phone/email) for a "billing" contact person (person that typically deals with the Highway Occupancy Permit invoicing process)

The Department has performed this preliminary review based only on the limited information provided. We reserve the right to make future, additional, detailed comments based on the formal submission and application for a Highway Occupancy Permit. If you have any questions

pertaining to the technical aspects of this review, please contact Andrew Parker, P.E., PTOE of McCormick Taylor, Inc. at 610.640.3500 or ajparker@mccormicktaylor.com.

Respectfully,

Francis J. Hanney
District Traffic Services Manager
Engineering District 6-0

cc: M. Miele, P.E.
A. Patel, P.E.
Traffic Services File
Phoenixville Borough
Chester County Planning Commission

Est. 1989
TRAFFIC PLANNING AND DESIGN, INC.
WWW.TRAFFICPD.COM

August 11, 2016

Mr. Francis J. Hanney
Traffic Services Manager
PennDOT District 6-0
7000 Geerdes Boulevard
King of Prussia, PA 19406

RE: TRANSPORTATION IMPACT STUDY (TIS) SCOPING APPLICATION

Steelworks

Phoenixville Borough, Chester County

TPD No. DEME.00003

Dear Mr. Hanney:

On behalf of Steelworks LLC, Traffic Planning and Design, Inc. (TPD) has prepared the following TIS Scoping Application for the above referenced project.

Scoping Meeting Date: TBD
Applicant: Steelworks LLC
Applicant's Consultant: Traffic Planning and Design, Inc. (TPD) – Guy DiMartino
Applicant's Primary Contact: Manny DeMutis, Steelworks LLC

1. *LOCATION OF PROPOSED DEVELOPMENT:*
   PennDOT Engineering Dist: 6-0 County: Chester
   Municipality: Phoenixville Borough
   State Route(s): Bridge Street (S.R. 0113)

   Please refer to the attached **Figure 1** which shows the project location. The proposed site plan is **attached.**

2. *DESCRIPTION OF PROPOSED DEVELOPMENT:*
   - Proposed Site Access:
     - Three (3) Full-Movement Driveways to Bridge Street (S.R. 0113). The northernmost access will be the reconstruction and extension of Hall Street, west of Bridge Street. The central driveway will be the primary access to the parking garage. The southernmost driveway along Bridge Street will serve the 5,700 square foot retail space on the southern end of the property.

- Proposed Land Use(s):
    - Proposed development will consist of 336 apartment units (ITE #220) and 36,700 square feet of retail (ITE #820)

- Community Linkages (access to neighboring properties, cross easements, pedestrian and transit accommodations): N/A

3. *DEVELOPMENT SCHEDULE AND STAGING:*
    - Opening Date: 2019
    - Design Year: 2024
    - Proposed Development/Staging: N/A

4. *TRIP GENERATION:*

Trip generation for the proposed development will be based on:

☒ ITE Trip Generation Manual.
- Apartment (ITE #220)
- Retail (ITE #820)

☐ Other independent surveys.

TABLE 1

TRIP GENERATION DATA

Land Use	ITE #	Size (X)	Time Period	Equation/Rate	Directional Splits		Pass-By %
					Enter %	Exit %	
Apartment	220	336 Units	Average Weekday	T = 6.06*(X)+123.56	50%	50%	--
			Weekday A.M. Peak Hour	T = 0.49*(X)+3.73	20%	80%	--
			Weekday P.M. Peak Hour	T = 0.55*(X)+17.65	65%	35%	--
			Saturday Midday Peak Hour	T = 0.41*(X)+19.23	54%[1]	46%[1]	--
Retail	820	36.7 ksf	Average Weekday	T = 42.70*(X)	50%	50%	--
			Weekday A.M. Peak Hour	T = 0.96*(X)	62%	38%	24%[2]
			Weekday P.M. Peak Hour	T = 3.71*(X)	48%	52%	34%
			Saturday Midday Peak Hour	T 4.82*(X)	52%	48%	26%

T = Total Trips; X = Independent Variable
1=No data available, used Condo/Townhome (ITE #230)
2= No data available, used 10% less than P.M. peak hour.

It is anticipated that there will be interaction between the proposed apartment and retail uses. Based on a preliminary interaction analysis (**attached**), TPD utilized the following interaction percentages:

- Weekday A.M. = 2%
- Weekday P.M. = 15%
- Average Weekday = Current methodology does not calculate interaction for this period. Assumed the average of the A.M./P.M. results above = 9%
- SAT Midday = Current methodology does not calculate interaction for this period. Assumed the average of the A.M./P.M. results above = 9%

The results of the proposed trip generation calculations are summarized in **Table 2**.

TABLE 2
TRIP GENERATION – PROPOSED DEVELOPMENT

Time Period	Land Use	Total	Internal Capture	External	Pass-By Trips			New Trips		
					Total	Enter	Exit	Total	Enter	Exit
Average Weekday	Apartments	2160	-194	1966	--	--	--	--	--	--
	Retail	1568	-141	1427	--	--	--	--	--	--
	Total	**3728**	**-335**	**3393**	**--**	**--**	**--**	**--**	**--**	**--**
Weekday A.M. Peak Hour	Apartments	168	-2	166	0	0	0	166	33	133
	Retail	35	-2	33	8	5	3	25	16	9
	Total	**203**	**-4**	**199**	**8**	**5**	**3**	**191**	**49**	**142**
Weekday P.M. Peak Hour	Apartments	202	-25	177	0	0	0	177	113	64
	Retail	136	-25	111	38	18	20	73	40	33
	Total	**338**	**-50**	**288**	**38**	**18**	**20**	**250**	**153**	**97**
Saturday Midday Peak Hour	Apartments	157	-14	143	0	0	0	143	77	66
	Retail	177	-16	161	42	21	21	119	63	56
	Total	**334**	**-30**	**304**	**42**	**21**	**21**	**262**	**140**	**122**

5. *ESTIMATED DAILY TRIP GENERATION/DRIVEWAY CLASSIFICATION:*
   a. Estimated Daily Trip Generation of Proposed Development (Full Build): 3,393 trips/day or 1,697 vehicles/day
   b. Driveway Classification Based on Trip Generation, three (3) access points, and site layout:
      One (1) Medium Volume Driveway = 750-1500 vehicles/day
      Two (2) Low Volume Driveways = 25-750 vehicles/day

6. *TRANSPORTATION IMPACT STUDY REQUIRED?*
   ☐ No
   ☒ Yes, based on:
      ☐ 3,000 or more vehicle trips/day generated
      ☒ During any one-hour time period, 100 or more new (added) vehicle trips generated entering or 100 or more new (added) vehicle trips generated exiting development.
      ☐ Other considerations as described below:

7. *TRAFFIC IMPACT ASSESSMENT REQUIRED?* ☒ **No** ☐ **Yes**

8. *TIA STUDY AREA:*
   - Roadway and Study Intersections
     - Bridge Street (S.R. 0113) and Church Street;
     - Bridge Street (S.R. 0113) and Hall Street;
     - Bridge Street (S.R. 0113) and Walnut Street;
     - Bridge Street (S.R. 0113) and Buchanan Street;
     - Bridge Street (S.R. 0113) and Proposed Driveways.
   - Land use context (Refer to Smart Transportation Handbook)
     - Suburban center
   - Known Congestion Areas
     - TBD
   - Known Safety Concerns
     - TBD
   - Known Environmental Constraints
     - TBD
   - Pedestrian/Bike Review (Community Centers, Parks, Schools, etc.)
     - Will be addressed in the TIS
   - Transit Review (Current routes/stops)
     - Will be addressed in the TIS

9. *STUDY AREA TYPE:*
   Urban ☒ Rural ☐

10. *TIS ANALYSIS PERIOD AND TIMES:*
    - Weekday A.M. peak hour (peak hour within the 7:00-9:00 A.M. peak period);
    - Weekday P.M. peak hour (peak hour within the 4:00-6:00 P.M. peak period);
    - Saturday Midday peak hour (peak hour within the 11:00 A.M.-1:00 P.M. peak period).

    Study Years to be evaluated:
    - 2016 Existing Conditions
    - 2019 Opening Year
    - 2024 Design Year

11. *TRAFFIC ADJUSTMENT FACTORS:*
    a. Seasonal Adjustment: (Identify counts requiring adjustment and methodology): None
    b. Annual Base Traffic Growth: 1.75%/year based on PennDOT Bureau of Planning and Research (BPR) data pertaining to urban non-interstate roadways in Bucks County.
    c. Pass-By Trips: See Tables 1-2
    d. Captured Trips for Multi-Use Sites: See Attachment and Table 2
    e. Modal Split Reductions: None
    f. Other Reduction: None

12. *OTHER PROJECTS WITHIN STUDY AREA TO BE ADDED TO BASE TRAFFIC:*
    To be determined through the scoping process.

13. *TRIP DISTRIBUTION AND ASSIGNMENT:*
    TPD recommends distributing and assigning trips to the surrounding roadways based upon an evaluation of the following: (1) existing traffic patterns, (2) roadways surrounding the site, and (3) the proposed site driveway location and configuration.

14. *APPROVAL OF DATA COLLECTION ELEMENTS AND METHODOLOGIES:*

Location	Time Period	Count Type
All Existing "Roadway and Study Intersections" noted in #8 above	Weekday A.M. Peak Hour	Manual Turning Movement Count
	Weekday P.M. Peak Hour	
	Saturday Midday Peak Hour	

    PennDOT iTMS Data is **attached** for reference.

15. *CAPACITY/LOS ANALYSIS:*
    Capacity analyses to be conducted at the study area intersections for the peak hours and study years to be evaluated according to the methodologies contained in the 2010 HCM (where applicable), utilizing SYNCHRO 8 software. In addition, capacity analyses will be conducted at the proposed site driveway intersections under future build conditions.

16. *ROADWAY IMPROVEMENTS/MODIFICATIONS BY OTHERS TO BE INCLUDED:*
    TBD

17. *OTHER NEEDED ANALYSES:*
    a. Sight Distance Analysis: Yes
    b. Signal Warrant Analysis: As needed
    c. Required Signal Phasing/Timing Modifications: As Needed
    d. Traffic Signal Corridor/Network Analysis: As Needed
    e. Analysis of the Need for Turning Lanes: Yes
    f. Turning Lane Lengths: Utilizing Pub. 46, Chapter 11
    g. Left Turn Signal Phasing Analysis: As Needed
    h. Queuing Analysis: Utilizing HCM 2010 95th percentile queues
    i. Gap Studies: As Needed
    j. Crash Analysis: If Requested
    k. Weaving Analysis: N/A
    l. Other Required Studies: As Needed

18. ADDITIONAL COMMENTS OR RECOMMENDATIONS RELATIVE TO THE SCOPE OF THE TIS:

TBD

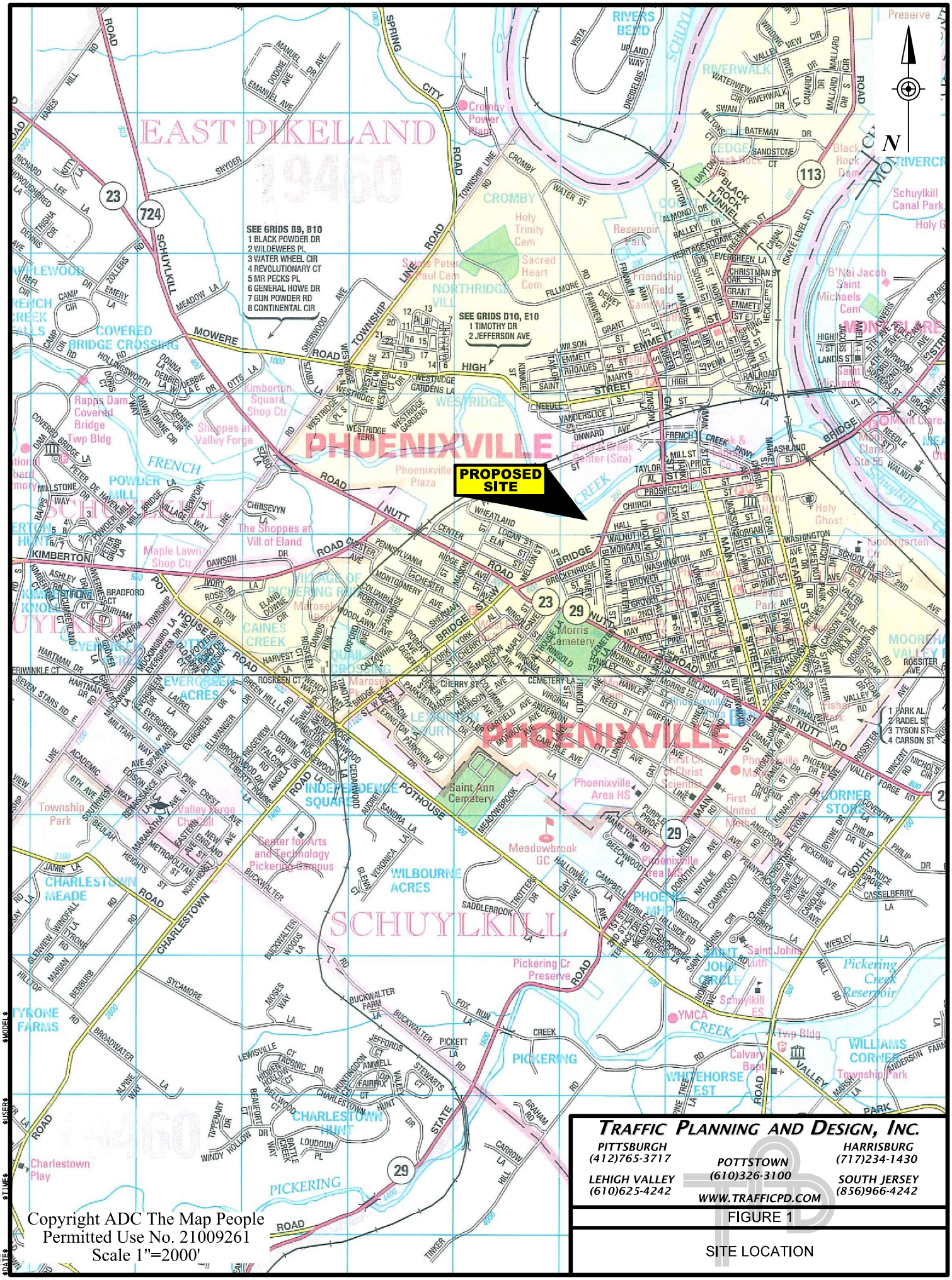
TRAFFIC PLANNING AND DESIGN, INC.

Guido W. DiMartino, P.E.
Project Manager

GDiMartino@TrafficPD.com

Attachments: Figure 1 – Study Area
Interaction Worksheets
PennDOT iTMS Data
Proposed Site Plan

Cc: E. Jean Krack, Manager, Phoenixville Borough
Manny DeMutis, The DeMutis Group
Jeff Amerine, Czop Specter, Inc.
TPD File



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Scale 1"=2000'

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FIGURE 1

SITE LOCATION

$MODEL$
$USER$
$TIME$
$FILE$
$DATE$

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Steelworks	**Organization:**	TPD
Project Location:	Phoenixville Borough	**Performed By:**	BH
Scenario Description:		**Date:**	8/9/2016
Analysis Year:	Future Condition	**Checked By:**	GD
Analysis Period:	**AM Street Peak Hour**	**Date:**	8/9/2016

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	37	KSF	35	22	13
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	336	units	168	34	134
Hotel				0		
All Other Land Uses[2]				0		
				203	56	147

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	203	56	147
Internal Capture Percentage	2%	4%	1%
External Vehicle-Trips[5]	199	54	145
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	5%	8%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	3%	1%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Barto Redevelopment
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	22	22	1.00	13	13
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	34	34	1.00	134	134
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	4		2	0	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	1	27	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		7	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	2		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	0	0		0
Hotel	0	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	21	22	21	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	33	34	33	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	12	13	12	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	133	134	133	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Steelworks	**Organization:**	TPD
Project Location:	Phoenixville Borough	**Performed By:**	BH
Scenario Description:		**Date:**	8/9/2016
Analysis Year:	Future Condition	**Checked By:**	GD
Analysis Period:	**PM Street Peak Hour**	**Date:**	8/9/2016

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	37	KSF	136	65	71
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	336	units	202	131	71
Hotel				0		
All Other Land Uses[2]				0		
				338	196	142

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	18	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	7	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	338	196	142
Internal Capture Percentage	15%	13%	18%
External Vehicle-Trips[5]	288	171	117
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	11%	25%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	14%	10%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Barto Redevelopment
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	65	65	1.00	71	71
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	131	131	1.00	71	71
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		21	3	18	4
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	30	15	0		2
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	5	0
Retail	0		0	0	60	0
Restaurant	0	33		0	21	0
Cinema/Entertainment	0	3	0		5	0
Residential	0	7	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	7	58	65	58	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	18	113	131	113	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	18	53	71	53	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	64	71	64	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

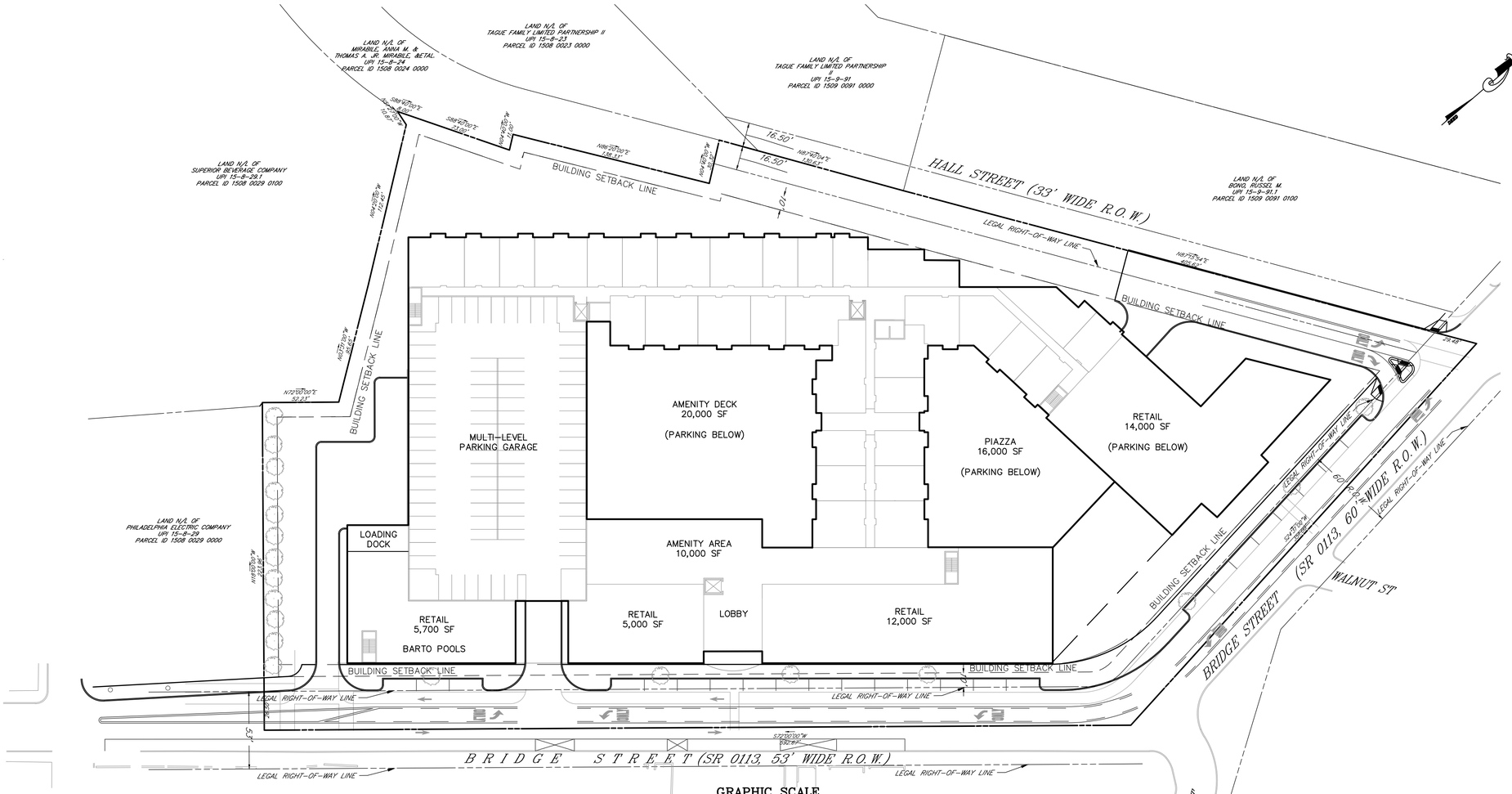
[2]Person-Trips

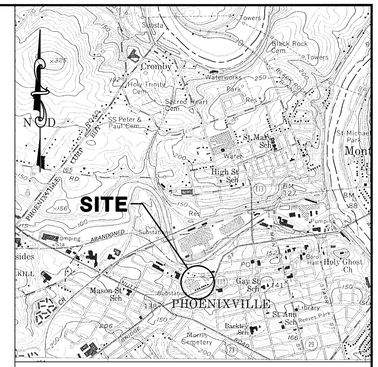
[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

SITE NO: 12464	
County	CHESTER (15)
Route	0113
Segment	0290
Offset	290
Current Avg Daily Traffic	9191
Agency	PH
Cycle Year	02
Freq Cycle	03
Site Status	E
Program Indicator	04
Year of Last Count	2013
Year of Next Scheduled Count	2016 - 2ND YEAR IN 3 YEAR CYC
Latitude	40.13171101777040
Longitude	-75.52189599710090







LOCATION MAP

1" = 2000'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

EQUITABLE OWNER:
STEELWORKS LLC
131 E. BRIDGE STREET, STE 301
PHOENIXVILLE, PA. 19460

OWNERS OF RECORD:
BARTO, EILEEN K.
551/541 BRIDGE STREET
PHOENIXVILLE, PA. 19460

UPI 15-9-82, DEED BOOK S 44, PAGE 39
UPI 15-9-83, DEED BOOK 722, PAGE 451
UPI 15-9-86, DEED BOOK 4326, PAGE 194
UPI 15-9-89, DEED BOOK 4014, PAGE 469
UPI 15-9-90, DEED BOOK U 46, PAGE 115

3D GROUP LTD.
2 RIDGE ROAD
PHOENIXVILLE, PA. 19460
UPI 15-9-84, DEED BOOK 6968, PAGE 1821

CONNER TRUST
P.O. BOX 284
CAMDENTON, MO 65020
UPI 15-9-85, DEED BOOK 6025, PAGE 263

NELLIGAN, GLORIA
525 BRIDGE STREET
PHOENIXVILLE, PA 19460
UPI 15-9-87; DEED BOOK F52, PAGE 437

ROCKWELL, RONALD C. & JEFFREY L.
120 EASTWOOD TRAIL
ROCHESTER, NY 14622
UPI 15-9-88; DEED BOOK 209, PAGE 53

ZONING CLASSIFICATION:
TOWN CENTER (TC) – MID-RISE
(REQUIREMENTS PER SECTION 27-303 OF ZONING ORDINANCE)

	REQUIRED	PROPOSED
MIN LOT AREA	4,000 SF	5.20 NET ACRES
MIN LOT WIDTH	40 FT	860 FT (MIN)
MIN FRONT YARD	BUILD TO 10 FT./SIDEWALK	BUILD TO 10 FT./SIDEWALK
MIN SIDE YARD	10 FT	10 FT
MIN REAR YARD	10 FT	10 FT
MAX IMPERV COVER	90%	< 90%
MIN BLDG SPACING	30 FT	30 FT (MIN)
MAX BLDG HEIGHT	60 FT	< 60 FT

UTILITIES INFORMATION: **(PA ONE CALL NO. 2845894)**

PHOENIXVILE BOROUGH	610-933-8801
BUCKEYE PARTNERS	484-232-4404
PECO ENERGY	610-725-7129
COMCST CABLE COMMUNICATIONS INC.	215-285-8750
VERIZON PENNSYLVANIA, INC.	610-280-2154

NOTE: ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE START OF WORK PER PENNSYLVANIA ACT 38.

USER NOTICE

ANY USER OF THESE PLANS IS RESPONSIBLE FOR CONTACTING THE APPROPRIATE AGENCY IN THE EVENT OF DISCREPANCIES BETWEEN THE PLAN, PLAN DETAILS, SHOP DRAWINGS, CONSTRUCTION STANDARDS, AND FIELD CONDITIONS. THE APPLICABLE AGENCY MUST BE CONTACTED AND DISCREPANCIES RESOLVED BEFORE PROPOSED IMPROVEMENTS ARE CONSTRUCTED. THE PREPARER OF THESE PLANS AND ALL REVIEWING AGENCIES ARE NOT LIABLE FOR ANY DISCREPANCIES.

PLAN INDEX

1. RECORD PLAN SHEET 1
2. RECORD PLAN SHEET 2
3. LOT CONSOLIDATION PLAN
4. EXISTING FEATURES/DEMOLITION PLAN
5. GRADING & UTILITY PLAN
6. EROSION & SEDIMENTATION CONTROL PLAN
7. EROSION & SEDIMENTATION DETAILS PLAN
8. LANDSCAPE PLAN
9. CONSTRUCTION DETAILS

NOTES:

1. BOUNDARY INFORMATION FROM RECORDED DEEDS, REFERENCE PLANS AND ACTUAL FIELD SURVEY BY THIS OFFICE ON 2/19/07
2. VERTICAL REFERENCE FROM NAVD 88, PID-KV2203 B.M. ELEV=106.78'
3. THIS SITE IS LOCATED PARTIALLY WITHIN THE 100 YEAR FLOODPLAIN SHOWN ON FEMA MAP #42029C0060F, LAST REVISED SEPT. 29, 2006. THE 100 YEAR FLOODPLAIN ELEVATION IS 111 PER THE FEMA FLOOD INSURANCE STUDY. FEMA ELEVATIONS ARE BASED ON NGVD 29 DATUM. BECAUSE THIS SITE IS BASED ON NAVD 88 DATUM, A CONVERSION FACTOR OF .974 (ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS CORPSCON V6.0.1 PROGRAM) HAS BEEN APPLIED TO THE NGVD 29 FEMA DATUM. THEREFORE THE 100 YR FLOODPLAIN ELEVATION HAS BEEN REVISED AS 111.974. THE FF ELEV. OF THE PROPOSED BLDG IS 113.5.
4. THE AREA BETWEEN THE TITLE LINE AND ULTIMATE RIGHT-OF-WAY IS HEREBY OFFERED FOR DEDICATION TO THE AUTHORITY HAVING JURISDICTION.
5. THE SITE SHALL BE SERVED BY PUBLIC WATER AND PUBLIC SANITARY.
6. ALL PROPOSED UTILITIES SHALL BE PLACED UNDERGROUND.
7. A WETLAND DELINEATION HAS NOT BEEN PERFORMED FOR THIS SITE.

PROPOSED USAGE:

RETAIL:	36,700 S.F. RETAIL
APARTMENTS:	336 UNITS
AMENITY DECK:	20,000 S.F.
PIAZZA DECK:	16,000 S.F.
PARKING:	500 SPACES

I, OWEN HYNE, A PENNSYLVANIA PROFESSIONAL ENGINEER, HAVE REVIEWED THIS PLAN, FOR THE BOROUGH, AND HAVE DETERMINED THAT IT HAS BEEN AMENDED AS REQUIRED BY BOROUGH RESOLUTION _____, AND THAT, BASED ON THE INFORMATION PROVIDED BY THE APPLICANT AND WITH ANY WAIVERS SPECIFICALLY IDENTIFIED AND SHOWN HEREON, THE PLAN COMPLIES WITH THE BOROUGH SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

_____, P.E.
[NAME]
DATE: _____.

(seal)

I, _____, A PENNSYLVANIA PROFESSIONAL ENGINEER, HEREBY CERTIFY THAT THE SUBDIVISION AND LAND DEVELOPMENT SHOWN HEREON COMPLIES WITH ALL APPLICABLE REGULATIONS INCLUDING BUT NOT LIMITED TO THE BOROUGH ZONING AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

_____, P.E.
[NAME]
DATE: _____.

(seal)

I, _____, A PENNSYLVANIA PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT THE LOT LINES, STREETS, RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN WERE SURVEYED AND PLOTTED BY ME AND ARE ACCURATE. I FURTHER CERTIFY THAT THE SUBDIVISION AND LAND DEVELOPMENT SHOWN HEREON COMPLIES WITH ALL APPLICABLE REGULATIONS INCLUDING BUT NOT LIMITED TO THE BOROUGH ZONING AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

_____, P.L.S.
[NAME]
DATE: _____.

(seal)

I HEREBY CERTIFY THAT THE BOROUGH OF PHOENIXVILLE PLANNING COMMISSION REVIEWED THIS PLAN AND ISSUED ITS COMMENTS TO BOROUGH COUNCIL PRIOR TO COUNCIL'S ADOPTION OF RESOLUTION 20_____, WHICH APPROVES THIS PLAN AS A FINAL PLAN PURSUANT TO THE BOROUGH'S SUBDIVISION AND LAND DEVELOPMENT ORDINANCE.

WILLIAM DAVIDSON
PLANNING COMMISSION CHAIRMAN

WE HEREBY CERTIFY THAT THE BOROUGH COUNCIL OF THE BOROUGH OF PHOENIXVILLE, CHESTER COUNTY, PENNSYLVANIA, BY ITS RESOLUTION 200_____, ADOPTED _____, 200_____, APPROVED THIS PLAN AS A FINAL SUBDIVISION AND/OR LAND DEVELOPMENT PLAN, PURSUANT TO THE BOROUGH'S THEN CURRENT SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE AND THAT THE BOROUGH, ON _____, 20_____, HEREBY AUTHORIZES THIS PLAN FOR RECORDING.

_____ BOROUGH SECRETARY

_____ COUNCIL PRESIDENT

THIS PLAN, OR AN EARLIER VERSION HEREOF, WAS REVIEWED BY THE CHESTER COUNTY PLANNING COMMISSION ON _____.

CCPC #_____

_____SECRETARY

COMMONWEALTH OF PENNSYLVANIA SS:
COUNTY OF CHESTER

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, THIS DAY PERSONALLY APPEARED _____,

TO ME KNOWN (OR SATISFACTORILY PROVEN), WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSE(S) AND SAY(S):

[I AM / WE ARE] THE RECORD OWNER(S) OF ALL THE PROPERTY TO WHICH THIS PLAN APPLIES AND OF ALL RIGHTS WHICH ARE NECESSARY TO IMPLEMENT THIS PLAN. THE SOURCE OF [MY / OUR] TITLE IS THE DEED(S) RECORDED, WITH THE OFFICE ("RECORDER'S OFFICE") OF THE RECORDER OF DEEDS IN AND FOR CHESTER COUNTY, PENNSYLVANIA, IN RECORD BOOK _____, BEGINNING AT PAGE _____. [I / WE] ACKNOWLEDGE THAT THIS PLAN IS [MY / OUR] ACT AND DEED AND IS AUTHORIZED BY [ME / US] TO BE RECORDED WITH THE RECORDER'S OFFICE AND THAT SUCH RECORDING SHALL BE EFFECTIVE FOR ALL PURPOSES.

_____
NAME

SWORN TO AND SUBSCRIBED BEFORE ME
THIS _____ DAY OF _____,

_____
NOTARY PUBLIC

AFFIDAVIT OF EQUITABLE OWNERSHIP

COMMONWEALTH OF PENNSYLVANIA SS:
COUNTY OF CHESTER

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, THIS DAY PERSONALLY APPEARED

_____ TO ME KNOWN (OR SATISFACTORILY PROVEN), WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSE(S) AND SAY(S):

HE IS THE _____ OF STEELWORKS LLC, WHICH IS A LIMITED LIABILITY CORPORATION, STEELWORKS IS THE EQUITABLE OWNER OF ALL THE PROPERTY ("PROPERTY"), TO WHICH THIS PLAN APPLIES, AND OF ALL RIGHTS WHICH ARE NECESSARY TO IMPLEMENT THIS PLAN. THIS PLAN IS THIER ACT AND DEED AND IS AUTHORIZED BY _____ TO BE RECORDED WITH THE RECORDER'S OFFICE AND SUCH RECORDING SHALL BE EFFECTIVE FOR ALL PURPOSES. HE IS AUTHORIZED BY SAID CORPORATION TO MAKE THIS AFFIDAVIT.

BY:

SWORN AND SUBSCRIBED TO BEFORE ME
THIS _____ DAY OF _____,

_____
NOTARY PUBLIC

LEGEND

- EXISTING EDGE OF PAVING
- PROPOSED EDGE OF PAVING
- PROPOSED CONCRETE CURB
- PROPOSED SIDEWALK
- MONUMENT TO BE SET
- PROPOSED SIGNS
- PROPOSED BUILDING
- PROPOSED TREE

CHESTER CO RECORDER OF DEEDS

STEELWORKS

BOROUGH OF PHOENIXVILLE CHESTER COUNTY, PA.

RECORD PLAN

DRAWN BY: LJD	PREPARED FOR: STEELWORKS, LLC, 131 E. BRIDGE ST., PHOENIXVILLE, PA 19460
CHECKED BY: JLA	
SCALE: 1" = 40'	
FIELD BOOK: N/A	

DATE: 8/03/16
JOB NO.: 1478-14
DRAWING FILE: 1478-14.DWG
SHEET NO.: 1 OF 2

CZOP SPECTER
1000 Madison Ave
Suite 220
Norristown, PA 19403
(484)831-5795
www.czopspecter.com
Civil Engineering • Surveyors • Construction Management

Appendix B

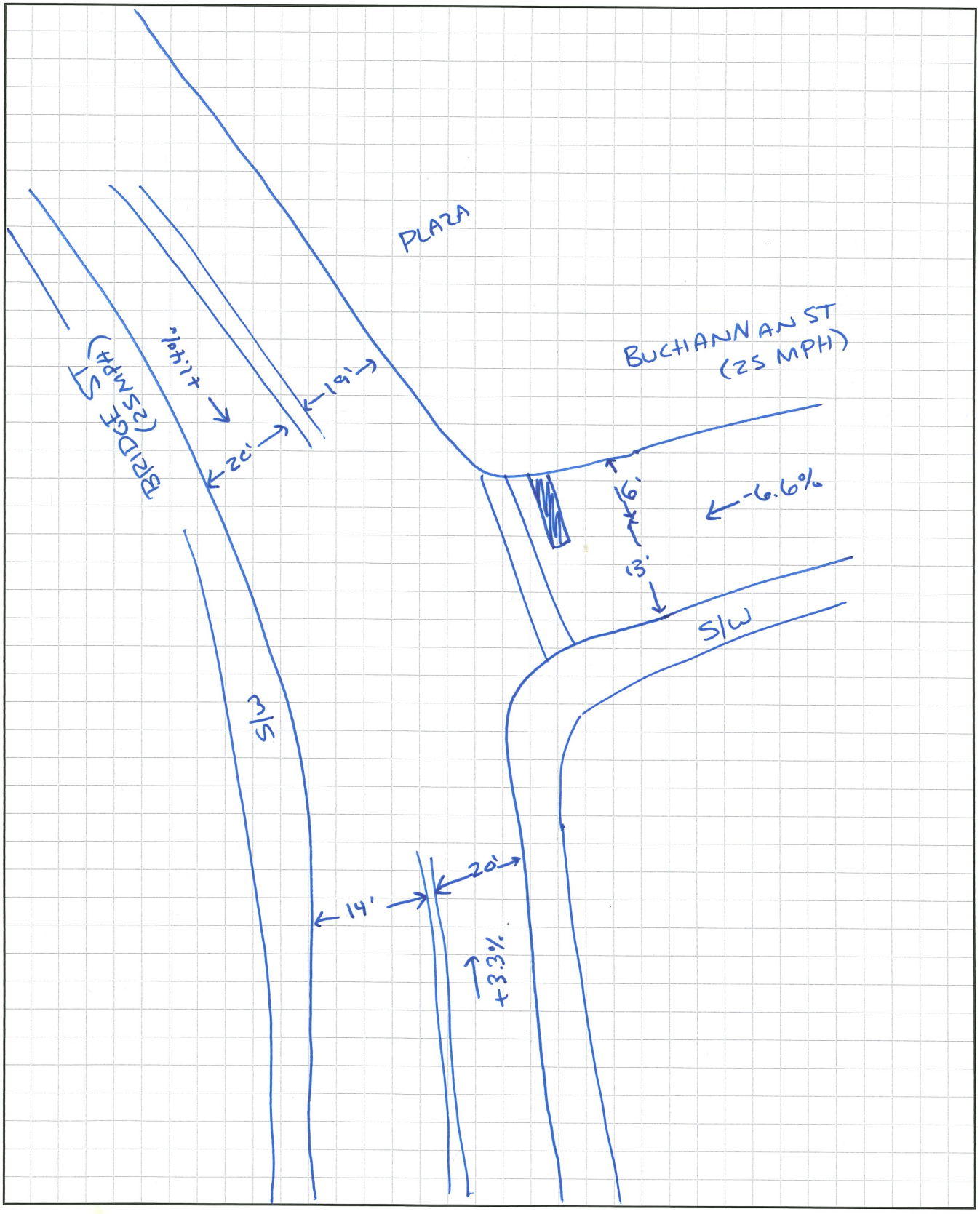
Traffic Signal Permit Plans and Intersection Sketches

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job 115 BUCHANNAN ST | McMahon Project No. 819730.11 | Sheet 3 of 3

Description Intersection Sketches | Designed By BGG | Date 10/8/19

Checked By | Date

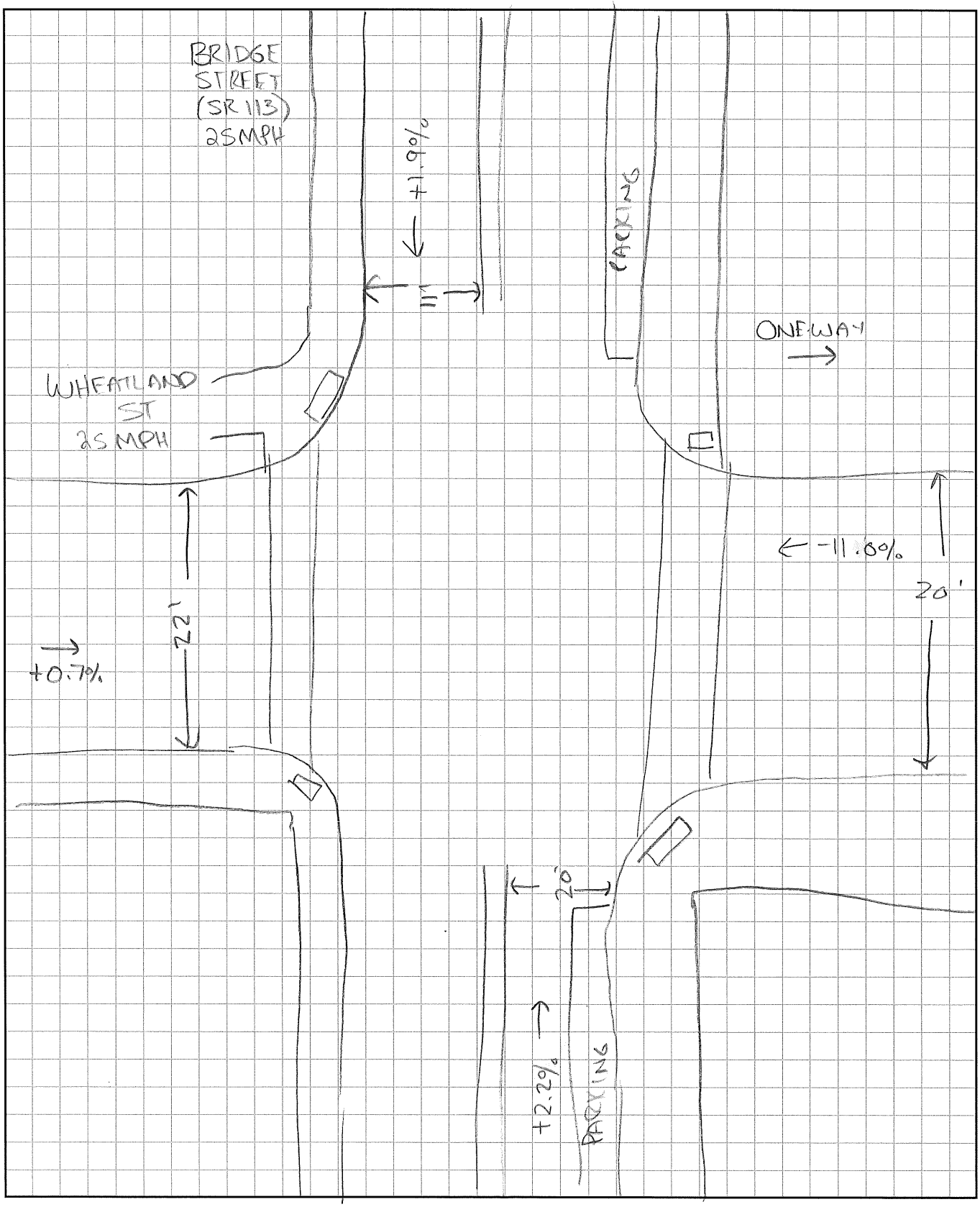


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job French Creek West | McMahon Project No. 818195.11 | Sheet 1 of 5

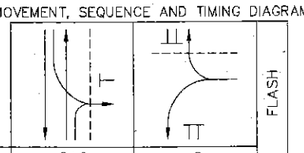
Description Intersection Sketch | Designed By BGG | Date 5/7/18

Checked By _____ | Date _____



Phoenixville Boro. File # 0055

MOVEMENT, SEQUENCE AND TIMING DIAGRAM



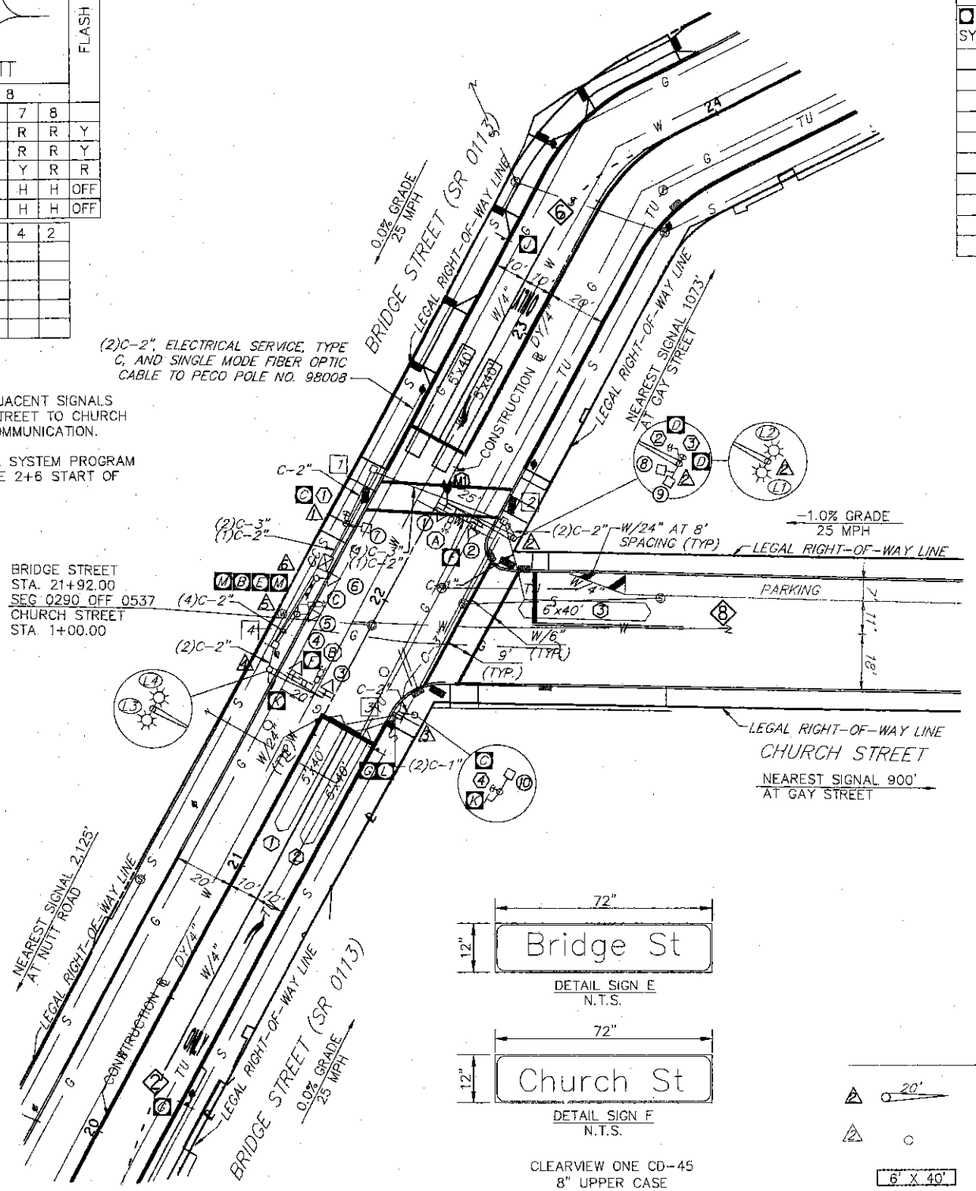
PHASE	2+6				8				
INTERVAL / SIGNALS	1	2	3	4	5	6	7	8	
1,2	G	G	Y	R	R	R	R	R	Y
3,4	G	G	Y	R	R	R	R	R	Y
5,6	R	R	R	R	G	G	Y	R	R
7,8	H	H	H	H	M	FH	H	H	OFF
9,10	M	FH	H	H	H	H	H	H	OFF

FIXED			4	2			4	2
MINIMUM	20				5			
PASSAGE	5				4			
MAX 1	60				40			
PEDESTRIAN*	7	9			7	9		
MEMORY	MN				NL			

*UPON PEDESTRIAN ACTUATION ONLY.

THIS SIGNAL IS COORDINATED WITH ADJACENT SIGNALS ALONG BRIDGE STREET FROM STARR STREET TO CHURCH STREET BY MEANS OF FIBER-OPTIC COMMUNICATION.

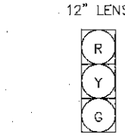
SEE SYSTEM PLAN I-0053 FOR SIGNAL SYSTEM PROGRAM TIMES. OFFSET REFERENCED TO PHASE 2+6 START OF GREEN (INTERVAL 1).



SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
B	W1-7	48"x24"	LARGE DOUBLE ARROW
C	R10-3B(L)	9"x12"	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL ←
D	R10-3B(R)	9"x12"	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL →
E	D3-4	72"x12"	Bridge St
F	D3-4	72"x12"	Church St
G	R3-7R	30"x30"	RIGHT LANE MUST TURN RIGHT
J	R3-7L	30"x30"	LEFT LANE MUST TURN LEFT
K	R9-3A	18"x18"	NO PEDESTRIAN CROSSING
L	R10-6aL	24"x30"	STOP HERE ON RED
M	OM1-3	18"x18"	OBJECT MARKER

SIGNAL INDICATIONS

12" LENS



1,2,3
4,5,6

PEDESTRIAN SIGNALS



7,8,9,10

SIGNALS EQUIPPED WITH TUNNEL VISORS 1-6

DETAIL SIGN E
N.T.S.

DETAIL SIGN F
N.T.S.

CLEARVIEW ONE CD-45
8" UPPER CASE
6" LOWER CASE
WHITE LEGEND ON GREEN BACKGROUND

SCALE

25 FEET 0 25 FEET

LEGEND

20'	EXISTING MAST ARM AND POLE	②	EXISTING VEHICULAR SIGNAL HEAD
○	EXISTING PEDESTAL POLE	②	EXISTING VEHICULAR SIGNAL HEAD WITH ARROW SECTION
6' X 40'	PROPOSED VEHICLE MICROWAVE DETECTION ZONE		
④ 6' X 40'	EXISTING VEHICLE DETECTOR PRESENCE & DIRECTIONAL		EXISTING SIGN WITH IDENTIFYING LETTER
Ⓐ	EXISTING FAIL-SAFE INDICATOR	CC	EXISTING CONTROLLER ASSEMBLY
Ⓐ	EXISTING OPTICAL PRE-EMPTION RECEIVER	2	EXISTING JUNCTION BOX
④	EXISTING PEDESTRIAN PUSHBUTTON WITH SIGN	W/4"	EXISTING PAVEMENT MARKING, TYPE/WIDTH
Ⓛ 10'	EXISTING LUMINAIRE /ARM LENGTH	②	PHASE NUMBER
C-1"	EXISTING CONDUIT/SIZE		DETECTABLE WARNING SURFACE
④	EXISTING PEDESTRIAN SIGNAL HEAD	MD	PROPOSED MICROWAVE DETECTION

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	CHESTER	0113	PSP	1 OF 6
PHOENIXVILLE BOROUGH				

REVISION NUMBER	REVISIONS	DATE	BY

TRAFFIC SIGNAL NOTES

DO NOT MODIFY INSTALLATION WITHOUT PRIOR WRITTEN APPROVAL.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ARE PART OF THE PERMIT. INSTALL AND MAINTAIN IN ACCORDANCE WITH PUBLICATION 212.

POST MOUNTED SIGNALS: INSTALL WITH A MINIMUM SIGNAL HEAD CLEARANCE OF 2 FEET BEHIND FACE OF CURB OR EDGE OF SHOULDER; AND 8 FEET ABOVE SIDEWALK OR PAVEMENT GRADE.

OVERHEAD SIGNALS: INSTALL WITH A MINIMUM SIGNAL HEAD CLEARANCE OF 2 FEET BEHIND FACE OF CURB OR EDGE OF SHOULDER. PROVIDE A MINIMUM SIGNAL HEAD CLEARANCE OF 16 FEET ABOVE ROADWAY; RIGIDLY MOUNT, TOP AND BOTTOM; AND EQUIP WITH BACKPLATES. PROVIDE A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN SIGNALS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.

DETERMINE WITH A PENNDOT REPRESENTATIVE, THE EXACT LOCATION OF DETECTORS PRIOR TO INSTALLATION.

CONSULT WITH LOCAL OFFICIALS AND UTILITIES TO RESOLVE CONFLICTS PRIOR TO CONSTRUCTION.

COMPLY WITH LATEST PROVISIONS OF ACT 287, FOR PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

ALL DESIGNERS AND CONTRACTORS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED TO COMPLY WITH THE REQUIREMENTS OF PENNSYLVANIA ACT 199, ENTITLED "UNDERGROUND UTILITY LINE PROTECTION LAW", (AMENDS PENNSYLVANIA ACT 187 & 287). ANY INFORMATION APPEARING ON THESE DRAWINGS AS TO THE UNDERGROUND LINES OF A USER, SUCH AS A PUBLIC UTILITY, HAS BEEN INCORPORATED HEREON PURSUANT TO SAID PENNSYLVANIA ACT 199. THIS INFORMATION HAS BEEN PROVIDED BY THE RESPECTIVE USERS IN RESPONSE TO THE PA ONE CALL SYSTEM REFERENCE SERIAL #1115939 PER PHONE CALL ON APRIL 21,2005.

ALL LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. CARROLL ENGINEERING CORP. HAS NOT MADE AN INDEPENDENT DETERMINATION WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION AND SPECIFICALLY DISCLAIMS ANY WARRANTY OR REPRESENTATION AS TO THE ACCURACY OF SUCH INFORMATION.

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE-STOP CALL

PENNSYLVANIA ONE CALL SYSTEM, INC.

1-800-242-1776

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT G. PROPHET ENGINEER No. 53538-E

COUNTY : CHESTER

MUNICIPALITY : PHOENIXVILLE BOROUGH

INTERSECTION : BRIDGE STREET (SR 0113) & CHURCH STREET, FILE #0055

REVIEWED :

5/15/2012

MUNICIPAL OFFICIAL L. Tom Rancke DATE

RECOMMENDED :

5/21/12

DISTRICT TRAFFIC ENGINEER 5/21/12 DATE

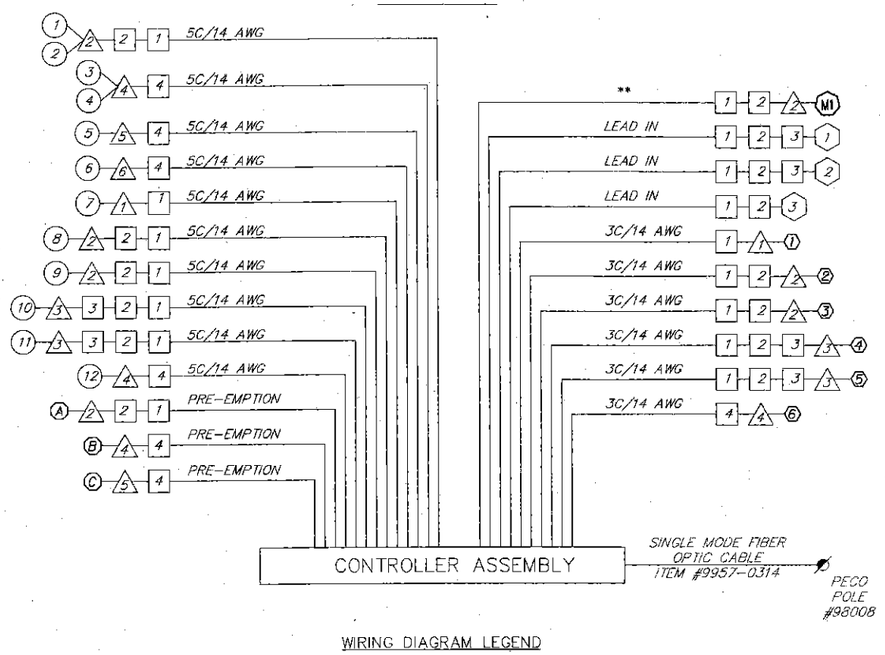
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File # 0055

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	CHESTER	0113	PSP	2 OF 6
PHOENIXVILLE BOROUGH				

REVISION NUMBER	REVISIONS	DATE	BY

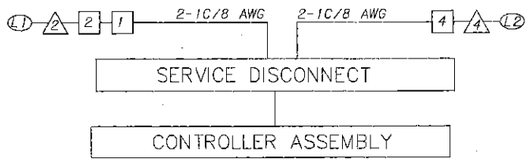
WIRING DIAGRAM



WIRING DIAGRAM LEGEND

- (1) – EXISTING SIGNAL HEAD
- (2) – EXISTING LOOP DETECTOR
- (4) – EXISTING PEDESTRIAN PUSH BUTTON
- (3) – EXISTING TRAFFIC SIGNAL SUPPORT
- [4] – EXISTING JUNCTION BOX
- 5C/14 – EXISTING CABLE (NO. OF COND./SIZE AWG)
- (A) – EXISTING PRE-EMPTION RECEIVER/INDICATOR
- (V1) – PROPOSED MICROWAVE DETECTOR
- ** – INCIDENTAL TO VIDEO DETECTION
- – EXISTING UTILITY POLE

LUMINAIRE SERVICE



EMERGENCY PRE-EMPTION PHASING

PHASE	2			6			8		
INTERVAL / SIGNALS	9	10	11	12	13	14	15	16	17
1,2	G	Y[a]	R[a]	R	R	R	R	R	R
3,4	R	R	R	G	Y[a]	R[a]	R	R	R
5,6	R	R	R	R	R	R	G	Y	R
7,8	H	H	H	H	H	H	H	H	H
9,10	H	H	H	H	H	H	H	H	H
11,12	H	H	H	H	H	H	H	H	H
FIXED TIME	b	4	2	b	4	2	b	4	2

[a] SIGNAL TO REMAIN G WHEN RETURNING TO PHASE 2+6

b FOR DURATION OF OPTICAL PRE-EMPTION

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND APPROACH OF CHURCH STREET AND THE EASTBOUND & WESTBOUND APPROACHES OF BRIDGE STREET (SR 0113) WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.
  THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
  LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLES, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLE SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF SIGNALS HAVE BEEN ACTUATED BY PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PRE-EMPTED, THE PEDESTRIAN TIME SHALL BE SPLIT BETWEEN PED "WALK (MAN)" AND PED "CLEAR (HAND)". THE PED "WALK (MAN)" INTERVAL SHALL TERMINATE IMMEDIATELY, FOLLOWED BY THE PED "CLEAR (HAND)" INTERVAL. THIS INTERVAL SHALL TIME OUT, FOLLOWED BY THE APPROPRIATE CLEARANCES, BEFORE GOING INTO EMERGENCY PRE-EMPTION.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE ARE FLASHING, ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION PHASE 2, 6, OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 1 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

MISCELLANEOUS

ITEM NO.	QUAN.	UNIT	DESCRIPTION	LOCATION
0956-0600	1	EACH	MICROWAVE DETECTOR	(2)

COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL – ROBERT G. PROPHET – ENGINEER – No. 58436-E

COUNTY : CHESTER

MUNICIPALITY : PHOENIXVILLE BOROUGH

INTERSECTION : BRIDGE STREET (SR 0113) & CHURCH STREET, FILE #0055

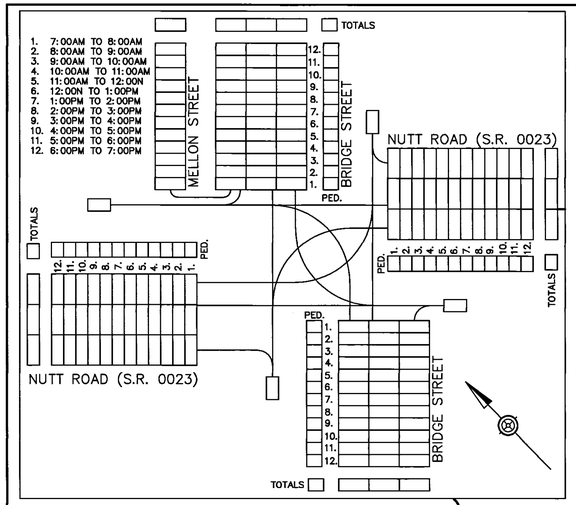
REVIEWED :

MUNICIPAL OFFICIAL & JOAN KRAUS 5/15/2012 DATE

RECOMMENDED :

DISTRICT TRAFFIC ENGINEER 5/21/12 DATE

J:\PHBRO\0055\CADD\Plans\Signal\Sperml(01) - Br1dge&1&Church&1.dgn 5/8/2012 9:40:12 AM 1:25.0002 rkeister



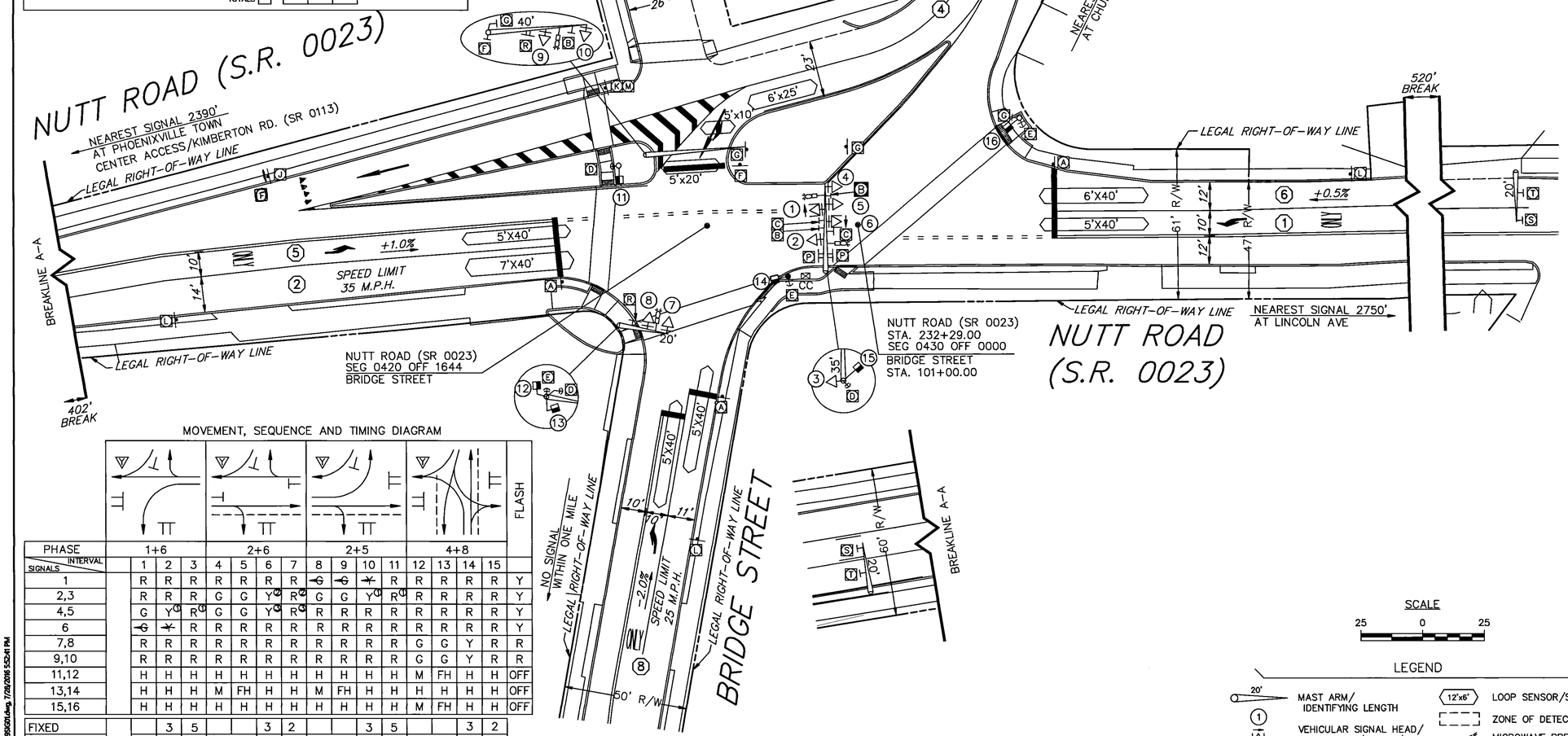
SIGNAL INDICATIONS

9" SYMBOLS	12" LENS	12" LENS
11,12,13, 14,15,16	R, Y, G	R, Y, G
	1,6	2,3,4,5, 7,8,9,10

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 1,6

SIGN TABULATION

PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R10-6AL	24"x30"	STOP HERE ON RED
B	R10-11	30"x36"	NO TURN ON RED ●
C	R10-10L	30"x36"	LEFT TURN SIGNAL
D	R10-3B(R)	9"x12"	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL →
E	R10-3B(L)	9"x12"	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL ←
F	R5-1	30"x30"	DO NOT ENTER
G	R9-3A	18"X18"	NO PEDESTRIAN CROSSING
J	R1-2	36"X36"	YIELD
K	W11-2	30"X30"	PEDESTRIAN
L	R3-7L	30"x30"	LEFT LANE MUST TURN LEFT
M	W16-7P	24"x12"	DOWNWARD DIAGONAL ARROW (PLAQUE)
P	D3-4	72"x12"	Bridge St
R	D3-4	72"x12"	Nutt Rd
S	R3-5L	30"x36"	LEFT TURN SIGN
T	R3-6SR	30"x36"	OPTIONAL RIGHT TURN SIGN
U	R3-6LS	30"x36"	OPTIONAL LEFT TURN SIGN
V	SPECIAL	35"x17"	SEE DETAIL
W	SPECIAL	30"x22"	SEE DETAIL



MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	1+6			2+6				2+5				4+8				FLASH
INTERVAL / SIGNALS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	R	R	R	R	R	R	R	~~G~~	~~Y~~	R	R	R	R	R	Y	
2,3	R	R	R	G	G	Y①	R①	G	G	Y①	R①	R	R	R	Y	
4,5	G	Y①	R①	G	G	Y①	R①	R	R	R	R	R	R	R	Y	
6	~~G~~	~~Y~~	R	R	R	R	R	R	R	R	R	R	R	R	Y	
7,8	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R
9,10	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R
11,12	H	H	H	H	H	H	H	H	H	H	H	M	FH	H	H	OFF
13,14	H	H	H	M	FH	H	H	M	FH	H	H	H	H	H	H	OFF
15,16	H	H	H	H	H	H	H	H	H	H	H	M	FH	H	H	OFF

FIXED			3	5			3	2			3	5			3	2
MINIMUM	7				15				7				7			
PASSAGE	3				3				3				3			
MAX 1	15				45				20				25			
PEDESTRIAN*					10	11			④				7	18		
MEMORY	NL				MN				NL				NL			

*UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND SYMBOL AT ALL TIMES.

OPERATION NOTES:

① REMAINS G IF FOLLOWED BY PHASE 2+6.
② REMAINS G IF FOLLOWED BY PHASE 2+5.
③ REMAINS G IF FOLLOWED BY PHASE 1+6.
④ TIMINGS SHALL BE AS SHOWN IN PHASE 2+6. IT MAY TIME OUT IN THIS PHASE OR BE COMPLETED IN PHASE 2+6.

MASTER CONTROLLER LOCATED AT THIS INTERSECTION.

THIS SIGNAL IS COORDINATED WITH ADJACENT SIGNALS ALONG NUTT ROAD (SR 0023) FROM RAPPS DAM ROAD/MOWERE ROAD TO BRIDGE STREET BY MEANS OF FIBER-OPTIC COMMUNICATION.

SEE SYSTEM PLAN I-0053 FOR SIGNAL SYSTEM PROGRAM TIMES. OFFSET REFERENCED TO PHASE 2+6 START OF GREEN (INTERVAL 4).

SCALE
25 0 25

LEGEND

- MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- VIDEO DETECTOR
- C.C. CONTROLLER CABINET
- 12'x6' LOOP SENSOR/SIZE
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- EMERGENCY PRE-EMPTION DEVICE
- CURB RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET
- WAVETRONIX RADAR DETECTOR

GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

SYSTEM PERMIT# I-0053

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER
MUNICIPALITY: PHOENIXVILLE BOROUGH
INTERSECTION: NUTT ROAD (S.R. 0023) AND BRIDGE STREET

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

PHOENIXVILLE BOROUGH OFFICIAL 5/17/07

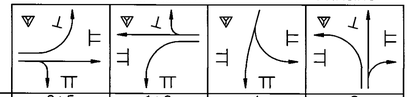
LOUIS R. BELMONTE 5/31/07
DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	AS BUILT DRAWING	KMJ	11/10/10	LUTZ	12/8/10		
2	ADD SIGNS V&W	MCM	7/28/16	mw2	8/24/16	zhp1H	8/26/16
3							
4							
5							
6							
7							
8							

SHEET 2 OF 3 | PERMIT # 62-0568 | FILE # 0568

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EMERGENCY PRE-EMPTION PHASING



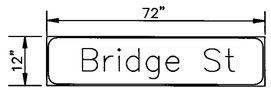
PHASE	2+5			1+6			4			8		
INTERVAL / SIGNALS	16	17	18	19	20	21	22	23	24	25	26	27
1	~~G~~	~~Y~~ ⓒ	R ⓒ	R	R	R	R	R	R	R	R	R
2,3	G	Y ⓒ	R ⓒ	R	R	R	R	R	R	R	R	R
4,5	R	R	R	G	Y ⓒ	R ⓒ	R	R	R	R	R	R
6	R	R	R	~~G~~	~~Y~~ ⓒ	R ⓒ	R	R	R	R	R	R
7,8	R	R	R	R	R	R	G	Y	R	R	R	R
9,10	R	R	R	R	R	R	R	R	R	G	Y	R
11,12	H	H	H	H	H	H	H	H	H	H	H	H
13,14	H	H	H	H	H	H	H	H	H	H	H	H
15,16	H	H	H	H	H	H	H	H	H	H	H	H
FIXED TIME	ⓑ	3	5	ⓑ	3	5	ⓑ	3	2	ⓑ	3	2

ⓒ SIGNAL TO REMAIN G WHEN RETURNING TO PHASE 2+6
ⓑ FOR DURATION OF OPTICAL PRE-EMPTION

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND & SOUTHBOUND APPROACHES OF NUTT ROAD (SR 0023) AND THE EASTBOUND & WESTBOUND APPROACHES OF BRIDGE STREET WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION. THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH. LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLES, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY EMERGENCY VEHICLE SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF SIGNALS HAVE BEEN ACTUATED BY PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PRE-EMPTED, THE PEDESTRIAN TIME SHALL BE SPLIT BETWEEN PED "WALK (MAN)" AND PED "CLEAR (HAND)". THE PED "WALK (MAN)" INTERVAL SHALL TERMINATE IMMEDIATELY, FOLLOWED BY THE PED "CLEAR (HAND)" INTERVAL. THIS INTERVAL SHALL TIME OUT, FOLLOWED BY THE APPROPRIATE CLEARANCES, BEFORE GOING INTO EMERGENCY PRE-EMPTION.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE ARE FLASHING, ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION PHASE 2+5, 4, 1+6, OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 4 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED. PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.



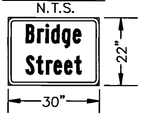
DETAIL SIGN P
N.T.S.



DETAIL SIGN R
N.T.S.

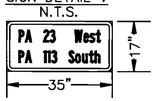
CLEARVIEWONE CD-45
8" UPPER CASE
6" LOWER CASE
WHITE LEGEND ON
GREEN BACKGROUND

SIGN DETAIL W
N.T.S.



SERIES B
6" UPPER CASE
4" LOWER CASE
WHITE LEGEND ON
GREEN BACKGROUND

SIGN DETAIL V
N.T.S.



SERIES B
4" UPPER CASE
3" LOWER CASE
WHITE LEGEND ON
GREEN BACKGROUND

GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

SYSTEM PERMIT# I-0053

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER
MUNICIPALITY: PHOENIXVILLE BOROUGH
INTERSECTION: NUTT ROAD (S.R. 0023) AND BRIDGE STREET

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

PHOENIXVILLE BOROUGH OFFICIAL 5/17/07

LOUIS R. BELMONTE 5/31/07
DISTRICT TRAFFIC ENGINEER DATE

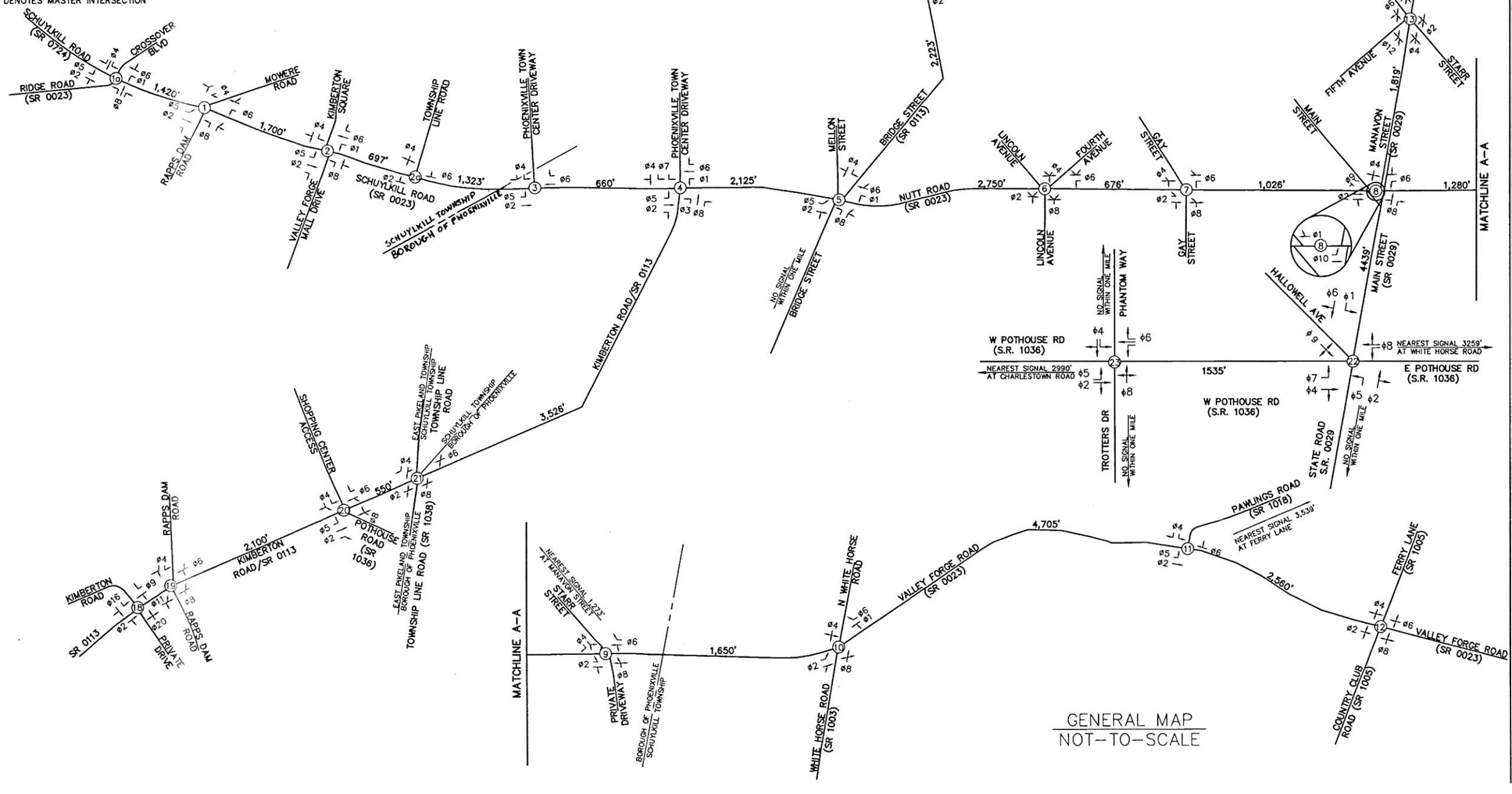
NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	AS BUILT DRAWING	KMJ	11/10/10	LUTZ	12/8/10		
2	ADD SIGNS V&W	MCM	7/28/16	lutz	8/24/16	agatt	8/24/16
3							
4							
5							
6							
7							
8							

SHEET 3 OF 3 | PERMIT # 62-0568 | FILE # 0568

Mong\13220 - Nutt Rd (S.R. 0023) and Bridge St\Dwg\13220SIG.dwg, 7/28/2016 8:53:57 PM

	SUBSYSTEM 1			PROGRAM CYCLE LENGTH				
	INTERSECTION	IP ADDRESS	FILE #	1	2	3	4	5
1a	SCHUYLKILL RD (SR 0724) AND RIDGE RD (SR 0023)/CROSSOVER BLVD		3903	110	100	110	100	100
1	SCHUYLKILL RD (SR 0023) AND RAPPS DAM RD/MOWERE RD	10.0.71.2	2441	110	100	110	100	100
2	SCHUYLKILL RD (SR 0023) AND KIMBERTON SQ/VALLEY FORGE MALL DR	10.0.71.3	1986	110	100	110	100	100
2a	SCHUYLKILL RD (SR 0023) AND TOWNSHIP LINE ROAD	10.0.71.23	2614	110	100	110	100	100
3	SCHUYLKILL RD (SR 0023) AND PHOENIXVILLE TOWN CTR DRIVEWAY	10.0.71.4	3216	110	100	110	100	100
4	NUTT RD (SR 0023) AND KIMBERTON RD/SR 0113/PHOENIXVILLE TOWN CTR	10.0.71.5	0031	110	100	110	100	100
5	NUTT RD (SR 0023) AND BRIDGE ST*	10.0.71.6	0568	110	100	110	100	100
	SUBSYSTEM 2			PROGRAM CYCLE LENGTH				
	INTERSECTION	IP ADDRESS	FILE #	1	2	3	4	5
6	NUTT RD (SR 0023) AND LINCOLN AVE/FOURTH AVE	10.0.71.7	0587	110	100	110	100	100
7	NUTT RD (SR 0023) AND GAY ST	10.0.71.8	0584	110	100	110	100	100
8	NUTT RD (SR 0023) AND MAIN ST/MANAVON ST*	10.0.71.10	0582	110	100	110	100	100
9	NUTT RD (SR 0023) AND STARR ST	10.0.71.11	0279	110	100	110	100	100
10	VALLEY FORGE RD (SR 0023) AND WHITE HORSE ROAD	10.0.71.12	0929	110	100	110	100	100
13	STARR ST (SR 0029) AND MANAVON ST/FIFTH AVE	10.0.71.9	0019	110	100	110	100	100
	SUBSYSTEM 3			PROGRAM CYCLE LENGTH				
	INTERSECTION	IP ADDRESS	FILE #	1	2	3	4	5
11	VALLEY FORGE RD (SR 0023) AND PAWLINGS RD	10.0.71.13	3366	110	60	110	60	60
12	VALLEY FORGE RD (SR 0023) AND FERRY LN/COUNTRY CLUB RD*	10.0.71.14	0252	110	60	110	60	60
	SUBSYSTEM 4			PROGRAM CYCLE LENGTH				
	INTERSECTION	IP ADDRESS	FILE #	1	2	3	4	5
18	KIMBERTON RD/SR 0113 AND PRIVATE DR	10.0.71.15	2952	120	100	120	100	100
19	KIMBERTON RD/SR 0113 AND RAPPS DAM RD							
20	KIMBERTON RD/SR 0113 AND POTHOUSE RD	10.0.71.16	2748	120	100	120	100	100
21	KIMBERTON RD/SR 0113 AND TOWNSHIP LINE RD*	10.0.71.17	2449	120	100	120	100	100
	SUBSYSTEM 5			PROGRAM CYCLE LENGTH				
	INTERSECTION	IP ADDRESS	FILE #	1	2	3	4	5
14	BRIDGE ST AND CHURCH ST	10.0.71.18	0055	60	70	80	70	70
15	BRIDGE ST AND GAY ST	10.0.71.19	0566	60	70	80	70	70
16	BRIDGE ST AND MAIN ST	10.0.71.20	0567	60	70	80	70	70
17	BRIDGE ST AND STARR ST*	10.0.71.21	0054	120	70	80	70	70
	SUBSYSTEM 6			PROGRAM CYCLE LENGTH				
	INTERSECTION	IP ADDRESS	FILE #	1	2	3	4	
22	W POTHOUSE RD & STATE RD/HALLOWELL AVE		2270	130	130	105	140	
23	W POTHOUSE RD & PHANTOM WAY/TROTTERS DR		3884	130	130	105	70	

* DENOTES MASTER INTERSECTION



GENERAL MAP
NOT-TO-SCALE

GENERAL NOTES

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REFER TO TRAFFIC SIGNAL PERMIT DRAWING FOR INDIVIDUAL INTERSECTION OPERATION, GEOMETRY, PHASING AND CRITICAL TIMES.

FOR CONSTRUCTION AND INSPECTION THE SYSTEM PERMIT SHOULD ALWAYS BE ACCOMPANIED WITH TRAFFIC SIGNAL PERMIT DRAWING.

TEST THE SYSTEM AT LOCAL INTERSECTION LEVEL, SUBSYSTEM LEVEL MASTER CONTROLLER LEVEL AND PERSONAL COMPUTER REMOTE DIAL UP LEVEL.

GATHER THE SYSTEM FAILURE CRITICAL ALARMS REPORT AND ARCHIVE THEM WHERE APPLICABLE.

SET UP PENNDOT DISTRICT 6-0 COMPUTER WITH THE SYSTEM DATABASE AND GRAPHICS. MODIFY THE DATABASE AND GRAPHICS FOR SYSTEMS REVISIONS.

ASSIGN LOOP DETECTORS AND PROGRAM THE CONTROLLERS TO GATHER TRAFFIC VOLUMES IN 15 MINUTE INTERVAL, WHERE APPLICABLE.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

OBTAIN POLE ATTACHMENT PERMIT FOR AERIAL FIBER OPTIC INSTALLATION.

MAINTAIN MASTER CONTROLLER COMMUNICATION SUCH AS PHONE DROPS.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER

MUNICIPALITY: PHOENIXVILLE BOROUGH, EAST PIKELAND TOWNSHIP & SCHUYLKILL TOWNSHIP

INTERSECTION: SCHUYLKILL ROAD/NUTT ROAD (SR 0023) TRAFFIC SIGNAL SYSTEM

REVIEWED:

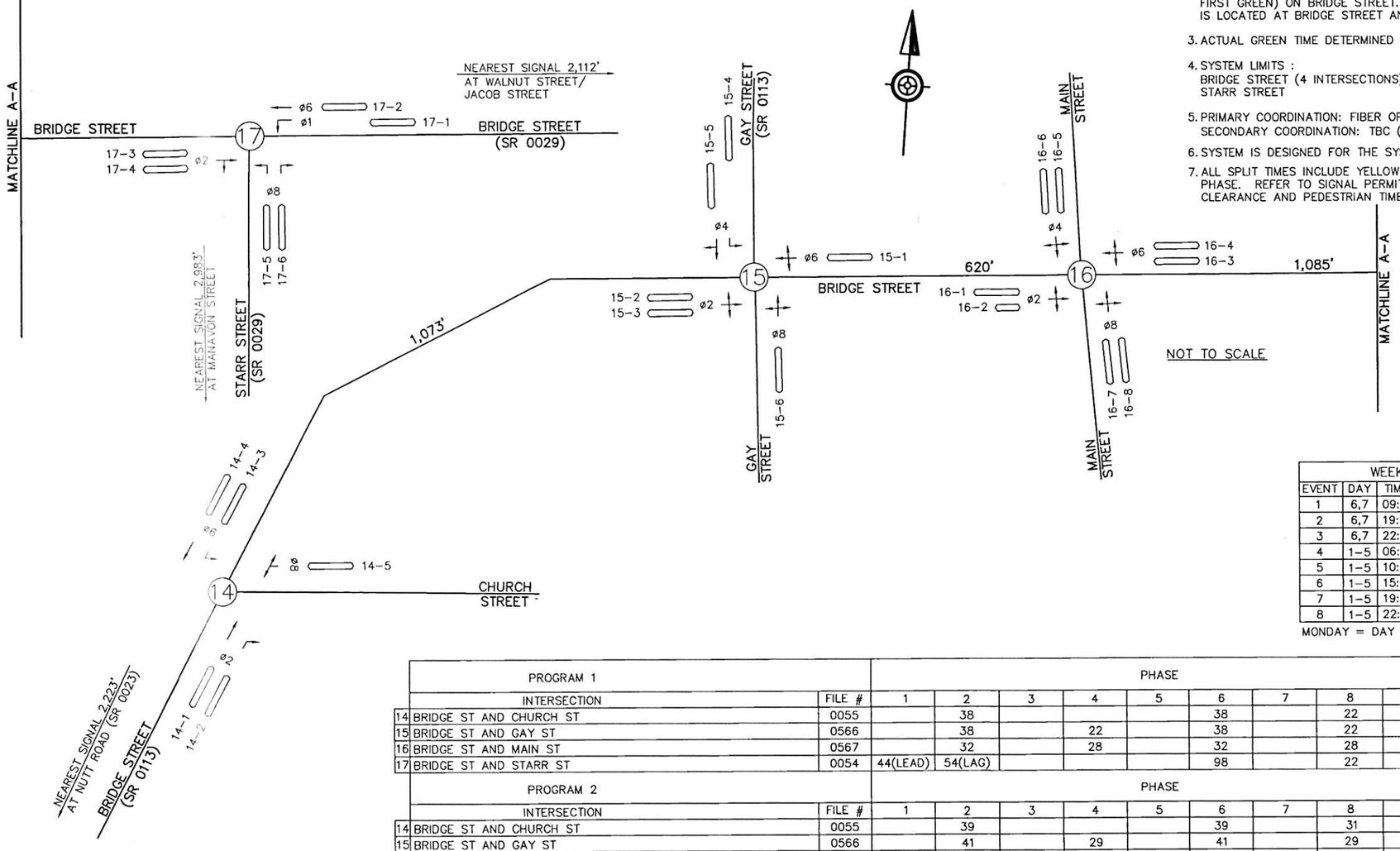
MUNICIPAL OFFICIAL — DATE 11/12/19

RECOMMENDED:
PAUL LUTZ — MUNICIPAL SIGNALS ENGINEER — DATE 12/8/2010
L.R. BELMONTE, P.E. — DISTRICT TRAFFIC ENGINEER — DATE 12/8/2010

NO.	REVISION	DES./REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	REV INT #1 LANE CONFIG & TIMINGS	MCM					
2	ADDITION OF INTER. #22, 23	MCM	3/4/16	LUTZ	3/4/16	APatel	3/7/16
3	ADD. INTERSECTION 1a	BURNS	4/19/16	LUTZ	6/13/16	APatel	6/13/16
4	REV. INT. #22 FOR PHASES 1,5,7	MCM	1/18/17	LUTZ	4/9/18	APatel	4/11/18
5	AS-BUILT RETIMING, ADD PHASE FOR INT #1	MCM	11/8/19	LUTZ	11/25/19	APatel	12/5/19
6							
7							
8							

INTERCONNECT PERMIT # I-0053 — SHEET 1 OF 9

SUBSYSTEM 5



SYSTEM NOTES

1. PROGRAM TO BE SELECTED BY CLOSED LOOP SYSTEM (TIME OF DAY) OR TBC BACKUP.
2. OFFSETS ARE REFERENCED TO THE BEGINNING OF TS2 – GREEN FIRST GREEN) ON BRIDGE STREET. THE MASTER CONTROLLER IS LOCATED AT BRIDGE STREET AND STARR STREET.
3. ACTUAL GREEN TIME DETERMINED BY CYCLE LENGTH.
4. SYSTEM LIMITS :
   BRIDGE STREET (4 INTERSECTIONS) – CHURCH STREET TO STARR STREET
5. PRIMARY COORDINATION: FIBER OPTIC
   SECONDARY COORDINATION: TBC (DEFAULT TO BACKUP TBC)
6. SYSTEM IS DESIGNED FOR THE SYSTEM SOFTWARE:
7. ALL SPLIT TIMES INCLUDE YELLOW AND RED TIMES FOR A GIVEN PHASE. REFER TO SIGNAL PERMIT PLAN FOR MAX 1, CLEARANCE AND PEDESTRIAN TIMES.

WEEKLY PROGRAM CHART				
EVENT	DAY	TIME	PROGRAM	REMARKS
1	6,7	09:00	4	WEEKEND
2	6,7	19:00	4	WEEKEND
3	6,7	22:00	–	FREE
4	1–5	06:00	1	WEEKDAY AM
5	1–5	10:00	2	WEEKDAY MID
6	1–5	15:00	3	WEEKDAY PM
7	1–5	19:00	2	WEEKDAY EVENING
8	1–5	22:00	–	FREE

MONDAY = DAY 1

PROGRAM 1		PHASE									CYCLE	OFFSET 1
INTERSECTION	FILE #	1	2	3	4	5	6	7	8	9		
14 BRIDGE ST AND CHURCH ST	0055		38				38		22		60	0
15 BRIDGE ST AND GAY ST	0566		38		22		38		22		60	30
16 BRIDGE ST AND MAIN ST	0567		32		28		32		28		60	34
17 BRIDGE ST AND STARR ST	0054	44(LEAD)	54(LAG)				98		22		120	61
PROGRAM 2		PHASE									CYCLE	OFFSET 1
INTERSECTION	FILE #	1	2	3	4	5	6	7	8	9		
14 BRIDGE ST AND CHURCH ST	0055		39				39		31		70	16
15 BRIDGE ST AND GAY ST	0566		41		29		41		29		70	48
16 BRIDGE ST AND MAIN ST	0567		43		27		43		27		70	46
17 BRIDGE ST AND STARR ST	0054	17(LEAD)	32(LAG)				49		21		70	6
PROGRAM 3		PHASE									CYCLE	OFFSET 1
INTERSECTION	FILE #	1	2	3	4	5	6	7	8	9		
14 BRIDGE ST AND CHURCH ST	0055		48				48		32		80	46
15 BRIDGE ST AND GAY ST	0566		48		32		48		32		80	12
16 BRIDGE ST AND MAIN ST	0567		50		30		50		30		80	5
17 BRIDGE ST AND STARR ST	0054	21(LEAD)	38(LAG)				59		21		80	39
PROGRAM 4		PHASE									CYCLE	OFFSET 1
INTERSECTION	FILE #	1	2	3	4	5	6	7	8	9		
14 BRIDGE ST AND CHURCH ST	0055		39				39		31		70	16
15 BRIDGE ST AND GAY ST	0566		41		29		41		29		70	48
16 BRIDGE ST AND MAIN ST	0567		43		27		43		27		70	46
17 BRIDGE ST AND STARR ST	0054	17(LEAD)	32(LAG)				49		21		70	6
PROGRAM 5		PHASE									CYCLE	OFFSET 1
INTERSECTION	FILE #	1	2	3	4	5	6	7	8	9		
14 BRIDGE ST AND CHURCH ST	0055		39				39		31		70	16
15 BRIDGE ST AND GAY ST	0566		41		29		41		29		70	48
16 BRIDGE ST AND MAIN ST	0567		43		27		43		27		70	48
17 BRIDGE ST AND STARR ST	0054	17(LEAD)	32(LAG)				49		21		70	6

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: CHESTER

MUNICIPALITY: PHOENIXVILLE BOROUGH

INTERSECTION: BRIDGE STREET (SR 0113/SR 1040)
TRAFFIC SIGNAL SYSTEM, SUBSYSTEM #5

REVIEWED:

MUNICIPAL OFFICIAL — DATE 11/12/19

RECOMMENDED:
PAUL LUTZ — MUNICIPAL SIGNALS ENGINEER — DATE 12/8/2010
LOUIS BELMONTE — DISTRICT TRAFFIC ENGINEER — DATE 12/8/2010

NO.	REVISION	DES. REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	REV INT #1 LANE CONFIG & TIMINGS	McM					
2	ADDITION OF INTER. #22, 23	McM	3/4/16	LUTZ	3/4/16	APatel	3/7/16
3	ADD. INTERSECTION 1a	BURNS	4/19/16	LUTZ	6/13/16	APatel	6/13/16
4	REV. INT. #22 FOR PHASES 1,5,7	McM	1/18/17	LUTZ	4/9/18	APatel	4/11/18
5	AS-BUILT RETIMING, ADD PHASE FOR INT #1	McM	11/8/19	LUTZ	11/15/19	APatel	11/15/19
6							
7							
8							

INTERCONNECT PERMIT # I-0053 — SHEET 8 OF 9

Appendix C

PennDOT TIRe Data

SR 0113
East of SR 0023

Layer Information:
Sort Type: Alphabetic | Show All

AADT 5,001 - 10,000
Type: Line | **Result:** 1 of 1

- **Avg. Daily Traffic**: 9969
- **Avg. Daily Truck Traffic**: 650
- **Count Date**: 20190828
- **Count Duration**: 24
- **County**: 15 - CHESTER
- **D Factor**: 51
- **Daily Truck Vehicle Miles Traveled**: 395
- **Daily Vehicle Miles Traveled**: 6061
- **Direction**: B - BOTH
- **District**: 06
- **Jurisdiction**: 1 - STATE
- **K Factor**: 7
- **Offset Begin**: 0
- **Offset End**: 0
- **Route**: 0113
- **Segment Begin**: 0280
- **Segment End**: 0300
- **Side Ind**: 1 - RIGHT / PRIMARY / EVEN SIDE
- **T Factor**: 6
- **Traffic Count Key**: 15011302900290

SR 1019
West of SR 0023

Layer Information:
Sort Type: Alphabetic | Show All

AADT 5,001 - 10,000
Type: Line | **Result:** 1 of 1

- **Avg. Daily Traffic**: 7205
- **Avg. Daily Truck Traffic**: 289
- **Count Date**: 20180912
- **Count Duration**: 24
- **County**: 15 - CHESTER
- **D Factor**: 55
- **Daily Truck Vehicle Miles Traveled**: 203
- **Daily Vehicle Miles Traveled**: 5065
- **Direction**: B - BOTH
- **District**: 06
- **Jurisdiction**: 1 - STATE
- **K Factor**: 10
- **Offset Begin**: 1647
- **Offset End**: 1748
- **Route**: 1019
- **Segment Begin**: 0070
- **Segment End**: 0080
- **Side Ind**: 1 - RIGHT / PRIMARY / EVEN SIDE
- **T Factor**: 2
- **Traffic Count Key**: 15101900800163

SR 0023
North of SR 1019

Layer Information:
Sort Type: Alphabetic | Show All

AADT 20,001 - 50,000
Type: Line | **Result:** 1 of 1

- **Avg. Daily Traffic**: 24042
- **Avg. Daily Truck Traffic**: 1976
- **Count Date**: 20190827
- **Count Duration**: 24
- **County**: 15 - CHESTER
- **D Factor**: 53
- **Daily Truck Vehicle Miles Traveled**: 925
- **Daily Vehicle Miles Traveled**: 11252
- **Direction**: B - BOTH
- **District**: 06
- **Jurisdiction**: 1 - STATE
- **K Factor**: 8
- **Offset Begin**: 0
- **Offset End**: 0
- **Route**: 0023
- **Segment Begin**: 0410
- **Segment End**: 0430
- **Side Ind**: 1 - RIGHT / PRIMARY / EVEN SIDE
- **T Factor**: 5
- **Traffic Count Key**: 15002304200200

SR 0023
South of SR 1019

Layer Information:
Sort Type: Alphabetic | Sho

AADT 10,001 - 20,000
Type: Line | **Result:** 1 of 1

- **Avg. Daily Traffic**: 10750
- **Avg. Daily Truck Traffic**: 679
- **Count Date**: 20190827
- **Count Duration**: 24
- **County**: 15 - CHESTER
- **D Factor**: 62
- **Daily Truck Vehicle Miles Traveled**: 587
- **Daily Vehicle Miles Traveled**: 9299
- **Direction**: B - BOTH
- **District**: 06
- **Jurisdiction**: 1 - STATE
- **K Factor**: 8
- **Offset Begin**: 0
- **Offset End**: 0
- **Route**: 0023
- **Segment Begin**: 0430
- **Segment End**: 0460
- **Side Ind**: 1 - RIGHT / PRIMARY / EVEN SIDE
- **T Factor**: 5
- **Traffic Count Key**: 15002304402165

Source: PennDOT Traffic Information Repository
Accessed: September 3, 2020

Appendix D

Turning Movement Counts

Nutt Road (S.R. 0023) and Bridge Street (S.R. 0113)

McMahon Associates, Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034
Transportation Engineers and Planners

Municipality: Phoenixville Borough
Location: Nutt Road &
Bridge Street & Mellon Street
Counter: BW

File Name : bridge04w
Site Code : 81819502
Start Date : 5/9/2018
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Mellon St Southbound				Bridge St Southwestbound				Nutt Rd Westbound					Bridge St Northbound					Nutt Rd Eastbound					
Start Time	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	ROR	Hard Right	Left	Thru	Bear Right	ROR	Right	Left	Bear Left	Thru	ROR	Right	Int. Total
06:00	0	0	0	0	1	18	32	0	1	33	0	0	2	8	0	11	0	10	0	32	113	0	9	270
06:15	0	0	0	0	0	17	57	0	6	36	0	0	3	5	0	10	0	10	0	41	157	0	12	354
06:30	0	0	0	0	2	31	61	0	5	46	0	0	1	15	0	16	0	9	0	61	177	0	14	438
06:45	0	0	0	0	1	58	76	0	13	63	0	0	4	13	0	16	0	21	0	48	194	0	22	529
Total	0	0	0	0	4	124	226	0	25	178	0	0	10	41	0	53	0	50	0	182	641	0	57	1591
07:00	0	0	0	0	1	86	63	0	13	87	0	0	1	14	0	29	0	13	0	70	174	0	34	585
07:15	0	0	0	0	3	103	74	0	21	79	0	0	7	17	0	38	0	5	0	79	137	0	38	601
07:30	0	0	0	0	1	86	72	0	11	91	0	0	10	18	0	53	0	10	0	105	136	0	27	620
07:45	0	0	0	0	2	56	69	0	8	65	0	0	6	14	0	34	0	7	0	94	175	0	35	565
Total	0	0	0	0	7	331	278	0	53	322	0	0	24	63	0	154	0	35	0	348	622	0	134	2371
08:00	0	0	0	0	1	82	50	0	20	70	0	0	5	12	0	28	0	16	0	108	171	0	26	589
08:15	0	0	0	0	4	67	59	0	22	84	0	0	5	10	0	31	0	12	0	82	163	0	29	568
08:30	0	0	0	0	5	88	80	0	25	93	0	0	10	12	0	44	0	14	0	103	157	0	26	657
08:45	0	0	0	0	1	41	90	0	11	97	0	0	4	13	0	31	0	10	0	90	122	0	13	523
Total	0	0	0	0	11	278	279	0	78	344	0	0	24	47	0	134	0	52	0	383	613	0	94	2337
09:00	0	0	0	0	3	33	59	0	12	95	0	0	3	14	0	30	0	10	0	85	118	0	10	472
09:15	0	0	0	0	1	21	65	0	12	72	0	0	6	17	0	29	0	14	0	69	115	0	13	434
09:30	0	0	0	0	1	25	69	0	10	82	0	0	2	13	0	22	0	13	0	78	95	0	13	423
09:45	0	0	0	0	1	24	60	0	9	91	0	0	1	15	0	28	0	16	0	67	108	0	9	429
Total	0	0	0	0	6	103	253	0	43	340	0	0	12	59	0	109	0	53	0	299	436	0	45	1758
*** BREAK ***																								
15:00	0	0	0	0	6	31	70	0	17	134	0	0	9	22	0	44	0	10	0	78	125	0	19	565
15:15	0	0	0	0	3	38	89	0	14	150	0	0	5	26	0	56	0	16	0	88	112	0	22	619
15:30	0	0	0	0	2	38	90	0	23	145	0	0	4	27	0	65	0	13	0	81	122	0	16	626
15:45	0	0	0	0	2	31	91	1	14	145	0	0	3	25	0	55	0	11	0	96	109	0	22	605
Total	0	0	0	0	13	138	340	1	68	574	0	0	21	100	0	220	0	50	0	343	468	0	79	2415
16:00	0	0	0	0	5	36	100	1	15	129	0	0	7	32	0	55	0	11	0	81	110	0	11	593
16:15	0	0	0	0	1	41	118	1	10	150	0	0	6	23	0	54	0	12	0	81	119	0	16	632
16:30	0	0	0	0	2	45	124	0	16	153	0	0	8	25	0	72	0	8	0	108	131	0	16	708
16:45	0	0	0	0	2	54	117	0	14	140	0	0	9	27	0	58	0	9	0	113	109	0	17	669
Total	0	0	0	0	10	176	459	2	55	572	0	0	30	107	0	239	0	40	0	383	469	0	60	2602
17:00	0	0	0	0	5	49	126	1	16	146	0	0	6	23	0	60	0	7	0	113	126	0	16	694
17:15	0	0	0	0	5	57	121	0	16	149	0	0	4	29	0	66	0	7	0	113	130	0	19	716
17:30	0	0	0	0	2	45	124	0	13	151	0	0	8	34	0	55	0	8	0	113	130	0	17	700
17:45	0	0	0	0	6	42	111	0	17	154	0	0	9	31	0	68	0	4	0	113	136	0	12	703
Total	0	0	0	0	18	193	482	1	62	600	0	0	27	117	0	249	0	26	0	452	522	0	64	2813
18:00	0	0	0	0	4	39	79	0	14	158	0	0	5	32	0	52	0	4	0	109	134	0	16	646

McMahon Associates, Inc.

425 Commerce Drive, Suite 200
Fort Washington, PA 19034
Transportation Engineers and Planners

Municipality: Phoenixville Borough
Location: Nutt Road &
Bridge Street & Mellon Street
Counter: BW

File Name : bridge04w
Site Code : 81819502
Start Date : 5/9/2018

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Mellon St Southbound				Bridge St Southwestbound				Nutt Rd Westbound					Bridge St Northbound					Nutt Rd Eastbound					
Start Time	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	ROR	Hard Right	Left	Thru	Bear Right	ROR	Right	Left	Bear Left	Thru	ROR	Right	Int. Total
18:15	0	0	0	0	3	33	80	0	13	132	0	0	6	26	0	64	0	10	0	102	114	0	28	611
18:30	0	0	0	0	2	39	79	0	9	162	0	0	6	28	0	39	0	10	0	80	129	0	15	598
18:45	0	0	0	0	1	32	80	2	6	110	0	0	11	36	0	50	0	12	0	78	124	0	15	557
Total	0	0	0	0	10	143	318	2	42	562	0	0	28	122	0	205	0	36	0	369	501	0	74	2412
Grand Total	0	0	0	0	79	1486	2635	6	426	3492	0	0	176	656	0	1363	0	342	0	2759	4272	0	607	18299
Apprch %	0	0	0	0	1.9	35.3	62.6	0.1	10.4	85.3	0	0	4.3	27.8	0	57.7	0	14.5	0	36.1	55.9	0	7.9	
Total %	0	0	0	0	0.4	8.1	14.4	0	2.3	19.1	0	0	1	3.6	0	7.4	0	1.9	0	15.1	23.3	0	3.3	
Passenger Vehicles	0	0	0	0	78	1472	2563	6	420	3408	0	0	163	644	0	1328	0	332	0	2721	4163	0	603	17901
% Passenger Vehicles	0	0	0	0	98.7	99.1	97.3	100	98.6	97.6	0	0	92.6	98.2	0	97.4	0	97.1	0	98.6	97.4	0	99.3	97.8
Heavy Vehicles	0	0	0	0	1	14	72	0	6	84	0	0	13	12	0	35	0	10	0	38	109	0	4	398
% Heavy Vehicles	0	0	0	0	1.3	0.9	2.7	0	1.4	2.4	0	0	7.4	1.8	0	2.6	0	2.9	0	1.4	2.6	0	0.7	2.2

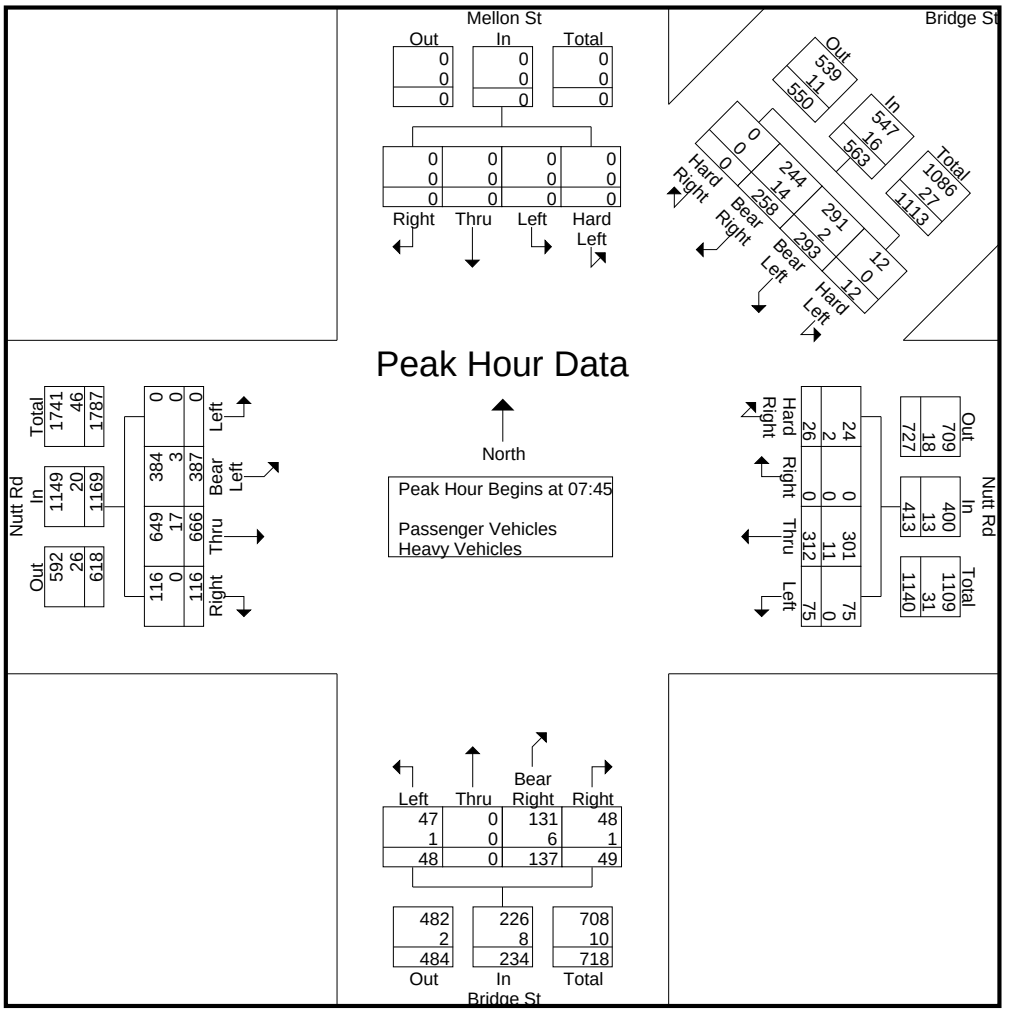
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Page No : 3

	Mellon St Southbound					Bridge St Southwestbound					Nutt Rd Westbound						Bridge St Northbound						Nutt Rd Eastbound						
Start Time	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	ROR	Hard Right	App. Total	Left	Thru	Bear Right	ROR	Right	App. Total	Left	Bear Left	Thru	ROR	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 to 11:45 - Peak 1 of 1																													
Peak Hour for Entire Intersection Begins at 07:45																													
07:45	0	0	0	0	0	2	56	69	0	127	8	65	0	0	6	79	**14**	0	34	0	7	55	0	94	**175**	0	**35**	304	565
08:00	0	0	0	0	0	1	82	50	0	133	20	70	0	0	5	95	12	0	28	0	**16**	56	0	**108**	171	0	26	**305**	589
08:15	0	0	0	0	0	4	67	59	0	130	22	84	0	0	5	111	10	0	31	0	12	53	0	82	163	0	29	274	568
08:30	0	0	0	0	0	**5**	**88**	**80**	0	**173**	**25**	**93**	0	0	**10**	**128**	12	0	**44**	0	14	**70**	0	103	157	0	26	286	**657**
Total Volume	0	0	0	0	0	12	293	258	0	563	75	312	0	0	26	413	48	0	137	0	49	234	0	387	666	0	116	1169	2379
% App. Total	0	0	0	0		2.1	52	45.8	0		18.2	75.5	0	0	6.3		20.5	0	58.5	0	20.9		0	33.1	57	0	9.9		
PHF	.000	.000	.000	.000	.000	.600	.832	.806	.000	.814	.750	.839	.000	.000	.650	.807	.857	.000	.778	.000	.766	.836	.000	.896	.951	.000	.829	.958	.905
Passenger Vehicles	0	0	0	0	0	12	291	244	0	547	75	301	0	0	24	400	47	0	131	0	48	226	0	384	649	0	116	1149	2322
% Passenger Vehicles	0	0	0	0	0	100	99.3	94.6	0	97.2	100	96.5	0	0	92.3	96.9	97.9	0	95.6	0	98.0	96.6	0	99.2	97.4	0	100	98.3	97.6
Heavy Vehicles	0	0	0	0	0	0	2	14	0	16	0	11	0	0	2	13	1	0	6	0	1	8	0	3	17	0	0	20	57
% Heavy Vehicles	0	0	0	0	0	0	0.7	5.4	0	2.8	0	3.5	0	0	7.7	3.1	2.1	0	4.4	0	2.0	3.4	0	0.8	2.6	0	0	1.7	2.4



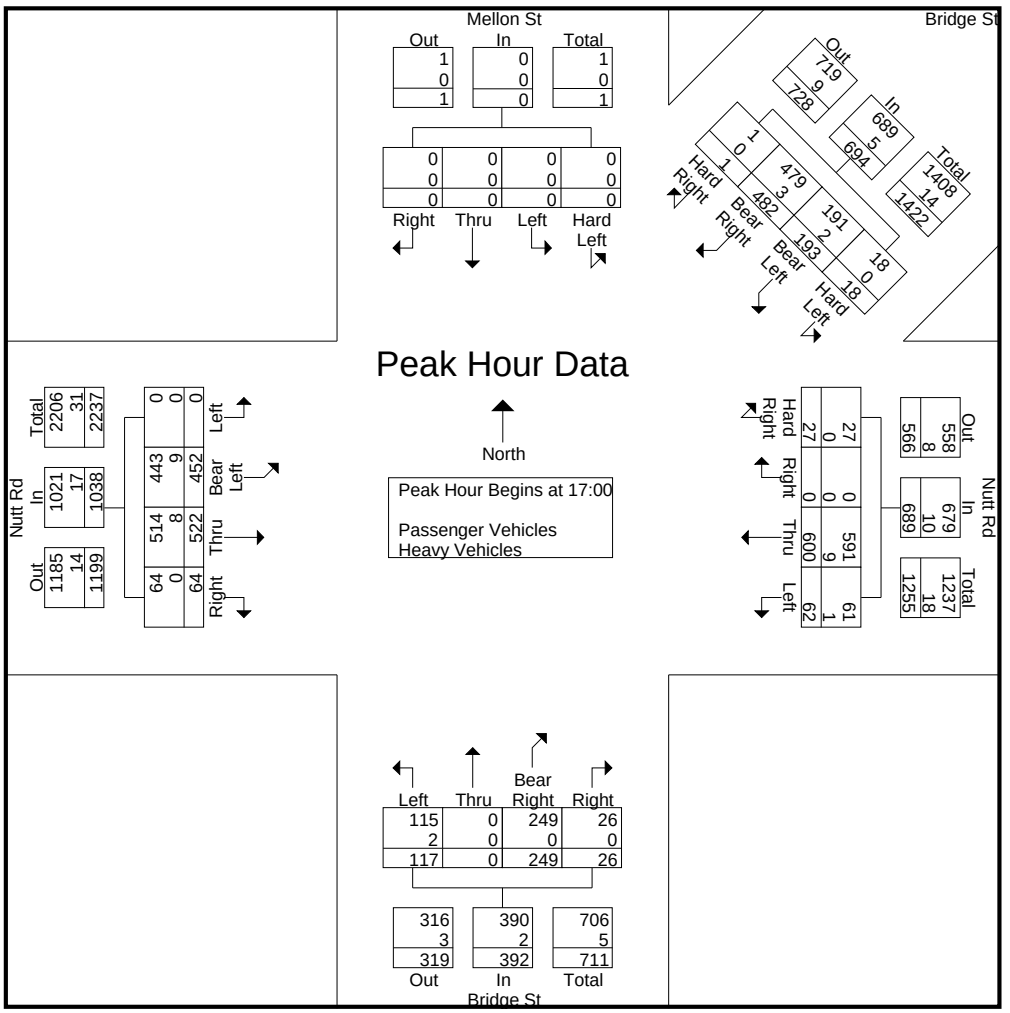
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	Mellon St Southbound					Bridge St Southwestbound					Nutt Rd Westbound						Bridge St Northbound						Nutt Rd Eastbound						
Start Time	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	ROR	Hard Right	App. Total	Left	Thru	Bear Right	ROR	Right	App. Total	Left	Bear Left	Thru	ROR	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 18:45 - Peak 1 of 1																													
Peak Hour for Entire Intersection Begins at 17:00																													
17:00	0	0	0	0	0	5	49	**126**	**1**	181	16	146	0	0	6	168	23	0	60	0	7	90	0	**113**	126	0	16	255	694
17:15	0	0	0	0	0	5	**57**	121	0	**183**	16	149	0	0	4	169	29	0	66	0	7	102	0	113	130	0	**19**	**262**	**716**
17:30	0	0	0	0	0	2	45	124	0	171	13	151	0	0	8	172	**34**	0	55	0	**8**	97	0	113	130	0	17	260	700
17:45	0	0	0	0	0	**6**	42	111	0	159	**17**	**154**	0	0	**9**	**180**	31	0	**68**	0	4	**103**	0	113	**136**	0	12	261	703
Total Volume	0	0	0	0	0	18	193	482	1	694	62	600	0	0	27	689	117	0	249	0	26	392	0	452	522	0	64	1038	2813
% App. Total	0	0	0	0		2.6	27.8	69.5	0.1		9	87.1	0	0	3.9		29.8	0	63.5	0	6.6		0	43.5	50.3	0	6.2		
PHF	.000	.000	.000	.000	.000	.750	.846	.956	.250	.948	.912	.974	.000	.000	.750	.957	.860	.000	.915	.000	.813	.951	.000	1.00	.960	.000	.842	.990	.982
Passenger Vehicles	0	0	0	0	0	18	191	479	1	689	61	591	0	0	27	679	115	0	249	0	26	390	0	443	514	0	64	1021	2779
% Passenger Vehicles	0	0	0	0	0	100	99.0	99.4	100	99.3	98.4	98.5	0	0	100	98.5	98.3	0	100	0	100	99.5	0	98.0	98.5	0	100	98.4	98.8
Heavy Vehicles	0	0	0	0	0	0	2	3	0	5	1	9	0	0	0	10	2	0	0	0	0	2	0	9	8	0	0	17	34
% Heavy Vehicles	0	0	0	0	0	0	1.0	0.6	0	0.7	1.6	1.5	0	0	0	1.5	1.7	0	0	0	0	0.5	0	2.0	1.5	0	0	1.6	1.2



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Page No : 1

Groups Printed- Pedestrians

	Mellon St Southbound	Bridge St Southwestbound	Nutt Rd Westbound	Bridge St Northbound	Nutt Rd Eastbound	
Start Time	E/W	E/W	N/S	E/W	N/S	Int. Total
*** BREAK ***						
06:15	1	0	0	0	0	1
06:30	0	0	0	1	0	1
*** BREAK ***						
Total	1	0	0	1	0	2
*** BREAK ***						
07:15	0	0	0	2	0	2
07:30	1	0	0	0	0	1
*** BREAK ***						
Total	1	0	0	2	0	3
*** BREAK ***						
08:15	2	0	1	0	0	3
08:30	0	0	0	1	0	1
*** BREAK ***						
Total	2	0	1	1	0	4
*** BREAK ***						
15:45	0	0	0	1	0	1
Total	0	0	0	1	0	1
*** BREAK ***						
16:15	1	0	0	0	0	1
*** BREAK ***						
Total	1	0	0	0	0	1
*** BREAK ***						
17:30	0	0	0	1	0	1
*** BREAK ***						
Total	0	0	0	1	0	1
18:00	3	0	0	0	0	3
*** BREAK ***						
18:30	0	0	0	2	0	2
18:45	1	0	0	0	0	1
Total	4	0	0	2	0	6
Grand Total	9	0	1	8	0	18
Apprch %	100	0	100	100	0	
Total %	50	0	5.6	44.4	0	

Day Type

2: Weekend Day (Sa-Sa)

TURNING MOVEMENT COUNTS

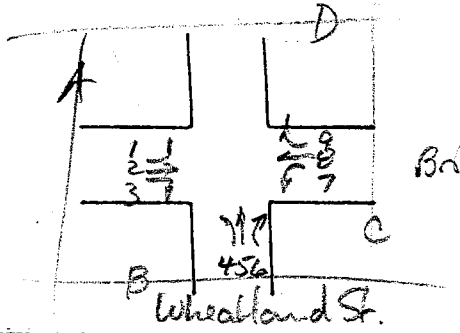
Day Part	Bridge Street EB Left	Bridge Street EB Thru	Bridge Street EB Right	Bridge Street WB Left	Bridge Street WB Thru	Bridge Street WB Right	Nutt Road NB Left	Nutt Road NB Thru	Nutt Road NB Right	Nutt Road SB Left	Nutt Road SB Thru	Nutt Road SB Right	Total
00: All Day (12am-12am)	1,305	2,961	994	492	2,732	6,238	1,017	8,177	565	5,821	7,987	1,016	39,305
01: 12am (12am-1am)	5	29	-	9	49	80	5	39	-	44	45	9	314
02: 1am (1am-2am)	-	11	5	4	8	92	14	12	-	31	14	3	194
03: 2am (2am-3am)	8	4	-	-	12	42	4	5	3	6	29	-	113
04: 3am (3am-4am)	-	-	-	-	5	27	-	22	-	4	14	4	76
05: 4am (4am-5am)	-	4	4	-	5	8	-	4	4	13	24	3	69
06: 5am (5am-6am)	-	9	19	-	-	20	-	35	-	-	49	-	132
07: 6am (6am-7am)	32	9	12	4	18	38	5	68	-	50	159	3	398
08: 7am (7am-8am)	19	66	37	16	89	121	35	219	3	107	316	17	1,045
09: 8am (8am-9am)	42	63	53	25	111	255	49	323	8	179	334	39	1,481
10: 9am (9am-10am)	56	185	64	19	111	329	91	431	29	350	428	61	2,154
11: 10am (10am-11am)	82	279	96	26	130	351	86	534	38	318	519	51	2,510
12: 11am (11am-12noon)	85	150	86	38	210	454	74	675	34	388	589	63	2,846
13: 12pm (12noon-1pm)	119	290	65	24	148	470	85	602	43	483	726	51	3,106
14: 1pm (1pm-2pm)	98	245	88	60	189	419	58	615	57	467	605	94	2,995
15: 2pm (2pm-3pm)	95	205	66	20	210	411	64	647	28	451	607	60	2,864
16: 3pm (3pm-4pm)	126	271	56	35	223	375	36	541	49	407	585	93	2,797
17: 4pm (4pm-5pm)	92	259	115	38	246	426	38	681	25	468	581	79	3,048
18: 5pm (5pm-6pm)	103	193	40	40	152	383	70	626	67	402	511	80	2,667
19: 6pm (6pm-7pm)	116	185	65	46	132	313	64	529	33	550	565	87	2,685
20: 7pm (7pm-8pm)	76	175	58	34	143	406	83	500	47	429	398	64	2,413
21: 8pm (8pm-9pm)	60	93	24	34	145	380	61	378	18	203	271	26	1,693
22: 9pm (9pm-10pm)	41	131	11	17	138	331	48	216	30	240	253	59	1,515
23: 10pm (10pm-11pm)	15	69	20	4	144	245	26	251	23	138	256	34	1,225
24: 11pm (11pm-12am)	27	33	5	-	99	246	31	237	28	114	102	37	959

Bridge Street (S.R. 0113) and Wheatland Street

HEINRICH & KLEIN ASSOCIATES, INC.
TRAFFIC ENGINEERING & PLANNING

TRAFFIC VOLUME SUMMARY

MUNICIPALITY Phoenixville Bor
LOCATION Bridge St & Wheatland St DATE 1/31/18
HOURS 7:00-9:00 AM; 4:00-6:00 PM WEATHER Clear
COUNT MADE BY: Hill
REMARKS



INDICATE NORTH BY ARROW

TIME	From East on Bridge St L 1	S 2	R 3	Total	From North on Wheatland St L 4	S 5	R 6	Total	From West on Bridge St L 7	S 8	R 9	Total	PEDESTRIANS A L	B S	C R	D Total	Total
7:00-7:15	7	137	3 B	7 147	2	2	1	0 5	1	61	8	3 70	0	0	0	0	222
7:15-7:30	4 S	144	2	10 150	4	3	0	0 7	2	131	4	4 137	0	1	0	0	294 X
7:30-7:45	2 S	158	0	4 160	9	0	3	0 12	2	130	3	5 135	1	1	0	2	307 X
7:45-8:00	4 S	163	1	4 168	4	0	4 B	1 8	0	115	5	9 120	3	4	1	2	296 X
8:00-8:15	8 BS	154	2	5 164	6 S	0	0	1 6	2	115	3	10 120	0	B	0	B	290 X
8:15-8:30	5	156	7	8 168	4	0	1	0 5	6	112	4	5 116	0	1	0	0	289
8:30-8:45	3	134	3	7 140	4	0	4	0 8	0	133	3	5 136	0	1	0	0	284
8:45-9:00	9	135	7	16 149	2	0	1	0 3	0	112	4	4 116	0	0	0	5	268
AM Peak Hour 7:15-8:15	18(5)	619(18)	5(0)	(23) 642	23(1)	3(0)	7(1)	(2) 33	6(0)	491(28)	15(0)	(28) 512	4	8	1	5	1187
4:00-4:15	5	142	1	3 148	1	0	1	0 2	2	144	5	1 151	0	1	0	1	301
4:15-4:30	8	131	3	3 142	4	1	5	0 10	7	145	9	0 161	B	5	2	1	313
4:30-4:45	9	141	4 S	2 154	5	1	6	0 12	3	148	6	2 157	0	1	1	0	323
4:45-5:00	6	146	1	1 153	11	0	4	0 15	0	141	5	1 146	1	B	0	2	314 X
5:00-5:15	5	184	2	3 191	8	2	2	0 12	2	143	9	1 153	1	1 BB	0	5	356 X
5:15-5:30	2	177	5	1 184	4	0	6	0 10	6	141	9 B	2 156	0	0	0	0	350 X
5:30-5:45	6	133	5	2 144	5	0	8	0 13	6	175	3	1 184	0	0	1	1	341 X
5:45-6:00	5	114	7	2 126	7	1	4	0 12	7	145	10	2 162	0	0	0	1	300
PM Peak Hour 4:45-5:45	19(0)	640(7)	13(0)	(7) 672	28(0)	2(0)	20(0)	(0) 50	14(0)	600(4)	25(1)	(5) 639	2	4	1	8	1361
TOTAL																	

Day Type

2: Weekend Day (Sa-Sa)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street EB Left	EB Thru	EB Right	Bridge Street WB Left	WB Thru	WB Right	Wheatland Street NB Left	NB Thru	NB Right	Wheatland Street SB Left	SB Thru	SB Right	Total
00: All Day (12am-12am)	214	9,292	499	707	9,257	271	7	-	16	228	129	244	20,864
01: 12am (12am-1am)	-	81	-	7	129	-	-	-	-	-	-	-	217
02: 1am (1am-2am)	-	46	-	7	106	-	-	-	-	-	-	-	159
03: 2am (2am-3am)	-	15	-	7	55	-	-	-	-	-	-	-	77
04: 3am (3am-4am)	-	-	7	-	30	-	-	-	-	-	-	-	37
05: 4am (4am-5am)	-	12	-	-	16	-	-	-	-	-	-	-	28
06: 5am (5am-6am)	6	8	6	12	29	-	-	-	-	-	7	-	68
07: 6am (6am-7am)	6	72	-	26	52	-	-	-	-	-	-	-	156
08: 7am (7am-8am)	-	183	-	7	221	6	-	-	-	-	-	-	417
09: 8am (8am-9am)	-	265	30	6	394	-	-	-	-	5	23	5	728
10: 9am (9am-10am)	23	548	42	45	458	8	-	-	-	27	-	5	1,156
11: 10am (10am-11am)	21	601	31	30	510	23	-	-	-	11	-	4	1,231
12: 11am (11am-12noon)	50	547	40	32	669	21	7	-	7	27	13	33	1,446
13: 12pm (12noon-1pm)	-	767	20	48	651	10	-	-	-	41	6	32	1,575
14: 1pm (1pm-2pm)	16	762	32	39	643	-	-	-	5	19	24	23	1,563
15: 2pm (2pm-3pm)	23	721	35	37	657	44	-	-	4	10	4	23	1,558
16: 3pm (3pm-4pm)	21	728	41	62	599	14	-	-	-	-	-	11	1,476
17: 4pm (4pm-5pm)	19	775	46	40	675	46	-	-	-	-	22	33	1,656
18: 5pm (5pm-6pm)	-	706	21	61	551	37	-	-	-	31	-	31	1,438
19: 6pm (6pm-7pm)	7	778	40	42	551	21	-	-	-	6	-	17	1,462
20: 7pm (7pm-8pm)	11	633	22	32	532	22	-	-	-	6	6	16	1,280
21: 8pm (8pm-9pm)	6	303	19	27	550	5	-	-	-	18	14	17	959
22: 9pm (9pm-10pm)	6	353	43	78	479	6	-	-	-	31	-	-	996
23: 10pm (10pm-11pm)	-	212	20	52	377	5	-	-	-	6	-	-	672
24: 11pm (11pm-12am)	-	173	8	13	318	6	-	-	-	-	-	-	518

Bridge Street (S.R. 0113) and Buchanan Street

McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Buchanan Street
Counter: LB

File Name : phoenixville01w
Site Code : 81973001
Start Date : 10/8/2019
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Bridge St Westbound		Buchanan St Northbound		Bridge St Eastbound		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
06:00	0	47	5	4	61	0	117
06:15	0	53	6	8	55	0	122
06:30	0	71	8	6	81	0	166
06:45	0	98	12	5	104	2	221
Total	0	269	31	23	301	2	626
07:00	0	137	15	14	101	0	267
07:15	2	174	8	16	127	0	327
07:30	0	209	12	20	124	2	367
07:45	0	182	8	10	132	0	332
Total	2	702	43	60	484	2	1293
08:00	1	194	13	13	108	1	330
08:15	0	177	12	12	128	0	329
08:30	0	145	16	13	125	0	299
08:45	0	105	11	9	111	0	236
Total	1	621	52	47	472	1	1194
09:00	0	113	9	4	107	0	233
09:15	0	93	4	6	112	0	215
09:30	0	87	5	10	94	1	197
09:45	0	78	3	5	89	0	175
Total	0	371	21	25	402	1	820
*** BREAK ***							
15:00	0	145	11	15	98	0	269
15:15	0	113	9	9	100	0	231
15:30	0	145	11	13	121	1	291
15:45	1	108	11	17	138	0	275
Total	1	511	42	54	457	1	1066
16:00	0	143	17	17	131	0	308
16:15	0	174	14	10	158	0	356
16:30	0	153	14	13	134	0	314
16:45	1	138	15	24	144	0	322
Total	1	608	60	64	567	0	1300
17:00	0	175	24	48	164	0	411
17:15	1	166	26	32	163	1	389
17:30	1	177	24	28	157	0	387
17:45	0	136	4	18	163	0	321
Total	2	654	78	126	647	1	1508
18:00	0	120	9	18	145	0	292
18:15	0	134	6	8	133	0	281
18:30	0	141	14	20	123	1	299
18:45	0	108	14	15	146	0	283
Total	0	503	43	61	547	1	1155
Grand Total	7	4239	370	460	3877	9	8962
Apprch %	0.2	99.8	44.6	55.4	99.8	0.2	
Total %	0.1	47.3	4.1	5.1	43.3	0.1	

McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Buchanan Street
Counter: LB

File Name : phoenixville01w
Site Code : 81973001
Start Date : 10/8/2019

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Bridge St Westbound		Buchanan St Northbound		Bridge St Eastbound		
	Left	Thru	Left	Right	Thru	Right	Int. Total
Passenger Vehicles	6	4114	361	448	3755	9	8693
% Passenger Vehicles	85.7	97.1	97.6	97.4	96.9	100	97
Heavy Vehicles	1	125	9	12	122	0	269
% Heavy Vehicles	14.3	2.9	2.4	2.6	3.1	0	3

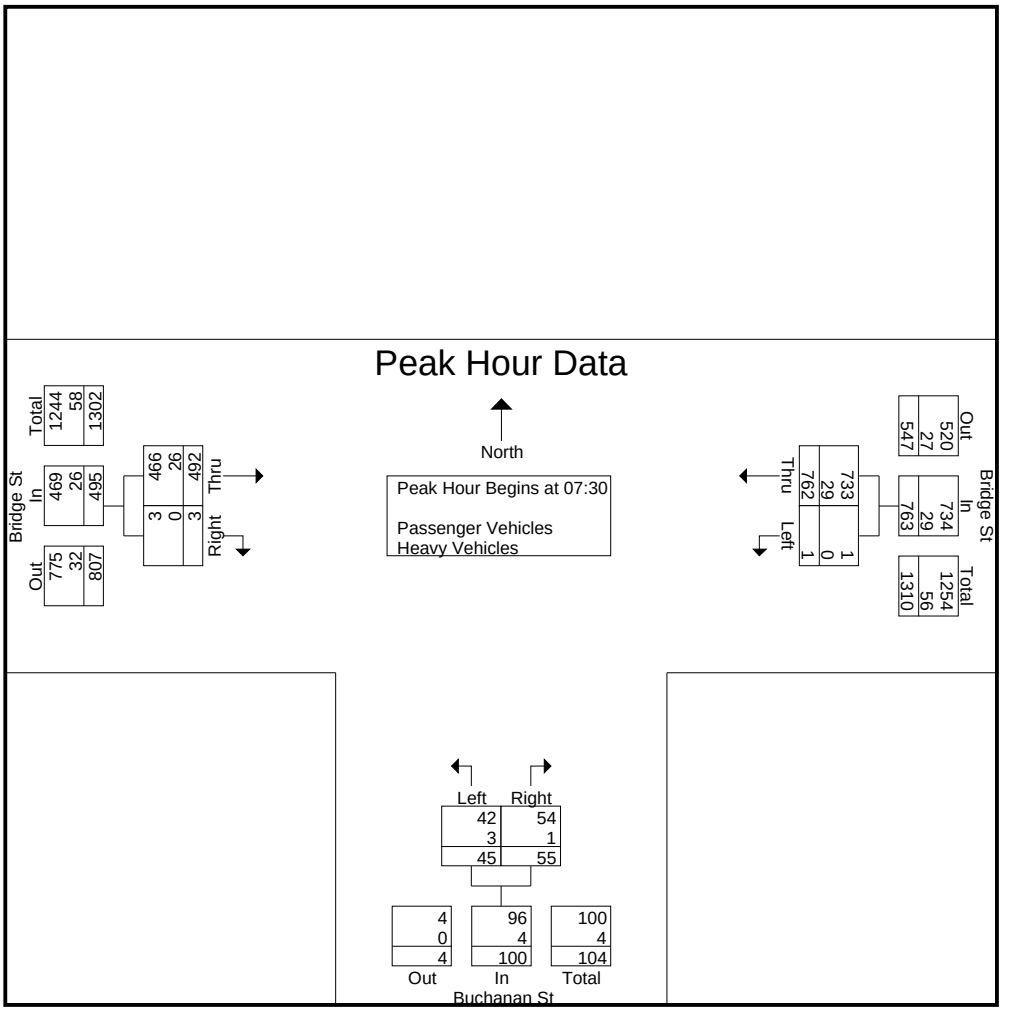
McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street & Buchanan Street
Counter: LB

File Name : phoenixville01w
Site Code : 81973001
Start Date : 10/8/2019

	Bridge St Westbound			Buchanan St Northbound			Bridge St Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 to 11:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	0	**209**	**209**	12	**20**	**32**	124	**2**	126	**367**
07:45	0	182	182	8	10	18	**132**	0	**132**	332
08:00	**1**	194	195	**13**	13	26	108	1	109	330
08:15	0	177	177	12	12	24	128	0	128	329
Total Volume	1	762	763	45	55	100	492	3	495	1358
% App. Total	0.1	99.9		45	55		99.4	0.6		
PHF	.250	.911	.913	.865	.688	.781	.932	.375	.938	.925
Passenger Vehicles	1	733	734	42	54	96	466	3	469	1299
% Passenger Vehicles	100	96.2	96.2	93.3	98.2	96.0	94.7	100	94.7	95.7
Heavy Vehicles	0	29	29	3	1	4	26	0	26	59
% Heavy Vehicles	0	3.8	3.8	6.7	1.8	4.0	5.3	0	5.3	4.3



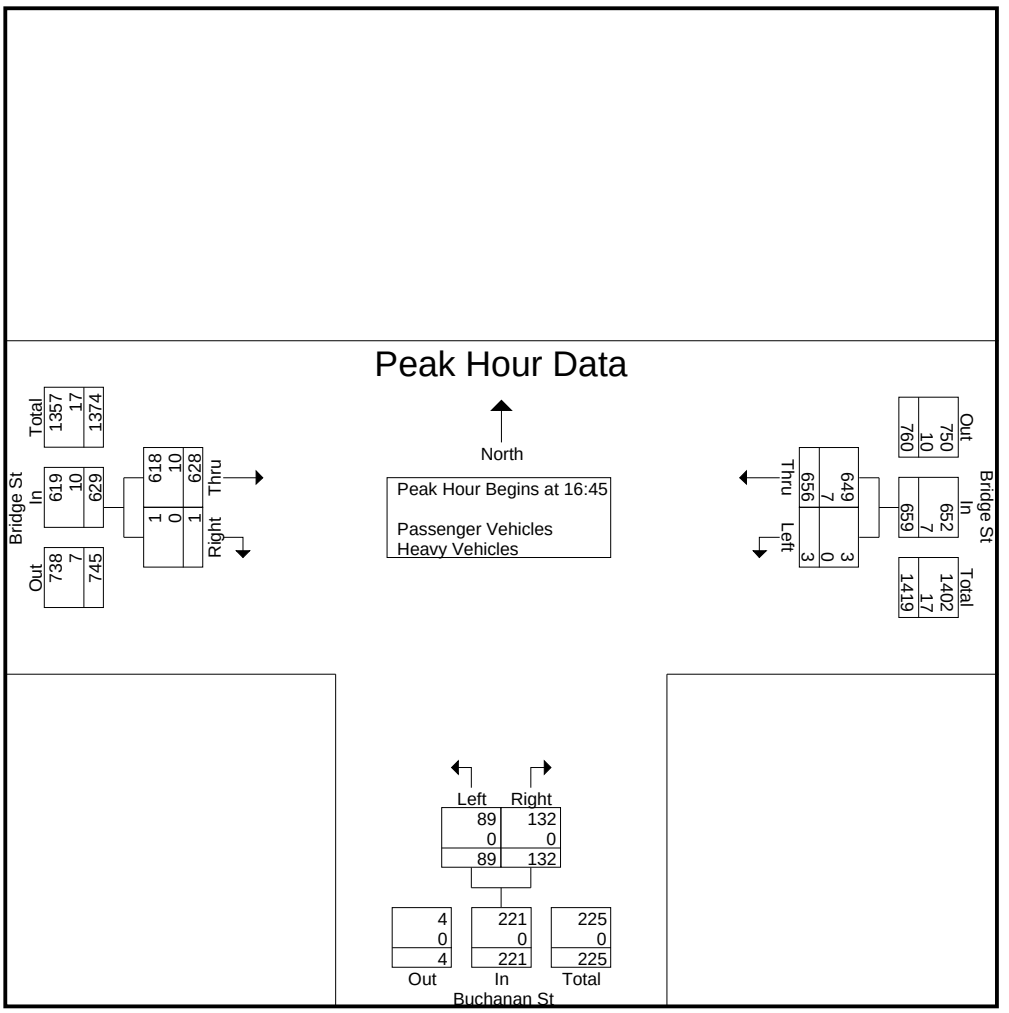
McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Buchanan Street
Counter: LB

File Name : phoenixville01w
Site Code : 81973001
Start Date : 10/8/2019
Page No : 4

	Bridge St Westbound			Buchanan St Northbound			Bridge St Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 18:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:45										
16:45	**1**	138	139	15	24	39	144	0	144	322
17:00	0	175	175	24	**48**	**72**	**164**	0	**164**	**411**
17:15	1	166	167	**26**	32	58	163	**1**	164	389
17:30	1	**177**	**178**	24	28	52	157	0	157	387
Total Volume	3	656	659	89	132	221	628	1	629	1509
% App. Total	0.5	99.5		40.3	59.7		99.8	0.2		
PHF	.750	.927	.926	.856	.688	.767	.957	.250	.959	.918
Passenger Vehicles	3	649	652	89	132	221	618	1	619	1492
% Passenger Vehicles	100	98.9	98.9	100	100	100	98.4	100	98.4	98.9
Heavy Vehicles	0	7	7	0	0	0	10	0	10	17
% Heavy Vehicles	0	1.1	1.1	0	0	0	1.6	0	1.6	1.1



McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Buchanan Street
Counter: LB

File Name : phoenixville01w
Site Code : 81973001
Start Date : 10/8/2019
Page No : 1

Groups Printed- Pedestrians

Start Time	Bridge St Southbound E/W	Bridge St Northbound E/W	Buchanan St Eastbound N/S	Int. Total
*** BREAK ***				
08:45	0	2	0	2
Total	0	2	0	2
*** BREAK ***				
15:30	2	0	0	2
*** BREAK ***				
Total	2	0	0	2
*** BREAK ***				
18:30	1	0	0	1
*** BREAK ***				
Total	1	0	0	1
Grand Total	3	2	0	5
Apprch %	100	100	0	
Total %	60	40	0	

Day Type

2: Weekend Day (Sa-Sa)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street EB Left	EB Thru	EB Right	Bridge Street WB Left	WB Thru	WB Right	Buchanan St NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	Total
00: All Day (12am-12am)	-	9,518	86	50	9,124	-	958	-	1,465	-	-	-	21,201
01: 12am (12am-1am)	-	85	-	-	131	-	-	-	7	-	-	-	223
02: 1am (1am-2am)	-	50	-	-	106	-	7	-	-	-	-	-	163
03: 2am (2am-3am)	-	18	6	-	67	-	-	-	20	-	-	-	111
04: 3am (3am-4am)	-	-	-	-	25	-	-	-	-	-	-	-	25
05: 4am (4am-5am)	-	13	-	-	12	-	7	-	-	-	-	-	32
06: 5am (5am-6am)	-	7	-	-	32	-	19	-	18	-	-	-	76
07: 6am (6am-7am)	-	68	-	7	59	-	-	-	7	-	-	-	141
08: 7am (7am-8am)	-	171	-	-	222	-	25	-	28	-	-	-	446
09: 8am (8am-9am)	-	273	6	-	380	-	7	-	39	-	-	-	705
10: 9am (9am-10am)	-	557	-	-	470	-	67	-	88	-	-	-	1,182
11: 10am (10am-11am)	-	618	9	-	465	-	91	-	96	-	-	-	1,279
12: 11am (11am-12noon)	-	572	13	7	651	-	61	-	120	-	-	-	1,424
13: 12pm (12noon-1pm)	-	769	6	-	616	-	67	-	140	-	-	-	1,598
14: 1pm (1pm-2pm)	-	801	29	17	639	-	59	-	42	-	-	-	1,587
15: 2pm (2pm-3pm)	-	720	-	-	617	-	105	-	63	-	-	-	1,505
16: 3pm (3pm-4pm)	-	716	-	-	601	-	105	-	99	-	-	-	1,521
17: 4pm (4pm-5pm)	-	783	6	-	677	-	56	-	174	-	-	-	1,696
18: 5pm (5pm-6pm)	-	728	-	-	609	-	31	-	105	-	-	-	1,473
19: 6pm (6pm-7pm)	-	783	11	6	523	-	55	-	127	-	-	-	1,505
20: 7pm (7pm-8pm)	-	627	-	-	496	-	34	-	129	-	-	-	1,286
21: 8pm (8pm-9pm)	-	347	-	10	521	-	40	-	64	-	-	-	982
22: 9pm (9pm-10pm)	-	396	-	5	516	-	33	-	67	-	-	-	1,017
23: 10pm (10pm-11pm)	-	231	-	-	373	-	43	-	31	-	-	-	678
24: 11pm (11pm-12am)	-	188	4	-	310	-	34	-	11	-	-	-	547

Bridge Street (S.R. 0113) and Walnut Street

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street			Bridge Street			E Leg Walnut			Walnut Street			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	8,483	1,292	171	8,230	-	3	-	43	-	-	-	18,222
01: 12am (12am-1am)	-	27	-	-	19	-	-	-	-	-	-	-	46
02: 1am (1am-2am)	-	10	-	-	14	-	-	-	-	-	-	-	24
03: 2am (2am-3am)	-	18	-	-	12	-	-	-	-	-	-	-	30
04: 3am (3am-4am)	-	6	-	-	9	-	-	-	-	-	-	-	15
05: 4am (4am-5am)	-	61	2	-	19	-	-	-	-	-	-	-	82
06: 5am (5am-6am)	-	61	15	4	106	-	-	-	-	-	-	-	186
07: 6am (6am-7am)	-	297	19	10	291	-	-	-	-	-	-	-	617
08: 7am (7am-8am)	-	605	79	7	932	-	-	-	1	-	-	-	1,624
09: 8am (8am-9am)	-	401	158	14	806	-	-	-	5	-	-	-	1,384
10: 9am (9am-10am)	-	430	76	21	405	-	-	-	2	-	-	-	934
11: 10am (10am-11am)	-	357	73	13	332	-	-	-	6	-	-	-	781
12: 11am (11am-12noon)	-	312	53	11	366	-	-	-	-	-	-	-	742
13: 12pm (12noon-1pm)	-	464	57	7	383	-	-	-	5	-	-	-	916
14: 1pm (1pm-2pm)	-	432	60	13	401	-	1	-	3	-	-	-	910
15: 2pm (2pm-3pm)	-	451	91	12	482	-	-	-	-	-	-	-	1,036
16: 3pm (3pm-4pm)	-	662	75	4	535	-	-	-	3	-	-	-	1,279
17: 4pm (4pm-5pm)	-	918	77	5	572	-	-	-	3	-	-	-	1,575
18: 5pm (5pm-6pm)	-	1,082	114	5	684	-	-	-	3	-	-	-	1,888
19: 6pm (6pm-7pm)	-	786	111	11	502	-	-	-	4	-	-	-	1,414
20: 7pm (7pm-8pm)	-	511	87	12	440	-	-	-	4	-	-	-	1,054
21: 8pm (8pm-9pm)	-	307	60	17	363	-	-	-	-	-	-	-	747
22: 9pm (9pm-10pm)	-	176	59	2	308	-	-	-	4	-	-	-	549
23: 10pm (10pm-11pm)	-	91	18	5	183	-	1	-	1	-	-	-	299
24: 11pm (11pm-12am)	-	43	7	1	91	-	-	-	-	-	-	-	142

Day Type

2: Weekend Day (Sa-Sa)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street			Bridge Street			E Leg Walnut			Walnut Street			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	9,617	1,552	339	9,184	-	19	-	62	-	-	-	20,773
01: 12am (12am-1am)	-	87	-	8	126	-	-	-	-	-	-	-	221
02: 1am (1am-2am)	-	60	-	-	110	-	-	-	-	-	-	-	170
03: 2am (2am-3am)	-	31	-	-	64	-	-	-	-	-	-	-	95
04: 3am (3am-4am)	-	4	-	-	25	-	-	-	-	-	-	-	29
05: 4am (4am-5am)	-	13	-	-	13	-	-	-	-	-	-	-	26
06: 5am (5am-6am)	-	20	-	-	33	-	-	-	-	-	-	-	53
07: 6am (6am-7am)	-	58	21	-	66	-	-	-	-	-	-	-	145
08: 7am (7am-8am)	-	151	49	-	239	-	-	-	4	-	-	-	443
09: 8am (8am-9am)	-	268	63	9	398	-	-	-	6	-	-	-	744
10: 9am (9am-10am)	-	557	57	10	473	-	5	-	3	-	-	-	1,105
11: 10am (10am-11am)	-	634	116	35	472	-	3	-	8	-	-	-	1,268
12: 11am (11am-12noon)	-	570	118	31	642	-	-	-	-	-	-	-	1,361
13: 12pm (12noon-1pm)	-	804	69	16	609	-	8	-	2	-	-	-	1,508
14: 1pm (1pm-2pm)	-	730	169	30	639	-	-	-	-	-	-	-	1,568
15: 2pm (2pm-3pm)	-	724	88	67	618	-	-	-	-	-	-	-	1,497
16: 3pm (3pm-4pm)	-	694	158	9	626	-	-	-	11	-	-	-	1,498
17: 4pm (4pm-5pm)	-	845	110	46	673	-	4	-	10	-	-	-	1,688
18: 5pm (5pm-6pm)	-	763	86	8	599	-	-	-	11	-	-	-	1,467
19: 6pm (6pm-7pm)	-	779	141	29	528	-	-	-	7	-	-	-	1,484
20: 7pm (7pm-8pm)	-	667	96	24	489	-	-	-	-	-	-	-	1,276
21: 8pm (8pm-9pm)	-	344	56	4	543	-	-	-	-	-	-	-	947
22: 9pm (9pm-10pm)	-	388	78	-	513	-	-	-	-	-	-	-	979
23: 10pm (10pm-11pm)	-	240	43	19	368	-	-	-	-	-	-	-	670
24: 11pm (11pm-12am)	-	182	29	-	311	-	-	-	-	-	-	-	522

Bridge Street (S.R. 0113) and Hall Street

McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Hall Street
Counter: LB

File Name : phxborough01w
Site Code : 81986601
Start Date : 1/7/2020
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Bridge St Southbound		Hall St Westbound		Bridge St Northbound		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
06:00	0	45	6	1	37	0	89
06:15	0	39	0	2	71	0	112
06:30	0	61	7	1	61	0	130
06:45	0	94	7	2	77	0	180
Total	0	239	20	6	246	0	511
07:00	0	85	7	1	79	0	172
07:15	0	102	5	1	88	1	197
07:30	1	128	6	5	99	0	239
07:45	0	140	10	2	109	0	261
Total	1	455	28	9	375	1	869
08:00	1	102	3	4	94	0	204
08:15	0	101	7	3	103	0	214
08:30	0	93	4	6	83	0	186
08:45	0	99	5	4	113	0	221
Total	1	395	19	17	393	0	825
09:00	0	77	11	3	78	0	169
09:15	0	74	6	3	69	0	152
09:30	0	71	8	2	92	0	173
09:45	0	58	7	6	74	0	145
Total	0	280	32	14	313	0	639
*** BREAK ***							
15:00	0	102	12	1	120	0	235
15:15	0	77	7	2	82	0	168
15:30	0	115	3	2	98	0	218
15:45	0	91	2	5	90	0	188
Total	0	385	24	10	390	0	809
16:00	0	103	7	3	118	0	231
16:15	0	135	13	2	121	0	271
16:30	0	125	13	5	148	0	291
16:45	0	130	5	7	139	0	281
Total	0	493	38	17	526	0	1074
17:00	0	136	2	3	159	0	300
17:15	0	131	11	0	131	0	273
17:30	0	109	8	0	127	0	244
17:45	0	116	3	4	131	0	254
Total	0	492	24	7	548	0	1071
18:00	0	96	5	3	112	0	216
18:15	0	82	1	0	75	0	158
18:30	0	70	3	1	76	0	150
18:45	0	64	2	1	73	0	140
Total	0	312	11	5	336	0	664
Grand Total	2	3051	196	85	3127	1	6462
Apprch %	0.1	99.9	69.8	30.2	100	0	
Total %	0	47.2	3	1.3	48.4	0	

McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Hall Street
Counter: LB

File Name : phxborough01w
Site Code : 81986601
Start Date : 1/7/2020

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Bridge St Southbound		Hall St Westbound		Bridge St Northbound		
	Left	Thru	Left	Right	Thru	Right	Int. Total
Passenger Vehicles	2	2983	191	85	3049	1	6311
% Passenger Vehicles	100	97.8	97.4	100	97.5	100	97.7
Heavy Vehicles	0	68	5	0	78	0	151
% Heavy Vehicles	0	2.2	2.6	0	2.5	0	2.3

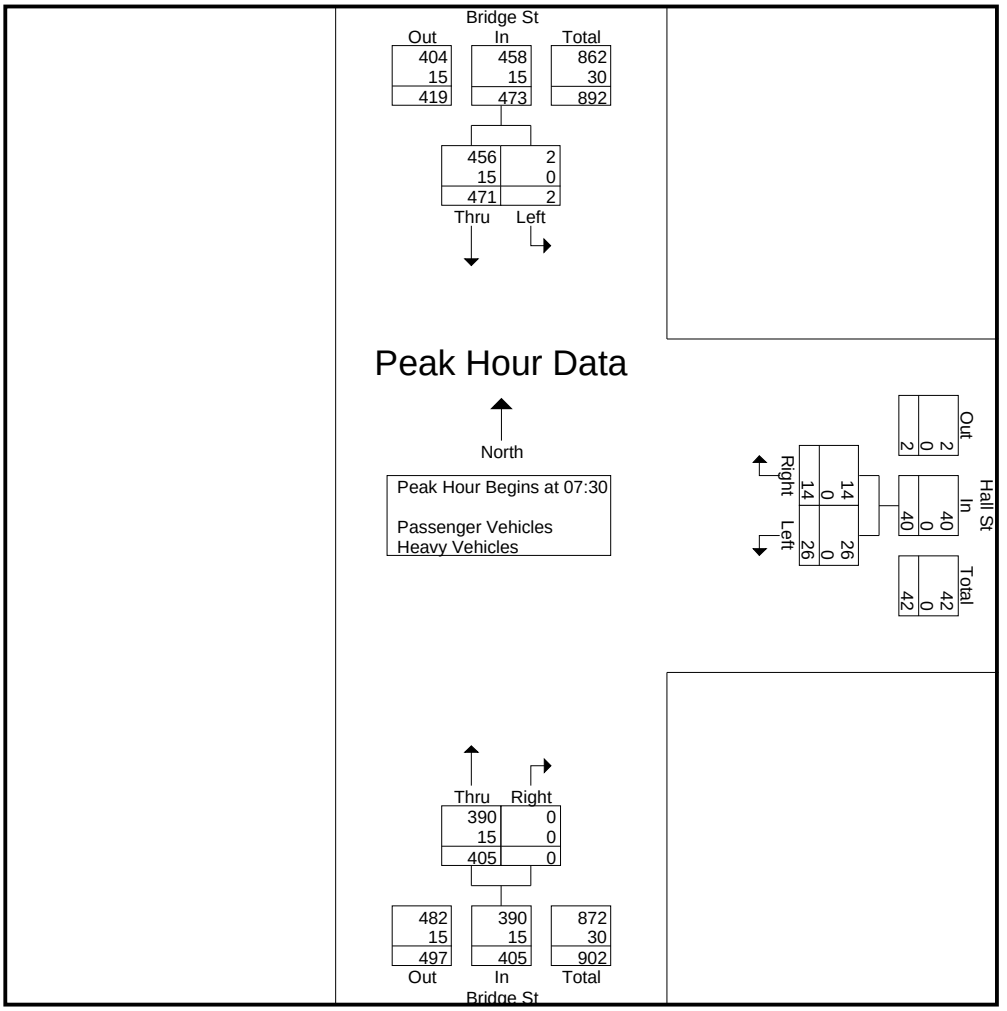
McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Hall Street
Counter: LB

File Name : phxborough01w
Site Code : 81986601
Start Date : 1/7/2020

	Bridge St Southbound			Hall St Westbound			Bridge St Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 to 11:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30										
07:30	**1**	128	129	6	**5**	11	99	0	99	239
07:45	0	**140**	**140**	**10**	2	**12**	**109**	0	**109**	**261**
08:00	1	102	103	3	4	7	94	0	94	204
08:15	0	101	101	7	3	10	103	0	103	214
Total Volume	2	471	473	26	14	40	405	0	405	918
% App. Total	0.4	99.6		65	35		100	0		
PHF	.500	.841	.845	.650	.700	.833	.929	.000	.929	.879
Passenger Vehicles	2	456	458	26	14	40	390	0	390	888
% Passenger Vehicles	100	96.8	96.8	100	100	100	96.3	0	96.3	96.7
Heavy Vehicles	0	15	15	0	0	0	15	0	15	30
% Heavy Vehicles	0	3.2	3.2	0	0	0	3.7	0	3.7	3.3



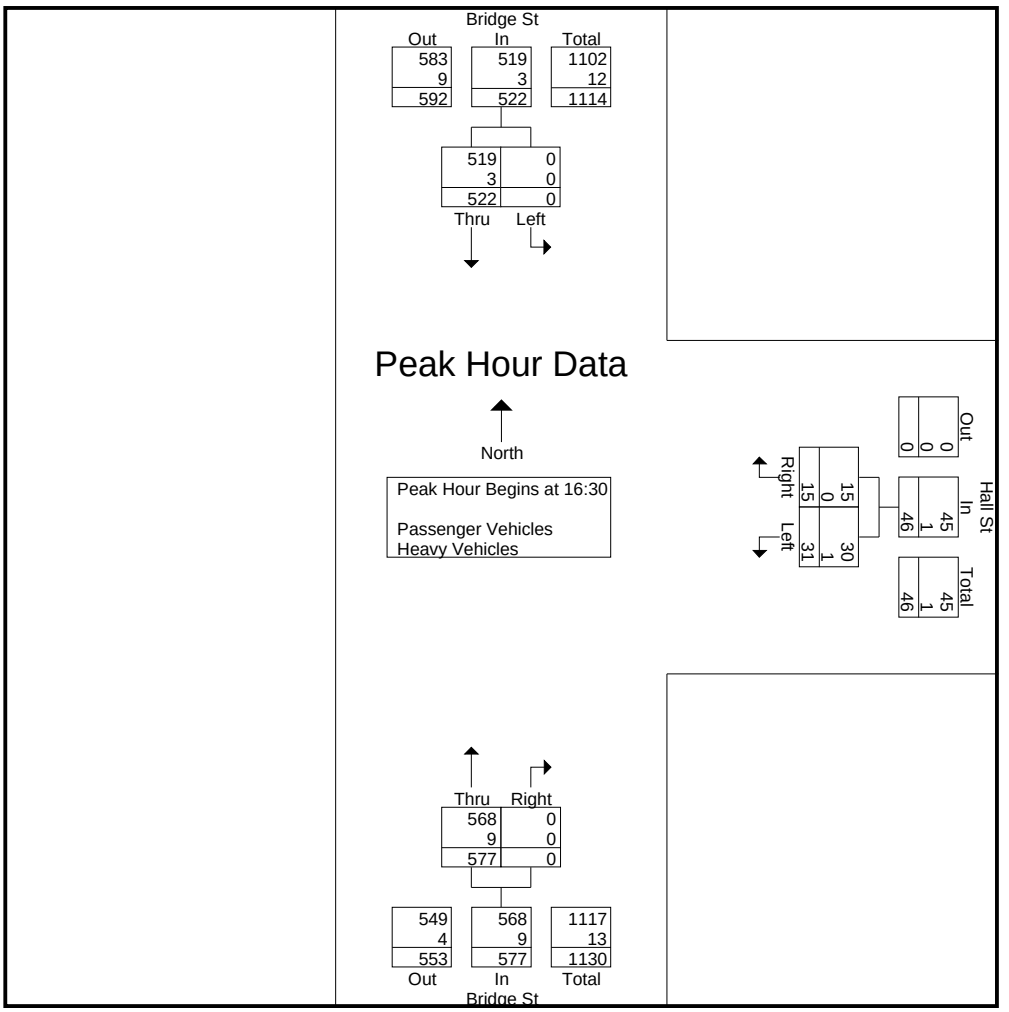
McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street & Hall Street
Counter: LB

File Name : phxborough01w
Site Code : 81986601
Start Date : 1/7/2020
Page No : 4

	Bridge St Southbound			Hall St Westbound			Bridge St Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 18:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:30										
16:30	0	125	125	**13**	5	**18**	148	0	148	291
16:45	0	130	130	5	**7**	12	139	0	139	281
17:00	0	**136**	**136**	2	3	5	**159**	0	**159**	**300**
17:15	0	131	131	11	0	11	131	0	131	273
Total Volume	0	522	522	31	15	46	577	0	577	1145
% App. Total	0	100		67.4	32.6		100	0		
PHF	.000	.960	.960	.596	.536	.639	.907	.000	.907	.954
Passenger Vehicles	0	519	519	30	15	45	568	0	568	1132
% Passenger Vehicles	0	99.4	99.4	96.8	100	97.8	98.4	0	98.4	98.9
Heavy Vehicles	0	3	3	1	0	1	9	0	9	13
% Heavy Vehicles	0	0.6	0.6	3.2	0	2.2	1.6	0	1.6	1.1



McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville Borough
Location: Bridge Street &
Hall Street
Counter: LB

File Name : phxborough01w
Site Code : 81986601
Start Date : 1/7/2020
Page No : 1

Groups Printed- Pedestrians

	Bridge St Southbound	Hall St Westbound	Bridge St Northbound	
Start Time	E/W	N/S	E/W	Int. Total
06:00	0	1	0	1
06:15	0	1	0	1
06:30	0	2	0	2
06:45	0	1	0	1
Total	0	5	0	5
07:00	0	2	0	2
07:15	0	1	0	1
*** BREAK ***				
Total	0	3	0	3
*** BREAK ***				
08:15	0	1	0	1
*** BREAK ***				
08:45	0	1	0	1
Total	0	2	0	2
*** BREAK ***				
09:15	0	1	0	1
*** BREAK ***				
09:45	0	2	0	2
Total	0	3	0	3
*** BREAK ***				
15:00	0	2	0	2
15:15	0	2	0	2
15:30	0	5	0	5
15:45	0	1	0	1
Total	0	10	0	10
16:00	0	2	0	2
*** BREAK ***				
16:45	0	1	0	1
Total	0	3	0	3
17:00	0	1	0	1
17:15	0	2	0	2
17:30	0	1	0	1
17:45	0	5	0	5
Total	0	9	0	9
18:00	0	6	0	6
18:15	0	3	0	3
18:30	0	1	0	1
*** BREAK ***				
Total	0	10	0	10
Grand Total	0	45	0	45
Apprch %	0	100	0	
Total %	0	100	0	

Day Type

2: Weekend Day (Sa-Sa)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street			Bridge Street			Hall Street			0			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	9,796	52	45	9,162	-	747	-	191	-	-	-	19,993
01: 12am (12am-1am)	-	90	-	-	125	-	-	-	-	-	-	-	215
02: 1am (1am-2am)	-	62	-	-	99	-	41	-	9	-	-	-	211
03: 2am (2am-3am)	-	33	-	-	63	-	-	-	-	-	-	-	96
04: 3am (3am-4am)	-	4	-	-	29	-	-	-	-	-	-	-	33
05: 4am (4am-5am)	-	13	-	-	13	-	-	-	-	-	-	-	26
06: 5am (5am-6am)	-	22	-	-	21	-	21	-	-	-	-	-	64
07: 6am (6am-7am)	-	62	-	-	61	-	9	-	-	-	-	-	132
08: 7am (7am-8am)	-	160	-	-	220	-	39	-	-	-	-	-	419
09: 8am (8am-9am)	-	269	-	-	392	-	20	-	10	-	-	-	691
10: 9am (9am-10am)	-	572	-	12	505	-	23	-	10	-	-	-	1,122
11: 10am (10am-11am)	-	650	12	19	491	-	38	-	5	-	-	-	1,215
12: 11am (11am-12noon)	-	551	-	-	630	-	74	-	53	-	-	-	1,308
13: 12pm (12noon-1pm)	-	845	6	6	599	-	22	-	-	-	-	-	1,478
14: 1pm (1pm-2pm)	-	752	-	-	637	-	73	-	-	-	-	-	1,462
15: 2pm (2pm-3pm)	-	736	5	-	631	-	45	-	8	-	-	-	1,425
16: 3pm (3pm-4pm)	-	720	-	-	601	-	75	-	17	-	-	-	1,413
17: 4pm (4pm-5pm)	-	862	4	-	699	-	28	-	21	-	-	-	1,614
18: 5pm (5pm-6pm)	-	765	-	-	610	-	26	-	11	-	-	-	1,412
19: 6pm (6pm-7pm)	-	759	5	-	534	-	23	-	13	-	-	-	1,334
20: 7pm (7pm-8pm)	-	693	-	4	500	-	13	-	-	-	-	-	1,210
21: 8pm (8pm-9pm)	-	345	-	-	510	-	60	-	10	-	-	-	925
22: 9pm (9pm-10pm)	-	398	12	-	501	-	34	-	8	-	-	-	953
23: 10pm (10pm-11pm)	-	226	7	13	365	-	59	-	15	-	-	-	685
24: 11pm (11pm-12am)	-	179	8	-	332	-	19	-	9	-	-	-	547

Bridge Street (S.R. 0113) and Church Street

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street			Bridge Street			Churh Street						Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	7,482	1,410	157	7,733	-	585	-	81	-	-	-	17,448
01: 12am (12am-1am)	-	26	2	-	19	-	2	-	-	-	-	-	49
02: 1am (1am-2am)	-	10	-	-	4	-	14	-	-	-	-	-	28
03: 2am (2am-3am)	-	17	-	-	6	-	4	-	-	-	-	-	27
04: 3am (3am-4am)	-	6	-	-	9	-	-	-	-	-	-	-	15
05: 4am (4am-5am)	-	55	1	-	17	-	3	-	-	-	-	-	76
06: 5am (5am-6am)	-	45	1	-	101	-	8	-	-	-	-	-	155
07: 6am (6am-7am)	-	269	13	3	287	-	26	-	1	-	-	-	599
08: 7am (7am-8am)	-	534	111	3	938	-	12	-	3	-	-	-	1,601
09: 8am (8am-9am)	-	335	105	21	789	-	32	-	-	-	-	-	1,282
10: 9am (9am-10am)	-	382	79	11	398	-	24	-	4	-	-	-	898
11: 10am (10am-11am)	-	295	66	7	321	-	23	-	3	-	-	-	715
12: 11am (11am-12noon)	-	253	75	11	349	-	26	-	3	-	-	-	717
13: 12pm (12noon-1pm)	-	369	95	5	346	-	22	-	3	-	-	-	840
14: 1pm (1pm-2pm)	-	387	73	20	349	-	51	-	3	-	-	-	883
15: 2pm (2pm-3pm)	-	415	53	-	434	-	46	-	3	-	-	-	951
16: 3pm (3pm-4pm)	-	598	108	9	483	-	30	-	3	-	-	-	1,231
17: 4pm (4pm-5pm)	-	807	156	3	537	-	57	-	24	-	-	-	1,584
18: 5pm (5pm-6pm)	-	976	171	20	632	-	54	-	15	-	-	-	1,868
19: 6pm (6pm-7pm)	-	708	126	19	469	-	45	-	10	-	-	-	1,377
20: 7pm (7pm-8pm)	-	438	99	18	395	-	39	-	3	-	-	-	992
21: 8pm (8pm-9pm)	-	289	37	4	343	-	23	-	2	-	-	-	698
22: 9pm (9pm-10pm)	-	172	20	5	283	-	23	-	-	-	-	-	503
23: 10pm (10pm-11pm)	-	82	10	1	163	-	17	-	2	-	-	-	275
24: 11pm (11pm-12am)	-	39	7	1	79	-	11	-	-	-	-	-	137

Day Type

2: Weekend Day (Sa-Sa)

TURNING MOVEMENT COUNTS

Day Part	Bridge Street			Bridge Street			Churh Street						Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	8,543	1,736	361	8,667	-	728	-	65	-	-	-	20,100
01: 12am (12am-1am)	-	79	5	-	109	-	20	-	-	-	-	-	213
02: 1am (1am-2am)	-	66	-	7	94	-	-	-	-	-	-	-	167
03: 2am (2am-3am)	-	24	7	14	64	-	-	-	-	-	-	-	109
04: 3am (3am-4am)	-	4	-	-	25	-	-	-	-	-	-	-	29
05: 4am (4am-5am)	-	8	5	-	4	-	11	-	-	-	-	-	28
06: 5am (5am-6am)	-	16	6	-	21	-	6	-	-	-	-	-	49
07: 6am (6am-7am)	-	62	-	-	62	-	-	-	-	-	-	-	124
08: 7am (7am-8am)	-	141	18	-	218	-	18	-	-	-	-	-	395
09: 8am (8am-9am)	-	242	42	6	390	-	18	-	4	-	-	-	702
10: 9am (9am-10am)	-	508	108	4	453	-	60	-	-	-	-	-	1,133
11: 10am (10am-11am)	-	557	101	24	485	-	23	-	15	-	-	-	1,205
12: 11am (11am-12noon)	-	494	84	29	580	-	68	-	-	-	-	-	1,255
13: 12pm (12noon-1pm)	-	685	205	16	583	-	43	-	-	-	-	-	1,532
14: 1pm (1pm-2pm)	-	628	223	33	612	-	43	-	7	-	-	-	1,546
15: 2pm (2pm-3pm)	-	655	122	30	604	-	24	-	-	-	-	-	1,435
16: 3pm (3pm-4pm)	-	566	237	21	579	-	39	-	7	-	-	-	1,449
17: 4pm (4pm-5pm)	-	739	152	18	656	-	59	-	-	-	-	-	1,624
18: 5pm (5pm-6pm)	-	668	112	16	589	-	72	-	17	-	-	-	1,474
19: 6pm (6pm-7pm)	-	686	130	65	493	-	55	-	5	-	-	-	1,434
20: 7pm (7pm-8pm)	-	629	76	10	437	-	75	-	-	-	-	-	1,227
21: 8pm (8pm-9pm)	-	309	42	16	492	-	26	-	13	-	-	-	898
22: 9pm (9pm-10pm)	-	386	23	26	462	-	35	-	-	-	-	-	932
23: 10pm (10pm-11pm)	-	214	13	22	341	-	14	-	-	-	-	-	604
24: 11pm (11pm-12am)	-	174	19	10	311	-	21	-	-	-	-	-	535

Appendix E

Site Trip Generation

PROJECT INFORMATION	
PROJECT NAME	Steelworks
MCMAHON PROJECT NUMBER	816819
DATE	11/3/2021
CITY/MUNICIPALITY	Phoenixville
STATE	PA
CLIENT	Phoenixville
ANALYST	BGG
ITE EDITION	ITE - TGM 11th Edition

TRIP GENERATION FOR THE STEELWORKS MIXED-USE DEVELOPMENT

Land Use	Size		Daily			Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Saturday Midday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Multifamily Housing (Mid-Rise)			871	871	1,742	35	118	153	89	58	147	77	74	151
Vehicle Occupancy	375 units		1.00	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-
Person Trips			871	871	1,742	35	118	153	89	58	147	77	74	151
Internal Person Trips [2]	Land Use Code:	221	165	76	241	2	11	13	29	16	45	20	9	29
External Person Trips	PASS-BY		706	795	1,501	33	107	140	60	42	102	57	65	122
Vehicle Occupancy	Weekday:	0%	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-
External Vehicle Trips	AM:	0%	706	795	1501	33	107	140	60	42	102	57	65	122
External Pass-By Trips [3]	PM:	0%	0	0	0	0	0	0	0	0	0	0	0	0
"New" External Trips	SAT:	0%	706	795	1501	33	107	140	60	42	102	57	65	122
Strip Retail Plaza (<40k)			757	758	1,515	36	24	60	86	86	172	102	98	200
Vehicle Occupancy	30,450 square feet		1.00	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-
Person Trips			757	758	1,515	36	24	60	86	86	172	102	98	200
Internal Person Trips [2]	Land Use Code:	820	206	225	431	4	4	8	23	39	62	23	27	50
External Person Trips	PASS-BY[4]		551	533	1,084	32	20	52	63	47	110	79	71	150
Vehicle Occupancy	Weekday:	19%	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-
External Vehicle Trips	AM:	19%	551	533	1084	32	20	52	63	47	110	79	71	150
External Pass-By Trips [3]	PM:	29%	105	101	206	6	4	10	18	14	32	15	13	28
"New" External Trips	SAT:	19%	446	432	878	26	16	42	45	33	78	64	58	122
High-Turnover (Sit-Down) Restaurant			544	544	1,088	53	44	97	56	36	92	58	56	114
Vehicle Occupancy	10,150 square feet		1.00	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-
Person Trips			544	544	1,088	53	44	97	56	36	92	58	56	114
Internal Person Trips [2]	Land Use Code:	932	141	213	354	14	5	19	24	21	45	15	22	37
External Person Trips	PASS-BY		403	331	734	39	39	78	32	15	47	43	34	77
Vehicle Occupancy	Weekday:	33%	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00	1.00	-
External Vehicle Trips	AM:	33%	403	331	734	39	39	78	32	15	47	43	34	77
External Pass-By Trips [3]	PM:	43%	133	109	242	13	13	26	14	6	20	14	11	25
"New" External Trips	SAT:	33%	270	222	492	26	26	52	18	9	27	29	23	52
Total Trips			***2,172***	***2,173***	***4,345***	***124***	***186***	***310***	***231***	***180***	***411***	***237***	***228***	***465***
Total Person Trips			***2,172***	***2,173***	***4,345***	***124***	***186***	***310***	***231***	***180***	***411***	***237***	***228***	***465***
Total Internal Person Trips			***512***	***514***	***1,026***	***20***	***20***	***40***	***76***	***76***	***152***	***58***	***58***	***116***
Total External Person Trips			***1,660***	***1,659***	***3,319***	***104***	***166***	***270***	***155***	***104***	***259***	***179***	***170***	***349***
Total External Vehicle Trips			***1,660***	***1,659***	***3,319***	***104***	***166***	***270***	***155***	***104***	***259***	***179***	***170***	***349***
Total External Pass-by Trips			***238***	***210***	***448***	***19***	***17***	***36***	***32***	***20***	***52***	***29***	***24***	***53***
Total "New" External Trips			***1,422***	***1,449***	***2,871***	***85***	***149***	***234***	***123***	***84***	***207***	***150***	***146***	***296***

(1) Based on the ITE publication *Trip Generation, Eleventh Edition* .

(2) Internal trips estimated based on the methodology contained in the ITE publication, *ITE Trip Generation Handbook, Third Edition.* The overall internal capture rate was capped at 25 percent.

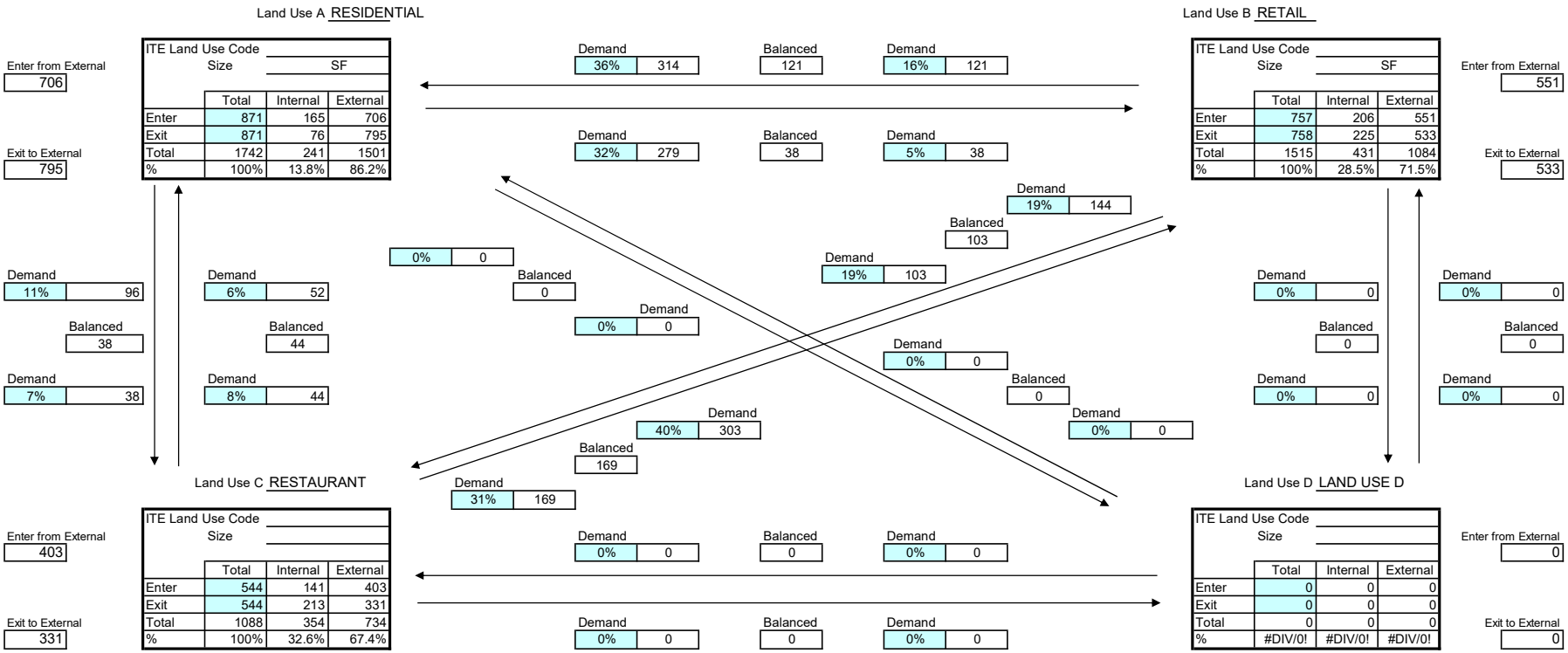
(3) Estimated based on information provided within the ITE publication, *Trip Generation Manual, Eleventh Edition* . For analysis periods without data, the pass-by rate was assumed to be ten percent less than the weekday afternoon peak hour.

(4) Pass-by data is not provided for this land use, however, it is expected that pass-by would occur. In order to estimtae the pass-by for the retail use, Land Use Code 820, which has the lowest pass-by estimates of all similar retail uses, was utilized.

Analyst BGG
Date 11/3/2021

Mixed-Use Development
Trip Generation
and Internal Capture Summary

Name of Devlpt Steelworks
Time Period Weekday



Net External Trips for Mixed-Use Development

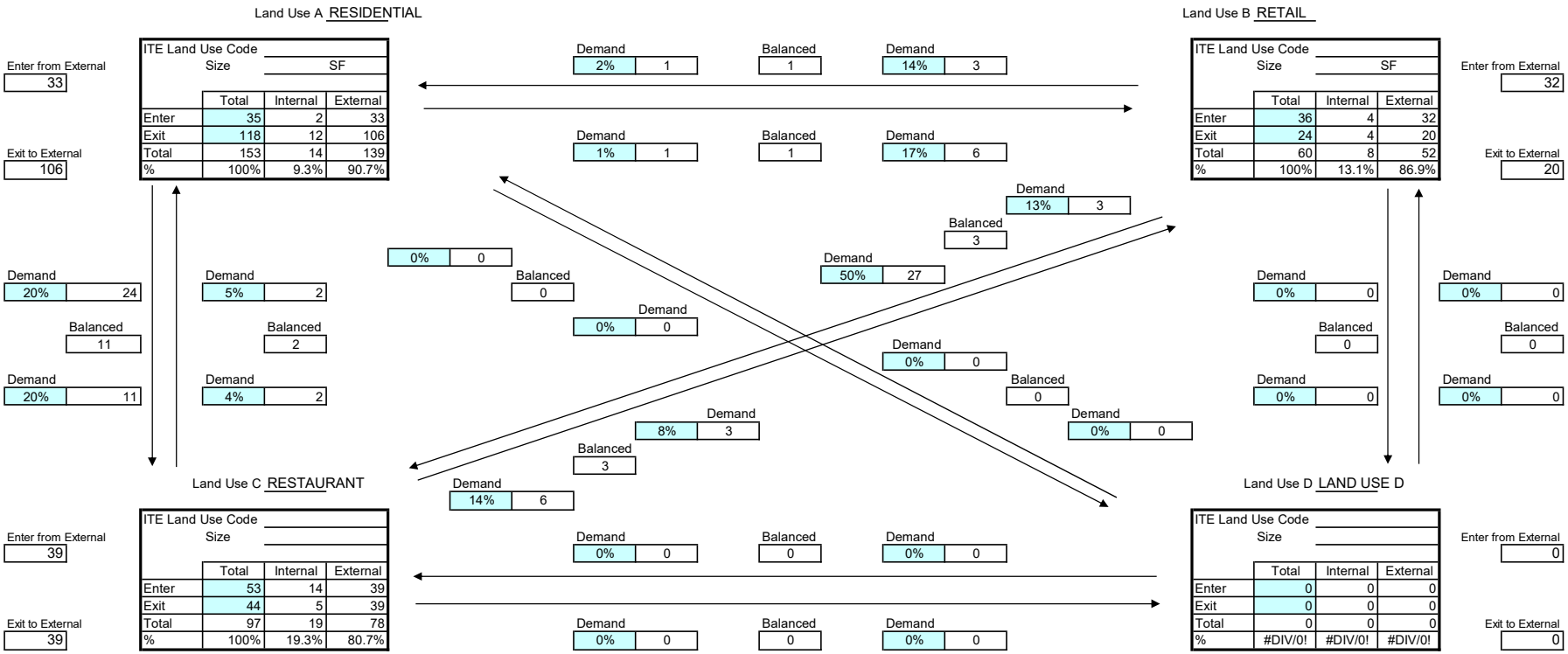
	RESIDENTIAL		RETAIL		RESTAURANT		LAND USE D		Total	
Enter	706		551		403		0		1659	
Exit	795		533		331		0		1659	Internal
Total	1501		1084		734		0		3319	Capture
Single-Use Trip Gen Estimate	1742		1515		1088		0		4345	23.6%

Source: Based on Templates from the ITE Trip Generation Handbook, Third Edition

Analyst BGG
Date 11/3/2021

Mixed-Use Development
Trip Generation
and Internal Capture Summary

Name of Devlpt Steelworks
Time Period Weekday AM



Net External Trips for Multi-Use Development

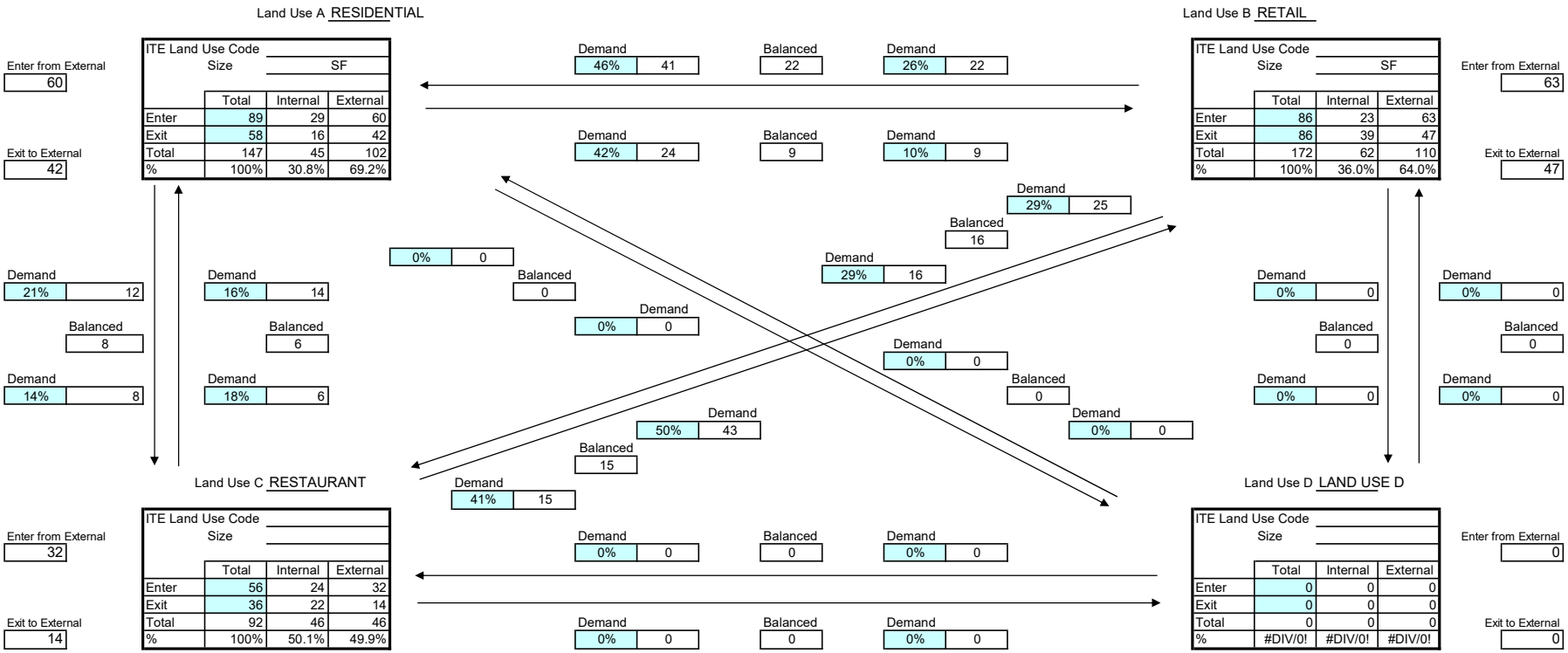
	RESIDENTIAL		RETAIL		RESTAURANT		LAND USE D		Total	
Enter	33		32		39		0		104	
Exit	106		20		39		0		165	Internal
Total	139		52		78		0		269	Capture
Single-Use Trip Gen Estimate	153		60		97		0		310	13.2%

Source: McMahon Associates, Inc. based on Templates from the ITE Trip Generation Handbook, Chapter 7, March 2001

Analyst BGG
Date 11/3/2021

Mixed-Use Development
Trip Generation
and Internal Capture Summary

Name of Devlpt Steelworks
Time Period Weekday PM



Net External Trips for Multi-Use Development

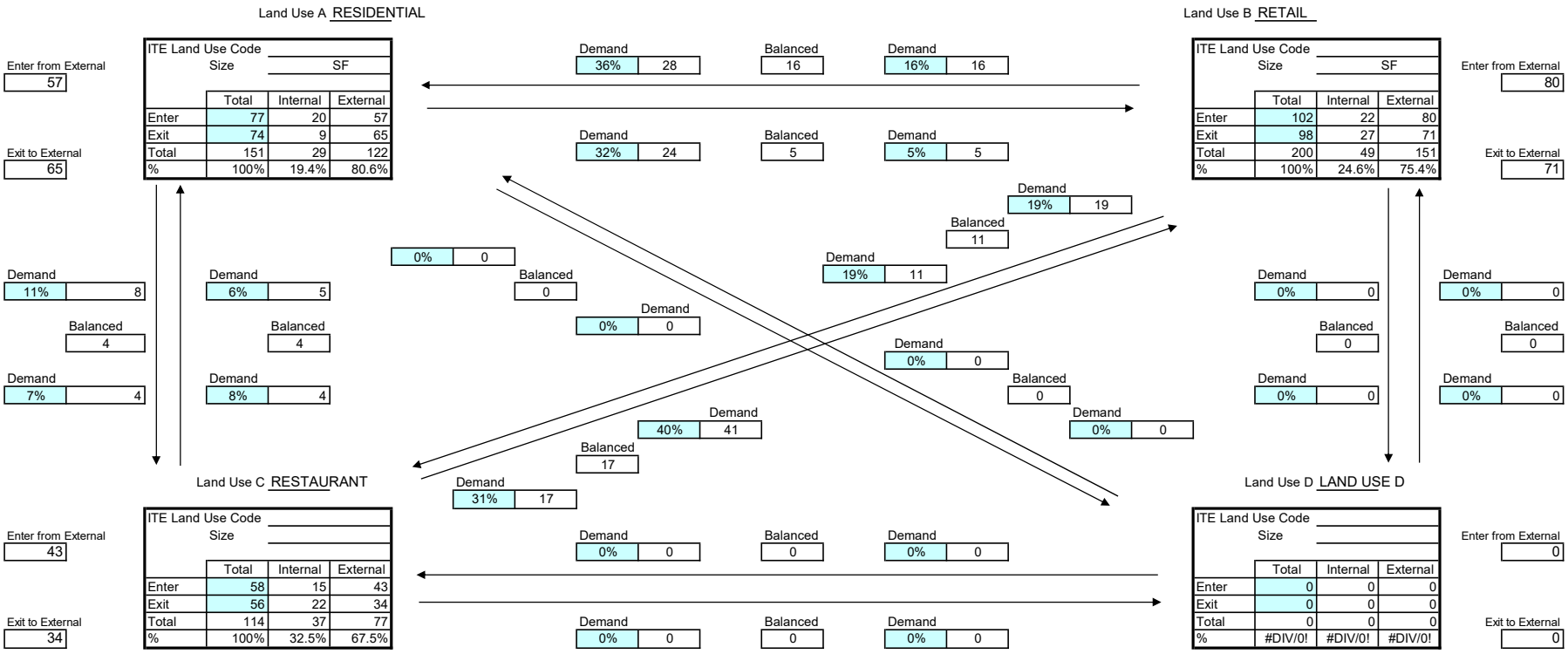
	RESIDENTIAL		RETAIL		RESTAURANT		LAND USE D		Total	
Enter	60		63		32		0		155	
Exit	42		47		14		0		103	Internal
Total	102		110		46		0		258	Capture
Single-Use Trip Gen Estimate	147		172		92		0		411	37.3%

Source: McMahon Associates, Inc. based on Templates from the ITE Trip Generation Handbook, Chapter 7, March 2001

Analyst BGG
Date 11/3/2021

Mixed-Use Development
Trip Generation
and Internal Capture Summary

Name of Devlpt Steelworks
Time Period Saturday Midday



Net External Trips for Multi-Use Development

	RESIDENTIAL		RETAIL		RESTAURANT		LAND USE D		Total	
Enter	57		80		43		0		179	
Exit	65		71		34		0		170	Internal
Total	122		151		77		0		349	Capture
Single-Use Trip Gen Estimate	151		200		114		0		465	24.9%

Source: McMahon Associates, Inc. based on Templates from the ITE Trip Generation Handbook, Chapter 7, March 2001

Appendix F

Warrant Analysis Worksheets

Bridge Street (S.R. 0113) and Site Access

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Site Access
Eastbound Bridge Street (S.R. 0113) Left-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	34	2.0%	35
	Through	-	533	6.0%	549
	Right				0
Opposing	Left				0
	Through	-	708	3.0%	719
	Right	Yes	37	2.0%	38

Advancing Volume:	584
Opposing Volume:	757
Left Turn Volume:	35
% Left Turns in Advancing Volume:	5.99%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	35
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

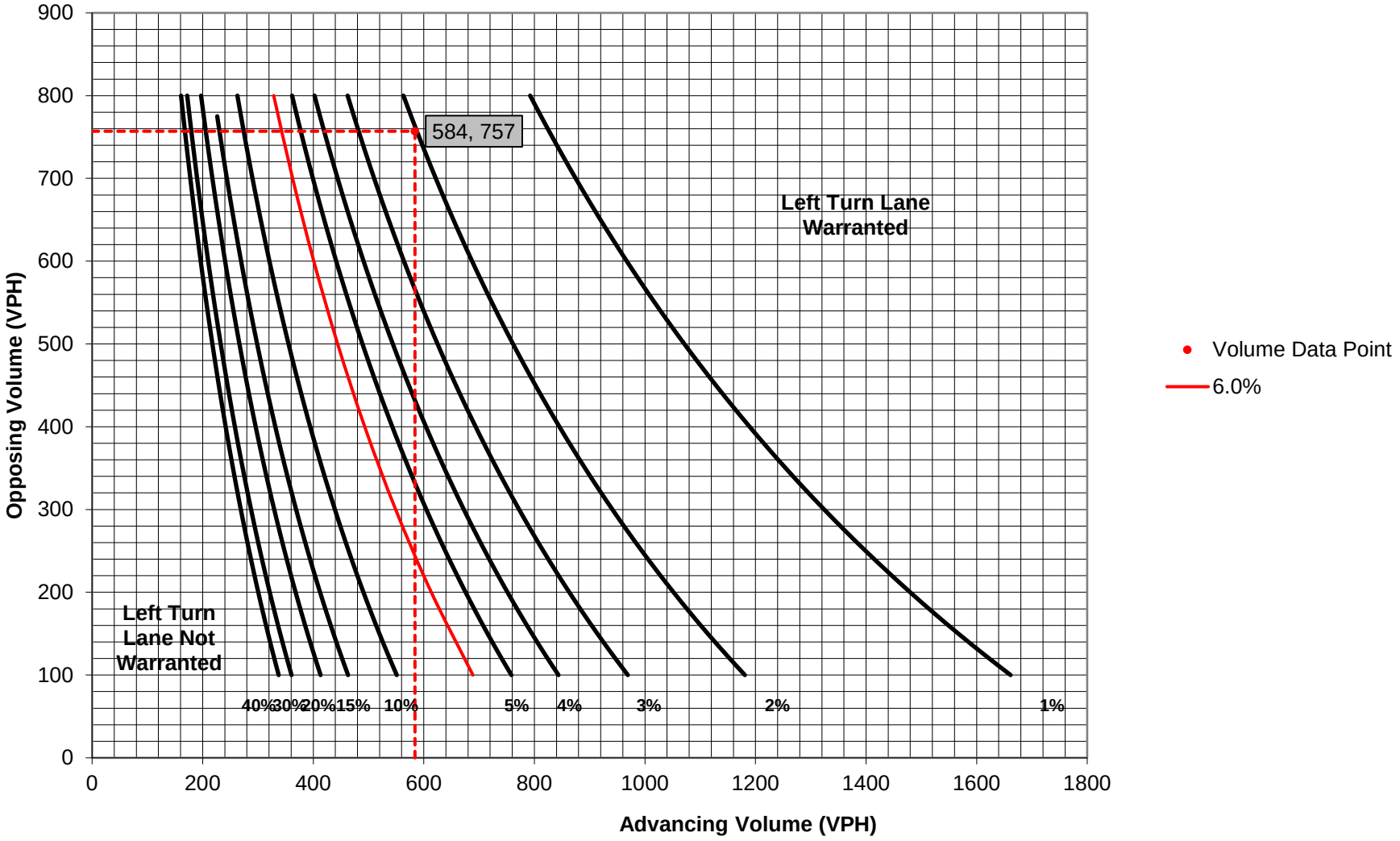
Left Turn Lane Storage Length, Condition A:	**75**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**75**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Site Access
Eastbound Bridge Street (S.R. 0113) Left-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	48	2.0%	49
	Through	-	677	1.0%	681
	Right				0
Opposing	Left				0
	Through	-	689	1.0%	693
	Right	Yes	47	2.0%	48

Advancing Volume:	730
Opposing Volume:	741
Left Turn Volume:	49
% Left Turns in Advancing Volume:	6.71%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: Yes

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	49
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

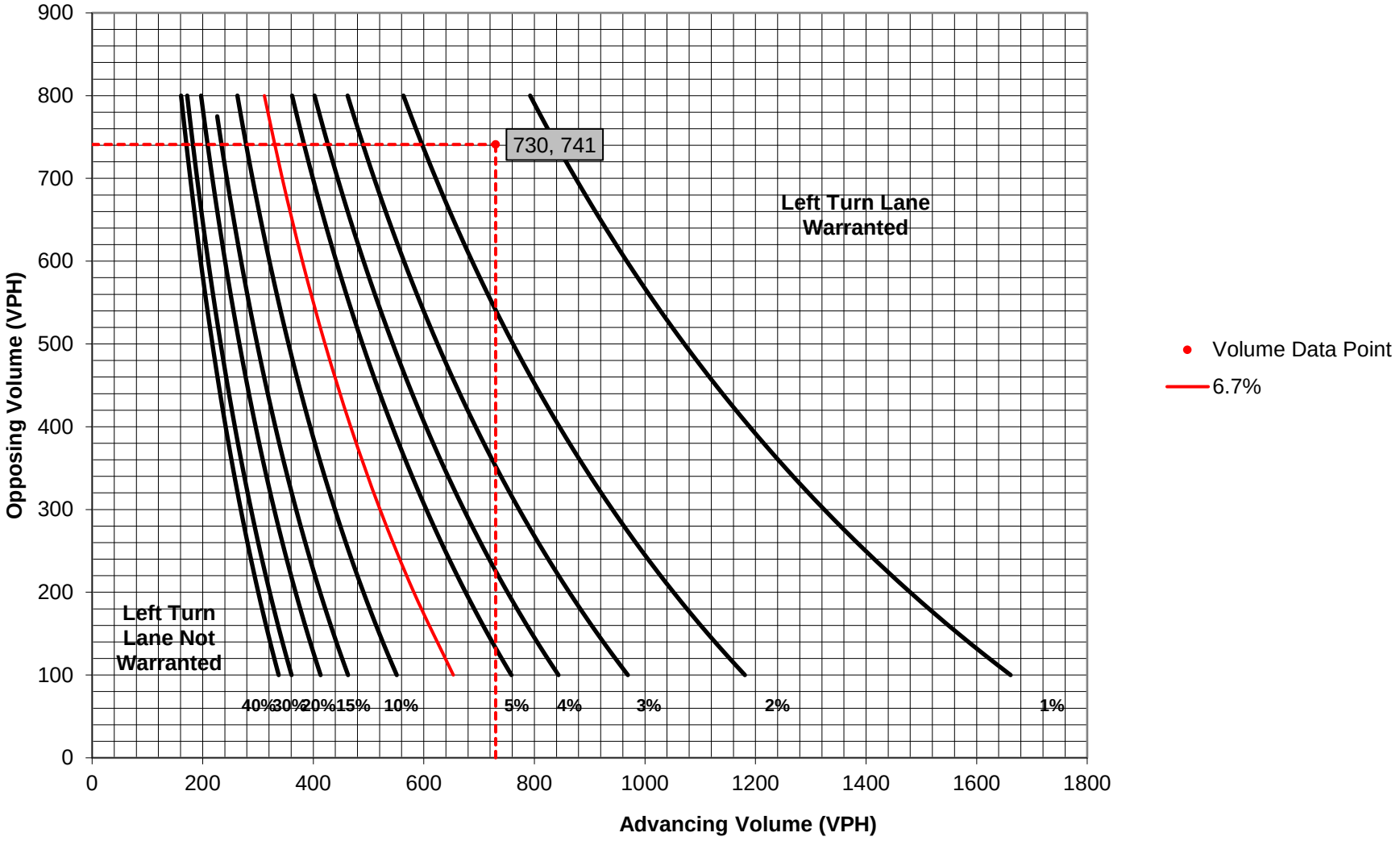
Left Turn Lane Storage Length, Condition A:	75	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	75	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Site Access
Eastbound Bridge Street (S.R. 0113) Left-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	SAT Midday Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	63	2.0%	64
	Through	-	871	1.0%	876
	Right				0
Opposing	Left				0
	Through	-	739	2.0%	747
	Right	Yes	59	2.0%	60

Advancing Volume: 940
Opposing Volume: 807
Left Turn Volume: 64
% Left Turns in Advancing Volume: 6.81%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume: N/A
Right Turn Volume: N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1
Warrant Met?: Yes

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A
Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	64
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

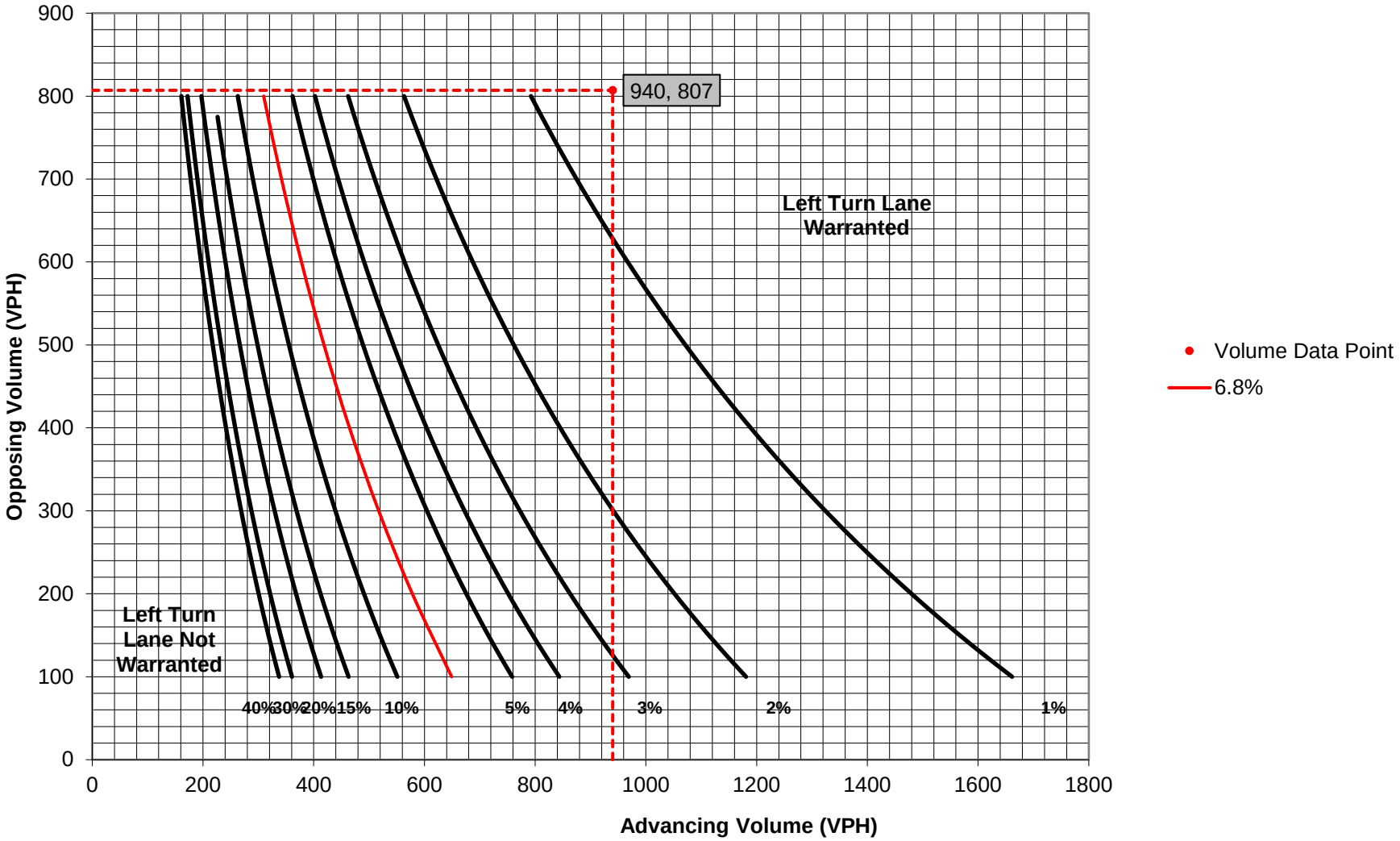
Left Turn Lane Storage Length, Condition A:	75	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	75	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Site Access
Westbound Bridge Street (S.R. 0113) Right-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right				N/A
Opposing	Left				N/A
	Through	-			N/A
	Right	Yes			N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				0
	Through	-	708	3.0%	719
	Right	-	37	2.0%	38

Advancing Volume:	757
Right Turn Volume:	38

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	38
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

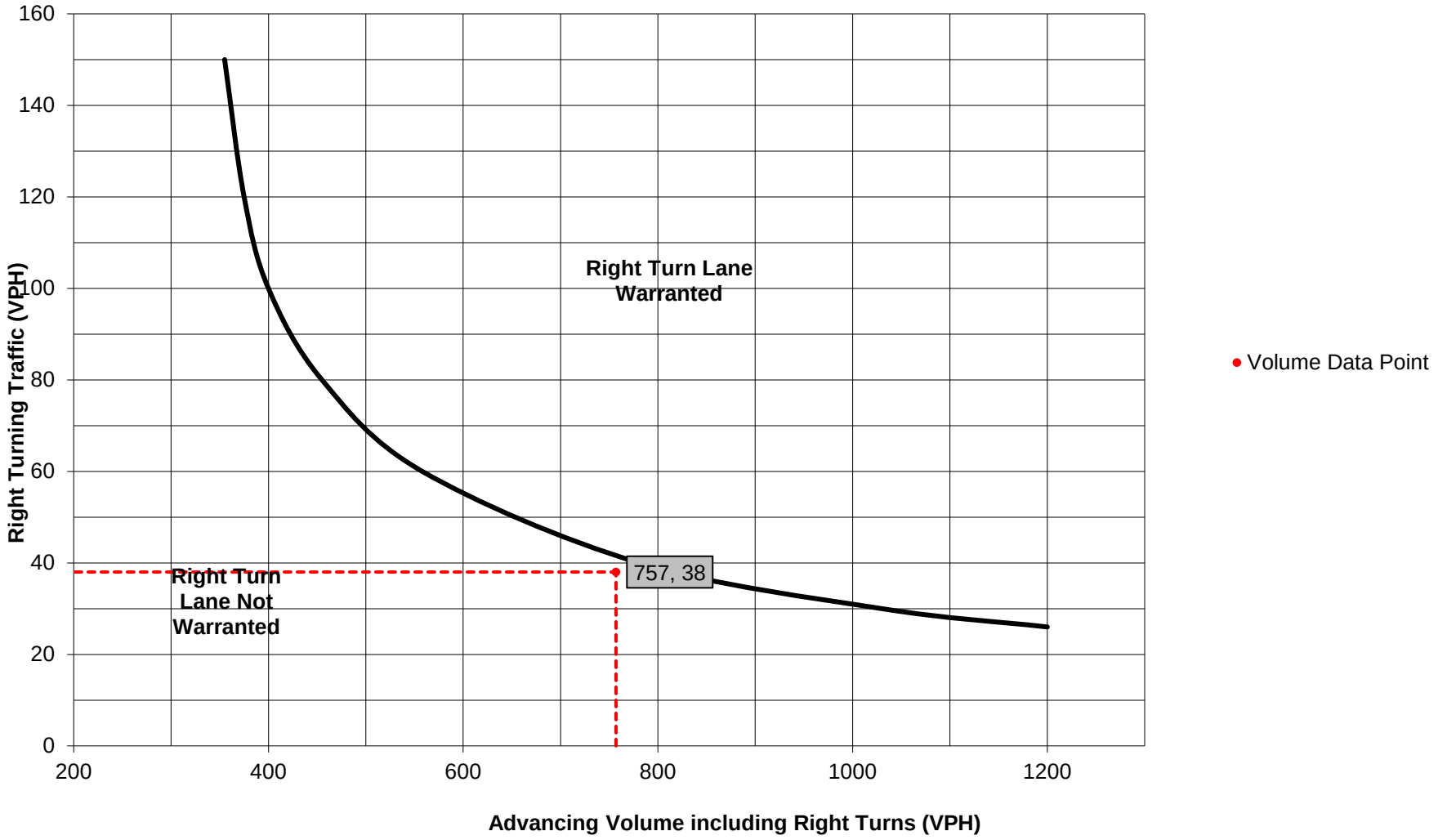
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Site Access
Westbound Bridge Street (S.R. 0113) Right-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right				N/A
Opposing	Left				N/A
	Through	-			N/A
	Right	Yes			N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				0
	Through	-	689	1.0%	693
	Right	-	47	2.0%	48

Advancing Volume:	741
Right Turn Volume:	48

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: Yes

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	48
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

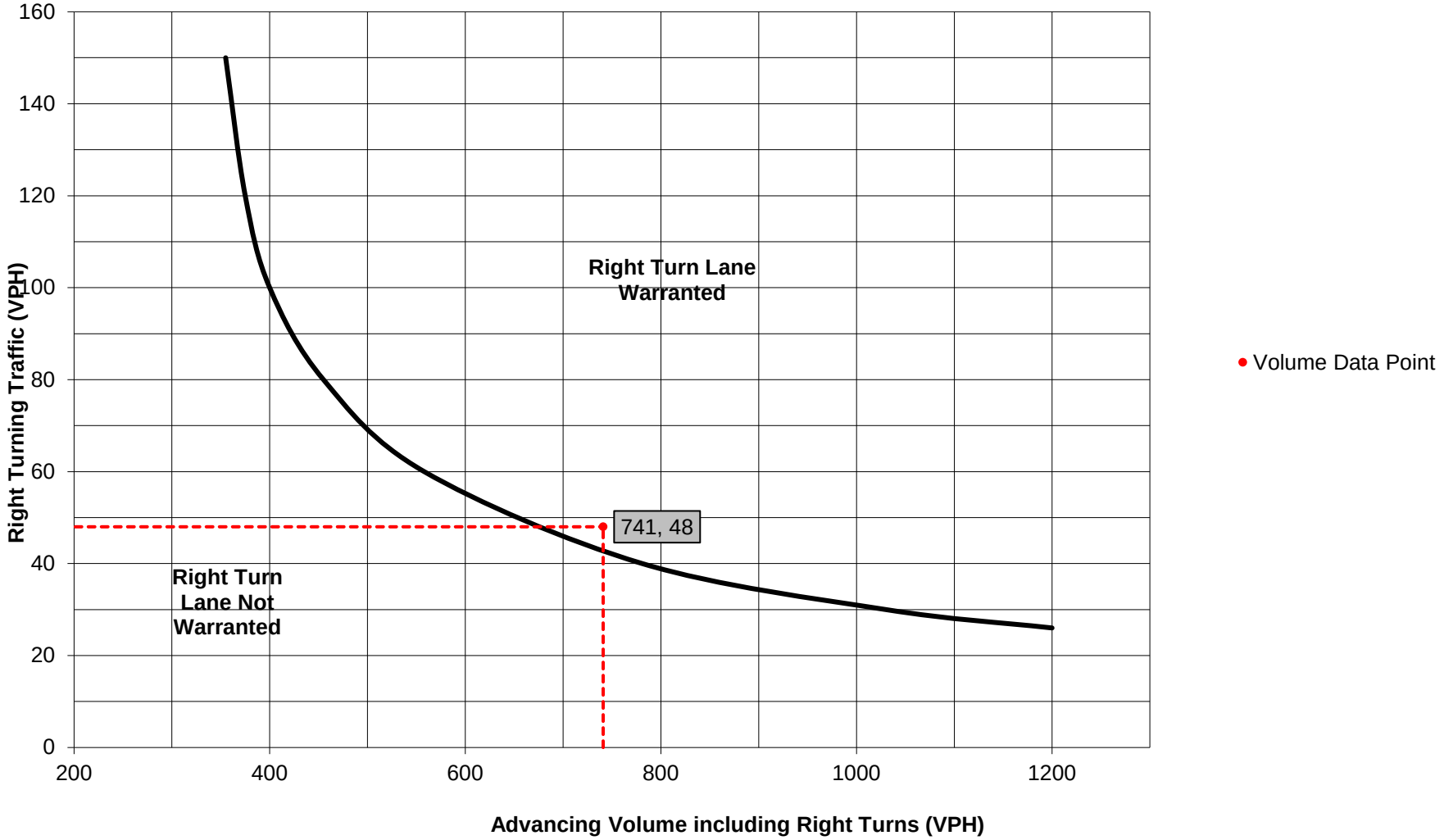
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	75	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	75	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Site Access
Westbound Bridge Street (S.R. 0113) Right-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	SAT Midday Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right				N/A
Opposing	Left				N/A
	Through	-			N/A
	Right	Yes			N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				0
	Through	-	739	2.0%	747
	Right	-	59	2.0%	60

Advancing Volume:	807
Right Turn Volume:	60

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: Yes

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	60
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

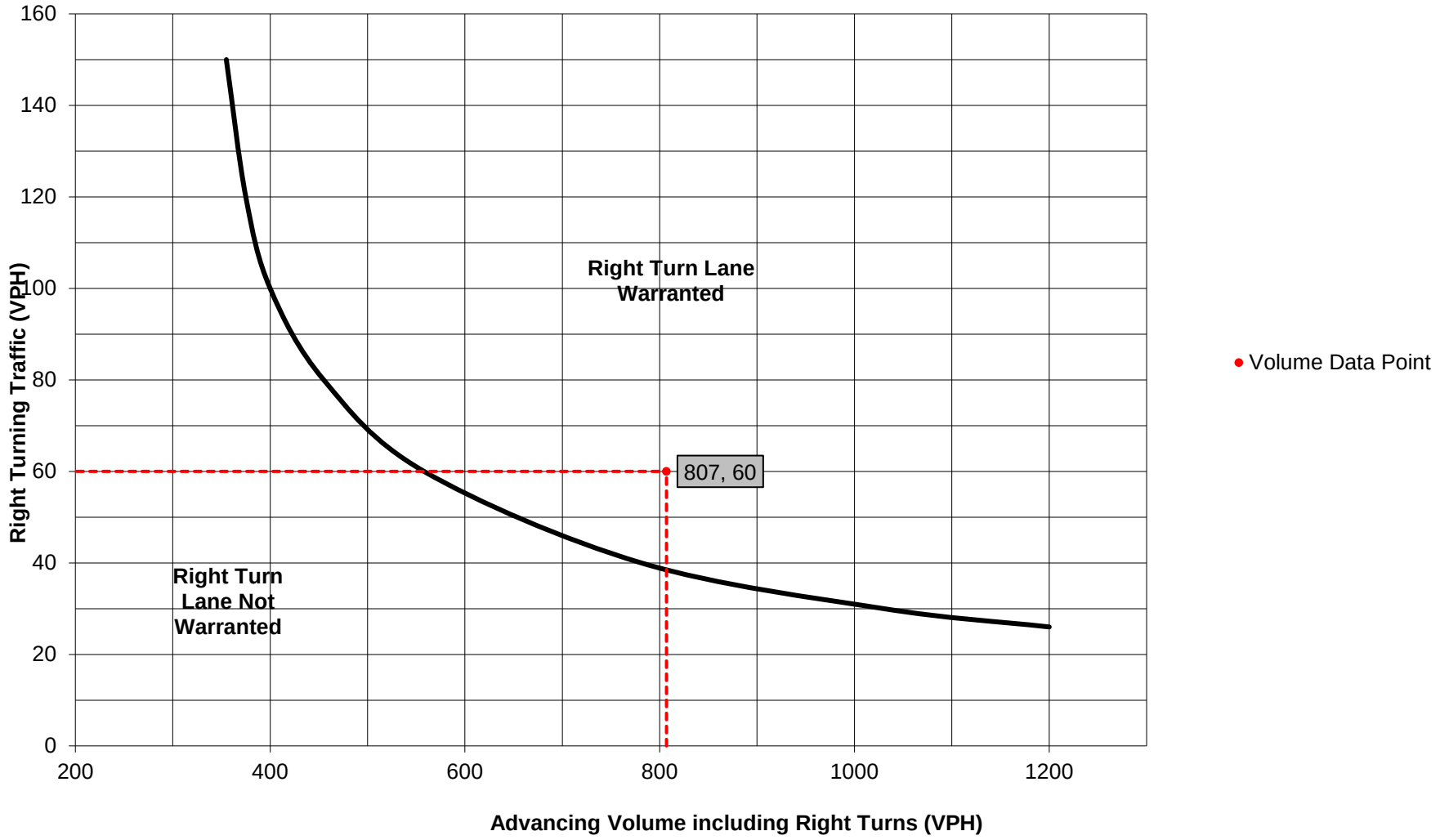
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	75	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	75	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Bridge Street (S.R. 0113) and Hall Street

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Hall Street
Eastbound Bridge Street (S.R. 0113) Left-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	14	2.0%	15
	Through	-	437	4.0%	446
	Right				0
Opposing	Left				0
	Through	-	632	3.0%	642
	Right	Yes	16	2.0%	17

Advancing Volume:	461
Opposing Volume:	659
Left Turn Volume:	15
% Left Turns in Advancing Volume:	3.25%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	15
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

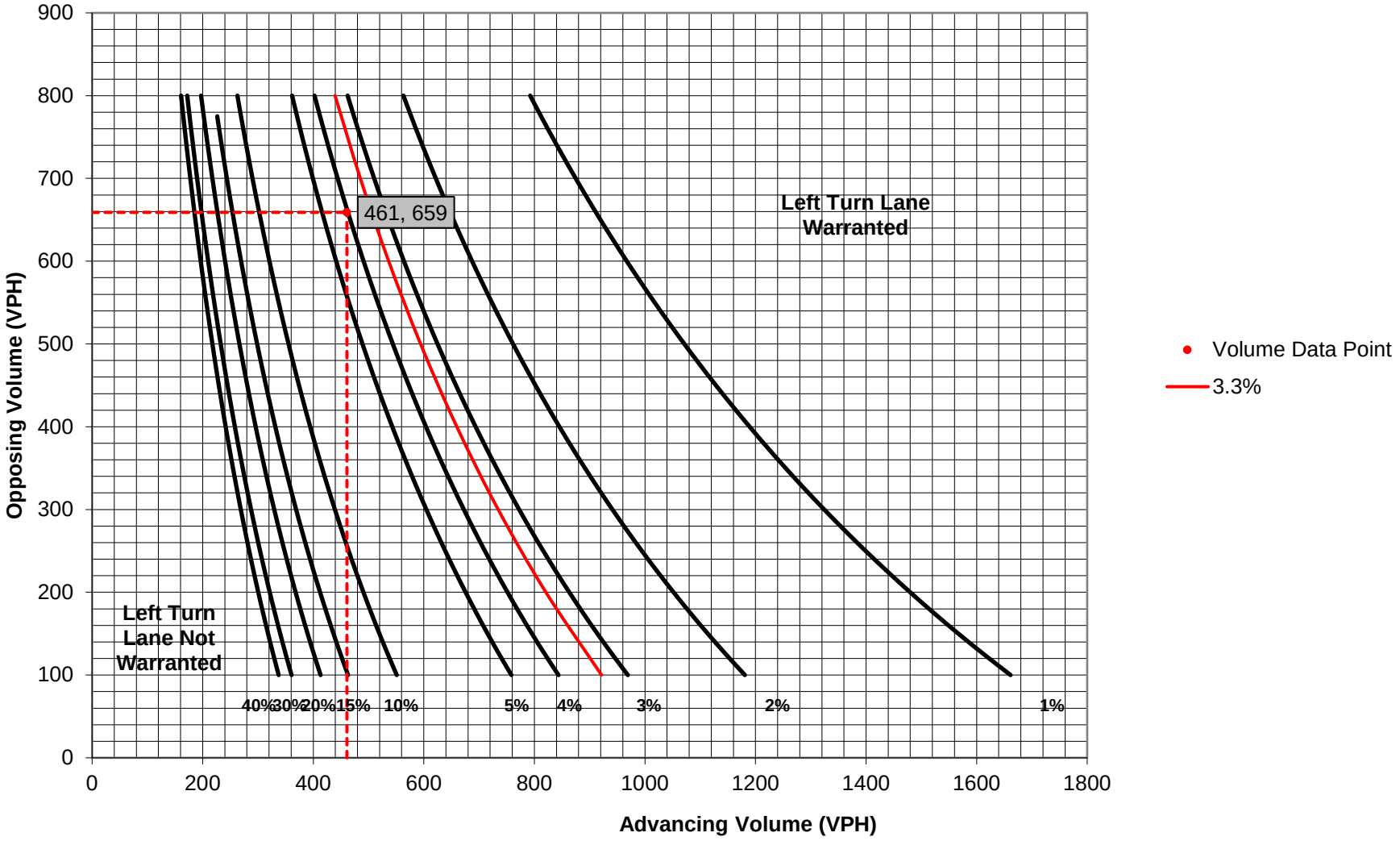
Left Turn Lane Storage Length, Condition A:	**N/A**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**N/A**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Hall Street
Eastbound Bridge Street (S.R. 0113) Left-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	40	2.0%	41
	Through	-	624	2.0%	631
	Right				0
Opposing	Left				0
	Through	-	558	1.0%	561
	Right	Yes	41	2.0%	42

Advancing Volume:	672
Opposing Volume:	603
Left Turn Volume:	41
% Left Turns in Advancing Volume:	6.10%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	41
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

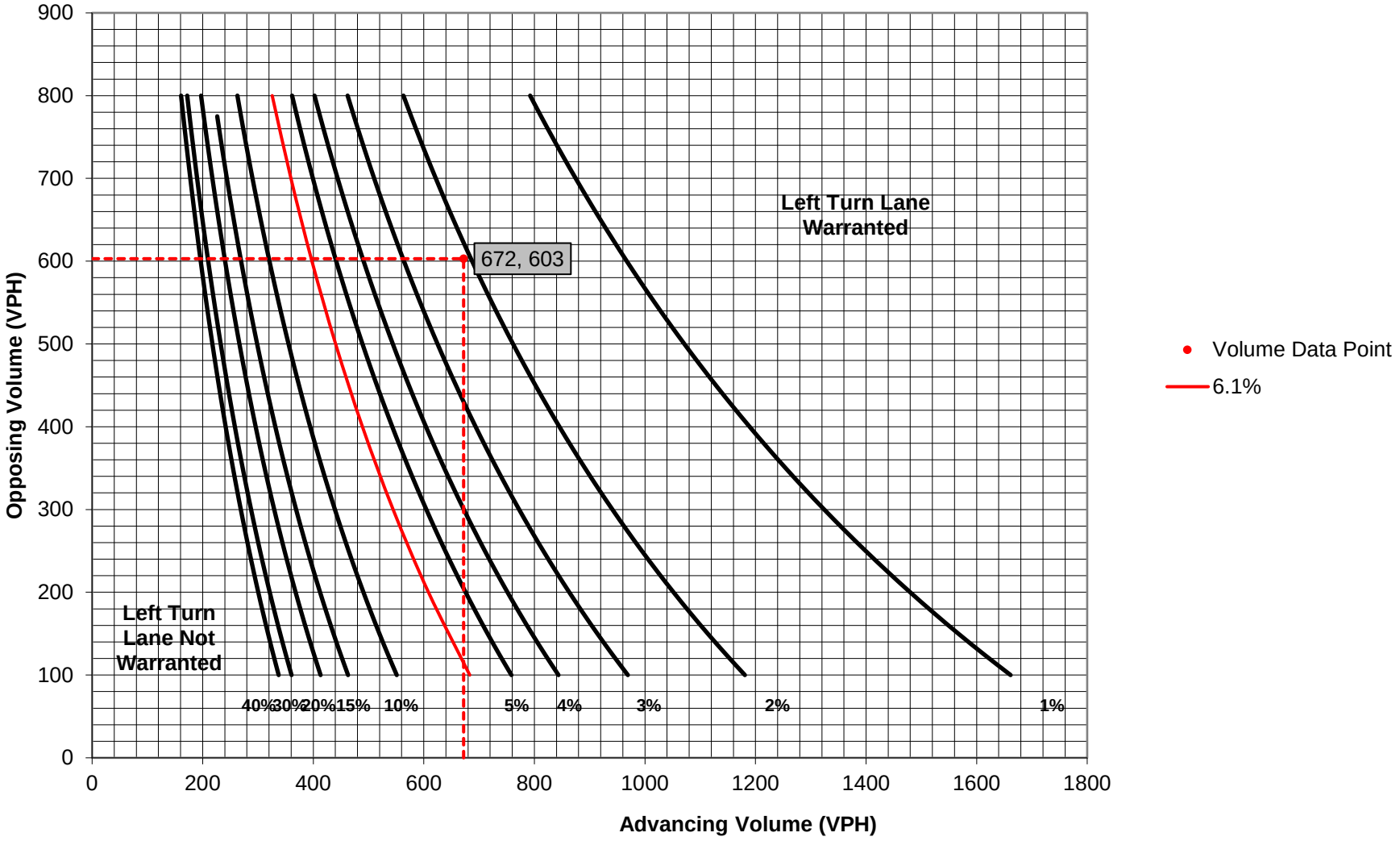
Left Turn Lane Storage Length, Condition A:	**75**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**75**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Hall Street
Eastbound Bridge Street (S.R. 0113) Left-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	SAT Midday Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	34	2.0%	35
	Through	-	974	1.0%	979
	Right				0
Opposing	Left				0
	Through	-	684	1.0%	688
	Right	Yes	23	2.0%	24

Advancing Volume:	1014
Opposing Volume:	712
Left Turn Volume:	35
% Left Turns in Advancing Volume:	3.45%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **Yes**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	35
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: 1.0

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

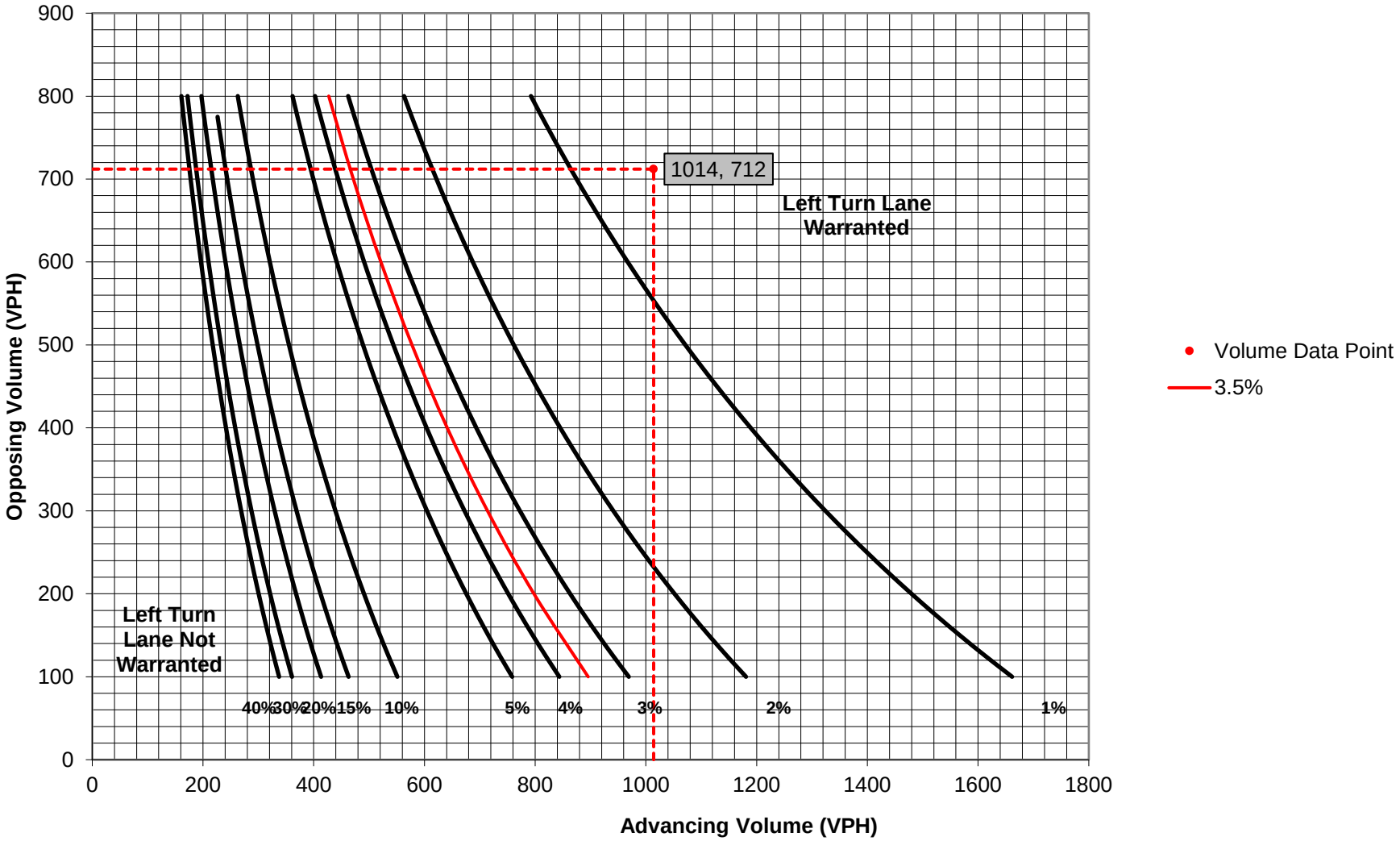
Left Turn Lane Storage Length, Condition A:	**75**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**75**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Hall Street
Westbound Bridge Street (S.R. 0113) Right-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right				N/A
Opposing	Left				N/A
	Through	-			N/A
	Right				N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				0
	Through	-	632	3.0%	642
	Right	-	16	2.0%	17

Advancing Volume:	659
Right Turn Volume:	17

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	17
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

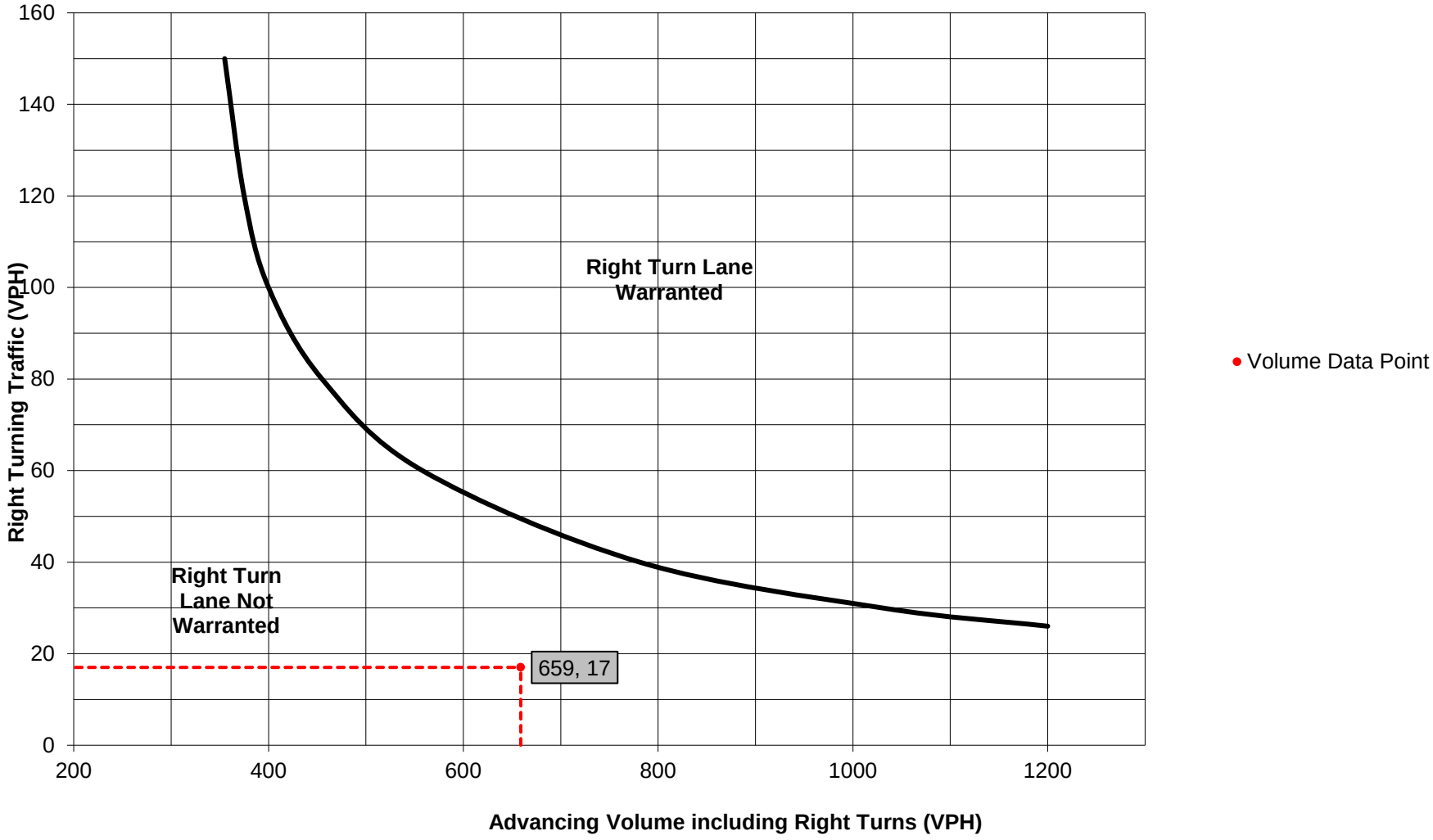
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Hall Street
Westbound Bridge Street (S.R. 0113) Right-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right				N/A
Opposing	Left				N/A
	Through	-			N/A
	Right				N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				0
	Through	-	558	1.0%	561
	Right	-	41	2.0%	42

Advancing Volume:	603
Right Turn Volume:	42

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	42
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

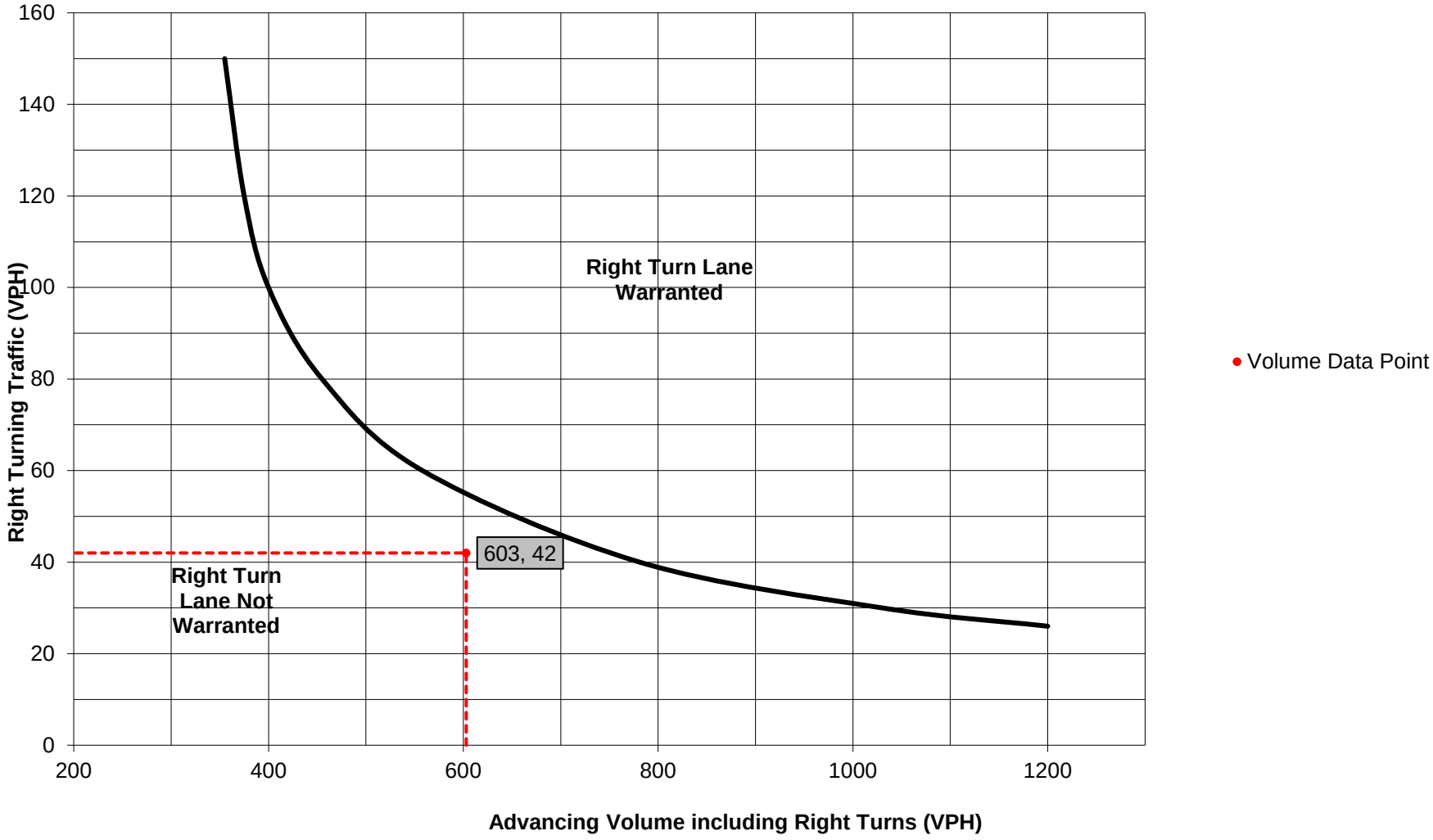
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	11/9/2021
County:	Chester County	**Conducted By:**	VSA
PennDOT Engineering District:	6	**Checked By:**	BGG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Bridge Street (S.R. 0113) and Hall Street
Westbound Bridge Street (S.R. 0113) Right-Turn Lane

Analysis Period:	2027 Build	**Number of Approach Lanes:**	1
Design Hour:	SAT Midday Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right				N/A
Opposing	Left				N/A
	Through	-			N/A
	Right				N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				0
	Through	-	684	2.0%	691
	Right	-	23	2.0%	24

Advancing Volume:	715
Right Turn Volume:	24

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	24
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

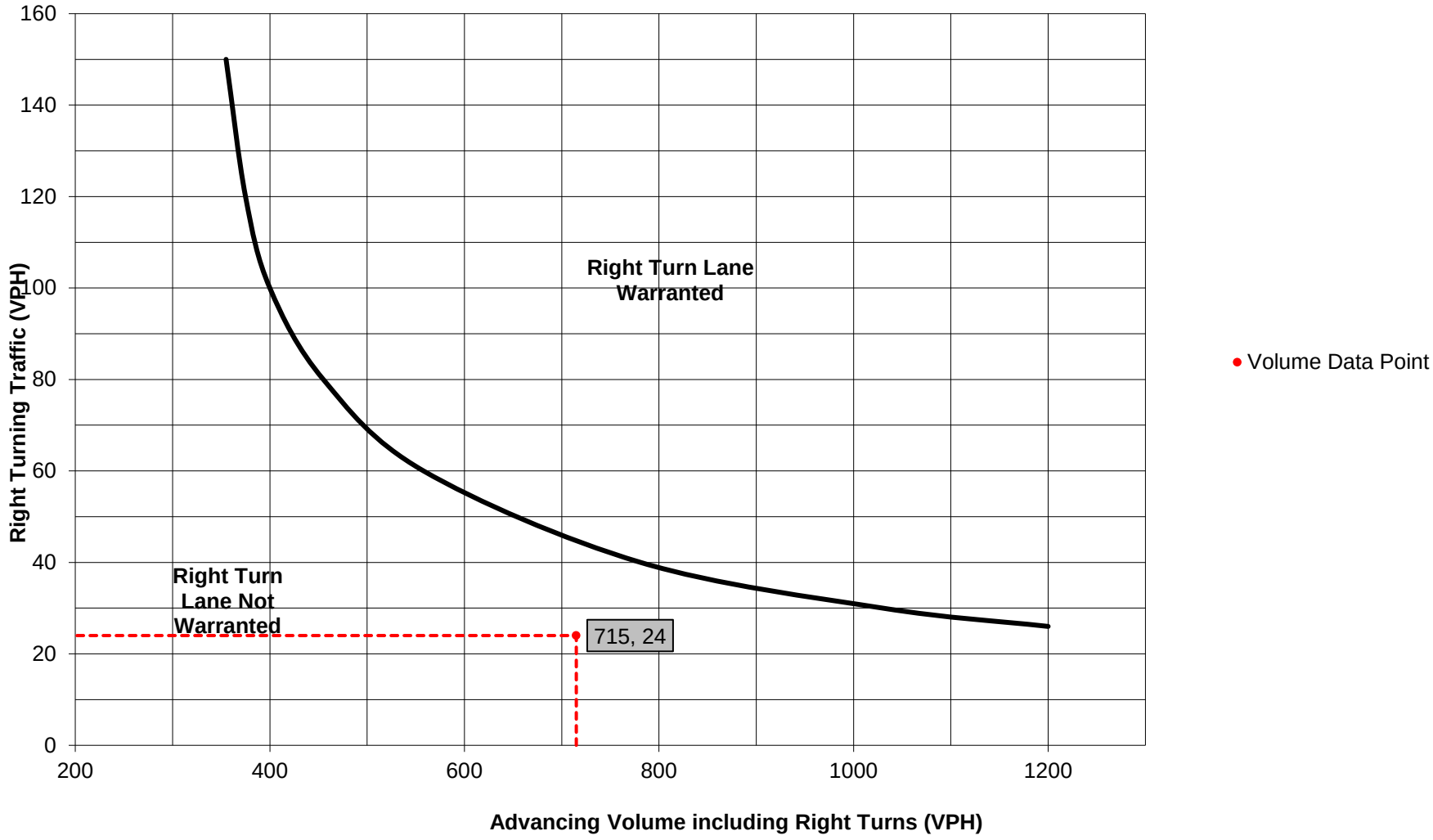
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Appendix G

Traffic Volume Projections

2022 Future Volume Projections

INTERSECTION VOLUME SUMMARY
Nutt Road (SR 23)/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Nutt Road (SR 23)			Bridge Street (SR 113)			Nutt Road (SR 23)		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	48	137	49	75	312	26	12	293	258	387	666	116
Seasonal Adjustment Factor ####	48	137	49	75	312	26	12	293	258	387	666	116
Balancing Adjustments	0	0	0	0	0	0	0	33	30	0	0	0
ADJUSTED EXISTING TRAFFIC	**48**	**137**	**49**	**75**	**312**	**26**	**12**	**326**	**288**	**387**	**666**	**116**
Background Growth 1.45 %	1	2	1	1	5	0	0	5	4	6	10	2
EXISTING W/ BACKGROUND	49	139	50	76	317	26	12	331	292	393	676	118
TOTAL "OTHER" DEVELOPMENTS	4	22	2	0	40	3	8	43	-30	-19	48	6
115 Buchanan Street (LUC 252)	0	0	0	0	0	0	0	1	2	1	0	0
723 Wheatland Street (LUC 221)	1	1	0	0	3	3	8	3	0	0	9	3
Bridge St Residences + Retail	0	2	0	0	0	0	0	4	8	5	0	0
Group 3	0	1	0	0	0	0	0	2	5	2	0	0
Group 4	0	1	0	0	0	0	0	2	6	3	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	1	0	0	0	3	0	0	0	2	5	9	3
Group 9	2	1	2	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	0	0	0	0	0	0	0	-60	-49	0	0
Schuylkill Township	0	0	0	0	22	0	0	0	0	0	8	0
East Pikeland Township	0	0	0	0	12	0	0	0	7	14	22	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**53**	**161**	**52**	**76**	**357**	**29**	**20**	**374**	**262**	**374**	**724**	**124**
TOTAL "NEW" SITE TRAFFIC	**0**	**9**	**0**	**0**	**0**	**21**	**43**	**16**	**0**	**-9**	**0**	**0**
Apartments	0	3	0	0	0	11	35	11	0	0	0	0
Retail / Restaurant	0	6	0	0	0	10	8	5	8	10	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	-8	-19	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	-1	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**53**	**170**	**52**	**76**	**357**	**50**	**63**	**390**	**261**	**365**	**724**	**124**
"New" Site Traffic % of Total *0.0%*	0.0	5.3	0.0	0.0	0.0	42.0	68.3	4.1	0.0	-2.5	0.0	0.0

INTERSECTION VOLUME SUMMARY
Nutt Road (SR 23)/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

		EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
		Bridge Street (SR 113)			Nutt Road (SR 23)			Bridge Street (SR 113)			Nutt Road (SR 23)		
Traffic Component		L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC		117	249	26	62	600	27	18	193	482	452	522	64
Seasonal Adjustment Factor	1.000	117	249	26	62	600	27	18	193	482	452	522	64
Balancing Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC		**117**	**249**	**26**	**62**	**600**	**27**	**18**	**193**	**482**	**452**	**522**	**64**
Background Growth	1.45 %	2	4	0	1	9	0	0	3	7	7	8	1
EXISTING W/ BACKGROUND		119	253	26	63	609	27	18	196	489	459	530	65
TOTAL "OTHER" DEVELOPMENTS		7	50	1	0	61	9	5	40	-47	-17	56	6
115 Buchanan Street (LUC 252)		0	1	0	0	0	0	0	1	2	2	0	0
723 Wheatland Street (LUC 221)		3	3	0	0	9	9	5	2	0	0	6	2
Bridge St Residences + Retail		0	7	0	0	0	0	0	6	14	15	0	0
Group 3		0	2	0	0	0	0	0	1	4	6	0	0
Group 4		0	2	0	0	0	0	0	2	5	7	0	0
Group 5		0	1	0	0	0	0	0	1	0	0	0	0
Group 6		0	33	0	0	0	0	0	25	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Group 8		3	0	0	0	10	0	0	0	6	4	6	2
Group 9		1	1	1	0	0	0	0	2	0	0	0	2
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions		0	0	0	0	0	0	0	0	-95	-63	0	0
Schuylkill Township		0	0	0	0	14	0	0	0	0	0	24	0
East Pikeland Township		0	0	0	0	28	0	0	0	17	12	20	0
Other Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT		**126**	**303**	**27**	**63**	**670**	**36**	**23**	**236**	**442**	**442**	**586**	**71**
TOTAL "NEW" SITE TRAFFIC		**0**	**11**	**0**	**0**	**0**	**33**	**22**	**9**	**-5**	**-9**	**0**	**0**
Apartments		0	6	0	0	0	20	14	4	0	0	0	0
Retail / Restaurant		0	5	0	0	0	13	8	5	8	13	0	0
Hall Street Diversion		0	0	0	0	0	0	0	0	-13	-22	0	0
Uncle B's Bar B Q		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic		0	0	0	0	0	0	0	-2	-3	0	0	0
Other Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT		**126**	**314**	**27**	**63**	**670**	**69**	**45**	**243**	**434**	**433**	**586**	**71**
"New" Site Traffic % of Total	*0.0%*	0.0	3.5	0.0	0.0	0.0	47.8	48.9	3.7	-1.2	-2.1	0.0	0.0

INTERSECTION VOLUME SUMMARY
Nutt Road (SR 23)/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

		EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
		Bridge Street (SR 113)			Nutt Road (SR 23)			Bridge Street (SR 113)			Nutt Road (SR 23)		
Traffic Component		L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC		119	290	65	85	602	43	24	148	470	483	726	51
Seasonal Adjustment Factor	1.000	119	290	65	85	602	43	24	148	470	483	726	51
Balancing Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC		**119**	**290**	**65**	**85**	**602**	**43**	**24**	**148**	**470**	**483**	**726**	**51**
Background Growth	1.45 %	2	4	1	1	9	1	0	2	7	7	11	1
EXISTING W/ BACKGROUND		121	294	66	86	611	44	24	150	477	490	737	52
TOTAL "OTHER" DEVELOPMENTS		6	52	1	0	58	7	8	50	-42	-3	59	6
115 Buchanan Street (LUC 252)		0	1	0	0	0	0	0	1	2	3	0	0
723 Wheatland Street (LUC 221)		2	2	0	0	8	7	8	2	0	0	8	2
Bridge St Residences + Retail		0	8	0	0	0	0	0	8	18	18	0	0
Group 3		0	2	0	0	0	0	0	2	5	6	0	0
Group 4		0	2	0	0	0	0	0	2	6	7	0	0
Group 5		0	1	0	0	0	0	0	1	0	0	0	0
Group 6		0	35	0	0	0	0	0	33	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Group 8		3	0	0	0	8	0	0	0	5	5	9	3
Group 9		1	1	1	0	0	0	0	1	0	0	0	1
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions		0	0	0	0	0	0	0	0	-92	-55	0	0
Schuylkill Township		0	0	0	0	19	0	0	0	0	0	21	0
East Pikeland Township		0	0	0	0	23	0	0	0	14	13	21	0
Other Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT		**127**	**346**	**67**	**86**	**669**	**51**	**32**	**200**	**435**	**487**	**796**	**58**
TOTAL "NEW" SITE TRAFFIC		**0**	**14**	**0**	**0**	**0**	**38**	**37**	**15**	**16**	**19**	**0**	**0**
Apartments		0	6	0	0	0	19	21	7	0	0	0	0
Retail / Restaurant		0	8	0	0	0	19	16	8	16	19	0	0
Hall Street Diversion		0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic		0	0	0	0	0	0	0	-1	-1	0	0	0
Other Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT		**127**	**360**	**67**	**86**	**669**	**89**	**69**	**214**	**450**	**506**	**796**	**58**
"New" Site Traffic % of Total	*0.0%*	0.0	3.9	0.0	0.0	0.0	42.7	53.6	7.0	3.6	3.8	0.0	0.0

INTERSECTION VOLUME SUMMARY
Wheatland St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Wheatland St			Bridge Street (SR 113)			Wheatland St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	6	491	15	0	0	0	18	619	5	23	3	7
Seasonal Adjustment Factor ####	6	491	15	0	0	0	18	619	5	23	3	7
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**6**	**491**	**15**	**0**	**0**	**0**	**18**	**619**	**5**	**23**	**3**	**7**
Background Growth 1.45 %	0	7	0	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	6	498	15	0	0	0	18	628	5	23	3	7
TOTAL "OTHER" DEVELOPMENTS	4	2	0	0	0	0	0	10	4	10	0	11
115 Buchanan Street (LUC 252)	0	1	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	4	0	0	0	0	0	0	0	4	10	0	11
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**10**	**500**	**15**	**0**	**0**	**0**	**18**	**638**	**9**	**33**	**3**	**18**
TOTAL "NEW" SITE TRAFFIC	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**59**	**0**	**0**	**0**	**0**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	0	26	0	0	0	0	0	21	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-1	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**10**	**521**	**15**	**0**	**0**	**0**	**18**	**696**	**9**	**33**	**3**	**18**
"New" Site Traffic % of Total ####	0.0	4.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Wheatland St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Wheatland St			Bridge Street (SR 113)			Wheatland St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	14	600	25	0	0	0	19	640	13	28	2	20
Seasonal Adjustment Factor 1.000	14	600	25	0	0	0	19	640	13	28	2	20
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**14**	**600**	**25**	**0**	**0**	**0**	**19**	**640**	**13**	**28**	**2**	**20**
Background Growth 1.45 %	0	9	0	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	14	609	25	0	0	0	19	649	13	28	2	20
TOTAL "OTHER" DEVELOPMENTS	11	30	0	0	0	0	0	-10	11	7	0	7
115 Buchanan Street (LUC 252)	0	3	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	11	0	0	0	0	0	0	0	11	7	0	7
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**25**	**639**	**25**	**0**	**0**	**0**	**19**	**639**	**24**	**35**	**2**	**27**
TOTAL "NEW" SITE TRAFFIC	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**26**	**0**	**0**	**0**	**0**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	0	31	0	0	0	0	0	21	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-5	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**25**	**674**	**25**	**0**	**0**	**0**	**19**	**660**	**24**	**35**	**2**	**27**
"New" Site Traffic % of Total *0.0%*	0.0	5.2	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Wheatland St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Wheatland St			Bridge Street (SR 113)			Wheatland St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	767	20	0	0	0	48	651	10	41	6	32
Seasonal Adjustment Factor 1.000	0	767	20	0	0	0	48	651	10	41	6	32
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**767**	**20**	**0**	**0**	**0**	**48**	**651**	**10**	**41**	**6**	**32**
Background Growth 1.45 %	0	11	0	0	0	0	1	9	0	1	0	0
EXISTING W/ BACKGROUND	0	778	20	0	0	0	49	660	10	42	6	32
TOTAL "OTHER" DEVELOPMENTS	9	48	0	0	0	0	0	4	9	10	0	10
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	9	0	0	0	0	0	0	0	9	10	0	10
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**9**	**826**	**20**	**0**	**0**	**0**	**49**	**664**	**19**	**52**	**6**	**42**
TOTAL "NEW" SITE TRAFFIC	**0**	**71**	**0**	**0**	**0**	**0**	**0**	**68**	**0**	**0**	**0**	**0**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	0	46	0	0	0	0	0	40	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-2	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**9**	**897**	**20**	**0**	**0**	**0**	**49**	**730**	**19**	**52**	**6**	**42**
"New" Site Traffic % of Total ####	0.0	7.9	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
W Site Access/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			W Site Access			Bridge Street (SR 113)			W Site Access		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	514	0	0	0	0	0	642	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**514**	**0**	**0**	**0**	**0**	**0**	**642**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	7	0	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	521	0	0	0	0	0	651	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	12	0	0	0	0	0	14	0	0	0	0
115 Buchanan Street (LUC 252)	0	1	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**533**	**0**	**0**	**0**	**0**	**0**	**665**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**26**	**-5**	**0**	**0**	**0**	**0**	**0**	**38**	**26**	**21**	**0**	**21**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	26	0	0	0	0	0	0	0	26	21	0	21
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	8	-8	0	0	0	0	0	-11	11	7	0	10
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**34**	**520**	**0**	**0**	**0**	**0**	**0**	**692**	**37**	**28**	**0**	**31**
"New" Site Traffic % of Total ####	76.5	-1.0	0.0	0.0	0.0	0.0	0.0	5.5	70.3	75.0	0.0	67.7

INTERSECTION VOLUME SUMMARY
W Site Access/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			W Site Access			Bridge Street (SR 113)			W Site Access		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	628	0	0	0	0	0	672	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**628**	**0**	**0**	**0**	**0**	**0**	**672**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	9	0	0	0	0	0	10	0	0	0	0
EXISTING W/ BACKGROUND	0	637	0	0	0	0	0	682	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	37	0	0	0	0	0	1	0	0	0	0
115 Buchanan Street (LUC 252)	0	3	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**674**	**0**	**0**	**0**	**0**	**0**	**683**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**31**	**4**	**0**	**0**	**0**	**0**	**0**	**5**	**32**	**21**	**0**	**21**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	31	0	0	0	0	0	0	0	32	21	0	21
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	17	-17	0	0	0	0	0	-15	15	10	0	10
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**48**	**661**	**0**	**0**	**0**	**0**	**0**	**673**	**47**	**31**	**0**	**31**
"New" Site Traffic % of Total ####	64.6	0.6	0.0	0.0	0.0	0.0	0.0	0.7	68.1	67.7	0.0	67.7

INTERSECTION VOLUME SUMMARY
W Site Access/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			W Site Access			Bridge Street (SR 113)			W Site Access		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	775	0	0	0	0	0	683	0	0	0	0
Seasonal Adjustment Factor 1.000	0	775	0	0	0	0	0	683	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**775**	**0**	**0**	**0**	**0**	**0**	**683**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	11	0	0	0	0	0	10	0	0	0	0
EXISTING W/ BACKGROUND	0	786	0	0	0	0	0	693	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	13	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**844**	**0**	**0**	**0**	**0**	**0**	**706**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**46**	**25**	**0**	**0**	**0**	**0**	**0**	**28**	**47**	**41**	**0**	**40**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	46	0	0	0	0	0	0	0	47	41	0	40
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	17	-17	0	0	0	0	0	-12	12	14	0	10
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**63**	**852**	**0**	**0**	**0**	**0**	**0**	**722**	**59**	**55**	**0**	**50**
"New" Site Traffic % of Total ####	73.0	2.9	0.0	0.0	0.0	0.0	0.0	3.9	79.7	74.5	0.0	80.0

INTERSECTION VOLUME SUMMARY
Buchanan St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Buchanan St			Bridge Street (SR 113)			Buchanan St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	3	45	0	55	1	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	3	45	0	55	1	0	0	0	0	0
Balancing Adjustments	0	460	0	0	0	0	0	597	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**460**	**3**	**45**	**0**	**55**	**1**	**597**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	7	0	1	0	1	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	467	3	46	0	56	1	606	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	11	1	3	0	4	1	11	0	0	0	0
115 Buchanan Street (LUC 252)	0	0	1	3	0	4	1	0	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**478**	**4**	**49**	**0**	**60**	**2**	**617**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**64**	**0**	**0**	**0**	**0**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**493**	**4**	**49**	**0**	**60**	**2**	**681**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	3.2	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Buchanan St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Buchanan St			Bridge Street (SR 113)			Buchanan St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	1	89	0	132	3	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	1	89	0	132	3	0	0	0	0	0
Balancing Adjustments	0	559	0	0	0	0	0	514	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**559**	**1**	**89**	**0**	**132**	**3**	**514**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	8	0	1	0	2	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	567	1	90	0	134	3	521	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	34	3	2	0	4	3	-1	0	0	0	0
115 Buchanan Street (LUC 252)	0	0	3	2	0	4	3	0	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**601**	**4**	**92**	**0**	**138**	**6**	**520**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**37**	**0**	**0**	**0**	**0**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-7	0	0	0	0	0	-5	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**619**	**4**	**92**	**0**	**138**	**6**	**552**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total *0.0%*	0.0	4.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Buchanan St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Buchanan St			Bridge Street (SR 113)			Buchanan St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	769	6	67	0	140	0	616	0	0	0	0
Seasonal Adjustment Factor 1.000	0	769	6	67	0	140	0	616	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**769**	**6**	**67**	**0**	**140**	**0**	**616**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	11	0	1	0	2	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	780	6	68	0	142	0	625	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	54	4	2	0	4	4	11	0	0	0	0
115 Buchanan Street (LUC 252)	0	0	4	2	0	4	4	0	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**834**	**10**	**70**	**0**	**146**	**4**	**636**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**66**	**0**	**0**	**0**	**0**	**0**	**75**	**0**	**0**	**0**	**0**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	-3	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**897**	**10**	**70**	**0**	**146**	**4**	**708**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	7.4	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Walnut St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Walnut St			Bridge Street (SR 113)			Walnut St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	79	0	0	0	7	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	79	0	0	0	7	0	0	0	0	0
Balancing Adjustments	0	436	0	0	0	0	0	598	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**436**	**79**	**0**	**0**	**0**	**7**	**598**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	6	1	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	442	80	0	0	0	7	607	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	12	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	1	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**457**	**80**	**0**	**0**	**0**	**7**	**619**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**64**	**0**	**0**	**0**	**0**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**472**	**80**	**0**	**0**	**0**	**7**	**683**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	3.4	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Walnut St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Walnut St			Bridge Street (SR 113)			Walnut St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	114	0	0	0	5	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	114	0	0	0	5	0	0	0	0	0
Balancing Adjustments	0	577	0	0	0	0	0	517	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**577**	**114**	**0**	**0**	**0**	**5**	**517**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	8	2	0	0	0	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	585	116	0	0	0	5	524	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	38	0	0	0	0	0	2	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**623**	**116**	**0**	**0**	**0**	**5**	**526**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**37**	**0**	**0**	**0**	**0**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-7	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**641**	**116**	**0**	**0**	**0**	**5**	**563**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total *0.0%*	0.0	3.9	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Walnut St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Walnut St			Bridge Street (SR 113)			Walnut St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	730	169	0	0	0	30	639	0	0	0	0
Seasonal Adjustment Factor 1.000	0	730	169	0	0	0	30	639	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**730**	**169**	**0**	**0**	**0**	**30**	**639**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	11	2	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	741	171	0	0	0	30	648	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	15	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	4	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**799**	**171**	**0**	**0**	**0**	**30**	**663**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**66**	**0**	**0**	**0**	**0**	**0**	**75**	**0**	**0**	**0**	**0**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**862**	**171**	**0**	**0**	**0**	**30**	**738**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	7.7	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Hall St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Hall St			Bridge Street (SR 113)			Hall St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	405	0	26	0	14	0	471	0	0	0	0
Seasonal Adjustment Factor ####	0	405	0	26	0	14	0	471	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	108	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**405**	**0**	**26**	**0**	**14**	**0**	**579**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	6	0	0	0	0	0	8	0	0	0	0
EXISTING W/ BACKGROUND	0	411	0	26	0	14	0	587	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	12	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	1	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**426**	**0**	**26**	**0**	**14**	**0**	**599**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**14**	**2**	**0**	**0**	**0**	**0**	**0**	**18**	**16**	**46**	**0**	**46**
Apartments	14	0	0	0	0	0	0	0	8	27	0	46
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	8	19	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**14**	**427**	**0**	**26**	**0**	**14**	**0**	**617**	**16**	**46**	**0**	**46**
"New" Site Traffic % of Total ####	100.0	0.5	0.0	0.0	0.0	0.0	0.0	2.9	100.0	100.0	0.0	100.0

INTERSECTION VOLUME SUMMARY
Hall St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Hall St			Bridge Street (SR 113)			Hall St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	577	0	31	0	15	0	522	0	0	0	0
Seasonal Adjustment Factor 1.000	0	577	0	31	0	15	0	522	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**577**	**0**	**31**	**0**	**15**	**0**	**522**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	8	0	0	0	0	0	8	0	0	0	0
EXISTING W/ BACKGROUND	0	585	0	31	0	15	0	530	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	38	0	0	0	0	0	2	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**623**	**0**	**31**	**0**	**15**	**0**	**532**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**34**	**-1**	**0**	**0**	**0**	**0**	**0**	**19**	**36**	**40**	**0**	**25**
Apartments	26	0	0	0	0	0	0	0	15	11	0	18
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	13	22	0	0
Uncle B's Bar B Q	8	0	0	0	0	0	0	0	8	7	0	7
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	6	-13	0	0	0	0	0	-5	5	5	0	4
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**40**	**609**	**0**	**31**	**0**	**15**	**0**	**546**	**41**	**45**	**0**	**29**
"New" Site Traffic % of Total ####	85.0	-0.2	0.0	0.0	0.0	0.0	0.0	3.5	87.8	88.9	0.0	86.2

INTERSECTION VOLUME SUMMARY
Hall St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Hall St			Bridge Street (SR 113)			Hall St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	845	0	22	0	0	0	599	0	0	0	0
Seasonal Adjustment Factor 1.000	0	845	0	22	0	0	0	599	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**845**	**0**	**22**	**0**	**0**	**0**	**599**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	12	0	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	857	0	22	0	0	0	608	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	15	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	4	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**915**	**0**	**22**	**0**	**0**	**0**	**623**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**34**	**41**	**0**	**0**	**0**	**0**	**0**	**47**	**23**	**22**	**0**	**34**
Apartments	25	0	0	0	0	0	0	0	14	16	0	28
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	9	0	0	0	0	0	0	0	9	6	0	6
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	0	0	3	0	3
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**34**	**953**	**0**	**22**	**0**	**0**	**0**	**670**	**23**	**25**	**0**	**37**
"New" Site Traffic % of Total ####	100.0	4.3	0.0	0.0	0.0	0.0	0.0	7.0	100.0	88.0	0.0	91.9

INTERSECTION VOLUME SUMMARY
Church St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Church St			Bridge Street (SR 113)			Church St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	111	12	0	3	3	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	111	12	0	3	3	0	0	0	0	0
Balancing Adjustments	0	308	0	0	0	0	0	468	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**308**	**111**	**12**	**0**	**3**	**3**	**468**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	4	2	0	0	0	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	312	113	12	0	3	3	475	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	12	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	1	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**327**	**113**	**12**	**0**	**3**	**3**	**487**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**48**	**0**	**0**	**0**	**0**	**0**	**34**	**0**	**0**	**0**	**0**
Apartments	0	27	0	0	0	0	0	8	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**374**	**113**	**12**	**0**	**3**	**3**	**521**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	12.8	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Church St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Church St			Bridge Street (SR 113)			Church St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	171	54	0	15	20	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	171	54	0	15	20	0	0	0	0	0
Balancing Adjustments	0	421	0	0	0	0	0	468	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**421**	**171**	**54**	**0**	**15**	**20**	**468**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	6	2	1	0	0	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	427	173	55	0	15	20	475	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	38	0	0	0	0	0	2	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**465**	**173**	**55**	**0**	**15**	**20**	**477**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**32**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**0**	**0**	**0**
Apartments	0	11	0	0	0	0	0	15	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-7	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**490**	**173**	**55**	**0**	**15**	**20**	**524**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	6.5	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Church St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Church St			Bridge Street (SR 113)			Church St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	628	223	43	0	7	33	612	0	0	0	0
Seasonal Adjustment Factor 1.000	0	628	223	43	0	7	33	612	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**628**	**223**	**43**	**0**	**7**	**33**	**612**	**0**	**0**	**0**	**0**
Background Growth 1.45 %	0	9	3	1	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	637	226	44	0	7	33	621	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	15	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	4	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**695**	**226**	**44**	**0**	**7**	**33**	**636**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**57**	**0**	**0**	**0**	**0**	**0**	**61**	**0**	**0**	**0**	**0**
Apartments	0	16	0	0	0	0	0	14	0	0	0	0
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**749**	**226**	**44**	**0**	**7**	**33**	**697**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	7.6	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0

2027 Future Volume Projections

INTERSECTION VOLUME SUMMARY
Nutt Road (SR 23)/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Nutt Road (SR 23)			Bridge Street (SR 113)			Nutt Road (SR 23)		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	48	137	49	75	312	26	12	293	258	387	666	116
Seasonal Adjustment Factor ####	48	137	49	75	312	26	12	293	258	387	666	116
Balancing Adjustments	0	0	0	0	0	0	0	33	30	0	0	0
ADJUSTED EXISTING TRAFFIC	**48**	**137**	**49**	**75**	**312**	**26**	**12**	**326**	**288**	**387**	**666**	**116**
Background Growth 3.91 %	2	5	2	3	12	1	0	13	11	15	26	5
EXISTING W/ BACKGROUND	50	142	51	78	324	27	12	339	299	402	692	121
TOTAL "OTHER" DEVELOPMENTS	4	22	2	0	40	3	8	43	-30	-19	48	6
115 Buchanan Street (LUC 252)	0	0	0	0	0	0	0	1	2	1	0	0
723 Wheatland Street (LUC 221)	1	1	0	0	3	3	8	3	0	0	9	3
Bridge St Residences + Retail	0	2	0	0	0	0	0	4	8	5	0	0
Group 3	0	1	0	0	0	0	0	2	5	2	0	0
Group 4	0	1	0	0	0	0	0	2	6	3	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	1	0	0	0	3	0	0	0	2	5	9	3
Group 9	2	1	2	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	0	0	0	0	0	0	0	-60	-49	0	0
Schuylkill Township	0	0	0	0	22	0	0	0	0	0	8	0
East Pikeland Township	0	0	0	0	12	0	0	0	7	14	22	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**54**	**164**	**53**	**78**	**364**	**30**	**20**	**382**	**269**	**383**	**740**	**127**
TOTAL "NEW" SITE TRAFFIC	**0**	**9**	**0**	**0**	**0**	**21**	**43**	**16**	**0**	**-9**	**0**	**0**
Apartments	0	3	0	0	0	11	35	11	0	0	0	0
Retail / Restaurant	0	6	0	0	0	10	8	5	8	10	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	-8	-19	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	-1	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**54**	**173**	**53**	**78**	**364**	**51**	**63**	**398**	**268**	**374**	**740**	**127**
"New" Site Traffic % of Total *0.0%*	0.0	5.2	0.0	0.0	0.0	41.2	68.3	4.0	0.0	-2.4	0.0	0.0

INTERSECTION VOLUME SUMMARY
Nutt Road (SR 23)/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

		EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
		Bridge Street (SR 113)			Nutt Road (SR 23)			Bridge Street (SR 113)			Nutt Road (SR 23)		
Traffic Component		L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC		117	249	26	62	600	27	18	193	482	452	522	64
Seasonal Adjustment Factor	1.000	117	249	26	62	600	27	18	193	482	452	522	64
Balancing Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC		**117**	**249**	**26**	**62**	**600**	**27**	**18**	**193**	**482**	**452**	**522**	**64**
Background Growth	3.91 %	5	10	1	2	23	1	1	8	19	18	20	2
EXISTING W/ BACKGROUND		122	259	27	64	623	28	19	201	501	470	542	66
TOTAL "OTHER" DEVELOPMENTS		7	50	1	0	61	9	5	40	-47	-17	56	6
115 Buchanan Street (LUC 252)		0	1	0	0	0	0	0	1	2	2	0	0
723 Wheatland Street (LUC 221)		3	3	0	0	9	9	5	2	0	0	6	2
Bridge St Residences + Retail		0	7	0	0	0	0	0	6	14	15	0	0
Group 3		0	2	0	0	0	0	0	1	4	6	0	0
Group 4		0	2	0	0	0	0	0	2	5	7	0	0
Group 5		0	1	0	0	0	0	0	1	0	0	0	0
Group 6		0	33	0	0	0	0	0	25	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Group 8		3	0	0	0	10	0	0	0	6	4	6	2
Group 9		1	1	1	0	0	0	0	2	0	0	0	2
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions		0	0	0	0	0	0	0	0	-95	-63	0	0
Schuylkill Township		0	0	0	0	14	0	0	0	0	0	24	0
East Pikeland Township		0	0	0	0	28	0	0	0	17	12	20	0
Other Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT		**129**	**309**	**28**	**64**	**684**	**37**	**24**	**241**	**454**	**453**	**598**	**72**
TOTAL "NEW" SITE TRAFFIC		**0**	**11**	**0**	**0**	**0**	**33**	**22**	**9**	**-6**	**-10**	**0**	**0**
Apartments		0	6	0	0	0	20	14	4	0	0	0	0
Retail / Restaurant		0	5	0	0	0	13	8	5	8	13	0	0
Hall Street Diversion		0	0	0	0	0	0	0	0	-14	-23	0	0
Uncle B's Bar B Q		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic		0	0	0	0	0	0	0	-2	-3	0	0	0
Other Adjustments		0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT		**129**	**320**	**28**	**64**	**684**	**70**	**46**	**248**	**445**	**443**	**598**	**72**
"New" Site Traffic % of Total	*0.0%*	0.0	3.4	0.0	0.0	0.0	47.1	47.8	3.6	-1.3	-2.3	0.0	0.0

INTERSECTION VOLUME SUMMARY
Nutt Road (SR 23)/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Nutt Road (SR 23)			Bridge Street (SR 113)			Nutt Road (SR 23)		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	119	290	65	85	602	43	24	148	470	483	726	51
Seasonal Adjustment Factor 1.000	119	290	65	85	602	43	24	148	470	483	726	51
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**119**	**290**	**65**	**85**	**602**	**43**	**24**	**148**	**470**	**483**	**726**	**51**
Background Growth 3.91 %	5	11	3	3	24	2	1	6	18	19	28	2
EXISTING W/ BACKGROUND	124	301	68	88	626	45	25	154	488	502	754	53
TOTAL "OTHER" DEVELOPMENTS	6	52	1	0	58	7	8	50	-42	-3	59	6
115 Buchanan Street (LUC 252)	0	1	0	0	0	0	0	1	2	3	0	0
723 Wheatland Street (LUC 221)	2	2	0	0	8	7	8	2	0	0	8	2
Bridge St Residences + Retail	0	8	0	0	0	0	0	8	18	18	0	0
Group 3	0	2	0	0	0	0	0	2	5	6	0	0
Group 4	0	2	0	0	0	0	0	2	6	7	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	3	0	0	0	8	0	0	0	5	5	9	3
Group 9	1	1	1	0	0	0	0	1	0	0	0	1
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	0	0	0	0	0	0	0	-92	-55	0	0
Schuylkill Township	0	0	0	0	19	0	0	0	0	0	21	0
East Pikeland Township	0	0	0	0	23	0	0	0	14	13	21	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**130**	**353**	**69**	**88**	**684**	**52**	**33**	**204**	**446**	**499**	**813**	**59**
TOTAL "NEW" SITE TRAFFIC	**0**	**14**	**0**	**0**	**0**	**38**	**37**	**15**	**16**	**19**	**0**	**0**
Apartments	0	6	0	0	0	19	21	7	0	0	0	0
Retail / Restaurant	0	8	0	0	0	19	16	8	16	19	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-1	-1	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**130**	**367**	**69**	**88**	**684**	**90**	**70**	**218**	**461**	**518**	**813**	**59**
"New" Site Traffic % of Total *0.0%*	0.0	3.8	0.0	0.0	0.0	42.2	52.9	6.9	3.5	3.7	0.0	0.0

INTERSECTION VOLUME SUMMARY
Wheatland St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Wheatland St			Bridge Street (SR 113)			Wheatland St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	6	491	15	0	0	0	18	619	5	23	3	7
Seasonal Adjustment Factor ####	6	491	15	0	0	0	18	619	5	23	3	7
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**6**	**491**	**15**	**0**	**0**	**0**	**18**	**619**	**5**	**23**	**3**	**7**
Background Growth 3.91 %	0	19	1	0	0	0	1	24	0	1	0	0
EXISTING W/ BACKGROUND	6	510	16	0	0	0	19	643	5	24	3	7
TOTAL "OTHER" DEVELOPMENTS	4	2	0	0	0	0	0	10	4	10	0	11
115 Buchanan Street (LUC 252)	0	1	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	4	0	0	0	0	0	0	0	4	10	0	11
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**10**	**512**	**16**	**0**	**0**	**0**	**19**	**653**	**9**	**34**	**3**	**18**
TOTAL "NEW" SITE TRAFFIC	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**59**	**0**	**0**	**0**	**0**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	0	26	0	0	0	0	0	21	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-1	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**10**	**533**	**16**	**0**	**0**	**0**	**19**	**711**	**9**	**34**	**3**	**18**
"New" Site Traffic % of Total ####	0.0	3.9	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Wheatland St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Wheatland St			Bridge Street (SR 113)			Wheatland St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	14	600	25	0	0	0	19	640	13	28	2	20
Seasonal Adjustment Factor 1.000	14	600	25	0	0	0	19	640	13	28	2	20
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**14**	**600**	**25**	**0**	**0**	**0**	**19**	**640**	**13**	**28**	**2**	**20**
Background Growth 3.91 %	1	23	1	0	0	0	1	25	1	1	0	1
EXISTING W/ BACKGROUND	15	623	26	0	0	0	20	665	14	29	2	21
TOTAL "OTHER" DEVELOPMENTS	11	30	0	0	0	0	0	-10	11	7	0	7
115 Buchanan Street (LUC 252)	0	3	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	11	0	0	0	0	0	0	0	11	7	0	7
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**26**	**653**	**26**	**0**	**0**	**0**	**20**	**655**	**25**	**36**	**2**	**28**
TOTAL "NEW" SITE TRAFFIC	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**26**	**0**	**0**	**0**	**0**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	0	31	0	0	0	0	0	21	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-5	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**26**	**688**	**26**	**0**	**0**	**0**	**20**	**676**	**25**	**36**	**2**	**28**
"New" Site Traffic % of Total *0.0%*	0.0	5.1	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Wheatland St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Wheatland St			Bridge Street (SR 113)			Wheatland St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	767	20	0	0	0	48	651	10	41	6	32
Seasonal Adjustment Factor 1.000	0	767	20	0	0	0	48	651	10	41	6	32
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**767**	**20**	**0**	**0**	**0**	**48**	**651**	**10**	**41**	**6**	**32**
Background Growth 3.91 %	0	30	1	0	0	0	2	25	0	2	0	1
EXISTING W/ BACKGROUND	0	797	21	0	0	0	50	676	10	43	6	33
TOTAL "OTHER" DEVELOPMENTS	9	48	0	0	0	0	0	4	9	10	0	10
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	9	0	0	0	0	0	0	0	9	10	0	10
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**9**	**845**	**21**	**0**	**0**	**0**	**50**	**680**	**19**	**53**	**6**	**43**
TOTAL "NEW" SITE TRAFFIC	**0**	**71**	**0**	**0**	**0**	**0**	**0**	**68**	**0**	**0**	**0**	**0**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	0	46	0	0	0	0	0	40	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	-2	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**9**	**916**	**21**	**0**	**0**	**0**	**50**	**746**	**19**	**53**	**6**	**43**
"New" Site Traffic % of Total ####	0.0	7.8	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
W Site Access/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			W Site Access			Bridge Street (SR 113)			W Site Access		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	514	0	0	0	0	0	642	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**514**	**0**	**0**	**0**	**0**	**0**	**642**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	20	0	0	0	0	0	25	0	0	0	0
EXISTING W/ BACKGROUND	0	534	0	0	0	0	0	667	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	12	0	0	0	0	0	14	0	0	0	0
115 Buchanan Street (LUC 252)	0	1	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**546**	**0**	**0**	**0**	**0**	**0**	**681**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**26**	**-5**	**0**	**0**	**0**	**0**	**0**	**38**	**26**	**21**	**0**	**21**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	26	0	0	0	0	0	0	0	26	21	0	21
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	8	-8	0	0	0	0	0	-11	11	7	0	10
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**34**	**533**	**0**	**0**	**0**	**0**	**0**	**708**	**37**	**28**	**0**	**31**
"New" Site Traffic % of Total ####	76.5	-0.9	0.0	0.0	0.0	0.0	0.0	5.4	70.3	75.0	0.0	67.7

INTERSECTION VOLUME SUMMARY
W Site Access/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			W Site Access			Bridge Street (SR 113)			W Site Access		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	628	0	0	0	0	0	672	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**628**	**0**	**0**	**0**	**0**	**0**	**672**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	25	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	653	0	0	0	0	0	698	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	37	0	0	0	0	0	1	0	0	0	0
115 Buchanan Street (LUC 252)	0	3	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**690**	**0**	**0**	**0**	**0**	**0**	**699**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**31**	**4**	**0**	**0**	**0**	**0**	**0**	**5**	**32**	**21**	**0**	**21**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	31	0	0	0	0	0	0	0	32	21	0	21
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	17	-17	0	0	0	0	0	-15	15	10	0	10
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**48**	**677**	**0**	**0**	**0**	**0**	**0**	**689**	**47**	**31**	**0**	**31**
"New" Site Traffic % of Total ####	64.6	0.6	0.0	0.0	0.0	0.0	0.0	0.7	68.1	67.7	0.0	67.7

INTERSECTION VOLUME SUMMARY
W Site Access/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			W Site Access			Bridge Street (SR 113)			W Site Access		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	775	0	0	0	0	0	683	0	0	0	0
Seasonal Adjustment Factor 1.000	0	775	0	0	0	0	0	683	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**775**	**0**	**0**	**0**	**0**	**0**	**683**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	30	0	0	0	0	0	27	0	0	0	0
EXISTING W/ BACKGROUND	0	805	0	0	0	0	0	710	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	13	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	2	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**863**	**0**	**0**	**0**	**0**	**0**	**723**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**46**	**25**	**0**	**0**	**0**	**0**	**0**	**28**	**47**	**41**	**0**	**40**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	46	0	0	0	0	0	0	0	47	41	0	40
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	17	-17	0	0	0	0	0	-12	12	14	0	10
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**63**	**871**	**0**	**0**	**0**	**0**	**0**	**739**	**59**	**55**	**0**	**50**
"New" Site Traffic % of Total ####	73.0	2.9	0.0	0.0	0.0	0.0	0.0	3.8	79.7	74.5	0.0	80.0

INTERSECTION VOLUME SUMMARY
Buchanan St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Buchanan St			Bridge Street (SR 113)			Buchanan St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	3	45	0	55	1	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	3	45	0	55	1	0	0	0	0	0
Balancing Adjustments	0	460	0	0	0	0	0	597	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**460**	**3**	**45**	**0**	**55**	**1**	**597**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	18	0	2	0	2	0	23	0	0	0	0
EXISTING W/ BACKGROUND	0	478	3	47	0	57	1	620	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	11	1	3	0	4	1	11	0	0	0	0
115 Buchanan Street (LUC 252)	0	0	1	3	0	4	1	0	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**489**	**4**	**50**	**0**	**61**	**2**	**631**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**64**	**0**	**0**	**0**	**0**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**504**	**4**	**50**	**0**	**61**	**2**	**695**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	3.2	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Buchanan St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Buchanan St			Bridge Street (SR 113)			Buchanan St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	1	89	0	132	3	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	1	89	0	132	3	0	0	0	0	0
Balancing Adjustments	0	559	0	0	0	0	0	514	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**559**	**1**	**89**	**0**	**132**	**3**	**514**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	22	0	3	0	5	0	20	0	0	0	0
EXISTING W/ BACKGROUND	0	581	1	92	0	137	3	534	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	34	3	2	0	4	3	-1	0	0	0	0
115 Buchanan Street (LUC 252)	0	0	3	2	0	4	3	0	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**615**	**4**	**94**	**0**	**141**	**6**	**533**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**37**	**0**	**0**	**0**	**0**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-7	0	0	0	0	0	-5	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**633**	**4**	**94**	**0**	**141**	**6**	**565**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total *0.0%*	0.0	3.9	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Buchanan St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Buchanan St			Bridge Street (SR 113)			Buchanan St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	769	6	67	0	140	0	616	0	0	0	0
Seasonal Adjustment Factor 1.000	0	769	6	67	0	140	0	616	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**769**	**6**	**67**	**0**	**140**	**0**	**616**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	30	0	3	0	5	0	24	0	0	0	0
EXISTING W/ BACKGROUND	0	799	6	70	0	145	0	640	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	54	4	2	0	4	4	11	0	0	0	0
115 Buchanan Street (LUC 252)	0	0	4	2	0	4	4	0	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**853**	**10**	**72**	**0**	**149**	**4**	**651**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**66**	**0**	**0**	**0**	**0**	**0**	**75**	**0**	**0**	**0**	**0**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	-3	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**916**	**10**	**72**	**0**	**149**	**4**	**723**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	7.2	0.0	0.0	0.0	0.0	0.0	10.4	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Walnut St/Bridge Street (SR 113)

Steelworks
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Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Walnut St			Bridge Street (SR 113)			Walnut St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	79	0	0	0	7	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	79	0	0	0	7	0	0	0	0	0
Balancing Adjustments	0	436	0	0	0	0	0	598	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**436**	**79**	**0**	**0**	**0**	**7**	**598**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	17	3	0	0	0	0	23	0	0	0	0
EXISTING W/ BACKGROUND	0	453	82	0	0	0	7	621	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	12	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	1	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**468**	**82**	**0**	**0**	**0**	**7**	**633**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**64**	**0**	**0**	**0**	**0**
Apartments	0	14	0	0	0	0	0	46	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**483**	**82**	**0**	**0**	**0**	**7**	**697**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	3.3	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Walnut St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Walnut St			Bridge Street (SR 113)			Walnut St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	114	0	0	0	5	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	114	0	0	0	5	0	0	0	0	0
Balancing Adjustments	0	577	0	0	0	0	0	517	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**577**	**114**	**0**	**0**	**0**	**5**	**517**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	23	4	0	0	0	0	20	0	0	0	0
EXISTING W/ BACKGROUND	0	600	118	0	0	0	5	537	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	38	0	0	0	0	0	2	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**638**	**118**	**0**	**0**	**0**	**5**	**539**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**37**	**0**	**0**	**0**	**0**
Apartments	0	26	0	0	0	0	0	18	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-7	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**656**	**118**	**0**	**0**	**0**	**5**	**576**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total *0.0%*	0.0	3.8	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Walnut St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Walnut St			Bridge Street (SR 113)			Walnut St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	730	169	0	0	0	30	639	0	0	0	0
Seasonal Adjustment Factor 1.000	0	730	169	0	0	0	30	639	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**730**	**169**	**0**	**0**	**0**	**30**	**639**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	29	7	0	0	0	1	25	0	0	0	0
EXISTING W/ BACKGROUND	0	759	176	0	0	0	31	664	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	15	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	4	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**817**	**176**	**0**	**0**	**0**	**31**	**679**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**66**	**0**	**0**	**0**	**0**	**0**	**75**	**0**	**0**	**0**	**0**
Apartments	0	25	0	0	0	0	0	28	0	0	0	0
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**880**	**176**	**0**	**0**	**0**	**31**	**754**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	7.5	0.0	0.0	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Hall St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Hall St			Bridge Street (SR 113)			Hall St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	405	0	26	0	14	0	471	0	0	0	0
Seasonal Adjustment Factor ####	0	405	0	26	0	14	0	471	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	108	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**405**	**0**	**26**	**0**	**14**	**0**	**579**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	16	0	1	0	1	0	23	0	0	0	0
EXISTING W/ BACKGROUND	0	421	0	27	0	15	0	602	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	12	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	1	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**436**	**0**	**27**	**0**	**15**	**0**	**614**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**14**	**2**	**0**	**0**	**0**	**0**	**0**	**18**	**16**	**46**	**0**	**46**
Apartments	14	0	0	0	0	0	0	0	8	27	0	46
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	-19	0	0	0	0	0	-8	8	19	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**14**	**437**	**0**	**27**	**0**	**15**	**0**	**632**	**16**	**46**	**0**	**46**
"New" Site Traffic % of Total ####	100.0	0.5	0.0	0.0	0.0	0.0	0.0	2.8	100.0	100.0	0.0	100.0

INTERSECTION VOLUME SUMMARY
Hall St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Hall St			Bridge Street (SR 113)			Hall St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	577	0	31	0	15	0	522	0	0	0	0
Seasonal Adjustment Factor 1.000	0	577	0	31	0	15	0	522	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**577**	**0**	**31**	**0**	**15**	**0**	**522**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	23	0	1	0	1	0	20	0	0	0	0
EXISTING W/ BACKGROUND	0	600	0	32	0	16	0	542	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	38	0	0	0	0	0	2	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**638**	**0**	**32**	**0**	**16**	**0**	**544**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**34**	**-1**	**0**	**0**	**0**	**0**	**0**	**19**	**36**	**40**	**0**	**25**
Apartments	26	0	0	0	0	0	0	0	15	11	0	18
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	-22	0	0	0	0	0	-13	13	22	0	0
Uncle B's Bar B Q	8	0	0	0	0	0	0	0	8	7	0	7
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	6	-13	0	0	0	0	0	-5	5	5	0	4
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**40**	**624**	**0**	**32**	**0**	**16**	**0**	**558**	**41**	**45**	**0**	**29**
"New" Site Traffic % of Total ####	85.0	-0.2	0.0	0.0	0.0	0.0	0.0	3.4	87.8	88.9	0.0	86.2

INTERSECTION VOLUME SUMMARY
Hall St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Hall St			Bridge Street (SR 113)			Hall St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	845	0	22	0	0	0	599	0	0	0	0
Seasonal Adjustment Factor 1.000	0	845	0	22	0	0	0	599	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**845**	**0**	**22**	**0**	**0**	**0**	**599**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	33	0	1	0	0	0	23	0	0	0	0
EXISTING W/ BACKGROUND	0	878	0	23	0	0	0	622	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	15	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	4	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**936**	**0**	**23**	**0**	**0**	**0**	**637**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**34**	**41**	**0**	**0**	**0**	**0**	**0**	**47**	**23**	**22**	**0**	**34**
Apartments	25	0	0	0	0	0	0	0	14	16	0	28
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	9	0	0	0	0	0	0	0	9	6	0	6
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	0	0	3	0	3
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**34**	**974**	**0**	**23**	**0**	**0**	**0**	**684**	**23**	**25**	**0**	**37**
"New" Site Traffic % of Total ####	100.0	4.2	0.0	0.0	0.0	0.0	0.0	6.9	100.0	88.0	0.0	91.9

INTERSECTION VOLUME SUMMARY
Church St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 : **Weekday 7-9 AM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Church St			Bridge Street (SR 113)			Church St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	111	12	0	3	3	0	0	0	0	0
Seasonal Adjustment Factor ####	0	0	111	12	0	3	3	0	0	0	0	0
Balancing Adjustments	0	308	0	0	0	0	0	468	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**308**	**111**	**12**	**0**	**3**	**3**	**468**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	12	4	0	0	0	0	18	0	0	0	0
EXISTING W/ BACKGROUND	0	320	115	12	0	3	3	486	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	12	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	1	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	4	0	0	0	0
Bridge St Residences + Retail	0	8	0	0	0	0	0	12	0	0	0	0
Group 3	0	2	0	0	0	0	0	7	0	0	0	0
Group 4	0	4	0	0	0	0	0	8	0	0	0	0
Group 5	0	0	0	0	0	0	0	1	0	0	0	0
Group 6	0	16	0	0	0	0	0	30	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	2	0	0	0	0
Group 9	0	1	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-49	0	0	0	0	0	-60	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	14	0	0	0	0	0	7	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**335**	**115**	**12**	**0**	**3**	**3**	**498**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**48**	**0**	**0**	**0**	**0**	**0**	**34**	**0**	**0**	**0**	**0**
Apartments	0	27	0	0	0	0	0	8	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	26	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-1	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**382**	**115**	**12**	**0**	**3**	**3**	**532**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	12.6	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Church St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Weekday 4-6 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Church St			Bridge Street (SR 113)			Church St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	171	54	0	15	20	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	171	54	0	15	20	0	0	0	0	0
Balancing Adjustments	0	421	0	0	0	0	0	468	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**421**	**171**	**54**	**0**	**15**	**20**	**468**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	16	7	2	0	1	1	18	0	0	0	0
EXISTING W/ BACKGROUND	0	437	178	56	0	16	21	486	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	38	0	0	0	0	0	2	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	3	0	0	0	0
723 Wheatland Street (LUC 221)	0	7	0	0	0	0	0	11	0	0	0	0
Bridge St Residences + Retail	0	22	0	0	0	0	0	20	0	0	0	0
Group 3	0	8	0	0	0	0	0	5	0	0	0	0
Group 4	0	9	0	0	0	0	0	7	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	33	0	0	0	0	0	25	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	4	0	0	0	0	0	6	0	0	0	0
Group 9	0	1	0	0	0	0	0	2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-63	0	0	0	0	0	-95	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	12	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**475**	**178**	**56**	**0**	**16**	**21**	**488**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**32**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**0**	**0**	**0**
Apartments	0	11	0	0	0	0	0	15	0	0	0	0
Retail / Restaurant	0	21	0	0	0	0	0	32	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-7	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**500**	**178**	**56**	**0**	**16**	**21**	**535**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	6.4	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0

INTERSECTION VOLUME SUMMARY
Church St/Bridge Street (SR 113)

Steelworks
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2021-09 I **Saturday 11-2 PM**
Design Year (2027) - 2021-09 REVISED TIS

	EASTBOUND			NORTHBOUND			WESTBOUND			SOUTHBOUND		
	Bridge Street (SR 113)			Church St			Bridge Street (SR 113)			Church St		
Traffic Component	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	628	223	43	0	7	33	612	0	0	0	0
Seasonal Adjustment Factor 1.000	0	628	223	43	0	7	33	612	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING TRAFFIC	**0**	**628**	**223**	**43**	**0**	**7**	**33**	**612**	**0**	**0**	**0**	**0**
Background Growth 3.91 %	0	25	9	2	0	0	1	24	0	0	0	0
EXISTING W/ BACKGROUND	0	653	232	45	0	7	34	636	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	58	0	0	0	0	0	15	0	0	0	0
115 Buchanan Street (LUC 252)	0	4	0	0	0	0	0	4	0	0	0	0
723 Wheatland Street (LUC 221)	0	10	0	0	0	0	0	9	0	0	0	0
Bridge St Residences + Retail	0	26	0	0	0	0	0	26	0	0	0	0
Group 3	0	8	0	0	0	0	0	6	0	0	0	0
Group 4	0	10	0	0	0	0	0	8	0	0	0	0
Group 5	0	1	0	0	0	0	0	1	0	0	0	0
Group 6	0	35	0	0	0	0	0	33	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Group 8	0	5	0	0	0	0	0	5	0	0	0	0
Group 9	0	1	0	0	0	0	0	1	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Paradise Street Diversions	0	-55	0	0	0	0	0	-92	0	0	0	0
Schuylkill Township	0	0	0	0	0	0	0	0	0	0	0	0
East Pikeland Township	0	13	0	0	0	0	0	14	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/O PROJECT	**0**	**711**	**232**	**45**	**0**	**7**	**34**	**651**	**0**	**0**	**0**	**0**
TOTAL "NEW" SITE TRAFFIC	**0**	**57**	**0**	**0**	**0**	**0**	**0**	**61**	**0**	**0**	**0**	**0**
Apartments	0	16	0	0	0	0	0	14	0	0	0	0
Retail / Restaurant	0	41	0	0	0	0	0	47	0	0	0	0
Hall Street Diversion	0	0	0	0	0	0	0	0	0	0	0	0
Uncle B's Bar B Q	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	-3	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
FUTURE TRAFFIC W/ PROJECT	**0**	**765**	**232**	**45**	**0**	**7**	**34**	**712**	**0**	**0**	**0**	**0**
"New" Site Traffic % of Total ####	0.0	7.5	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0

Appendix H

Capacity / Level-of-Service Methodology

CAPACITY/LEVEL-OF-SERVICE ANALYSIS METHODOLOGY

The detailed capacity/level-of-service analysis contained in this transportation impact study was performed in accordance with the standard techniques contained in the *Highway Capacity Manual 6th Edition.* By definition, capacity represents "the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions." The level at which an intersection or a uniform section of a lane or roadway function can be expressed in terms of a level of service. Level of service (LOS) is defined as "a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."

Stop-Controlled Intersections

At unsignalized stop-controlled intersections, such as two-way stop-controlled (TWSC) or all-way stop-controlled (AWSC), a methodology for evaluating the relative functioning of these intersections is based upon the control delay. For these types of unsignalized intersections, the analysis of the control delay is based upon the following data:

- Number and configuration of lanes on each approach;
- Percentage of heavy vehicles on each approach;
- Demand flow rate for each entering vehicular movement and pedestrian crossing movement;
- Unique geometric factors such as, channelization aspects; two-way left-turn lanes, raised or striped median storage; approach grades, flared approaches on the minor street; and upstream signals within 0.25 miles.

At TWSC intersections, only drivers on the minor street approaches are required to stop before proceeding into the intersection and left-turning drivers from the major street may have to yield to on-coming major street through or right-turning traffic, but are not required to stop in the absence of on-coming traffic. The capacity at stop-controlled legs is based primarily on three factors: the distribution of gaps in the major stream, driver judgment in selecting the gaps, and the follow-up headways required by each driver in a queue.

At AWSC intersections, every vehicle is required to stop at the intersection before proceeding, and as a result, the decision to proceed is a function of the traffic conditions on the other approaches. Each driver proceeds only after determining that no vehicles are currently in the intersection and that it is the driver's turn to proceed. Capacity at an AWSC intersection is described by the saturation headway or time between departures of successive vehicles on a given approach for a particular case assuming a continuous queue; departure headway or the average time between departures of successive vehicles on a given approach accounting for the probability of each possible case; and service time or the average time sent by a vehicle in first position waiting to depart.

At both TWSC and AWSC intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. For TWSC intersections, the level of service is not calculated for major-street approaches or for the intersection as a whole; however, the intersection-wide level of service is calculated for AWSC intersections. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for TWSC and AWSC intersections.

Control Delay (Sec/Veh)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

Signalized Intersections

At three or four-legged signalized intersections, a methodology for evaluating the capacity and quality of service provided to road users traveling through the signalized intersection. For signalized intersections, the level of service can be characterized for the entire intersection, each approach, and each lane group. The level of service is based upon the control delay and volume-to-capacity ratio. The delay quantifies the increase in travel time due to the traffic signal control and is a surrogate measure of driver discomfort and fuel consumption, while the volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group. Input data in determining the delay and volume-to-capacity ratio include:

- Demand flow rate for each entering vehicular movement and pedestrian crossing movement, including right-turn on red volumes and percent of heavy vehicles;
- Initial queue for each lane group;
- Number and configuration of lanes on each approach;
- Type of signal control and phase sequence;
- Allocation of minimum/maximum green times and clearance intervals (Yellow plus All Red phases); and
- Phase recall.

At signalized intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for signalized intersections.

Control Delay (Sec/Veh)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

Appendix I

Existing Capacity/Level-of-Service Analysis Worksheets

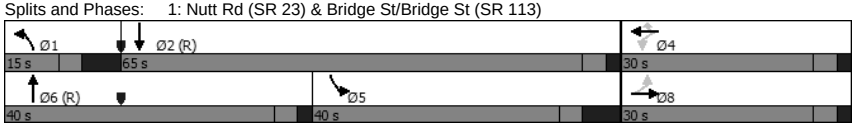
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	137	49	12	326	288	75	312	26	387	666	116
Future Volume (vph)	48	137	49	12	326	288	75	312	26	387	666	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.960				0.850		0.988			0.978	
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1580	1621	0	0	1652	1353	1588	1696	0	1572	1816	0
Flt Permitted	0.202				0.987		0.950			0.950		
Satd. Flow (perm)	336	1621	0	0	1634	1353	1587	1696	0	1572	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				316		4			13	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			246	
Travel Time (s)		17.2			17.9			17.1			4.8	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	4%	2%	0%	1%	5%	0%	4%	8%	1%	3%	0%
Adj. Flow (vph)	53	151	54	13	358	316	82	343	29	425	732	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	205	0	0	371	316	82	372	0	425	859	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

McMahon Associates, Inc. Steelworks Mixed-Use
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113) Existing | Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	40.0		40.0	65.0	
Total Split (%)	27.3%	27.3%		27.3%	27.3%	27.3%	13.6%	36.4%		36.4%	59.1%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	7.0	35.0		32.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings Existing | Weekday AM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2020-11 TIS\Synchro\1 -EX\AM.syn Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	137	49	12	326	288	75	312	26	387	666	116
Future Volume (veh/h)	48	137	49	12	326	288	75	312	26	387	666	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1846	1794	1780	1724	1794	1738	1682	1780	1822	1866
Adj Flow Rate, veh/h	53	151	54	13	358	0	82	343	29	425	732	127
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	4	2	0	1	5	0	4	8	1	3	0
Cap, veh/h	164	299	107	40	406		124	387	33	652	801	139
Arrive On Green	0.23	0.23	0.22	0.22	0.23	0.00	0.07	0.25	0.24	0.38	0.53	0.52
Sat Flow, veh/h	1010	1277	457	27	1737	1461	1709	1580	134	1696	1512	262
Grp Volume(v), veh/h	53	0	205	371	0	0	82	0	372	425	0	859
Grp Sat Flow(s),veh/h/ln	1010	0	1734	1764	0	1461	1709	0	1714	1696	0	1775
Q Serve(g_s), s	0.0	0.0	11.3	9.0	0.0	0.0	5.1	0.0	23.0	22.6	0.0	48.5
Cycle Q Clear(g_c), s	16.2	0.0	11.3	22.7	0.0	0.0	5.1	0.0	23.0	22.6	0.0	48.5
Prop In Lane	1.00		0.26	0.04		1.00	1.00		0.08	1.00		0.15
Lane Grp Cap(c), veh/h	164	0	406	430	0		124	0	420	652	0	940
V/C Ratio(X)	0.32	0.00	0.51	0.86	0.00		0.66	0.00	0.89	0.65	0.00	0.91
Avail Cap(c_a), veh/h	167	0	410	435	0		124	0	561	652	0	984
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	36.7	40.9	0.0	0.0	49.7	0.0	40.1	27.8	0.0	23.6
Incr Delay (d2), s/veh	1.1	0.0	1.0	16.0	0.0	0.0	12.1	0.0	22.9	2.3	0.0	14.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.0	8.6	17.5	0.0	0.0	4.7	0.0	17.9	14.3	0.0	30.4
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	39.6	0.0	37.7	56.9	0.0	0.0	61.8	0.0	63.0	30.1	0.0	38.3
LnGrp LOS	D	A	D	E	A	A	E	A	E	C	A	D
Approach Vol, veh/h		258			687	A		454			1284	
Approach Delay, s/veh		38.1			30.7			62.8			35.6	
Approach LOS		D			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	65.3		29.7	49.3	31.0		29.7				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 60		25.0	32.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	7.6	50.5		24.7	25.1	25.0		18.7				
Green Ext Time (p_c), s	0.0	2.8		0.1	0.9	0.9		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

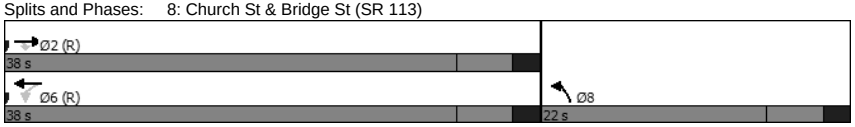
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	308	111	3	468	12	3
Future Volume (vph)	308	111	3	468	12	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1615	1400	1565	1631	1606	0
Flt Permitted			0.551		0.960	
Satd. Flow (perm)	1615	1400	908	1631	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		126			3	
Link Speed (mph)	25			25	25	
Link Distance (ft)	305			218	489	
Travel Time (s)	8.3			5.9	13.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	2%	2%	3%	2%	2%
Adj. Flow (vph)	350	126	3	532	14	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	350	126	3	532	17	0
Number of Detectors	1	1	1	1	1	
Detector Template						
Leading Detector (ft)	35	35	35	35	35	
Trailing Detector (ft)	-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5	
Detector 1 Size(ft)	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	38.0	38.0	38.0	38.0	22.0	
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	
Maximum Green (s)	32.0	32.0	32.0	32.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church St & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	308	111	3	468	12	3
Future Volume (veh/h)	308	111	3	468	12	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1744	1772	1772	1758	1809	1809
Adj Flow Rate, veh/h	350	126	3	532	14	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	2	2	3	2	2
Cap, veh/h	1386	1194	767	1398	50	11
Arrive On Green	0.80	0.80	0.80	0.80	0.04	0.02
Sat Flow, veh/h	1744	1502	870	1758	1316	282
Grp Volume(v), veh/h	350	126	3	532	18	0
Grp Sat Flow(s),veh/h/ln	1744	1502	870	1758	1692	0
Q Serve(g_s), s	3.1	1.1	0.1	5.3	0.6	0.0
Cycle Q Clear(g_c), s	3.1	1.1	3.1	5.3	0.6	0.0
Prop In Lane		1.00	1.00		0.78	0.17
Lane Grp Cap(c), veh/h	1386	1194	767	1398	65	0
V/C Ratio(X)	0.25	0.11	0.00	0.38	0.28	0.00
Avail Cap(c_a), veh/h	1386	1194	767	1398	479	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	1.6	1.4	2.0	1.8	28.1	0.0
Incr Delay (d2), s/veh	0.4	0.2	0.0	0.8	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.3	0.0	1.6	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.0	1.6	2.0	2.6	31.4	0.0
LnGrp LOS	A	A	A	A	C	A
Approach Vol, veh/h	476			535	18	
Approach Delay, s/veh	1.9			2.6	31.4	
Approach LOS	A			A	C	

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	52.7			52.7	7.3
Change Period (Y+Rc), s	6.0			6.0	6.0
Max Green Setting (Gmax), s	32.0			32.0	16.0
Max Q Clear Time (g_c+I1), s	5.6			7.8	3.1
Green Ext Time (p_c), s	4.2			4.9	0.0

Intersection Summary		
HCM 6th Ctrl Delay	2.8	
HCM 6th LOS	A	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	6	491	15	18	619	5	0	0	0	23	3	7
Future Volume (vph)	6	491	15	18	619	5	0	0	0	23	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.999						0.972	
Flt Protected		0.999			0.999						0.966	
Satd. Flow (prot)	0	2006	0	0	1750	0	0	0	0	0	1623	0
Flt Permitted		0.999			0.999						0.966	
Satd. Flow (perm)	0	2006	0	0	1750	0	0	0	0	0	1623	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Confl. Peds. (#/hr)	8					8				4		1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	28%	3%	0%	0%	0%	0%	4%	0%	14%
Adj. Flow (vph)	6	506	15	19	638	5	0	0	0	24	3	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	662	0	0	0	0	0	34	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	6	491	15	18	619	5	0	0	0	23	3	7
Future Vol, veh/h	6	491	15	18	619	5	0	0	0	23	3	7
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	4	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16	9	7	4	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	0	28	3	0	0	0	0	4	0	14
Mvmt Flow	6	506	15	19	638	5	0	0	0	24	3	7

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	651	0	0	521	0	0		1217	1220	650
Stage 1	-	-	-	-	-	-		687	687	-
Stage 2	-	-	-	-	-	-		530	533	-
Critical Hdwy	4.3	-	-	4.6	-	-		6.64	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	-	-		5.64	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.64	5.7	-
Follow-up Hdwy	3	-	-	3.3	-	-		3	4	3.2
Pot Cap-1 Maneuver	714	-	-	705	-	-		202	170	463
Stage 1	-	-	-	-	-	-		537	434	-
Stage 2	-	-	-	-	-	-		647	513	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	709	-	-	705	-	-		188	0	459
Mov Cap-2 Maneuver	-	-	-	-	-	-		188	0	-
Stage 1	-	-	-	-	-	-		527	0	-
Stage 2	-	-	-	-	-	-		615	0	-

Approach	EB	WB	SB
HCM Control Delay, s	9.1	0.3	24.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	709	-	-	705	-	-	218
HCM Lane V/C Ratio	0.009	-	-	0.026	-	-	0.156
HCM Control Delay (s)	10.1	0	-	10.2	0	-	24.5
HCM Lane LOS	B	A	-	B	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	460	3	1	597	45	55
Future Volume (vph)	460	3	1	597	45	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.926	
Flt Protected					0.978	
Satd. Flow (prot)	2019	0	0	2060	1936	0
Flt Permitted					0.978	
Satd. Flow (perm)	2019	0	0	2060	1936	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			104	283	
Travel Time (s)	20.4			2.8	7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	0%	0%	4%	7%	2%
Adj. Flow (vph)	495	3	1	642	48	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	498	0	0	643	107	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	460	3	1	597	45	55
Future Vol, veh/h	460	3	1	597	45	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	0	0	4	7	2
Mvmt Flow	495	3	1	642	48	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	498	0	1141	497
Stage 1	-	-	-	-	497	-
Stage 2	-	-	-	-	644	-
Critical Hdwy	-	-	4.3	-	5.07	5.52
Critical Hdwy Stg 1	-	-	-	-	4.07	-
Critical Hdwy Stg 2	-	-	-	-	4.07	-
Follow-up Hdwy	-	-	3	-	3.2	3.1
Pot Cap-1 Maneuver	-	-	809	-	*265	666
Stage 1	-	-	-	-	*793	-
Stage 2	-	-	-	-	*603	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	809	-	*264	666
Mov Cap-2 Maneuver	-	-	-	-	*264	-
Stage 1	-	-	-	-	*793	-
Stage 2	-	-	-	-	*602	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	395	-	-	809	-
HCM Lane V/C Ratio	0.272	-	-	0.001	-
HCM Control Delay (s)	17.5	-	-	9.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	436	79	7	598	0	0
Future Volume (vph)	436	79	7	598	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979					
Flt Protected				0.999		
Satd. Flow (prot)	2039	0	0	2089	0	1900
Flt Permitted				0.999		
Satd. Flow (perm)	2039	0	0	2089	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	104			214	356	
Travel Time (s)	2.8			5.8	9.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	479	87	8	657	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	566	0	0	665	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	436	79	7	598	0	0
Future Vol, veh/h	436	79	7	598	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	479	87	8	657	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	566	0	-	523
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.3
Pot Cap-1 Maneuver	-	-	766	-	0	558
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	766	-	-	558
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	766	-
HCM Lane V/C Ratio	-	-	-	0.01	-
HCM Control Delay (s)	0	-	-	9.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	405	0	0	579	26	14
Future Volume (vph)	405	0	0	579	26	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.953	
Flt Protected					0.968	
Satd. Flow (prot)	2071	0	0	2091	1957	0
Flt Permitted					0.968	
Satd. Flow (perm)	2071	0	0	2091	1957	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	214			305	454	
Travel Time (s)	5.8			8.3	12.4	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	0%	0%	3%	2%	2%
Adj. Flow (vph)	460	0	0	658	30	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	460	0	0	658	46	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	405	0	0	579	26	14
Future Vol, veh/h	405	0	0	579	26	14
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	0	0	3	2	2
Mvmt Flow	460	0	0	658	30	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1118	460
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	658	-
Critical Hdwy	-	-	-	-	6.22	6.12
Critical Hdwy Stg 1	-	-	-	-	5.22	-
Critical Hdwy Stg 2	-	-	-	-	5.22	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	*225	643
Stage 1	-	0	0	-	*741	-
Stage 2	-	0	0	-	*643	-
Platoon blocked, %	-			-	1	
Mov Cap-1 Maneuver	-	-	-	-	*225	643
Mov Cap-2 Maneuver	-	-	-	-	*225	-
Stage 1	-	-	-	-	*741	-
Stage 2	-	-	-	-	*643	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	291	-	-
HCM Lane V/C Ratio	0.156	-	-
HCM Control Delay (s)	19.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1169	360	0	0	288
Future Volume (vph)	0	1169	360	0	0	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1809	0	0	1542
Flt Permitted						
Satd. Flow (perm)	0	1853	1809	0	0	1542
Link Speed (mph)		35	35		30	
Link Distance (ft)		731	246		147	
Travel Time (s)		14.2	4.8		3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	4%	2%	2%	5%
Adj. Flow (vph)	0	1285	396	0	0	316
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	396	0	0	316
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1169	360	0	0	288
Future Vol, veh/h	0	1169	360	0	0	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	4	2	2	5
Mvmt Flow	0	1285	396	0	0	316

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	396
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	667
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	667
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	15.2
HCM LOS			C

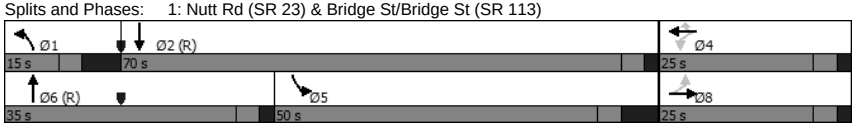
Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	667
HCM Lane V/C Ratio	-	-	0.474
HCM Control Delay (s)	-	-	15.2
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	249	26	18	193	482	62	600	27	452	522	64
Future Volume (vph)	117	249	26	18	193	482	62	600	27	452	522	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt		0.986				0.850		0.993			0.984	
Flt Protected	0.950				0.996		0.950			0.950		
Satd. Flow (prot)	1580	1733	0	0	1650	1407	1557	1745	0	1557	1842	0
Flt Permitted	0.428				0.845		0.950			0.950		
Satd. Flow (perm)	712	1733	0	0	1400	1407	1555	1745	0	1557	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				492		2			10	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	1%	1%	2%	2%	0%	2%	2%	0%
Adj. Flow (vph)	119	254	27	18	197	492	63	612	28	461	533	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	281	0	0	215	492	63	640	0	461	598	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	15.0	35.0		50.0	70.0	
Total Split (%)	22.7%	22.7%		22.7%	22.7%	22.7%	13.6%	31.8%		45.5%	63.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0	20.0	7.0	30.0		42.0	65.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	249	26	18	193	482	62	600	27	452	522	64
Future Volume (veh/h)	117	249	26	18	193	482	62	600	27	452	522	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1875	1875	1794	1780	1780	1766	1766	1794	1766	1837	1866
Adj Flow Rate, veh/h	119	254	27	18	197	0	63	612	28	461	533	65
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	0	1	1	2	2	0	2	2	0
Cap, veh/h	154	318	34	41	216		107	472	22	658	935	114
Arrive On Green	0.19	0.19	0.18	0.18	0.19	0.00	0.06	0.28	0.27	0.39	0.58	0.57
Sat Flow, veh/h	1170	1666	177	28	1131	1509	1682	1676	77	1682	1606	196
Grp Volume(v), veh/h	119	0	281	215	0	0	63	0	640	461	0	598
Grp Sat Flow(s),veh/h/ln	1170	0	1843	1159	0	1509	1682	0	1752	1682	0	1802
Q Serve(g_s), s	1.5	0.0	16.0	4.0	0.0	0.0	4.0	0.0	31.0	25.3	0.0	22.9
Cycle Q Clear(g_c), s	21.0	0.0	16.0	20.0	0.0	0.0	4.0	0.0	31.0	25.3	0.0	22.9
Prop In Lane	1.00		0.10	0.08		1.00	1.00		0.04	1.00		0.11
Lane Grp Cap(c), veh/h	154	0	352	246	0		107	0	494	658	0	1049
V/C Ratio(X)	0.77	0.00	0.80	0.87	0.00		0.59	0.00	1.30	0.70	0.00	0.57
Avail Cap(c_a), veh/h	154	0	352	246	0		122	0	494	658	0	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	42.5	42.9	0.0	0.0	50.1	0.0	39.5	28.1	0.0	14.4
Incr Delay (d2), s/veh	21.2	0.0	12.2	27.3	0.0	0.0	5.6	0.0	147.6	3.3	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.6	0.0	13.3	12.4	0.0	0.0	3.3	0.0	49.2	15.7	0.0	14.3
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	69.2	0.0	54.8	70.2	0.0	0.0	55.8	0.0	187.1	31.4	0.0	16.7
LnGrp LOS	E	A	D	E	A	A	E	A	F	C	A	B
Approach Vol, veh/h		400			707	A		703			1059	
Approach Delay, s/veh		59.1			21.3			175.3			23.1	
Approach LOS		E			C			F			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	71.0		25.0	50.0	35.0		25.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 65		20.0	42.0	30.0		20.0				
Max Q Clear Time (g_c+I1), s	6.5	24.9		22.0	27.8	33.0		23.5				
Green Ext Time (p_c), s	0.0	2.4		0.0	1.5	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	65.0
HCM 6th LOS	E

Notes

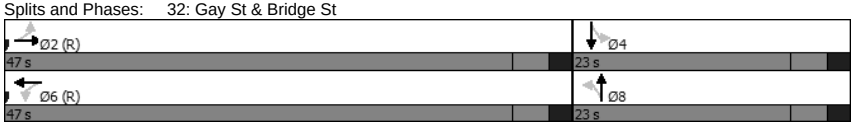
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	8	14	14	14	10	10	10	13	13	13
Grade (%)		1%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99		0.99	0.97	
Frt		0.992			0.979			0.987			0.916	
Flt Protected		0.985			0.998			0.998		0.950		
Satd. Flow (prot)	0	1842	0	0	1839	0	0	1625	0	1715	1616	0
Flt Permitted		0.749			0.972			0.979		0.313		
Satd. Flow (perm)	0	1394	0	0	1790	0	0	1592	0	557	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		369			664			193			1199	
Travel Time (s)		10.1			18.1			5.3			32.7	
Confl. Peds. (#/hr)	20		19	19		20	13		18	18		13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	145	316	30	24	434	83	18	314	36	54	95	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	541	0	0	368	0	54	216	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	35		20	35		20	35		35	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	26.0	26.0		26.0	26.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0		25.0	25.0	
Total Split (s)	47.0	47.0		47.0	47.0		23.0	23.0		23.0	23.0	
Total Split (%)	67.1%	67.1%		67.1%	67.1%		32.9%	32.9%		32.9%	32.9%	
Maximum Green (s)	42.0	42.0		42.0	42.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	17	17		17	17		17	17		17	17	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 18 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: Gay St & Bridge St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.98		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1852	1852	1723	1872	1857	1857	1693	1778	1778	1820	1849	1805
Adj Flow Rate, veh/h	145	316	30	24	434	83	18	314	36	54	95	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	6	0	0	2	0	3
Cap, veh/h	295	617	55	76	926	172	64	383	43	256	183	234
Arrive On Green	0.62	0.63	0.62	1.00	1.00	1.00	0.24	0.25	0.24	0.25	0.25	0.24
Sat Flow, veh/h	361	977	87	35	1467	272	39	1507	168	992	722	919
Grp Volume(v), veh/h	491	0	0	541	0	0	368	0	0	54	0	216
Grp Sat Flow(s),veh/h/ln	1425	0	0	1774	0	0	1715	0	0	992	0	1641
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	12.2	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	6.3	0.0	8.0
Prop In Lane	0.30		0.06	0.04		0.15	0.05		0.10	1.00		0.56
Lane Grp Cap(c), veh/h	946	0	0	1149	0	0	465	0	0	256	0	417
V/C Ratio(X)	0.52	0.00	0.00	0.47	0.00	0.00	0.79	0.00	0.00	0.21	0.00	0.52
Avail Cap(c_a), veh/h	946	0	0	1149	0	0	494	0	0	274	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.65	0.00	0.00	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	6.9	0.0	0.0	0.0	0.0	0.0	24.9	0.0	0.0	21.8	0.0	22.7
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.9	0.0	0.0	8.1	0.0	0.0	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	0.0	0.0	0.5	0.0	0.0	11.0	0.0	0.0	1.3	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.9	0.0	0.0	0.9	0.0	0.0	33.0	0.0	0.0	22.2	0.0	23.7
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		491			541			368			270	
Approach Delay, s/veh		8.9			0.9			33.0			23.4	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.2		21.8		48.2		21.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		42.0		18.0		42.0		18.0				
Max Q Clear Time (g_c+I1), s		14.2		10.0		2.5		16.5				
Green Ext Time (p_c), s		2.5		0.7		2.3		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	14	600	25	19	640	13	0	0	0	28	2	20
Future Volume (vph)	14	600	25	19	640	13	0	0	0	28	2	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.997						0.945	
Flt Protected		0.999			0.999						0.973	
Satd. Flow (prot)	0	2096	0	0	1794	0	0	0	0	0	1680	0
Flt Permitted		0.999			0.999						0.973	
Satd. Flow (perm)	0	2096	0	0	1794	0	0	0	0	0	1680	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Confl. Peds. (#/hr)	4					4				2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	4%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	625	26	20	667	14	0	0	0	29	2	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	666	0	0	701	0	0	0	0	0	52	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	14	600	25	19	640	13	0	0	0	28	2	20
Future Vol, veh/h	14	600	25	19	640	13	0	0	0	28	2	20
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	1	4	0	1	0	0	0	0	0	0	0
Mvmt Flow	15	625	26	20	667	14	0	0	0	29	2	21

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	685	0	0	651	0	0	1388	1399	679
Stage 1	-	-	-	-	-	-	718	718	-
Stage 2	-	-	-	-	-	-	670	681	-
Critical Hdwy	4.3	-	-	4.3	-	-	6.6	6.7	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.6	5.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	695	-	-	714	-	-	159	131	467
Stage 1	-	-	-	-	-	-	522	419	-
Stage 2	-	-	-	-	-	-	552	436	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	693	-	-	714	-	-	146	0	465
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	0	-
Stage 1	-	-	-	-	-	-	503	0	-
Stage 2	-	-	-	-	-	-	526	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.3	28.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	693	-	-	714	-	-	204
HCM Lane V/C Ratio	0.021	-	-	0.028	-	-	0.255
HCM Control Delay (s)	10.3	0	-	10.2	0	-	28.6
HCM Lane LOS	B	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	577	114	5	517	0	0
Future Volume (vph)	577	114	5	517	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978					
Flt Protected						
Satd. Flow (prot)	2065	0	0	2132	0	1900
Flt Permitted						
Satd. Flow (perm)	2065	0	0	2132	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	1%	0%	0%
Adj. Flow (vph)	614	121	5	550	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	735	0	0	555	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	577	114	5	517	0	0
Future Vol, veh/h	577	114	5	517	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	1	0	0
Mvmt Flow	614	121	5	550	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	735	0	-	675
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	667	-	0	479
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	667	-	-	479
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	667	-
HCM Lane V/C Ratio	-	-	-	0.008	-
HCM Control Delay (s)	0	-	-	10.4	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	577	0	0	522	31	15
Future Volume (vph)	577	0	0	522	31	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.956	
Flt Protected					0.967	
Satd. Flow (prot)	2111	0	0	2132	1961	0
Flt Permitted					0.967	
Satd. Flow (perm)	2111	0	0	2132	1961	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	190			297	454	
Travel Time (s)	5.2			8.1	12.4	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	607	0	0	549	33	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	607	0	0	549	49	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	577	0	0	522	31	15
Future Vol, veh/h	577	0	0	522	31	15
Conflicting Peds, #/hr	0	4	4	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	1	3	0
Mvmt Flow	607	0	0	549	33	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1156	607
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	549	-
Critical Hdwy	-	-	-	-	6.23	6.1
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	*206	533
Stage 1	-	0	0	-	*633	-
Stage 2	-	0	0	-	*693	-
Platoon blocked, %	-			-	1	
Mov Cap-1 Maneuver	-	-	-	-	*206	533
Mov Cap-2 Maneuver	-	-	-	-	*206	-
Stage 1	-	-	-	-	*633	-
Stage 2	-	-	-	-	*693	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	258	-	-
HCM Lane V/C Ratio	0.188	-	-
HCM Control Delay (s)	22.1	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1038	717	0	0	482
Future Volume (vph)	0	1038	717	0	0	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1059	732	0	0	492
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1059	732	0	0	492
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	28.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1038	717	0	0	482
Future Vol, veh/h	0	1038	717	0	0	482
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1059	732	0	0	492

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	732
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 418
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 418
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	131.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	418
HCM Lane V/C Ratio	-	-	1.177
HCM Control Delay (s)	-	-	131.7
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	19

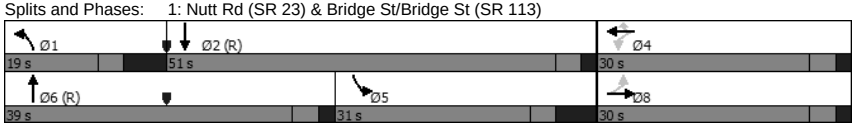
Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	290	65	24	148	470	85	602	43	483	726	51
Future Volume (vph)	119	290	65	24	148	470	85	602	43	483	726	51
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.973				0.850		0.990			0.990	
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1580	1690	0	0	1627	1393	1557	1738	0	1557	1854	0
Flt Permitted	0.536				0.662		0.950			0.950		
Satd. Flow (perm)	892	1690	0	0	1085	1393	1557	1738	0	1557	1854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11				480		4			5	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	121	296	66	24	151	480	87	614	44	493	741	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	362	0	0	175	480	87	658	0	493	793	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	19.0	39.0		31.0	51.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	19.0%	39.0%		31.0%	51.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	11.0	34.0		23.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	290	65	24	148	470	85	602	43	483	726	51
Future Volume (veh/h)	119	290	65	24	148	470	85	602	43	483	726	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1860	1846	1766	1766	1766	1766	1766	1766	1766	1837	1837
Adj Flow Rate, veh/h	121	296	66	24	151	0	87	614	44	493	741	52
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	1	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	372	83	53	271		133	570	41	416	828	58
Arrive On Green	0.25	0.25	0.24	0.24	0.25	0.00	0.08	0.35	0.34	0.25	0.49	0.48
Sat Flow, veh/h	1220	1473	328	49	1071	1497	1682	1629	117	1682	1697	119
Grp Volume(v), veh/h	121	0	362	175	0	0	87	0	658	493	0	793
Grp Sat Flow(s),veh/h/ln	1220	0	1801	1120	0	1497	1682	0	1745	1682	0	1816
Q Serve(g_s), s	2.2	0.0	18.8	1.1	0.0	0.0	5.0	0.0	35.0	24.7	0.0	39.7
Cycle Q Clear(g_c), s	21.6	0.0	18.8	19.9	0.0	0.0	5.0	0.0	35.0	24.7	0.0	39.7
Prop In Lane	1.00		0.18	0.14		1.00	1.00		0.07	1.00		0.07
Lane Grp Cap(c), veh/h	234	0	455	313	0		133	0	611	416	0	886
V/C Ratio(X)	0.52	0.00	0.79	0.56	0.00		0.65	0.00	1.08	1.19	0.00	0.89
Avail Cap(c_a), veh/h	242	0	468	324	0		202	0	611	416	0	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	0.0	35.0	31.5	0.0	0.0	44.7	0.0	32.5	37.6	0.0	23.3
Incr Delay (d2), s/veh	1.8	0.0	9.0	2.0	0.0	0.0	5.4	0.0	59.0	105.5	0.0	13.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	0.0	14.4	6.7	0.0	0.0	4.1	0.0	33.7	32.6	0.0	26.1
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	39.1	0.0	44.0	33.5	0.0	0.0	50.1	0.0	91.5	143.1	0.0	36.7
LnGrp LOS	D	A	D	C	A	A	D	A	F	F	A	D
Approach Vol, veh/h		483			655	A		745			1286	
Approach Delay, s/veh		42.8			8.9			86.6			77.5	
Approach LOS		D			A			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.9	55.8		29.3	31.7	39.0		29.3				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	* 46		25.0	23.0	34.0		25.0				
Max Q Clear Time (g_c+I1), s	7.5	41.7		21.9	27.2	37.0		24.1				
Green Ext Time (p_c), s	0.1	1.5		0.2	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	60.2
HCM 6th LOS	E

Notes

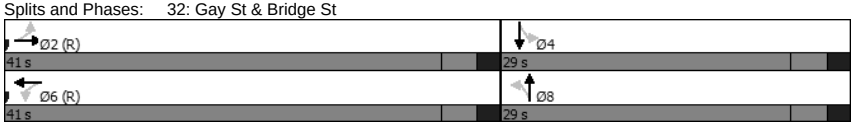
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	8	14	14	14	10	10	10	13	13	13
Grade (%)		1%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99		0.98	0.97	
Frt		0.992			0.979			0.987			0.916	
Flt Protected		0.985			0.998			0.998		0.950		
Satd. Flow (prot)	0	1842	0	0	1839	0	0	1625	0	1715	1616	0
Flt Permitted		0.740			0.972			0.980		0.365		
Satd. Flow (perm)	0	1378	0	0	1790	0	0	1594	0	649	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		369			664			193			1199	
Travel Time (s)		10.1			18.1			5.3			32.7	
Confl. Peds. (#/hr)	20		19	19		20	13		18	18		13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	145	316	30	24	434	83	18	314	36	54	95	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	541	0	0	368	0	54	216	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	35		20	35		20	35		35	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	26.0	26.0		26.0	26.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0		25.0	25.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	
Maximum Green (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	17	17		17	17		17	17		17	17	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 30 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: Gay St & Bridge St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.98		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1852	1852	1723	1872	1857	1857	1693	1778	1778	1820	1849	1805
Adj Flow Rate, veh/h	145	316	30	24	434	83	18	314	36	54	95	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	6	0	0	2	0	3
Cap, veh/h	292	612	55	76	918	170	64	392	44	264	188	239
Arrive On Green	0.61	0.63	0.61	1.00	1.00	1.00	0.25	0.26	0.25	0.26	0.26	0.25
Sat Flow, veh/h	361	978	87	36	1467	272	39	1508	168	993	722	920
Grp Volume(v), veh/h	491	0	0	541	0	0	368	0	0	54	0	216
Grp Sat Flow(s),veh/h/ln	1426	0	0	1774	0	0	1715	0	0	993	0	1642
Q Serve(g_s), s	7.6	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	7.9
Cycle Q Clear(g_c), s	12.4	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	6.2	0.0	7.9
Prop In Lane	0.30		0.06	0.04		0.15	0.05		0.10	1.00		0.56
Lane Grp Cap(c), veh/h	939	0	0	1139	0	0	475	0	0	264	0	427
V/C Ratio(X)	0.52	0.00	0.00	0.48	0.00	0.00	0.77	0.00	0.00	0.20	0.00	0.51
Avail Cap(c_a), veh/h	939	0	0	1139	0	0	639	0	0	361	0	586
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.67	0.00	0.00	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	7.1	0.0	0.0	0.0	0.0	0.0	24.5	0.0	0.0	21.5	0.0	22.3
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.0	0.0	0.0	4.2	0.0	0.0	0.4	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.2	0.0	0.0	0.5	0.0	0.0	10.3	0.0	0.0	1.3	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	1.0	0.0	0.0	28.7	0.0	0.0	21.9	0.0	23.2
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		491			541			368			270	
Approach Delay, s/veh		9.2			1.0			28.7			23.0	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.8		22.2		47.8		22.2				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		36.0		24.0		36.0		24.0				
Max Q Clear Time (g_c+I1), s		14.4		9.9		2.5		16.3				
Green Ext Time (p_c), s		2.3		0.9		2.3		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	0	767	20	48	651	10	0	0	0	41	6	32
Future Volume (vph)	0	767	20	48	651	10	0	0	0	41	6	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.998						0.946	
Flt Protected					0.997						0.974	
Satd. Flow (prot)	0	2104	0	0	1774	0	0	0	0	0	1651	0
Flt Permitted					0.997						0.974	
Satd. Flow (perm)	0	2104	0	0	1774	0	0	0	0	0	1651	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	799	21	50	678	10	0	0	0	43	6	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	820	0	0	738	0	0	0	0	0	82	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	0	767	20	48	651	10	0	0	0	41	6	32
Future Vol, veh/h	0	767	20	48	651	10	0	0	0	41	6	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	799	21	50	678	10	0	0	0	43	6	33

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	688	0	0	820	0	0			1593	1603	683
Stage 1	-	-	-	-	-	-			783	783	-
Stage 2	-	-	-	-	-	-			810	820	-
Critical Hdwy	4.3	-	-	4.3	-	-			6.62	6.72	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-			5.62	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.62	5.72	-
Follow-up Hdwy	3	-	-	3	-	-			3.5	4.018	3.1
Pot Cap-1 Maneuver	693	-	-	622	-	-			116	97	463
Stage 1	-	-	-	-	-	-			481	387	-
Stage 2	-	-	-	-	-	-			466	372	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	693	-	-	622	-	-			101	0	463
Mov Cap-2 Maneuver	-	-	-	-	-	-			101	0	-
Stage 1	-	-	-	-	-	-			481	0	-
Stage 2	-	-	-	-	-	-			405	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.8	52.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	693	-	-	622	-	-	154
HCM Lane V/C Ratio	-	-	-	0.08	-	-	0.534
HCM Control Delay (s)	0	-	-	11.3	0	-	52.4
HCM Lane LOS	A	-	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	2.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	769	6	0	616	67	140
Future Volume (vph)	769	6	0	616	67	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.909	
Flt Protected					0.984	
Satd. Flow (prot)	2098	0	0	2101	1954	0
Flt Permitted					0.984	
Satd. Flow (perm)	2098	0	0	2101	1954	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			150	303	
Travel Time (s)	20.4			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	836	7	0	670	73	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	843	0	0	670	225	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	9.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	769	6	0	616	67	140
Future Vol, veh/h	769	6	0	616	67	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	836	7	0	670	73	152

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	843	0	1510	840
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	670	-
Critical Hdwy	-	-	4.3	-	5.02	5.52
Critical Hdwy Stg 1	-	-	-	-	4.02	-
Critical Hdwy Stg 2	-	-	-	-	4.02	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	610	-	*131	450
Stage 1	-	-	-	-	*653	-
Stage 2	-	-	-	-	*620	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	610	-	*131	450
Mov Cap-2 Maneuver	-	-	-	-	*131	-
Stage 1	-	-	-	-	*653	-
Stage 2	-	-	-	-	*620	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	74.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	252	-	-	610	-
HCM Lane V/C Ratio	0.893	-	-	-	-
HCM Control Delay (s)	74.7	-	-	0	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	7.7	-	-	0	-

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	169	30	639	0	0
Future Volume (vph)	730	169	30	639	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975					
Flt Protected				0.998		
Satd. Flow (prot)	2075	0	0	2107	0	1863
Flt Permitted				0.998		
Satd. Flow (perm)	2075	0	0	2107	0	1863
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	777	180	32	680	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	957	0	0	712	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	730	169	30	639	0	0
Future Vol, veh/h	730	169	30	639	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	777	180	32	680	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	957	0	-	867
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	555	-	0	369
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	555	-	-	369
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	555	-
HCM Lane V/C Ratio	-	-	-	0.058	-
HCM Control Delay (s)	0	-	-	11.9	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	845	0	0	599	22	0
Future Volume (vph)	845	0	0	599	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	2132	0	0	2111	2016	0
Flt Permitted					0.950	
Satd. Flow (perm)	2132	0	0	2111	2016	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	190			297	454	
Travel Time (s)	5.2			8.1	12.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	889	0	0	631	23	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	889	0	0	631	23	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	845	0	0	599	22	0
Future Vol, veh/h	845	0	0	599	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	889	0	0	631	23	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1520	889
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	-	-	-	-	6.22	6.12
Critical Hdwy Stg 1	-	-	-	-	5.22	-
Critical Hdwy Stg 2	-	-	-	-	5.22	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	153	367
Stage 1	-	0	0	-	468	-
Stage 2	-	0	0	-	618	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	153	367
Mov Cap-2 Maneuver	-	-	-	-	153	-
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	32.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	153	-	-
HCM Lane V/C Ratio	0.151	-	-
HCM Control Delay (s)	32.7	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.5	-	-

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1260	721	0	0	470
Future Volume (vph)	0	1260	721	0	0	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1286	736	0	0	480
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1286	736	0	0	480
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	23.9

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1260	721	0	0	470
Future Vol, veh/h	0	1260	721	0	0	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1286	736	0	0	480

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	736
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 415
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 415
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	124.4
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	415
HCM Lane V/C Ratio	-	-	1.156
HCM Control Delay (s)	-	-	124.4
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	18

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix J

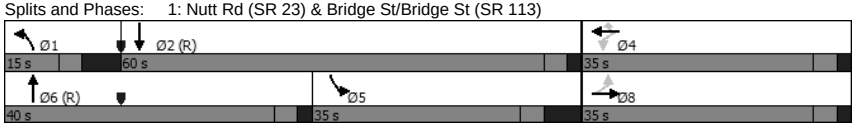
2022 Future without Development Capacity/Level-of-Service Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	161	52	20	374	262	76	357	29	374	724	124
Future Volume (vph)	53	161	52	20	374	262	76	357	29	374	724	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.963				0.850		0.989			0.978	
Flt Protected	0.950				0.997		0.950			0.950		
Satd. Flow (prot)	1580	1626	0	0	1651	1353	1588	1698	0	1572	1816	0
Flt Permitted	0.161				0.976		0.950			0.950		
Satd. Flow (perm)	268	1626	0	0	1616	1353	1587	1698	0	1572	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				288		4			11	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			246	
Travel Time (s)		17.2			17.9			17.1			4.8	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	4%	2%	0%	1%	5%	0%	4%	8%	1%	3%	0%
Adj. Flow (vph)	58	177	57	22	411	288	84	392	32	411	796	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	234	0	0	433	288	84	424	0	411	932	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	15.0	40.0		35.0	60.0	
Total Split (%)	31.8%	31.8%		31.8%	31.8%	31.8%	13.6%	36.4%		31.8%	54.5%	
Maximum Green (s)	30.0	30.0		30.0	30.0	30.0	7.0	35.0		27.0	55.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	161	52	20	374	262	76	357	29	374	724	124
Future Volume (veh/h)	53	161	52	20	374	262	76	357	29	374	724	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1846	1794	1780	1724	1794	1738	1682	1780	1822	1866
Adj Flow Rate, veh/h	58	177	57	22	411	0	84	392	32	411	796	136
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	4	2	0	1	5	0	4	8	1	3	0
Cap, veh/h	169	358	115	48	463		124	434	35	710	898	153
Arrive On Green	0.27	0.27	0.26	0.26	0.27	0.00	0.07	0.27	0.26	0.42	0.59	0.58
Sat Flow, veh/h	962	1316	424	49	1701	1461	1709	1585	129	1696	1516	259
Grp Volume(v), veh/h	58	0	234	433	0	0	84	0	424	411	0	932
Grp Sat Flow(s),veh/h/ln	962	0	1740	1750	0	1461	1709	0	1715	1696	0	1775
Q Serve(g_s), s	0.0	0.0	12.5	13.7	0.0	0.0	5.3	0.0	26.2	20.5	0.0	49.6
Cycle Q Clear(g_c), s	19.4	0.0	12.5	26.6	0.0	0.0	5.3	0.0	26.2	20.5	0.0	49.6
Prop In Lane	1.00		0.24	0.05		1.00	1.00		0.08	1.00		0.15
Lane Grp Cap(c), veh/h	169	0	473	494	0		124	0	470	710	0	1052
V/C Ratio(X)	0.34	0.00	0.49	0.88	0.00		0.68	0.00	0.90	0.58	0.00	0.89
Avail Cap(c_a), veh/h	179	0	490	511	0		124	0	561	710	0	1052
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.2	0.0	33.8	38.8	0.0	0.0	49.7	0.0	38.6	24.5	0.0	19.3
Incr Delay (d2), s/veh	1.2	0.0	0.8	15.3	0.0	0.0	13.6	0.0	23.2	1.2	0.0	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	9.2	19.6	0.0	0.0	4.9	0.0	19.9	12.9	0.0	29.2
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	37.4	0.0	34.6	54.1	0.0	0.0	63.3	0.0	61.8	25.7	0.0	30.3
LnGrp LOS	D	A	C	D	A	A	E	A	E	C	A	C
Approach Vol, veh/h		292			721	A		508			1343	
Approach Delay, s/veh		35.2			32.5			62.1			28.9	
Approach LOS		D			C			E			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	72.2		33.9	53.0	34.1		33.9				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 55		30.0	27.0	35.0		30.0				
Max Q Clear Time (g_c+I1), s	7.8	51.6		28.6	23.0	28.2		21.9				
Green Ext Time (p_c), s	0.0	1.5		0.3	0.6	0.9		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

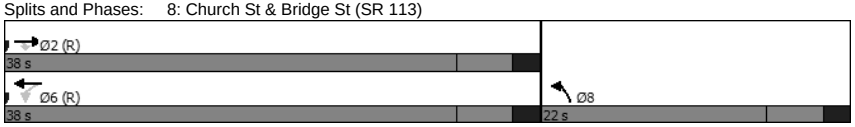
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	327	113	3	487	12	3
Future Volume (vph)	327	113	3	487	12	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1615	1400	1565	1631	1606	0
Flt Permitted			0.540		0.960	
Satd. Flow (perm)	1615	1400	889	1631	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		128			3	
Link Speed (mph)	25			25	25	
Link Distance (ft)	305			218	489	
Travel Time (s)	8.3			5.9	13.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	2%	2%	3%	2%	2%
Adj. Flow (vph)	372	128	3	553	14	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	372	128	3	553	17	0
Number of Detectors	1	1	1	1	1	
Detector Template						
Leading Detector (ft)	35	35	35	35	35	
Trailing Detector (ft)	-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5	
Detector 1 Size(ft)	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	38.0	38.0	38.0	38.0	22.0	
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	
Maximum Green (s)	32.0	32.0	32.0	32.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church St & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	327	113	3	487	12	3
Future Volume (veh/h)	327	113	3	487	12	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1744	1772	1772	1758	1809	1809
Adj Flow Rate, veh/h	372	128	3	553	14	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	2	2	3	2	2
Cap, veh/h	1386	1194	749	1398	50	11
Arrive On Green	0.80	0.80	0.80	0.80	0.04	0.02
Sat Flow, veh/h	1744	1502	851	1758	1316	282
Grp Volume(v), veh/h	372	128	3	553	18	0
Grp Sat Flow(s),veh/h/ln	1744	1502	851	1758	1692	0
Q Serve(g_s), s	3.3	1.1	0.1	5.6	0.6	0.0
Cycle Q Clear(g_c), s	3.3	1.1	3.4	5.6	0.6	0.0
Prop In Lane		1.00	1.00		0.78	0.17
Lane Grp Cap(c), veh/h	1386	1194	749	1398	65	0
V/C Ratio(X)	0.27	0.11	0.00	0.40	0.28	0.00
Avail Cap(c_a), veh/h	1386	1194	749	1398	479	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	1.6	1.4	2.0	1.8	28.1	0.0
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.8	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.3	0.0	1.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.1	1.6	2.1	2.7	31.4	0.0
LnGrp LOS	A	A	A	A	C	A
Approach Vol, veh/h	500			556	18	
Approach Delay, s/veh	1.9			2.7	31.4	
Approach LOS	A			A	C	

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		52.7			52.7	7.3
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		32.0			32.0	16.0
Max Q Clear Time (g_c+I1), s		5.8			8.1	3.1
Green Ext Time (p_c), s		4.4			5.1	0.0

Intersection Summary		
HCM 6th Ctrl Delay	2.8	
HCM 6th LOS	A	

Notes
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	10	500	15	18	638	9	0	0	0	33	3	18
Future Volume (vph)	10	500	15	18	638	9	0	0	0	33	3	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.998						0.954	
Flt Protected		0.999			0.999						0.971	
Satd. Flow (prot)	0	2006	0	0	1749	0	0	0	0	0	1579	0
Flt Permitted		0.999			0.999						0.971	
Satd. Flow (perm)	0	2006	0	0	1749	0	0	0	0	0	1579	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Confl. Peds. (#/hr)	8					8				4		1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	28%	3%	0%	0%	0%	0%	4%	0%	14%
Adj. Flow (vph)	10	515	15	19	658	9	0	0	0	34	3	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	540	0	0	686	0	0	0	0	0	56	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	10	500	15	18	638	9	0	0	0	33	3	18
Future Vol, veh/h	10	500	15	18	638	9	0	0	0	33	3	18
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	4	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	0	28	3	0	0	0	0	4	0	14
Mvmt Flow	10	515	15	19	658	9	0	0	0	34	3	19

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	675	0	0	530	0	0		1256	1259	672
Stage 1	-	-	-	-	-	-		709	709	-
Stage 2	-	-	-	-	-	-		547	550	-
Critical Hdwy	4.3	-	-	4.6	-	-		6.64	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	-	-		5.64	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.64	5.7	-
Follow-up Hdwy	3	-	-	3.3	-	-		3	4	3.2
Pot Cap-1 Maneuver	701	-	-	700	-	-		191	161	449
Stage 1	-	-	-	-	-	-		523	423	-
Stage 2	-	-	-	-	-	-		634	504	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	696	-	-	700	-	-		177	0	445
Mov Cap-2 Maneuver	-	-	-	-	-	-		177	0	-
Stage 1	-	-	-	-	-	-		509	0	-
Stage 2	-	-	-	-	-	-		602	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.3	26.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	696	-	-	700	-	-	225
HCM Lane V/C Ratio	0.015	-	-	0.027	-	-	0.247
HCM Control Delay (s)	10.2	0	-	10.3	0	-	26.2
HCM Lane LOS	B	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.9

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	478	4	2	617	49	60
Future Volume (vph)	478	4	2	617	49	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.926	
Flt Protected					0.978	
Satd. Flow (prot)	2019	0	0	2060	1936	0
Flt Permitted					0.978	
Satd. Flow (perm)	2019	0	0	2060	1936	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			104	283	
Travel Time (s)	20.4			2.8	7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	0%	0%	4%	7%	2%
Adj. Flow (vph)	514	4	2	663	53	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	518	0	0	665	118	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	478	4	2	617	49	60
Future Vol, veh/h	478	4	2	617	49	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	0	0	4	7	2
Mvmt Flow	514	4	2	663	53	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	518	0	1183	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	667	-
Critical Hdwy	-	-	4.3	-	5.07	5.52
Critical Hdwy Stg 1	-	-	-	-	4.07	-
Critical Hdwy Stg 2	-	-	-	-	4.07	-
Follow-up Hdwy	-	-	3	-	3.2	3.1
Pot Cap-1 Maneuver	-	-	796	-	*245	652
Stage 1	-	-	-	-	*783	-
Stage 2	-	-	-	-	*603	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	796	-	*244	652
Mov Cap-2 Maneuver	-	-	-	-	*244	-
Stage 1	-	-	-	-	*783	-
Stage 2	-	-	-	-	*600	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	372	-	-	796	-
HCM Lane V/C Ratio	0.315	-	-	0.003	-
HCM Control Delay (s)	19.1	-	-	9.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0	-

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	457	80	7	619	0	0
Future Volume (vph)	457	80	7	619	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980					
Flt Protected				0.999		
Satd. Flow (prot)	2041	0	0	2089	0	1900
Flt Permitted				0.999		
Satd. Flow (perm)	2041	0	0	2089	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	104			214	356	
Travel Time (s)	2.8			5.8	9.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	502	88	8	680	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	590	0	0	688	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
6: Walnut St & Bridge St

Steelworks Mixed-Use
2022 w/o Dev | Weekday AM

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	457	80	7	619	0	0
Future Vol, veh/h	457	80	7	619	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	502	88	8	680	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	590	0	-	546
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.3
Pot Cap-1 Maneuver	-	-	751	-	0	541
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	751	-	-	541
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	751	-
HCM Lane V/C Ratio	-	-	-	0.01	-
HCM Control Delay (s)	0	-	-	9.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	426	0	0	599	26	14
Future Volume (vph)	426	0	0	599	26	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.953	
Flt Protected					0.968	
Satd. Flow (prot)	2071	0	0	2091	1957	0
Flt Permitted					0.968	
Satd. Flow (perm)	2071	0	0	2091	1957	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	214			305	454	
Travel Time (s)	5.8			8.3	12.4	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	0%	0%	3%	2%	2%
Adj. Flow (vph)	484	0	0	681	30	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	484	0	0	681	46	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	426	0	0	599	26	14
Future Vol, veh/h	426	0	0	599	26	14
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	0	0	3	2	2
Mvmt Flow	484	0	0	681	30	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1165	484
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	681	-
Critical Hdwy	-	-	-	-	6.22	6.12
Critical Hdwy Stg 1	-	-	-	-	5.22	-
Critical Hdwy Stg 2	-	-	-	-	5.22	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	*200	624
Stage 1	-	0	0	-	*723	-
Stage 2	-	0	0	-	*643	-
Platoon blocked, %	-			-	1	
Mov Cap-1 Maneuver	-	-	-	-	*200	624
Mov Cap-2 Maneuver	-	-	-	-	*200	-
Stage 1	-	-	-	-	*723	-
Stage 2	-	-	-	-	*643	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	262	-	-
HCM Lane V/C Ratio	0.173	-	-
HCM Control Delay (s)	21.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1169	410	0	0	262
Future Volume (vph)	0	1169	410	0	0	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1809	0	0	1542
Flt Permitted						
Satd. Flow (perm)	0	1853	1809	0	0	1542
Link Speed (mph)		35	35		30	
Link Distance (ft)		731	246		147	
Travel Time (s)		14.2	4.8		3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	4%	2%	2%	5%
Adj. Flow (vph)	0	1285	451	0	0	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	451	0	0	288
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge Street RT
Steelworks Mixed-Use
2022 w/o Dev | Weekday AM

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1169	410	0	0	262
Future Vol, veh/h	0	1169	410	0	0	262
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	4	2	2	5
Mvmt Flow	0	1285	451	0	0	288

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	451
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	617
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	617
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	15.8
HCM LOS			C

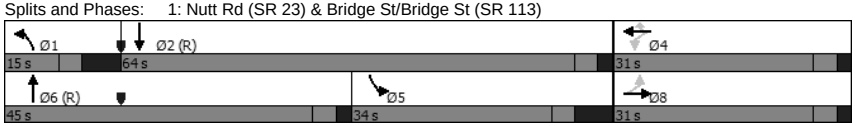
Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	617
HCM Lane V/C Ratio	-	-	0.467
HCM Control Delay (s)	-	-	15.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	303	27	23	236	442	63	670	36	442	586	71
Future Volume (vph)	126	303	27	23	236	442	63	670	36	442	586	71
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt		0.988				0.850		0.992			0.984	
Flt Protected	0.950				0.996		0.950			0.950		
Satd. Flow (prot)	1580	1736	0	0	1650	1407	1557	1744	0	1557	1842	0
Flt Permitted	0.357				0.707		0.950			0.950		
Satd. Flow (perm)	594	1736	0	0	1171	1407	1555	1744	0	1557	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				451		3			9	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	1%	1%	2%	2%	0%	2%	2%	0%
Adj. Flow (vph)	129	309	28	23	241	451	64	684	37	451	598	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	337	0	0	264	451	64	721	0	451	670	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	15.0	45.0		34.0	64.0	
Total Split (%)	28.2%	28.2%		28.2%	28.2%	28.2%	13.6%	40.9%		30.9%	58.2%	
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	7.0	40.0		26.0	59.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	303	27	23	236	442	63	670	36	442	586	71
Future Volume (veh/h)	126	303	27	23	236	442	63	670	36	442	586	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1875	1875	1794	1780	1780	1766	1766	1794	1766	1837	1866
Adj Flow Rate, veh/h	129	309	28	23	241	0	64	684	37	451	598	72
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	0	1	1	2	2	0	2	2	0
Cap, veh/h	180	416	38	46	294		107	619	33	413	848	102
Arrive On Green	0.25	0.25	0.24	0.24	0.25	0.00	0.06	0.37	0.36	0.25	0.53	0.52
Sat Flow, veh/h	1124	1693	153	42	1197	1509	1682	1660	90	1682	1608	194
Grp Volume(v), veh/h	129	0	337	264	0	0	64	0	721	451	0	670
Grp Sat Flow(s),veh/h/ln	1124	0	1847	1239	0	1509	1682	0	1750	1682	0	1802
Q Serve(g_s), s	3.8	0.0	18.5	5.2	0.0	0.0	4.1	0.0	41.0	27.0	0.0	30.8
Cycle Q Clear(g_c), s	27.0	0.0	18.5	23.7	0.0	0.0	4.1	0.0	41.0	27.0	0.0	30.8
Prop In Lane	1.00		0.08	0.09		1.00	1.00		0.05	1.00		0.11
Lane Grp Cap(c), veh/h	180	0	453	328	0		107	0	652	413	0	950
V/C Ratio(X)	0.71	0.00	0.74	0.80	0.00		0.60	0.00	1.11	1.09	0.00	0.71
Avail Cap(c_a), veh/h	180	0	453	328	0		122	0	652	413	0	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.3	0.0	38.3	38.8	0.0	0.0	50.1	0.0	34.5	41.5	0.0	19.6
Incr Delay (d2), s/veh	12.6	0.0	6.5	13.5	0.0	0.0	6.1	0.0	67.7	71.5	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.6	0.0	14.2	13.1	0.0	0.0	3.4	0.0	40.4	27.6	0.0	19.3
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	57.9	0.0	44.9	52.3	0.0	0.0	56.2	0.0	102.2	113.0	0.0	24.0
LnGrp LOS	E	A	D	D	A	A	E	A	F	F	A	C
Approach Vol, veh/h		466			715	A		785			1121	
Approach Delay, s/veh		48.5			19.3			98.5			59.8	
Approach LOS		D			B			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	65.0		31.0	34.0	45.0		31.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 59		26.0	26.0	40.0		26.0				
Max Q Clear Time (g_c+I1), s	6.1	32.8		25.7	29.5	43.0		29.5				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	58.5
HCM 6th LOS	E

Notes

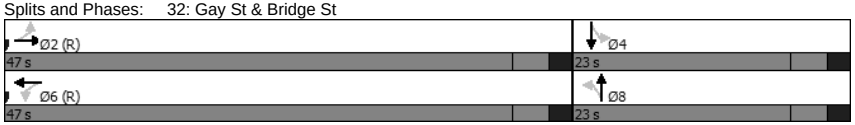
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	8	14	14	14	10	10	10	13	13	13
Grade (%)		1%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99		0.99	0.97	
Frt		0.992			0.979			0.987			0.916	
Flt Protected		0.985			0.998			0.998		0.950		
Satd. Flow (prot)	0	1842	0	0	1839	0	0	1625	0	1715	1616	0
Flt Permitted		0.749			0.972			0.979		0.313		
Satd. Flow (perm)	0	1394	0	0	1790	0	0	1592	0	557	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		369			664			193			1199	
Travel Time (s)		10.1			18.1			5.3			32.7	
Confl. Peds. (#/hr)	20		19	19		20	13		18	18		13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	145	316	30	24	434	83	18	314	36	54	95	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	541	0	0	368	0	54	216	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	35		20	35		20	35		35	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	26.0	26.0		26.0	26.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0		25.0	25.0	
Total Split (s)	47.0	47.0		47.0	47.0		23.0	23.0		23.0	23.0	
Total Split (%)	67.1%	67.1%		67.1%	67.1%		32.9%	32.9%		32.9%	32.9%	
Maximum Green (s)	42.0	42.0		42.0	42.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	17	17		17	17		17	17		17	17	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 18 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: Gay St & Bridge St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.98		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1852	1852	1723	1872	1857	1857	1693	1778	1778	1820	1849	1805
Adj Flow Rate, veh/h	145	316	30	24	434	83	18	314	36	54	95	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	6	0	0	2	0	3
Cap, veh/h	295	617	55	76	926	172	64	383	43	256	183	234
Arrive On Green	0.62	0.63	0.62	1.00	1.00	1.00	0.24	0.25	0.24	0.25	0.25	0.24
Sat Flow, veh/h	361	977	87	35	1467	272	39	1507	168	992	722	919
Grp Volume(v), veh/h	491	0	0	541	0	0	368	0	0	54	0	216
Grp Sat Flow(s),veh/h/ln	1425	0	0	1774	0	0	1715	0	0	992	0	1641
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	12.2	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	6.3	0.0	8.0
Prop In Lane	0.30		0.06	0.04		0.15	0.05		0.10	1.00		0.56
Lane Grp Cap(c), veh/h	946	0	0	1149	0	0	465	0	0	256	0	417
V/C Ratio(X)	0.52	0.00	0.00	0.47	0.00	0.00	0.79	0.00	0.00	0.21	0.00	0.52
Avail Cap(c_a), veh/h	946	0	0	1149	0	0	494	0	0	274	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.65	0.00	0.00	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	6.9	0.0	0.0	0.0	0.0	0.0	24.9	0.0	0.0	21.8	0.0	22.7
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.9	0.0	0.0	8.1	0.0	0.0	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	0.0	0.0	0.5	0.0	0.0	11.0	0.0	0.0	1.3	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.9	0.0	0.0	0.9	0.0	0.0	33.0	0.0	0.0	22.2	0.0	23.7
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		491			541			368			270	
Approach Delay, s/veh		8.9			0.9			33.0			23.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.2		21.8		48.2		21.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		42.0		18.0		42.0		18.0				
Max Q Clear Time (g_c+I1), s		14.2		10.0		2.5		16.5				
Green Ext Time (p_c), s		2.5		0.7		2.3		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	25	639	25	19	639	24	0	0	0	35	2	27
Future Volume (vph)	25	639	25	19	639	24	0	0	0	35	2	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.995						0.943	
Flt Protected		0.998			0.999						0.973	
Satd. Flow (prot)	0	2094	0	0	1791	0	0	0	0	0	1677	0
Flt Permitted		0.998			0.999						0.973	
Satd. Flow (perm)	0	2094	0	0	1791	0	0	0	0	0	1677	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Confl. Peds. (#/hr)	4					4				2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	4%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	26	666	26	20	666	25	0	0	0	36	2	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	718	0	0	711	0	0	0	0	0	66	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	25	639	25	19	639	24	0	0	0	35	2	27
Future Vol, veh/h	25	639	25	19	639	24	0	0	0	35	2	27
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	1	4	0	1	0	0	0	0	0	0	0
Mvmt Flow	26	666	26	20	666	25	0	0	0	36	2	28

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	695	0	0	692	0	0		1456	1467	684
Stage 1	-	-	-	-	-	-		723	723	-
Stage 2	-	-	-	-	-	-		733	744	-
Critical Hdwy	4.3	-	-	4.3	-	-		6.6	6.7	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-		5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.6	5.7	-
Follow-up Hdwy	3	-	-	3	-	-		3	4	3.1
Pot Cap-1 Maneuver	689	-	-	691	-	-		144	119	464
Stage 1	-	-	-	-	-	-		519	417	-
Stage 2	-	-	-	-	-	-		513	407	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	687	-	-	691	-	-		128	0	462
Mov Cap-2 Maneuver	-	-	-	-	-	-		128	0	-
Stage 1	-	-	-	-	-	-		485	0	-
Stage 2	-	-	-	-	-	-		487	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0.3	34.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	687	-	-	691	-	-	187
HCM Lane V/C Ratio	0.038	-	-	0.029	-	-	0.357
HCM Control Delay (s)	10.4	0	-	10.4	0	-	34.6
HCM Lane LOS	B	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	1.5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	601	4	6	520	92	138
Future Volume (vph)	601	4	6	520	92	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.919	
Flt Protected				0.999	0.980	
Satd. Flow (prot)	2078	0	0	2119	2007	0
Flt Permitted				0.999	0.980	
Satd. Flow (perm)	2078	0	0	2119	2007	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			150	303	
Travel Time (s)	20.4			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	653	4	7	565	100	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	657	0	0	572	250	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	601	4	6	520	92	138
Future Vol, veh/h	601	4	6	520	92	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	653	4	7	565	100	150

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	657	0	1234	655
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	-	-	4.3	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	711	-	*244	559
Stage 1	-	-	-	-	*752	-
Stage 2	-	-	-	-	*693	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	711	-	*241	559
Mov Cap-2 Maneuver	-	-	-	-	*241	-
Stage 1	-	-	-	-	*752	-
Stage 2	-	-	-	-	*683	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	33.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	366	-	-	711	-
HCM Lane V/C Ratio	0.683	-	-	0.009	-
HCM Control Delay (s)	33.6	-	-	10.1	0
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	4.8	-	-	0	-

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	623	116	5	526	0	0
Future Volume (vph)	623	116	5	526	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979					
Flt Protected						
Satd. Flow (prot)	2067	0	0	2132	0	1900
Flt Permitted						
Satd. Flow (perm)	2067	0	0	2132	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	1%	0%	0%
Adj. Flow (vph)	663	123	5	560	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	786	0	0	565	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	623	116	5	526	0	0
Future Vol, veh/h	623	116	5	526	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	1	0	0
Mvmt Flow	663	123	5	560	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	786	0	-	725
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	640	-	0	448
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	640	-	-	448
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	640	-
HCM Lane V/C Ratio	-	-	-	0.008	-
HCM Control Delay (s)	0	-	-	10.7	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	623	0	0	532	31	15
Future Volume (vph)	623	0	0	532	31	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.956	
Flt Protected					0.967	
Satd. Flow (prot)	2111	0	0	2132	1961	0
Flt Permitted					0.967	
Satd. Flow (perm)	2111	0	0	2132	1961	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	190			297	454	
Travel Time (s)	5.2			8.1	12.4	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	656	0	0	560	33	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	656	0	0	560	49	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	623	0	0	532	31	15
Future Vol, veh/h	623	0	0	532	31	15
Conflicting Peds, #/hr	0	4	4	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	1	3	0
Mvmt Flow	656	0	0	560	33	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1216	656
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	560	-
Critical Hdwy	-	-	-	-	6.23	6.1
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	*179	500
Stage 1	-	0	0	-	*601	-
Stage 2	-	0	0	-	*693	-
Platoon blocked, %	-			-	1	
Mov Cap-1 Maneuver	-	-	-	-	*179	500
Mov Cap-2 Maneuver	-	-	-	-	*179	-
Stage 1	-	-	-	-	*601	-
Stage 2	-	-	-	-	*693	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	226	-	-
HCM Lane V/C Ratio	0.214	-	-
HCM Control Delay (s)	25.2	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1038	796	0	0	442
Future Volume (vph)	0	1038	796	0	0	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1059	812	0	0	451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1059	812	0	0	451
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge St RT

Steelworks Mixed-Use
2022 w/o Dev | Weekday PM

Intersection	
Int Delay, s/veh	28.8

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1038	796	0	0	442
Future Vol, veh/h	0	1038	796	0	0	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1059	812	0	0	451

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	812
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 373
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	148.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	373
HCM Lane V/C Ratio	-	-	1.209
HCM Control Delay (s)	-	-	148.1
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	18.8

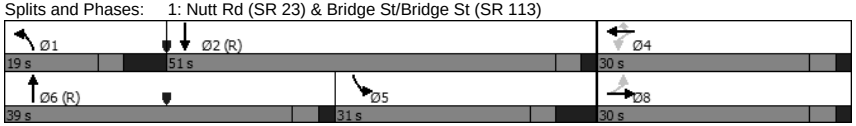
Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	346	67	32	200	435	86	669	51	487	796	58
Future Volume (vph)	127	346	67	32	200	435	86	669	51	487	796	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976				0.850		0.989			0.990	
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1580	1696	0	0	1627	1393	1557	1737	0	1557	1854	0
Flt Permitted	0.441				0.518		0.950			0.950		
Satd. Flow (perm)	734	1696	0	0	849	1393	1557	1737	0	1557	1854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				444		4			5	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	130	353	68	33	204	444	88	683	52	497	812	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	421	0	0	237	444	88	735	0	497	871	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	19.0	39.0		31.0	51.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	19.0%	39.0%		31.0%	51.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	11.0	34.0		23.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	346	67	32	200	435	86	669	51	487	796	58
Future Volume (veh/h)	127	346	67	32	200	435	86	669	51	487	796	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1860	1846	1766	1766	1766	1766	1766	1766	1766	1837	1837
Adj Flow Rate, veh/h	130	353	68	33	204	0	88	683	52	497	812	59
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	1	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	394	76	47	199		134	567	43	404	813	59
Arrive On Green	0.26	0.26	0.25	0.25	0.26	0.00	0.08	0.35	0.34	0.24	0.48	0.47
Sat Flow, veh/h	1163	1516	292	22	766	1497	1682	1621	123	1682	1692	123
Grp Volume(v), veh/h	130	0	421	237	0	0	88	0	735	497	0	871
Grp Sat Flow(s),veh/h/ln	1163	0	1808	788	0	1497	1682	0	1744	1682	0	1815
Q Serve(g_s), s	1.5	0.0	22.5	2.5	0.0	0.0	5.1	0.0	35.0	24.0	0.0	48.0
Cycle Q Clear(g_c), s	26.0	0.0	22.5	25.0	0.0	0.0	5.1	0.0	35.0	24.0	0.0	48.0
Prop In Lane	1.00		0.16	0.14		1.00	1.00		0.07	1.00		0.07
Lane Grp Cap(c), veh/h	188	0	470	238	0		134	0	610	404	0	872
V/C Ratio(X)	0.69	0.00	0.90	1.00	0.00		0.66	0.00	1.20	1.23	0.00	1.00
Avail Cap(c_a), veh/h	188	0	470	238	0		202	0	610	404	0	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.5	0.0	35.8	35.3	0.0	0.0	44.7	0.0	32.5	38.0	0.0	26.0
Incr Delay (d2), s/veh	10.3	0.0	19.5	57.1	0.0	0.0	5.3	0.0	106.8	123.9	0.0	30.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	0.0	18.1	14.9	0.0	0.0	4.1	0.0	46.5	35.1	0.0	34.7
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	49.8	0.0	55.2	92.4	0.0	0.0	50.0	0.0	139.3	161.9	0.0	56.3
LnGrp LOS	D	A	E	F	A	A	D	A	F	F	A	E
Approach Vol, veh/h		551			681	A		823			1368	
Approach Delay, s/veh		54.0			32.2			129.8			94.7	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	55.0		30.0	31.0	39.0		30.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	* 46		25.0	23.0	34.0		25.0				
Max Q Clear Time (g_c+I1), s	7.5	50.0		27.0	26.5	37.0		28.5				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	84.1
HCM 6th LOS	F

Notes

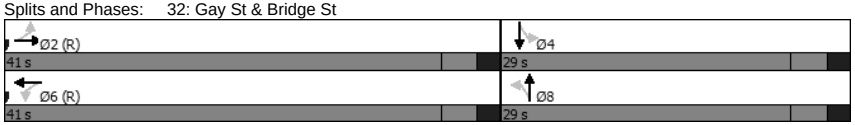
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	8	14	14	14	10	10	10	13	13	13
Grade (%)		1%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99		0.98	0.97	
Frt		0.992			0.979			0.987			0.916	
Flt Protected		0.985			0.998			0.998		0.950		
Satd. Flow (prot)	0	1842	0	0	1839	0	0	1625	0	1715	1616	0
Flt Permitted		0.740			0.972			0.980		0.365		
Satd. Flow (perm)	0	1378	0	0	1790	0	0	1594	0	649	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		369			664			193			1199	
Travel Time (s)		10.1			18.1			5.3			32.7	
Confl. Peds. (#/hr)	20		19	19		20	13		18	18		13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	145	316	30	24	434	83	18	314	36	54	95	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	541	0	0	368	0	54	216	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	35		20	35		20	35		35	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	26.0	26.0		26.0	26.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0		25.0	25.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	
Maximum Green (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	17	17		17	17		17	17		17	17	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 30 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: Gay St & Bridge St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.98		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1852	1852	1723	1872	1857	1857	1693	1778	1778	1820	1849	1805
Adj Flow Rate, veh/h	145	316	30	24	434	83	18	314	36	54	95	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	6	0	0	2	0	3
Cap, veh/h	292	612	55	76	918	170	64	392	44	264	188	239
Arrive On Green	0.61	0.63	0.61	1.00	1.00	1.00	0.25	0.26	0.25	0.26	0.26	0.25
Sat Flow, veh/h	361	978	87	36	1467	272	39	1508	168	993	722	920
Grp Volume(v), veh/h	491	0	0	541	0	0	368	0	0	54	0	216
Grp Sat Flow(s),veh/h/ln	1426	0	0	1774	0	0	1715	0	0	993	0	1642
Q Serve(g_s), s	7.6	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	7.9
Cycle Q Clear(g_c), s	12.4	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	6.2	0.0	7.9
Prop In Lane	0.30		0.06	0.04		0.15	0.05		0.10	1.00		0.56
Lane Grp Cap(c), veh/h	939	0	0	1139	0	0	475	0	0	264	0	427
V/C Ratio(X)	0.52	0.00	0.00	0.48	0.00	0.00	0.77	0.00	0.00	0.20	0.00	0.51
Avail Cap(c_a), veh/h	939	0	0	1139	0	0	639	0	0	361	0	586
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.67	0.00	0.00	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	7.1	0.0	0.0	0.0	0.0	0.0	24.5	0.0	0.0	21.5	0.0	22.3
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.0	0.0	0.0	4.2	0.0	0.0	0.4	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.2	0.0	0.0	0.5	0.0	0.0	10.3	0.0	0.0	1.3	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	1.0	0.0	0.0	28.7	0.0	0.0	21.9	0.0	23.2
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		491			541			368			270	
Approach Delay, s/veh		9.2			1.0			28.7			23.0	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.8		22.2		47.8		22.2				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		36.0		24.0		36.0		24.0				
Max Q Clear Time (g_c+I1), s		14.4		9.9		2.5		16.3				
Green Ext Time (p_c), s		2.3		0.9		2.3		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	9	826	20	49	664	19	0	0	0	52	6	42
Future Volume (vph)	9	826	20	49	664	19	0	0	0	52	6	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.996						0.943	
Flt Protected		0.999			0.997						0.975	
Satd. Flow (prot)	0	2102	0	0	1770	0	0	0	0	0	1647	0
Flt Permitted		0.999			0.997						0.975	
Satd. Flow (perm)	0	2102	0	0	1770	0	0	0	0	0	1647	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	9	860	21	51	692	20	0	0	0	54	6	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	890	0	0	763	0	0	0	0	0	104	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	9	826	20	49	664	19	0	0	0	52	6	42
Future Vol, veh/h	9	826	20	49	664	19	0	0	0	52	6	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	860	21	51	692	20	0	0	0	54	6	44

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	712	0	0	881	0	0		1693	1703	702
Stage 1	-	-	-	-	-	-		804	804	-
Stage 2	-	-	-	-	-	-		889	899	-
Critical Hdwy	4.3	-	-	4.3	-	-		6.62	6.72	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-		5.62	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.62	5.72	-
Follow-up Hdwy	3	-	-	3	-	-		3.518	4.018	3.1
Pot Cap-1 Maneuver	880	-	-	591	-	-		100	83	451
Stage 1	-	-	-	-	-	-		469	378	-
Stage 2	-	-	-	-	-	-		424	340	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	880	-	-	591	-	-		84	0	451
Mov Cap-2 Maneuver	-	-	-	-	-	-		84	0	-
Stage 1	-	-	-	-	-	-		457	0	-
Stage 2	-	-	-	-	-	-		363	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.8	94.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	680	-	-	591	-	-	132
HCM Lane V/C Ratio	0.014	-	-	0.086	-	-	0.789
HCM Control Delay (s)	10.4	0	-	11.7	0	-	94.1
HCM Lane LOS	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	4.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	834	10	4	636	70	146
Future Volume (vph)	834	10	4	636	70	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.909	
Flt Protected					0.984	
Satd. Flow (prot)	2096	0	0	2101	1954	0
Flt Permitted					0.984	
Satd. Flow (perm)	2096	0	0	2101	1954	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			150	303	
Travel Time (s)	20.4			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	907	11	4	691	76	159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	918	0	0	695	235	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
5: Buchanan St & Bridge St (SR 113)/Bridge St

Steelworks Mixed-Use
2022 w/o Dev | Saturday Midday

Intersection	
Int Delay, s/veh	18

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	834	10	4	636	70	146
Future Vol, veh/h	834	10	4	636	70	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	907	11	4	691	76	159

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	918	0	1612	913
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	699	-
Critical Hdwy	-	-	4.3	-	5.02	5.52
Critical Hdwy Stg 1	-	-	-	-	4.02	-
Critical Hdwy Stg 2	-	-	-	-	4.02	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	574	-	*107	414
Stage 1	-	-	-	-	*618	-
Stage 2	-	-	-	-	*620	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	574	-	*105	414
Mov Cap-2 Maneuver	-	-	-	-	*105	-
Stage 1	-	-	-	-	*618	-
Stage 2	-	-	-	-	*614	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	141.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	212	-	-	574	-
HCM Lane V/C Ratio	1.107	-	-	0.008	-
HCM Control Delay (s)	141.3	-	-	11.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	10.9	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	799	171	30	663	0	0
Future Volume (vph)	799	171	30	663	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976					
Flt Protected				0.998		
Satd. Flow (prot)	2077	0	0	2107	0	1863
Flt Permitted				0.998		
Satd. Flow (perm)	2077	0	0	2107	0	1863
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	850	182	32	705	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1032	0	0	737	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	799	171	30	663	0	0
Future Vol, veh/h	799	171	30	663	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	850	182	32	705	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1032	0	-	941
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	522	-	0	333
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	522	-	-	333
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	522	-
HCM Lane V/C Ratio	-	-	-	0.061	-
HCM Control Delay (s)	0	-	-	12.3	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↰	
Traffic Volume (vph)	915	0	0	623	22	0
Future Volume (vph)	915	0	0	623	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	2132	0	0	2111	2016	0
Flt Permitted					0.950	
Satd. Flow (perm)	2132	0	0	2111	2016	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	190			297	454	
Travel Time (s)	5.2			8.1	12.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	963	0	0	656	23	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	963	0	0	656	23	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↰	
Traffic Vol, veh/h	915	0	0	623	22	0
Future Vol, veh/h	915	0	0	623	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	963	0	0	656	23	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1619	963
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	656	-
Critical Hdwy	-	-	-	-	6.22	6.12
Critical Hdwy Stg 1	-	-	-	-	5.22	-
Critical Hdwy Stg 2	-	-	-	-	5.22	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	133	332
Stage 1	-	0	0	-	432	-
Stage 2	-	0	0	-	602	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	133	332
Mov Cap-2 Maneuver	-	-	-	-	133	-
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	602	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	37.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	133	-	-
HCM Lane V/C Ratio	0.174	-	-
HCM Control Delay (s)	37.7	-	-
HCM Lane LOS	E	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1260	796	0	0	435
Future Volume (vph)	0	1260	796	0	0	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1286	812	0	0	444
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1286	812	0	0	444
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge St RT

Steelworks Mixed-Use
2022 w/o Dev | Saturday Midday

Intersection	
Int Delay, s/veh	24.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1260	796	0	0	435
Future Vol, veh/h	0	1260	796	0	0	435
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1286	812	0	0	444

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	812
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 373
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	141.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	373
HCM Lane V/C Ratio	-	-	1.19
HCM Control Delay (s)	-	-	141.1
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	18.1

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix K

2022 Future with Development Capacity/Level-of-Service Analysis Worksheets

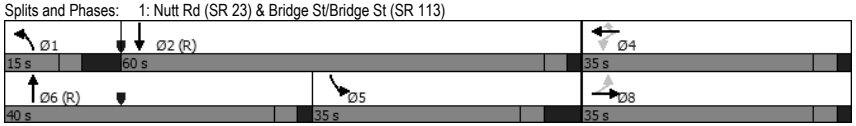
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	170	52	63	390	261	76	357	50	365	724	124
Future Volume (vph)	53	170	52	63	390	261	76	357	50	365	724	124
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.965				0.850		0.982			0.978	
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1580	1630	0	0	1646	1353	1588	1683	0	1572	1816	0
Flt Permitted	0.129				0.774		0.950			0.950		
Satd. Flow (perm)	215	1630	0	0	1283	1353	1587	1683	0	1572	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				287		7			11	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			246	
Travel Time (s)		17.2			17.9			17.1			4.8	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	4%	2%	0%	1%	5%	0%	4%	8%	1%	3%	0%
Adj. Flow (vph)	58	187	57	69	429	287	84	392	55	401	796	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	244	0	0	498	287	84	447	0	401	932	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

McMahon Associates, Inc.
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)
Steelworks Mixed-Use
2022 w/ Dev | Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	15.0	40.0		35.0	60.0	
Total Split (%)	31.8%	31.8%		31.8%	31.8%	31.8%	13.6%	36.4%		31.8%	54.5%	
Maximum Green (s)	30.0	30.0		30.0	30.0	30.0	7.0	35.0		27.0	55.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings
2022 w/ Dev | Weekday AM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\3A - 2022 W\AM.syn
Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	170	52	63	390	261	76	357	50	365	724	124
Future Volume (veh/h)	53	170	52	63	390	261	76	357	50	365	724	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1846	1794	1780	1724	1794	1738	1682	1780	1822	1866
Adj Flow Rate, veh/h	58	187	57	69	429	0	84	392	55	401	796	136
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	4	2	0	1	5	0	4	8	1	3	0
Cap, veh/h	176	377	115	74	304		124	430	60	708	919	157
Arrive On Green	0.28	0.28	0.27	0.27	0.28	0.00	0.07	0.29	0.28	0.42	0.61	0.60
Sat Flow, veh/h	946	1336	407	129	1080	1461	1709	1491	209	1696	1516	259
Grp Volume(v), veh/h	58	0	244	498	0	0	84	0	447	401	0	932
Grp Sat Flow(s),veh/h/ln	946	0	1743	1209	0	1461	1709	0	1700	1696	0	1775
Q Serve(g_s), s	0.0	0.0	12.9	17.1	0.0	0.0	5.3	0.0	27.9	19.8	0.0	47.9
Cycle Q Clear(g_c), s	15.0	0.0	12.9	30.0	0.0	0.0	5.3	0.0	27.9	19.8	0.0	47.9
Prop In Lane	1.00		0.23	0.14		1.00	1.00		0.12	1.00		0.15
Lane Grp Cap(c), veh/h	176	0	491	367	0		124	0	490	708	0	1076
V/C Ratio(X)	0.33	0.00	0.50	1.36	0.00		0.68	0.00	0.91	0.57	0.00	0.87
Avail Cap(c_a), veh/h	176	0	491	367	0		124	0	556	708	0	1076
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	33.1	42.6	0.0	0.0	49.7	0.0	37.9	24.4	0.0	18.0
Incr Delay (d2), s/veh	1.1	0.0	0.8	177.6	0.0	0.0	13.6	0.0	23.8	1.1	0.0	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.0	9.5	43.5	0.0	0.0	4.9	0.0	20.8	12.5	0.0	27.8
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	34.9	0.0	33.9	220.2	0.0	0.0	63.3	0.0	61.6	25.5	0.0	27.4
LnGrp LOS	C	A	C	F	A	A	E	A	E	C	A	C
Approach Vol, veh/h		302			785	A		531			1333	
Approach Delay, s/veh		34.1			139.7			61.9			26.8	
Approach LOS		C			F			E			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	73.7		35.0	52.9	35.7		35.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 55		30.0	27.0	35.0		30.0				
Max Q Clear Time (g_c+I1), s	7.8	49.9		32.0	22.3	29.9		17.5				
Green Ext Time (p_c), s	0.0	2.1		0.0	0.7	0.8		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		63.9	
HCM 6th LOS		E	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	521	15	18	696	9	0	0	0	33	3	18
Future Volume (vph)	10	521	15	18	696	9	0	0	0	33	3	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.998						0.954	
Flt Protected		0.999			0.999						0.971	
Satd. Flow (prot)	0	2006	0	0	1750	0	0	0	0	0	1579	0
Flt Permitted		0.999			0.999						0.971	
Satd. Flow (perm)	0	2006	0	0	1750	0	0	0	0	0	1579	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			251			322			393	
Travel Time (s)		17.9			6.8			8.8			10.7	
Confl. Peds. (#/hr)	8					8				4		1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	28%	3%	0%	0%	0%	0%	4%	0%	14%
Adj. Flow (vph)	10	537	15	19	718	9	0	0	0	34	3	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	562	0	0	746	0	0	0	0	0	56	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

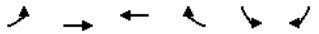
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	10	521	15	18	696	9	0	0	0	33	3	18
Future Vol, veh/h	10	521	15	18	696	9	0	0	0	33	3	18
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	4	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	0	28	3	0	0	0	0	4	0	14
Mvmt Flow	10	537	15	19	718	9	0	0	0	34	3	19

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	735	0	0	552	0	0			1338	1341	732
Stage 1	-	-	-	-	-	-			769	769	-
Stage 2	-	-	-	-	-	-			569	572	-
Critical Hdwy	4.3	-	-	4.6	-	-			6.64	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	-	-			5.64	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.64	5.7	-
Follow-up Hdwy	3	-	-	3.3	-	-			3	4	3.2
Pot Cap-1 Maneuver	667	-	-	687	-	-			169	143	413
Stage 1	-	-	-	-	-	-			487	396	-
Stage 2	-	-	-	-	-	-			618	492	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	662	-	-	687	-	-			155	0	410
Mov Cap-2 Maneuver	-	-	-	-	-	-			155	0	-
Stage 1	-	-	-	-	-	-			473	0	-
Stage 2	-	-	-	-	-	-			585	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.3	30
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	662	-	-	687	-	-	199
HCM Lane V/C Ratio	0.016	-	-	0.027	-	-	0.28
HCM Control Delay (s)	10.5	0	-	10.4	0	-	30
HCM Lane LOS	B	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	520	692	37	28	31
Future Volume (vph)	34	520	692	37	28	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		3%	2%		0%	
Storage Length (ft)	75			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.929	
Flt Protected	0.950				0.977	
Satd. Flow (prot)	1743	1766	1814	0	1691	0
Flt Permitted	0.950				0.977	
Satd. Flow (perm)	1743	1766	1814	0	1691	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		251	498		211	
Travel Time (s)		6.8	13.6		4.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	3%	2%	2%	2%
Adj. Flow (vph)	38	578	769	41	31	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	578	810	0	65	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	520	692	37	28	31
Future Vol, veh/h	34	520	692	37	28	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	2	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	6	3	2	2	2
Mvmt Flow	38	578	769	41	31	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	810	0	-	0	1444	790
Stage 1	-	-	-	-	790	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	*524	-	-	-	*76	*507
Stage 1	-	-	-	-	*524	-
Stage 2	-	-	-	-	*581	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	*524	-	-	-	*70	*507
Mov Cap-2 Maneuver	-	-	-	-	*273	-
Stage 1	-	-	-	-	*486	-
Stage 2	-	-	-	-	*581	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 524	-	-	-	360
HCM Lane V/C Ratio	0.072	-	-	-	0.182
HCM Control Delay (s)	12.4	-	-	-	17.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	493	4	2	681	49	60
Future Volume (vph)	493	4	2	681	49	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.926	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	2019	0	2035	2060	1936	0
Flt Permitted			0.950		0.978	
Satd. Flow (perm)	2019	0	2035	2060	1936	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	498			104	283	
Travel Time (s)	13.6			2.8	7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	0%	0%	4%	7%	2%
Adj. Flow (vph)	530	4	2	732	53	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	534	0	2	732	118	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	493	4	2	681	49	60
Future Vol, veh/h	493	4	2	681	49	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	0	0	4	7	2
Mvmt Flow	530	4	2	732	53	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	534	0	1268	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	736	-
Critical Hdwy	-	-	4.3	-	5.07	5.52
Critical Hdwy Stg 1	-	-	-	-	4.07	-
Critical Hdwy Stg 2	-	-	-	-	4.07	-
Follow-up Hdwy	-	-	3	-	3.2	3.1
Pot Cap-1 Maneuver	-	-	786	-	*197	640
Stage 1	-	-	-	-	*774	-
Stage 2	-	-	-	-	*547	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	786	-	*197	640
Mov Cap-2 Maneuver	-	-	-	-	*378	-
Stage 1	-	-	-	-	*774	-
Stage 2	-	-	-	-	*545	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	488	-	-	786	-
HCM Lane V/C Ratio	0.24	-	-	0.003	-
HCM Control Delay (s)	14.7	-	-	9.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	472	80	7	683	0	0
Future Volume (vph)	472	80	7	683	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980					
Flt Protected			0.950			
Satd. Flow (prot)	2040	0	2046	2091	0	1900
Flt Permitted			0.950			
Satd. Flow (perm)	2040	0	2046	2091	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	104			214	356	
Travel Time (s)	2.8			5.8	9.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	519	88	8	751	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	607	0	8	751	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	472	80	7	683	0	0
Future Vol, veh/h	472	80	7	683	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	519	88	8	751	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	607	0	-	563
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.3
Pot Cap-1 Maneuver	-	-	741	-	0	530
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	741	-	-	530
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	741	-
HCM Lane V/C Ratio	-	-	-	0.01	-
HCM Control Delay (s)	0	-	-	9.9	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	427	0	0	617	16	26	0	14	46	0	46
Future Volume (vph)	14	427	0	0	617	16	26	0	14	46	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.953				0.850
Flt Protected	0.950							0.968		0.950		
Satd. Flow (prot)	1770	2071	0	0	2085	0	0	1727	0	1770	0	1583
Flt Permitted	0.950							0.968		0.950		
Satd. Flow (perm)	1770	2071	0	0	2085	0	0	1727	0	1770	0	1583
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		214			305			454			284	
Travel Time (s)		5.8			8.3			12.4			7.7	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	4%	0%	0%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	16	485	0	0	701	18	30	0	16	52	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	485	0	0	719	0	0	46	0	52	0	52
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	427	0	0	617	16	26	0	14	46	0	46
Future Vol, veh/h	14	427	0	0	617	16	26	0	14	46	0	46
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	75	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-1	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	4	0	0	3	2	2	2	2	2	2	2
Mvmt Flow	16	485	0	0	701	18	30	0	16	52	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	719	0	-	-	-	0	1227	1236	485	1235	-	710
Stage 1	-	-	-	-	-	-	517	517	-	710	-	-
Stage 2	-	-	-	-	-	-	710	719	-	525	-	-
Critical Hdwy	4.3	-	-	-	-	-	6.92	6.32	6.12	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Follow-up Hdwy	3	-	-	-	-	-	3	4.018	3.1	3	-	3.1
Pot Cap-1 Maneuver	622	-	0	0	-	-	141	136	623	130	0	601
Stage 1	-	-	0	0	-	-	631	549	-	622	0	-
Stage 2	-	-	0	0	-	-	623	461	-	607	0	-
Platoon blocked, %	1	-			-	-	1	1		1		1
Mov Cap-1 Maneuver	622	-	-	-	-	-	126	133	623	124	-	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	126	133	-	124	-	-
Stage 1	-	-	-	-	-	-	615	535	-	605	-	-
Stage 2	-	-	-	-	-	-	569	461	-	576	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	32.6	32.7
HCM LOS			D	D

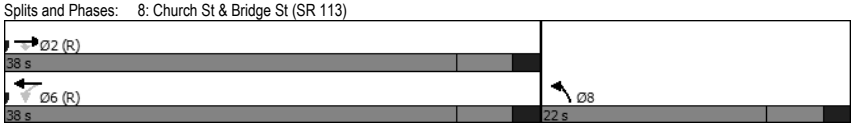
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	175	622	-	-	-	124	601
HCM Lane V/C Ratio	0.26	0.026	-	-	-	0.422	0.087
HCM Control Delay (s)	32.6	10.9	-	-	-	53.7	11.6
HCM Lane LOS	D	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1	0.1	-	-	-	1.8	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	374	113	3	521	12	3
Future Volume (vph)	374	113	3	521	12	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1615	1400	1565	1631	1606	0
Flt Permitted			0.515		0.960	
Satd. Flow (perm)	1615	1400	848	1631	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		128			3	
Link Speed (mph)	25			25	25	
Link Distance (ft)	305			218	489	
Travel Time (s)	8.3			5.9	13.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	2%	2%	3%	2%	2%
Adj. Flow (vph)	425	128	3	592	14	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	425	128	3	592	17	0
Number of Detectors	1	1	1	1	1	
Detector Template						
Leading Detector (ft)	35	35	35	35	35	
Trailing Detector (ft)	-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5	
Detector 1 Size(ft)	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	38.0	38.0	38.0	38.0	22.0	
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	
Maximum Green (s)	32.0	32.0	32.0	32.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church St & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	374	113	3	521	12	3
Future Volume (veh/h)	374	113	3	521	12	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1744	1772	1772	1758	1809	1809
Adj Flow Rate, veh/h	425	128	3	592	14	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	2	2	3	2	2
Cap, veh/h	1386	1194	711	1398	50	11
Arrive On Green	0.80	0.80	0.80	0.80	0.04	0.02
Sat Flow, veh/h	1744	1502	810	1758	1316	282
Grp Volume(v), veh/h	425	128	3	592	18	0
Grp Sat Flow(s),veh/h/ln	1744	1502	810	1758	1692	0
Q Serve(g_s), s	4.0	1.1	0.1	6.2	0.6	0.0
Cycle Q Clear(g_c), s	4.0	1.1	4.0	6.2	0.6	0.0
Prop In Lane		1.00	1.00		0.78	0.17
Lane Grp Cap(c), veh/h	1386	1194	711	1398	65	0
V/C Ratio(X)	0.31	0.11	0.00	0.42	0.28	0.00
Avail Cap(c_a), veh/h	1386	1194	711	1398	479	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	1.7	1.4	2.2	1.9	28.1	0.0
Incr Delay (d2), s/veh	0.6	0.2	0.0	0.9	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.3	0.0	1.8	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.2	1.6	2.2	2.8	31.4	0.0
LnGrp LOS	A	A	A	A	C	A
Approach Vol, veh/h	553			595	18	
Approach Delay, s/veh	2.1			2.8	31.4	
Approach LOS	A			A	C	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	52.7	52.7	7.3
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	32.0	32.0	16.0
Max Q Clear Time (g_c+I1), s	6.5	8.7	3.1
Green Ext Time (p_c), s	5.0	5.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	2.9
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1213	410	0	0	261
Future Volume (vph)	0	1213	410	0	0	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1809	0	0	1542
Flt Permitted						
Satd. Flow (perm)	0	1853	1809	0	0	1542
Link Speed (mph)		35	35		30	
Link Distance (ft)		731	246		147	
Travel Time (s)		14.2	4.8		3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	4%	2%	2%	5%
Adj. Flow (vph)	0	1333	451	0	0	287
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1333	451	0	0	287
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge Street RT
Steelworks Mixed-Use
2022 w/ Dev | Weekday AM

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1213	410	0	0	261
Future Vol, veh/h	0	1213	410	0	0	261
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	4	2	2	5
Mvmt Flow	0	1333	451	0	0	287

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	451
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	617
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	617
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	617
HCM Lane V/C Ratio	-	-	0.465
HCM Control Delay (s)	-	-	15.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.5

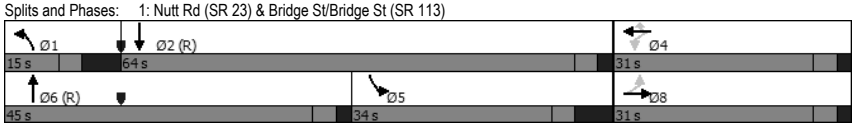
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	314	27	45	243	434	63	670	69	433	586	71
Future Volume (vph)	126	314	27	45	243	434	63	670	69	433	586	71
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt		0.988				0.850		0.986			0.984	
Flt Protected	0.950				0.992		0.950			0.950		
Satd. Flow (prot)	1580	1736	0	0	1644	1407	1557	1734	0	1557	1842	0
Flt Permitted	0.318				0.541		0.950			0.950		
Satd. Flow (perm)	529	1736	0	0	897	1407	1555	1734	0	1557	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				443		5			9	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	1%	1%	2%	2%	0%	2%	2%	0%
Adj. Flow (vph)	129	320	28	46	248	443	64	684	70	442	598	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	348	0	0	294	443	64	754	0	442	670	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

McMahon Associates, Inc. Steelworks Mixed-Use
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113) 2022 w/ Dev | Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	15.0	45.0		34.0	64.0	
Total Split (%)	28.2%	28.2%		28.2%	28.2%	28.2%	13.6%	40.9%		30.9%	58.2%	
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	7.0	40.0		26.0	59.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings 2022 w/ Dev | Weekday PM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\3A - 2022 W\PM.syn Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	314	27	45	243	434	63	670	69	433	586	71
Future Volume (veh/h)	126	314	27	45	243	434	63	670	69	433	586	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1875	1875	1794	1780	1780	1766	1766	1794	1766	1837	1866
Adj Flow Rate, veh/h	129	320	28	46	248	0	64	684	70	442	598	72
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	0	1	1	2	2	0	2	2	0
Cap, veh/h	176	417	36	54	193		107	587	60	413	848	102
Arrive On Green	0.25	0.25	0.24	0.24	0.25	0.00	0.06	0.37	0.36	0.25	0.53	0.52
Sat Flow, veh/h	1117	1699	149	64	786	1509	1682	1576	161	1682	1608	194
Grp Volume(v), veh/h	129	0	348	294	0	0	64	0	754	442	0	670
Grp Sat Flow(s),veh/h/ln	1117	0	1848	850	0	1509	1682	0	1737	1682	0	1802
Q Serve(g_s), s	1.5	0.0	19.3	6.7	0.0	0.0	4.1	0.0	41.0	27.0	0.0	30.8
Cycle Q Clear(g_c), s	27.0	0.0	19.3	26.0	0.0	0.0	4.1	0.0	41.0	27.0	0.0	30.8
Prop In Lane	1.00		0.08	0.16		1.00	1.00		0.09	1.00		0.11
Lane Grp Cap(c), veh/h	176	0	454	239	0		107	0	647	413	0	950
V/C Ratio(X)	0.73	0.00	0.77	1.23	0.00		0.60	0.00	1.16	1.07	0.00	0.71
Avail Cap(c_a), veh/h	176	0	454	239	0		122	0	647	413	0	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	38.6	42.9	0.0	0.0	50.1	0.0	34.5	41.5	0.0	19.6
Incr Delay (d2), s/veh	14.4	0.0	7.7	135.1	0.0	0.0	6.1	0.0	90.2	64.3	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	0.0	14.8	24.6	0.0	0.0	3.4	0.0	46.6	26.3	0.0	19.3
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	58.8	0.0	46.4	178.0	0.0	0.0	56.2	0.0	124.8	105.8	0.0	24.0
LnGrp LOS	E	A	D	F	A	A	E	A	F	F	A	C
Approach Vol, veh/h		477			737	A		818			1112	
Approach Delay, s/veh		49.7			71.0			119.4			56.5	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	65.0		31.0	34.0	45.0		31.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 59		26.0	26.0	40.0		26.0				
Max Q Clear Time (g_c+I1), s	6.6	32.8		28.0	29.5	43.0		29.5				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			75.2									
HCM 6th LOS			E									

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	674	25	19	660	24	0	0	0	35	2	27
Future Volume (vph)	25	674	25	19	660	24	0	0	0	35	2	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.995						0.943	
Flt Protected		0.998			0.999						0.973	
Satd. Flow (prot)	0	2095	0	0	1791	0	0	0	0	0	1677	0
Flt Permitted		0.998			0.999						0.973	
Satd. Flow (perm)	0	2095	0	0	1791	0	0	0	0	0	1677	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			220			322			393	
Travel Time (s)		17.9			6.0			8.8			10.7	
Confl. Peds. (#/hr)	4					4				2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	4%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	26	702	26	20	688	25	0	0	0	36	2	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	754	0	0	733	0	0	0	0	0	66	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary		
Area Type:	Other	
Control Type: Unsignalized		

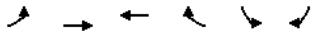
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	25	674	25	19	660	24	0	0	0	35	2	27
Future Vol, veh/h	25	674	25	19	660	24	0	0	0	35	2	27
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	1	4	0	1	0	0	0	0	0	0	0
Mvmt Flow	26	702	26	20	688	25	0	0	0	36	2	28

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	717	0	0	728	0	0			1514	1525	706
Stage 1	-	-	-	-	-	-			745	745	-
Stage 2	-	-	-	-	-	-			769	780	-
Critical Hdwy	4.3	-	-	4.3	-	-			6.6	6.7	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-			5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.6	5.7	-
Follow-up Hdwy	3	-	-	3	-	-			3	4	3.1
Pot Cap-1 Maneuver	677	-	-	671	-	-			132	109	451
Stage 1	-	-	-	-	-	-			506	407	-
Stage 2	-	-	-	-	-	-			491	391	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	675	-	-	671	-	-			117	0	449
Mov Cap-2 Maneuver	-	-	-	-	-	-			117	0	-
Stage 1	-	-	-	-	-	-			472	0	-
Stage 2	-	-	-	-	-	-			465	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0.3	38.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	675	-	-	671	-	-	173
HCM Lane V/C Ratio	0.039	-	-	0.029	-	-	0.385
HCM Control Delay (s)	10.5	0	-	10.5	0	-	38.3
HCM Lane LOS	B	A	-	B	A	-	E
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	1.7



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	48	661	673	47	31	31
Future Volume (vph)	48	661	673	47	31	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		3%	2%		0%	
Storage Length (ft)	75			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1743	1853	1844	0	1694	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1743	1853	1844	0	1694	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		220	530		249	
Travel Time (s)		6.0	14.5		5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%
Adj. Flow (vph)	52	718	732	51	34	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	718	783	0	68	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	661	673	47	31	31
Future Vol, veh/h	48	661	673	47	31	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	2	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2
Mvmt Flow	52	718	732	51	34	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	783	0	-	0	1580	758
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	822	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	*559	-	-	-	*53	*541
Stage 1	-	-	-	-	*559	-
Stage 2	-	-	-	-	*481	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	*559	-	-	-	*48	*541
Mov Cap-2 Maneuver	-	-	-	-	*247	-
Stage 1	-	-	-	-	*507	-
Stage 2	-	-	-	-	*481	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 559	-	-	-	339
HCM Lane V/C Ratio	0.093	-	-	-	0.199
HCM Control Delay (s)	12.1	-	-	-	18.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	619	4	6	552	92	138
Future Volume (vph)	619	4	6	552	92	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.919	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	2078	0	2035	2121	2007	0
Flt Permitted			0.950		0.980	
Satd. Flow (perm)	2078	0	2035	2121	2007	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	530			150	303	
Travel Time (s)	14.5			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	673	4	7	600	100	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	0	7	600	250	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	619	4	6	552	92	138
Future Vol, veh/h	619	4	6	552	92	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	673	4	7	600	100	150

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	677	0	1289	675
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	614	-
Critical Hdwy	-	-	4.3	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	699	-	*222	546
Stage 1	-	-	-	-	*741	-
Stage 2	-	-	-	-	*693	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	699	-	*220	546
Mov Cap-2 Maneuver	-	-	-	-	*425	-
Stage 1	-	-	-	-	*741	-
Stage 2	-	-	-	-	*686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	490	-	-	699	-
HCM Lane V/C Ratio	0.51	-	-	0.009	-
HCM Control Delay (s)	19.8	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	2.9	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	641	116	5	563	0	0
Future Volume (vph)	641	116	5	563	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979					
Flt Protected			0.950			
Satd. Flow (prot)	2067	0	2006	2132	0	1900
Flt Permitted			0.950			
Satd. Flow (perm)	2067	0	2006	2132	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	1%	0%	0%
Adj. Flow (vph)	682	123	5	599	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	805	0	5	599	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	641	116	5	563	0	0
Future Vol, veh/h	641	116	5	563	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	1	0	0
Mvmt Flow	682	123	5	599	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	805	0	-	744
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	630	-	0	437
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	630	-	-	437
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	630	-
HCM Lane V/C Ratio	-	-	-	0.008	-
HCM Control Delay (s)	0	-	-	10.8	-
HCM Lane LOS	A	-	-	B	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	609	0	0	546	41	31	0	15	45	0	29
Future Volume (vph)	40	609	0	0	546	41	31	0	15	45	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.991			0.956				0.850
Flt Protected	0.950							0.967		0.950		
Satd. Flow (prot)	1770	2111	0	0	2111	0	0	1730	0	1770	0	1583
Flt Permitted	0.950							0.967		0.950		
Satd. Flow (perm)	1770	2111	0	0	2111	0	0	1730	0	1770	0	1583
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		190			297			454			310	
Travel Time (s)		5.2			8.1			12.4			8.5	
Confl. Peds. (#/hr)			4	4								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	1%	2%	3%	2%	0%	2%	2%	2%
Adj. Flow (vph)	42	641	0	0	575	43	33	0	16	47	0	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	641	0	0	618	0	0	49	0	47	0	31
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	609	0	0	546	41	31	0	15	45	0	29
Future Vol, veh/h	40	609	0	0	546	41	31	0	15	45	0	29
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	75	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-1	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	0	0	1	2	3	2	0	2	2	2
Mvmt Flow	42	641	0	0	575	43	33	0	16	47	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	618	0	-	-	-	0	1322	1343	641	1330	-	597
Stage 1	-	-	-	-	-	-	725	725	-	597	-	-
Stage 2	-	-	-	-	-	-	597	618	-	733	-	-
Critical Hdwy	4.3	-	-	-	-	-	6.93	6.32	6.1	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.93	5.32	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.93	5.32	-	6.12	-	-
Follow-up Hdwy	3	-	-	-	-	-	3	4.018	3.1	3	-	3.1
Pot Cap-1 Maneuver	*693	-	0	0	-	-	*110	*110	510	*101	0	*670
Stage 1	-	-	0	0	-	-	*484	*448	-	*692	0	-
Stage 2	-	-	0	0	-	-	*693	*517	-	*461	0	-
Platoon blocked, %	1	-			-	-	1	1		1		1
Mov Cap-1 Maneuver	*693	-	-	-	-	-	*100	*104	510	*93	-	*670
Mov Cap-2 Maneuver	-	-	-	-	-	-	*283	*251	-	*273	-	-
Stage 1	-	-	-	-	-	-	*454	*421	-	*650	-	-
Stage 2	-	-	-	-	-	-	*661	*517	-	*420	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	17.7	16.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	331	* 693	-	-	-	273	670
HCM Lane V/C Ratio	0.146	0.061	-	-	-	0.174	0.046
HCM Control Delay (s)	17.7	10.5	-	-	-	20.9	10.6
HCM Lane LOS	C	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0.5	0.2	-	-	-	0.6	0.1

Notes

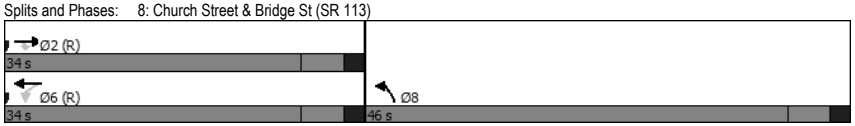
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	490	173	20	524	55	15
Future Volume (vph)	490	173	20	524	55	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.971	
Flt Protected			0.950		0.962	
Satd. Flow (prot)	1647	1428	1596	1663	1596	0
Flt Permitted			0.452		0.962	
Satd. Flow (perm)	1647	1428	759	1663	1596	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		149			16	
Link Speed (mph)	25			25	25	
Link Distance (ft)	297			194	518	
Travel Time (s)	8.1			5.3	14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	516	182	21	552	58	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	516	182	21	552	74	0
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	10.0	10.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	34.0	34.0	34.0	34.0	46.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	
Maximum Green (s)	28.0	28.0	28.0	28.0	40.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church Street & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	490	173	20	524	55	15
Future Volume (veh/h)	490	173	20	524	55	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1772	1800	1800	1786	1795	1837
Adj Flow Rate, veh/h	516	182	21	552	58	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	1	3	0
Cap, veh/h	1415	1218	605	1426	99	27
Arrive On Green	0.80	0.80	0.80	0.80	0.08	0.06
Sat Flow, veh/h	1772	1525	719	1786	1289	355
Grp Volume(v), veh/h	516	182	21	552	75	0
Grp Sat Flow(s),veh/h/ln	1772	1525	719	1786	1666	0
Q Serve(g_s), s	6.6	2.2	0.7	7.2	3.5	0.0
Cycle Q Clear(g_c), s	6.6	2.2	7.3	7.2	3.5	0.0
Prop In Lane		1.00	1.00		0.77	0.21
Lane Grp Cap(c), veh/h	1415	1218	605	1426	127	0
V/C Ratio(X)	0.36	0.15	0.03	0.39	0.59	0.00
Avail Cap(c_a), veh/h	1415	1218	605	1426	854	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.3	1.8	3.3	2.4	35.8	0.0
Incr Delay (d2), s/veh	0.7	0.3	0.1	0.8	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.8	0.2	3.2	2.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.0	2.1	3.4	3.1	41.8	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	698			573	75	
Approach Delay, s/veh	2.8			3.2	41.8	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		68.9				68.9	11.1
Change Period (Y+Rc), s		6.0				6.0	6.0
Max Green Setting (Gmax), s		28.0				28.0	40.0
Max Q Clear Time (g_c+I1), s		9.1				9.8	6.0
Green Ext Time (p_c), s		7.3				6.6	0.3

Intersection Summary		
HCM 6th Ctrl Delay	5.1	
HCM 6th LOS	A	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1090	796	0	0	434
Future Volume (vph)	0	1090	796	0	0	434
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1112	812	0	0	443
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1112	812	0	0	443
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge St RT

Steelworks Mixed-Use
2022 w/ Dev | Weekday PM

Intersection	
Int Delay, s/veh	26.2

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1090	796	0	0	434
Future Vol, veh/h	0	1090	796	0	0	434
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1112	812	0	0	443

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	812
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 373
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	140.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	373
HCM Lane V/C Ratio	-	-	1.187
HCM Control Delay (s)	-	-	140.1
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	18

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

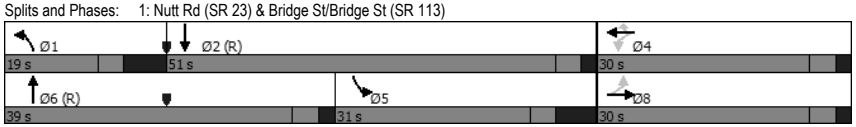
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	360	67	69	214	450	86	669	89	506	796	58
Future Volume (vph)	127	360	67	69	214	450	86	669	89	506	796	58
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977				0.850		0.982			0.990	
Flt Protected	0.950				0.988		0.950			0.950		
Satd. Flow (prot)	1580	1697	0	0	1619	1393	1557	1724	0	1557	1854	0
Flt Permitted	0.357				0.299		0.950			0.950		
Satd. Flow (perm)	594	1697	0	0	490	1393	1557	1724	0	1557	1854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				459		7			5	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	130	367	68	70	218	459	88	683	91	516	812	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	435	0	0	288	459	88	774	0	516	871	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						

McMahon Associates, Inc. Steelworks Mixed-Use
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113) 2022 w/ Dev | Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	19.0	39.0		31.0	51.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	19.0%	39.0%		31.0%	51.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	11.0	34.0		23.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings 2022 w/ Dev | Saturday Midday
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\3A - 2022 W\SAT.syn Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	360	67	69	214	450	86	669	89	506	796	58
Future Volume (veh/h)	127	360	67	69	214	450	86	669	89	506	796	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1860	1846	1766	1766	1766	1766	1766	1766	1766	1837	1837
Adj Flow Rate, veh/h	130	367	68	70	218	0	88	683	91	516	812	59
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	1	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	397	74	50	92		134	534	71	404	813	59
Arrive On Green	0.26	0.26	0.25	0.25	0.26	0.00	0.08	0.35	0.34	0.24	0.48	0.47
Sat Flow, veh/h	1148	1527	283	22	354	1497	1682	1526	203	1682	1692	123
Grp Volume(v), veh/h	130	0	435	288	0	0	88	0	774	516	0	871
Grp Sat Flow(s),veh/h/ln	1148	0	1809	375	0	1497	1682	0	1730	1682	0	1815
Q Serve(g_s), s	0.0	0.0	23.4	1.6	0.0	0.0	5.1	0.0	35.0	24.0	0.0	48.0
Cycle Q Clear(g_c), s	24.2	0.0	23.4	25.0	0.0	0.0	5.1	0.0	35.0	24.0	0.0	48.0
Prop In Lane	1.00		0.16	0.24		1.00	1.00		0.12	1.00		0.07
Lane Grp Cap(c), veh/h	219	0	470	139	0		134	0	605	404	0	872
V/C Ratio(X)	0.59	0.00	0.92	2.08	0.00		0.66	0.00	1.28	1.28	0.00	1.00
Avail Cap(c_a), veh/h	219	0	470	139	0		202	0	605	404	0	872
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	36.1	37.3	0.0	0.0	44.7	0.0	32.6	38.0	0.0	26.0
Incr Delay (d2), s/veh	4.3	0.0	24.2	508.9	0.0	0.0	5.3	0.0	137.7	143.1	0.0	30.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	0.0	19.4	39.7	0.0	0.0	4.1	0.0	54.6	38.5	0.0	34.7
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	40.6	0.0	60.3	546.2	0.0	0.0	50.0	0.0	170.3	181.1	0.0	56.3
LnGrp LOS	D	A	E	F	A	A	D	A	F	F	A	E
Approach Vol, veh/h		565			747	A		862			1387	
Approach Delay, s/veh		55.8			210.6			158.0			102.7	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	55.0		30.0	31.0	39.0		30.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	* 46		25.0	23.0	34.0		25.0				
Max Q Clear Time (g_c+I1), s	7.6	50.0		27.0	26.5	37.0		26.7				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		131.3
HCM 6th LOS		F

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	897	20	49	730	19	0	0	0	52	6	42
Future Volume (vph)	9	897	20	49	730	19	0	0	0	52	6	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.997						0.943	
Flt Protected					0.997						0.975	
Satd. Flow (prot)	0	2104	0	0	1772	0	0	0	0	0	1647	0
Flt Permitted					0.997						0.975	
Satd. Flow (perm)	0	2104	0	0	1772	0	0	0	0	0	1647	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			224			322			393	
Travel Time (s)		17.9			6.1			8.8			10.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	9	934	21	51	760	20	0	0	0	54	6	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	964	0	0	831	0	0	0	0	0	104	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

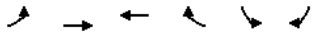
Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	9	897	20	49	730	19	0	0	0	52	6	42
Future Vol, veh/h	9	897	20	49	730	19	0	0	0	52	6	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	934	21	51	760	20	0	0	0	54	6	44

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	780	0	0	955	0	0	1835	1845	770
Stage 1	-	-	-	-	-	-	872	872	-
Stage 2	-	-	-	-	-	-	963	973	-
Critical Hdwy	4.3	-	-	4.3	-	-	6.62	6.72	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	5.62	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.62	5.72	-
Follow-up Hdwy	3	-	-	3	-	-	3	4.018	3.1
Pot Cap-1 Maneuver	643	-	-	556	-	-	80	68	411
Stage 1	-	-	-	-	-	-	433	351	-
Stage 2	-	-	-	-	-	-	388	313	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	643	-	-	556	-	-	65	0	411
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	0	-
Stage 1	-	-	-	-	-	-	420	0	-
Stage 2	-	-	-	-	-	-	325	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.7	164.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	643	-	-	556	-	-	104
HCM Lane V/C Ratio	0.015	-	-	0.092	-	-	1.002
HCM Control Delay (s)	10.7	0	-	12.1	0	-	164.9
HCM Lane LOS	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	6.3



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	63	852	722	59	55	50
Future Volume (vph)	63	852	722	59	55	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		3%	2%		0%	
Storage Length (ft)	75			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.936	
Flt Protected	0.950				0.974	
Satd. Flow (prot)	1743	1853	1826	0	1698	0
Flt Permitted	0.950				0.974	
Satd. Flow (perm)	1743	1853	1826	0	1698	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		224	525		251	
Travel Time (s)		6.1	14.3		6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%
Adj. Flow (vph)	68	926	785	64	60	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	926	849	0	114	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	852	722	59	55	50
Future Vol, veh/h	63	852	722	59	55	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	2	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	2	2	2	2
Mvmt Flow	68	926	785	64	60	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	849	0	-	0	1879	817
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	1062	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	*518	-	-	-	*~ 17	*501
Stage 1	-	-	-	-	*518	-
Stage 2	-	-	-	-	*365	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	*518	-	-	-	*~ 15	*501
Mov Cap-2 Maneuver	-	-	-	-	*191	-
Stage 1	-	-	-	-	*450	-
Stage 2	-	-	-	-	*365	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	27.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 518	-	-	-	271
HCM Lane V/C Ratio	0.132	-	-	-	0.421
HCM Control Delay (s)	13	-	-	-	27.6
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	897	10	4	708	70	146
Future Volume (vph)	897	10	4	708	70	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.909	
Flt Protected			0.950		0.984	
Satd. Flow (prot)	2096	0	1996	2101	1954	0
Flt Permitted			0.950		0.984	
Satd. Flow (perm)	2096	0	1996	2101	1954	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	525			150	303	
Travel Time (s)	14.3			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	975	11	4	770	76	159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	986	0	4	770	235	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	897	10	4	708	70	146
Future Vol, veh/h	897	10	4	708	70	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	975	11	4	770	76	159

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	986	0	1759	981
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	778	-
Critical Hdwy	-	-	4.3	-	5.02	5.52
Critical Hdwy Stg 1	-	-	-	-	4.02	-
Critical Hdwy Stg 2	-	-	-	-	4.02	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	542	-	*~ 59	382
Stage 1	-	-	-	-	*587	-
Stage 2	-	-	-	-	*518	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	542	-	*~ 58	382
Mov Cap-2 Maneuver	-	-	-	-	*277	-
Stage 1	-	-	-	-	*587	-
Stage 2	-	-	-	-	*515	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	36.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	340	-	-	542	-
HCM Lane V/C Ratio	0.691	-	-	0.008	-
HCM Control Delay (s)	36.2	-	-	11.7	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	4.9	-	-	0	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	862	171	30	738	0	0
Future Volume (vph)	862	171	30	738	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978					
Flt Protected			0.950			
Satd. Flow (prot)	2082	0	2006	2111	0	1863
Flt Permitted			0.950			
Satd. Flow (perm)	2082	0	2006	2111	0	1863
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	917	182	32	785	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1099	0	32	785	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	862	171	30	738	0	0
Future Vol, veh/h	862	171	30	738	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	917	182	32	785	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1099	0	-	1008
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	493	-	0	304
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	493	-	-	304
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	493	-
HCM Lane V/C Ratio	-	-	-	0.065	-
HCM Control Delay (s)	0	-	-	12.8	-
HCM Lane LOS	A	-	-	B	-
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	953	0	0	670	23	22	0	0	25	0	37
Future Volume (vph)	34	953	0	0	670	23	22	0	0	25	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996							0.850
Flt Protected	0.950							0.950		0.950		
Satd. Flow (prot)	1770	2132	0	0	2103	0	0	1778	0	1770	0	1583
Flt Permitted	0.950							0.950		0.950		
Satd. Flow (perm)	1770	2132	0	0	2103	0	0	1778	0	1770	0	1583
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		190			297			454			296	
Travel Time (s)		5.2			8.1			12.4			6.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	36	1003	0	0	705	24	23	0	0	26	0	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1003	0	0	729	0	0	23	0	26	0	39
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	17.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	953	0	0	670	23	22	0	0	25	0	37
Future Vol, veh/h	34	953	0	0	670	23	22	0	0	25	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	75	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-1	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	1003	0	0	705	24	23	0	0	26	0	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	729	0	-	-	-	0	1792	1804	1003	1792	-	717
Stage 1	-	-	-	-	-	-	1075	1075	-	717	-	-
Stage 2	-	-	-	-	-	-	717	729	-	1075	-	-
Critical Hdwy	4.3	-	-	-	-	-	6.92	6.32	6.12	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Follow-up Hdwy	3	-	-	-	-	-	3	4.018	3.1	3	-	3.1
Pot Cap-1 Maneuver	*569	-	0	0	-	-	*~ 21	*26	315	*~ 19	0	*551
Stage 1	-	-	0	0	-	-	*310	*314	-	*569	0	-
Stage 2	-	-	0	0	-	-	*569	*425	-	*292	0	-
Platoon blocked, %	1	-			-	-	1	1		1		1
Mov Cap-1 Maneuver	*569	-	-	-	-	-	*~ 18	*24	315	*~ 18	-	*551
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 18	*24	-	*~ 18	-	-
Stage 1	-	-	-	-	-	-	*290	*294	-	*533	-	-
Stage 2	-	-	-	-	-	-	*529	*425	-	*274	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	$ 615.8	283.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	18	* 569	-	-	-	18	551
HCM Lane V/C Ratio	1.287	0.063	-	-	-	1.462	0.071
HCM Control Delay (s)	$ 615.8	11.8	-	-	-	$ 686.3	12
HCM Lane LOS	F	B	-	-	-	F	B
HCM 95th %tile Q(veh)	3.3	0.2	-	-	-	3.7	0.2

Notes

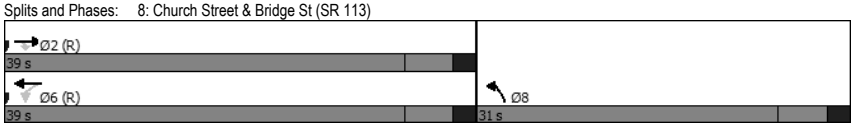
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	749	226	33	697	44	7
Future Volume (vph)	749	226	33	697	44	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.982	
Flt Protected			0.950		0.958	
Satd. Flow (prot)	1663	1400	1565	1647	1613	0
Flt Permitted			0.312		0.958	
Satd. Flow (perm)	1663	1400	514	1647	1613	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		181			7	
Link Speed (mph)	25			25	25	
Link Distance (ft)	297			194	518	
Travel Time (s)	8.1			5.3	14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	788	238	35	734	46	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	788	238	35	734	53	0
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	10.0	10.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	39.0	39.0	39.0	39.0	31.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (%)	55.7%	55.7%	55.7%	55.7%	44.3%	
Maximum Green (s)	33.0	33.0	33.0	33.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 16 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church Street & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	749	226	33	697	44	7
Future Volume (veh/h)	749	226	33	697	44	7
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1786	1772	1772	1772	1809	1809
Adj Flow Rate, veh/h	788	238	35	734	46	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	2	2	2	2
Cap, veh/h	1422	1196	434	1411	88	13
Arrive On Green	0.80	0.80	0.80	0.80	0.06	0.05
Sat Flow, veh/h	1786	1502	521	1772	1446	220
Grp Volume(v), veh/h	788	238	35	734	54	0
Grp Sat Flow(s),veh/h/ln	1786	1502	521	1772	1697	0
Q Serve(g_s), s	11.3	2.7	1.8	10.1	2.2	0.0
Cycle Q Clear(g_c), s	11.3	2.7	13.1	10.1	2.2	0.0
Prop In Lane		1.00	1.00		0.85	0.13
Lane Grp Cap(c), veh/h	1422	1196	434	1411	103	0
V/C Ratio(X)	0.55	0.20	0.08	0.52	0.52	0.00
Avail Cap(c_a), veh/h	1422	1196	434	1411	630	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.6	1.7	5.0	2.5	32.0	0.0
Incr Delay (d2), s/veh	1.6	0.4	0.4	1.4	5.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	0.9	0.4	3.9	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.2	2.1	5.3	3.9	37.7	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	1026			769	54	
Approach Delay, s/veh	3.7			3.9	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		60.7			60.7	9.3
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		33.0			33.0	25.0
Max Q Clear Time (g_c+I1), s		13.8			15.6	4.7
Green Ext Time (p_c), s		11.6			9.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.8
HCM 6th LOS	A

Notes
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1360	796	0	0	450
Future Volume (vph)	0	1360	796	0	0	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1388	812	0	0	459
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1388	812	0	0	459
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge St RT

Steelworks Mixed-Use
2022 w/ Dev | Saturday Midday

Intersection	
Int Delay, s/veh	27

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1360	796	0	0	450
Future Vol, veh/h	0	1360	796	0	0	450
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1388	812	0	0	459

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	812
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 373
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	156.4
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	373
HCM Lane V/C Ratio	-	-	1.231
HCM Control Delay (s)	-	-	156.4
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	19.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix L

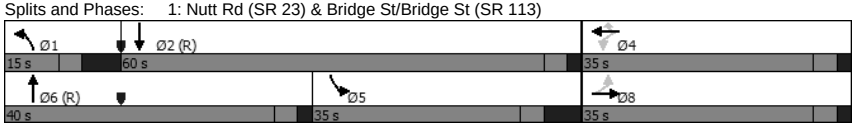
2027 Future without Development Capacity/Level-of-Service Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	164	53	20	382	269	78	364	30	383	740	127
Future Volume (vph)	54	164	53	20	382	269	78	364	30	383	740	127
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.963				0.850		0.989			0.978	
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1580	1626	0	0	1653	1353	1588	1698	0	1572	1816	0
Flt Permitted	0.152				0.977		0.950			0.950		
Satd. Flow (perm)	253	1626	0	0	1618	1353	1587	1698	0	1572	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				296		4			11	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			246	
Travel Time (s)		17.2			17.9			17.1			4.8	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	4%	2%	0%	1%	5%	0%	4%	8%	1%	3%	0%
Adj. Flow (vph)	59	180	58	22	420	296	86	400	33	421	813	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	238	0	0	442	296	86	433	0	421	953	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	15.0	40.0		35.0	60.0	
Total Split (%)	31.8%	31.8%		31.8%	31.8%	31.8%	13.6%	36.4%		31.8%	54.5%	
Maximum Green (s)	30.0	30.0		30.0	30.0	30.0	7.0	35.0		27.0	55.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	164	53	20	382	269	78	364	30	383	740	127
Future Volume (veh/h)	54	164	53	20	382	269	78	364	30	383	740	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1846	1794	1780	1724	1794	1738	1682	1780	1822	1866
Adj Flow Rate, veh/h	59	180	58	22	420	0	86	400	33	421	813	140
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	4	2	0	1	5	0	4	8	1	3	0
Cap, veh/h	168	363	117	47	470		124	442	36	744	935	161
Arrive On Green	0.28	0.28	0.27	0.27	0.28	0.00	0.07	0.28	0.27	0.44	0.62	0.61
Sat Flow, veh/h	954	1316	424	47	1703	1461	1709	1584	131	1696	1514	261
Grp Volume(v), veh/h	59	0	238	442	0	0	86	0	433	421	0	953
Grp Sat Flow(s),veh/h/ln	954	0	1740	1750	0	1461	1709	0	1714	1696	0	1775
Q Serve(g_s), s	0.0	0.0	12.6	14.1	0.0	0.0	5.4	0.0	26.8	20.4	0.0	48.8
Cycle Q Clear(g_c), s	20.2	0.0	12.6	27.2	0.0	0.0	5.4	0.0	26.8	20.4	0.0	48.8
Prop In Lane	1.00		0.24	0.05		1.00	1.00		0.08	1.00		0.15
Lane Grp Cap(c), veh/h	168	0	481	502	0		124	0	478	744	0	1097
V/C Ratio(X)	0.35	0.00	0.50	0.88	0.00		0.69	0.00	0.91	0.57	0.00	0.87
Avail Cap(c_a), veh/h	174	0	490	511	0		124	0	561	744	0	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.1	0.0	33.5	38.6	0.0	0.0	49.8	0.0	38.3	23.0	0.0	17.4
Incr Delay (d2), s/veh	1.2	0.0	0.8	16.1	0.0	0.0	15.2	0.0	23.4	1.0	0.0	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	0.0	9.3	20.1	0.0	0.0	5.1	0.0	20.2	12.7	0.0	28.0
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	37.4	0.0	34.3	54.7	0.0	0.0	65.0	0.0	61.7	24.0	0.0	26.8
LnGrp LOS	D	A	C	D	A	A	E	A	E	C	A	C
Approach Vol, veh/h		297			738	A		519			1374	
Approach Delay, s/veh		34.9			32.7			62.2			26.0	
Approach LOS		C			C			E			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	74.9		34.4	55.3	34.7		34.4				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 55		30.0	27.0	35.0		30.0				
Max Q Clear Time (g_c+I1), s	7.9	50.8		29.2	22.9	28.8		22.7				
Green Ext Time (p_c), s	0.0	1.8		0.2	0.6	0.9		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

Notes

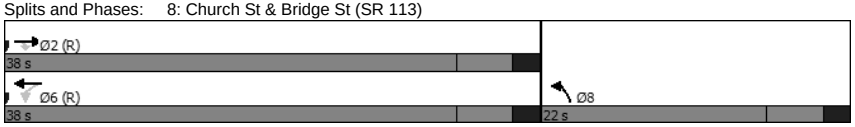
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	335	115	3	498	12	3
Future Volume (vph)	335	115	3	498	12	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1615	1400	1565	1631	1606	0
Flt Permitted			0.536		0.960	
Satd. Flow (perm)	1615	1400	883	1631	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		131			3	
Link Speed (mph)	25			25	25	
Link Distance (ft)	305			218	489	
Travel Time (s)	8.3			5.9	13.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	2%	2%	3%	2%	2%
Adj. Flow (vph)	381	131	3	566	14	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	381	131	3	566	17	0
Number of Detectors	1	1	1	1	1	
Detector Template						
Leading Detector (ft)	35	35	35	35	35	
Trailing Detector (ft)	-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5	
Detector 1 Size(ft)	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	38.0	38.0	38.0	38.0	22.0	
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	
Maximum Green (s)	32.0	32.0	32.0	32.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church St & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	335	115	3	498	12	3
Future Volume (veh/h)	335	115	3	498	12	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1744	1772	1772	1758	1809	1809
Adj Flow Rate, veh/h	381	131	3	566	14	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	2	2	3	2	2
Cap, veh/h	1386	1194	741	1398	50	11
Arrive On Green	0.80	0.80	0.80	0.80	0.04	0.02
Sat Flow, veh/h	1744	1502	841	1758	1316	282
Grp Volume(v), veh/h	381	131	3	566	18	0
Grp Sat Flow(s),veh/h/ln	1744	1502	841	1758	1692	0
Q Serve(g_s), s	3.4	1.2	0.1	5.8	0.6	0.0
Cycle Q Clear(g_c), s	3.4	1.2	3.5	5.8	0.6	0.0
Prop In Lane		1.00	1.00		0.78	0.17
Lane Grp Cap(c), veh/h	1386	1194	741	1398	65	0
V/C Ratio(X)	0.27	0.11	0.00	0.40	0.28	0.00
Avail Cap(c_a), veh/h	1386	1194	741	1398	479	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	1.6	1.4	2.1	1.9	28.1	0.0
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.9	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.3	0.0	1.7	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.1	1.6	2.1	2.7	31.4	0.0
LnGrp LOS	A	A	A	A	C	A
Approach Vol, veh/h	512			569	18	
Approach Delay, s/veh	2.0			2.7	31.4	
Approach LOS	A			A	C	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	52.7				52.7	7.3
Change Period (Y+Rc), s	6.0				6.0	6.0
Max Green Setting (Gmax), s	32.0				32.0	16.0
Max Q Clear Time (g_c+I1), s	5.9				8.3	3.1
Green Ext Time (p_c), s	4.5				5.3	0.0

Intersection Summary		
HCM 6th Ctrl Delay	2.8	
HCM 6th LOS	A	

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	10	512	16	19	653	9	0	0	0	34	3	18
Future Volume (vph)	10	512	16	19	653	9	0	0	0	34	3	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.998						0.955	
Flt Protected		0.999			0.999						0.970	
Satd. Flow (prot)	0	2006	0	0	1749	0	0	0	0	0	1580	0
Flt Permitted		0.999			0.999						0.970	
Satd. Flow (perm)	0	2006	0	0	1749	0	0	0	0	0	1580	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Confl. Peds. (#/hr)	8					8				4		1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	28%	3%	0%	0%	0%	0%	4%	0%	14%
Adj. Flow (vph)	10	528	16	20	673	9	0	0	0	35	3	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	554	0	0	702	0	0	0	0	0	57	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	10	512	16	19	653	9	0	0	0	34	3	18
Future Vol, veh/h	10	512	16	19	653	9	0	0	0	34	3	18
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	4	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16	9	74	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	0	28	3	0	0	0	0	4	0	14
Mvmt Flow	10	528	16	20	673	9	0	0	0	35	3	19

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	690	0	0	544	0	0			1286	1290	687
Stage 1	-	-	-	-	-	-			726	726	-
Stage 2	-	-	-	-	-	-			560	564	-
Critical Hdwy	4.3	-	-	4.6	-	-			6.64	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	-	-			5.64	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.64	5.7	-
Follow-up Hdwy	3	-	-	3.3	-	-			3	4	3.2
Pot Cap-1 Maneuver	692	-	-	691	-	-			182	154	440
Stage 1	-	-	-	-	-	-			513	415	-
Stage 2	-	-	-	-	-	-			625	496	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	687	-	-	691	-	-			167	0	436
Mov Cap-2 Maneuver	-	-	-	-	-	-			167	0	-
Stage 1	-	-	-	-	-	-			499	0	-
Stage 2	-	-	-	-	-	-			591	0	-

Approach	EB	WB	SB
HCM Control Delay, s	9.2	0.3	28.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	687	-	-	691	-	-	212
HCM Lane V/C Ratio	0.015	-	-	0.028	-	-	0.267
HCM Control Delay (s)	10.3	0	-	10.4	0	-	28.1
HCM Lane LOS	B	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	489	4	2	631	50	61
Future Volume (vph)	489	4	2	631	50	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.926	
Flt Protected					0.978	
Satd. Flow (prot)	2019	0	0	2060	1936	0
Flt Permitted					0.978	
Satd. Flow (perm)	2019	0	0	2060	1936	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			104	283	
Travel Time (s)	20.4			2.8	7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	0%	0%	4%	7%	2%
Adj. Flow (vph)	526	4	2	678	54	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	0	0	680	120	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	489	4	2	631	50	61
Future Vol, veh/h	489	4	2	631	50	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	0	0	4	7	2
Mvmt Flow	526	4	2	678	54	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	530	0	1210	528
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	682	-
Critical Hdwy	-	-	4.3	-	5.07	5.52
Critical Hdwy Stg 1	-	-	-	-	4.07	-
Critical Hdwy Stg 2	-	-	-	-	4.07	-
Follow-up Hdwy	-	-	3	-	3.2	3.1
Pot Cap-1 Maneuver	-	-	788	-	*223	643
Stage 1	-	-	-	-	*776	-
Stage 2	-	-	-	-	*547	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	788	-	*222	643
Mov Cap-2 Maneuver	-	-	-	-	*222	-
Stage 1	-	-	-	-	*776	-
Stage 2	-	-	-	-	*545	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	347	-	-	788	-
HCM Lane V/C Ratio	0.344	-	-	0.003	-
HCM Control Delay (s)	20.7	-	-	9.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	468	82	7	633	0	0
Future Volume (vph)	468	82	7	633	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980					
Flt Protected				0.999		
Satd. Flow (prot)	2041	0	0	2089	0	1900
Flt Permitted				0.999		
Satd. Flow (perm)	2041	0	0	2089	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	104			214	356	
Travel Time (s)	2.8			5.8	9.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	514	90	8	696	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	604	0	0	704	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
6: Walnut St & Bridge St

Steelworks Mixed-Use
2027 w/o Dev | Weekday AM

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	468	82	7	633	0	0
Future Vol, veh/h	468	82	7	633	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	514	90	8	696	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	604	0	-	559
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.3
Pot Cap-1 Maneuver	-	-	742	-	0	532
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	742	-	-	532
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	742	-
HCM Lane V/C Ratio	-	-	-	0.01	-
HCM Control Delay (s)	0	-	-	9.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	436	0	0	614	27	15
Future Volume (vph)	436	0	0	614	27	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.952	
Flt Protected					0.969	
Satd. Flow (prot)	2071	0	0	2091	1957	0
Flt Permitted					0.969	
Satd. Flow (perm)	2071	0	0	2091	1957	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	214			305	454	
Travel Time (s)	5.8			8.3	12.4	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	0%	0%	3%	2%	2%
Adj. Flow (vph)	495	0	0	698	31	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	495	0	0	698	48	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	436	0	0	614	27	15
Future Vol, veh/h	436	0	0	614	27	15
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	4	0	0	3	2	2
Mvmt Flow	495	0	0	698	31	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1193	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	698	-
Critical Hdwy	-	-	-	-	6.22	6.12
Critical Hdwy Stg 1	-	-	-	-	5.22	-
Critical Hdwy Stg 2	-	-	-	-	5.22	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	186	615
Stage 1	-	0	0	-	714	-
Stage 2	-	0	0	-	640	-
Platoon blocked, %	-			-	1	
Mov Cap-1 Maneuver	-	-	-	-	186	615
Mov Cap-2 Maneuver	-	-	-	-	186	-
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	640	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	248	-	-
HCM Lane V/C Ratio	0.192	-	-
HCM Control Delay (s)	22.9	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.7	-	-

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1169	418	0	0	269
Future Volume (vph)	0	1169	418	0	0	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1809	0	0	1542
Flt Permitted						
Satd. Flow (perm)	0	1853	1809	0	0	1542
Link Speed (mph)		35	35		30	
Link Distance (ft)		731	246		147	
Travel Time (s)		14.2	4.8		3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	4%	2%	2%	5%
Adj. Flow (vph)	0	1285	459	0	0	296
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	459	0	0	296
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1169	418	0	0	269
Future Vol, veh/h	0	1169	418	0	0	269
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	4	2	2	5
Mvmt Flow	0	1285	459	0	0	296

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	459
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	610
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	610
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	16.3
HCM LOS			C

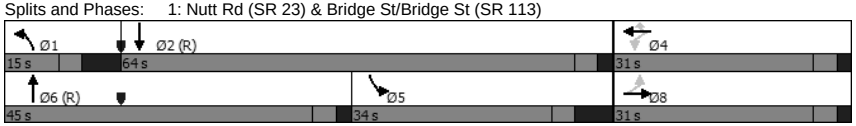
Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	610
HCM Lane V/C Ratio	-	-	0.485
HCM Control Delay (s)	-	-	16.3
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	309	28	24	241	454	64	684	37	453	598	72
Future Volume (vph)	129	309	28	24	241	454	64	684	37	453	598	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt		0.987				0.850		0.992			0.984	
Flt Protected	0.950				0.996		0.950			0.950		
Satd. Flow (prot)	1580	1735	0	0	1650	1407	1557	1744	0	1557	1842	0
Flt Permitted	0.354				0.701		0.950			0.950		
Satd. Flow (perm)	589	1735	0	0	1161	1407	1555	1744	0	1557	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				463		3			9	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	1%	1%	2%	2%	0%	2%	2%	0%
Adj. Flow (vph)	132	315	29	24	246	463	65	698	38	462	610	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	344	0	0	270	463	65	736	0	462	683	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	15.0	45.0		34.0	64.0	
Total Split (%)	28.2%	28.2%		28.2%	28.2%	28.2%	13.6%	40.9%		30.9%	58.2%	
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	7.0	40.0		26.0	59.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	309	28	24	241	454	64	684	37	453	598	72
Future Volume (veh/h)	129	309	28	24	241	454	64	684	37	453	598	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1875	1875	1794	1780	1780	1766	1766	1794	1766	1837	1866
Adj Flow Rate, veh/h	132	315	29	24	246	0	65	698	38	462	610	73
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	0	1	1	2	2	0	2	2	0
Cap, veh/h	168	415	38	45	282		108	619	34	413	848	101
Arrive On Green	0.25	0.25	0.24	0.24	0.25	0.00	0.06	0.37	0.36	0.25	0.53	0.52
Sat Flow, veh/h	1119	1691	156	40	1149	1509	1682	1660	90	1682	1609	193
Grp Volume(v), veh/h	132	0	344	270	0	0	65	0	736	462	0	683
Grp Sat Flow(s),veh/h/ln	1119	0	1847	1189	0	1509	1682	0	1750	1682	0	1802
Q Serve(g_s), s	2.4	0.0	19.0	6.1	0.0	0.0	4.1	0.0	41.0	27.0	0.0	31.8
Cycle Q Clear(g_c), s	27.0	0.0	19.0	25.1	0.0	0.0	4.1	0.0	41.0	27.0	0.0	31.8
Prop In Lane	1.00		0.08	0.09		1.00	1.00		0.05	1.00		0.11
Lane Grp Cap(c), veh/h	168	0	453	317	0		108	0	652	413	0	950
V/C Ratio(X)	0.79	0.00	0.76	0.85	0.00		0.60	0.00	1.13	1.12	0.00	0.72
Avail Cap(c_a), veh/h	168	0	453	317	0		122	0	652	413	0	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	38.5	39.5	0.0	0.0	50.1	0.0	34.5	41.5	0.0	19.9
Incr Delay (d2), s/veh	21.7	0.0	7.3	19.6	0.0	0.0	6.5	0.0	76.2	80.7	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	0.0	14.6	14.0	0.0	0.0	3.5	0.0	42.9	29.3	0.0	19.8
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	67.8	0.0	45.8	59.0	0.0	0.0	56.6	0.0	110.7	122.2	0.0	24.6
LnGrp LOS	E	A	D	E	A	A	E	A	F	F	A	C
Approach Vol, veh/h		476			733	A		801			1145	
Approach Delay, s/veh		51.9			21.7			106.3			64.0	
Approach LOS		D			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	65.0		31.0	34.0	45.0		31.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 59		26.0	26.0	40.0		26.0				
Max Q Clear Time (g_c+I1), s	6.1	33.8		27.1	29.5	43.0		29.5				
Green Ext Time (p_c), s	0.0	2.8		0.0	0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	63.1
HCM 6th LOS	E

Notes

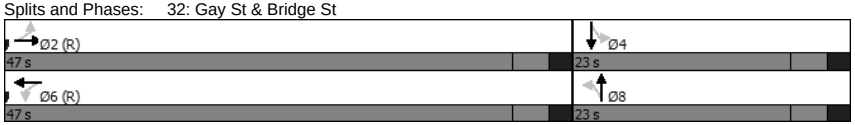
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	8	14	14	14	10	10	10	13	13	13
Grade (%)		1%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99		0.99	0.97	
Frt		0.992			0.979			0.987			0.916	
Flt Protected		0.985			0.998			0.998		0.950		
Satd. Flow (prot)	0	1842	0	0	1839	0	0	1625	0	1715	1616	0
Flt Permitted		0.749			0.972			0.979		0.313		
Satd. Flow (perm)	0	1394	0	0	1790	0	0	1592	0	557	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		369			664			193			1199	
Travel Time (s)		10.1			18.1			5.3			32.7	
Confl. Peds. (#/hr)	20		19	19		20	13		18	18		13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	145	316	30	24	434	83	18	314	36	54	95	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	541	0	0	368	0	54	216	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	35		20	35		20	35		35	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	26.0	26.0		26.0	26.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0		25.0	25.0	
Total Split (s)	47.0	47.0		47.0	47.0		23.0	23.0		23.0	23.0	
Total Split (%)	67.1%	67.1%		67.1%	67.1%		32.9%	32.9%		32.9%	32.9%	
Maximum Green (s)	42.0	42.0		42.0	42.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	17	17		17	17		17	17		17	17	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 18 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: Gay St & Bridge St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.98		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1852	1852	1723	1872	1857	1857	1693	1778	1778	1820	1849	1805
Adj Flow Rate, veh/h	145	316	30	24	434	83	18	314	36	54	95	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	6	0	0	2	0	3
Cap, veh/h	295	617	55	76	926	172	64	383	43	256	183	234
Arrive On Green	0.62	0.63	0.62	1.00	1.00	1.00	0.24	0.25	0.24	0.25	0.25	0.24
Sat Flow, veh/h	361	977	87	35	1467	272	39	1507	168	992	722	919
Grp Volume(v), veh/h	491	0	0	541	0	0	368	0	0	54	0	216
Grp Sat Flow(s),veh/h/ln	1425	0	0	1774	0	0	1715	0	0	992	0	1641
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s	12.2	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	6.3	0.0	8.0
Prop In Lane	0.30		0.06	0.04		0.15	0.05		0.10	1.00		0.56
Lane Grp Cap(c), veh/h	946	0	0	1149	0	0	465	0	0	256	0	417
V/C Ratio(X)	0.52	0.00	0.00	0.47	0.00	0.00	0.79	0.00	0.00	0.21	0.00	0.52
Avail Cap(c_a), veh/h	946	0	0	1149	0	0	494	0	0	274	0	445
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.65	0.00	0.00	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	6.9	0.0	0.0	0.0	0.0	0.0	24.9	0.0	0.0	21.8	0.0	22.7
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.9	0.0	0.0	8.1	0.0	0.0	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	0.0	0.0	0.5	0.0	0.0	11.0	0.0	0.0	1.3	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.9	0.0	0.0	0.9	0.0	0.0	33.0	0.0	0.0	22.2	0.0	23.7
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		491			541			368			270	
Approach Delay, s/veh		8.9			0.9			33.0			23.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.2		21.8		48.2		21.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		42.0		18.0		42.0		18.0				
Max Q Clear Time (g_c+I1), s		14.2		10.0		2.5		16.5				
Green Ext Time (p_c), s		2.5		0.7		2.3		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	26	653	26	20	655	25	0	0	0	36	2	28
Future Volume (vph)	26	653	26	20	655	25	0	0	0	36	2	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.995						0.943	
Flt Protected		0.998			0.999						0.973	
Satd. Flow (prot)	0	2094	0	0	1791	0	0	0	0	0	1677	0
Flt Permitted		0.998			0.999						0.973	
Satd. Flow (perm)	0	2094	0	0	1791	0	0	0	0	0	1677	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Confl. Peds. (#/hr)	4					4				2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	4%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	27	680	27	21	682	26	0	0	0	38	2	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	734	0	0	729	0	0	0	0	0	69	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	26	653	26	20	655	25	0	0	0	36	2	28
Future Vol, veh/h	26	653	26	20	655	25	0	0	0	36	2	28
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	1	4	0	1	0	0	0	0	0	0	0
Mvmt Flow	27	680	27	21	682	26	0	0	0	38	2	29

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	712	0	0	707	0	0	1491	1502	700
Stage 1	-	-	-	-	-	-	741	741	-
Stage 2	-	-	-	-	-	-	750	761	-
Critical Hdwy	4.3	-	-	4.3	-	-	6.6	6.7	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.6	5.7	-
Follow-up Hdwy	3	-	-	3	-	-	3	4	3.1
Pot Cap-1 Maneuver	880	-	-	683	-	-	136	113	454
Stage 1	-	-	-	-	-	-	508	409	-
Stage 2	-	-	-	-	-	-	503	400	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	878	-	-	683	-	-	120	0	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	0	-
Stage 1	-	-	-	-	-	-	473	0	-
Stage 2	-	-	-	-	-	-	476	0	-

Approach	EB	WB	SB
HCM Control Delay, s	9.4	0.3	37.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	678	-	-	683	-	-	177
HCM Lane V/C Ratio	0.04	-	-	0.031	-	-	0.388
HCM Control Delay (s)	10.5	0	-	10.4	0	-	37.7
HCM Lane LOS	B	A	-	B	A	-	E
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	1.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	615	4	6	533	94	141
Future Volume (vph)	615	4	6	533	94	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.919	
Flt Protected				0.999	0.980	
Satd. Flow (prot)	2078	0	0	2119	2007	0
Flt Permitted				0.999	0.980	
Satd. Flow (perm)	2078	0	0	2119	2007	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			150	303	
Travel Time (s)	20.4			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	668	4	7	579	102	153
Shared Lane Traffic (%)						
Lane Group Flow (vph)	672	0	0	586	255	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	615	4	6	533	94	141
Future Vol, veh/h	615	4	6	533	94	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	668	4	7	579	102	153

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	672	0	1263	670
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	593	-
Critical Hdwy	-	-	4.3	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	702	-	*232	549
Stage 1	-	-	-	-	*744	-
Stage 2	-	-	-	-	*693	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	702	-	*229	549
Mov Cap-2 Maneuver	-	-	-	-	*229	-
Stage 1	-	-	-	-	*744	-
Stage 2	-	-	-	-	*682	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	38.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	702	-
HCM Lane V/C Ratio	0.726	-	-	0.009	-
HCM Control Delay (s)	38.1	-	-	10.2	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	5.5	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	638	118	5	539	0	0
Future Volume (vph)	638	118	5	539	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979					
Flt Protected						
Satd. Flow (prot)	2067	0	0	2132	0	1900
Flt Permitted						
Satd. Flow (perm)	2067	0	0	2132	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	1%	0%	0%
Adj. Flow (vph)	679	126	5	573	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	805	0	0	578	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	638	118	5	539	0	0
Future Vol, veh/h	638	118	5	539	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	1	0	0
Mvmt Flow	679	126	5	573	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	805	0	-	742
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	630	-	0	438
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	630	-	-	438
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	630	-
HCM Lane V/C Ratio	-	-	-	0.008	-
HCM Control Delay (s)	0	-	-	10.8	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	638	0	0	544	32	16
Future Volume (vph)	638	0	0	544	32	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.955	
Flt Protected					0.968	
Satd. Flow (prot)	2111	0	0	2132	1961	0
Flt Permitted					0.968	
Satd. Flow (perm)	2111	0	0	2132	1961	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	190			297	454	
Travel Time (s)	5.2			8.1	12.4	
Confl. Peds. (#/hr)		4	4			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	672	0	0	573	34	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	672	0	0	573	51	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	638	0	0	544	32	16
Future Vol, veh/h	638	0	0	544	32	16
Conflicting Peds, #/hr	0	4	4	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	1	3	0
Mvmt Flow	672	0	0	573	34	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1245	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	573	-
Critical Hdwy	-	-	-	-	6.23	6.1
Critical Hdwy Stg 1	-	-	-	-	5.23	-
Critical Hdwy Stg 2	-	-	-	-	5.23	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	*167	490
Stage 1	-	0	0	-	*590	-
Stage 2	-	0	0	-	*693	-
Platoon blocked, %	-			-	1	
Mov Cap-1 Maneuver	-	-	-	-	*167	490
Mov Cap-2 Maneuver	-	-	-	-	*167	-
Stage 1	-	-	-	-	*590	-
Stage 2	-	-	-	-	*693	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	214	-	-
HCM Lane V/C Ratio	0.236	-	-
HCM Control Delay (s)	26.9	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1038	813	0	0	454
Future Volume (vph)	0	1038	813	0	0	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1059	830	0	0	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1059	830	0	0	463
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	34.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1038	813	0	0	454
Future Vol, veh/h	0	1038	813	0	0	454
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1059	830	0	0	463

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	830
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 363
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 363
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	174.8
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	363
HCM Lane V/C Ratio	-	-	1.276
HCM Control Delay (s)	-	-	174.8
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	20.9

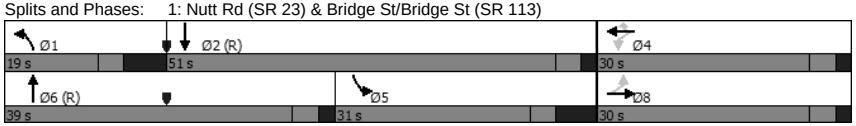
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	353	69	33	204	446	88	684	52	499	813	59
Future Volume (vph)	130	353	69	33	204	446	88	684	52	499	813	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976				0.850		0.989			0.990	
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1580	1696	0	0	1627	1393	1557	1737	0	1557	1854	0
Flt Permitted	0.433				0.490		0.950			0.950		
Satd. Flow (perm)	720	1696	0	0	803	1393	1557	1737	0	1557	1854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				455		4			5	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	133	360	70	34	208	455	90	698	53	509	830	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	430	0	0	242	455	90	751	0	509	890	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	19.0	39.0		31.0	51.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	19.0%	39.0%		31.0%	51.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	11.0	34.0		23.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	353	69	33	204	446	88	684	52	499	813	59
Future Volume (veh/h)	130	353	69	33	204	446	88	684	52	499	813	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1860	1846	1766	1766	1766	1766	1766	1766	1766	1837	1837
Adj Flow Rate, veh/h	133	360	70	34	208	0	90	698	53	509	830	60
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	1	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	393	76	45	187		136	567	43	404	811	59
Arrive On Green	0.26	0.26	0.25	0.25	0.26	0.00	0.08	0.35	0.34	0.24	0.48	0.47
Sat Flow, veh/h	1159	1513	294	17	718	1497	1682	1621	123	1682	1693	122
Grp Volume(v), veh/h	133	0	430	242	0	0	90	0	751	509	0	890
Grp Sat Flow(s),veh/h/ln	1159	0	1807	734	0	1497	1682	0	1744	1682	0	1815
Q Serve(g_s), s	1.5	0.0	23.1	1.9	0.0	0.0	5.2	0.0	35.0	24.0	0.0	47.9
Cycle Q Clear(g_c), s	26.0	0.0	23.1	25.0	0.0	0.0	5.2	0.0	35.0	24.0	0.0	47.9
Prop In Lane	1.00		0.16	0.14		1.00	1.00		0.07	1.00		0.07
Lane Grp Cap(c), veh/h	188	0	470	225	0		136	0	610	404	0	869
V/C Ratio(X)	0.71	0.00	0.92	1.08	0.00		0.66	0.00	1.23	1.26	0.00	1.02
Avail Cap(c_a), veh/h	188	0	470	225	0		202	0	610	404	0	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	36.0	34.9	0.0	0.0	44.6	0.0	32.5	38.0	0.0	26.1
Incr Delay (d2), s/veh	11.5	0.0	22.5	82.2	0.0	0.0	5.3	0.0	117.5	135.9	0.0	36.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.1	0.0	19.0	16.8	0.0	0.0	4.2	0.0	49.4	37.2	0.0	37.2
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	51.1	0.0	58.5	117.1	0.0	0.0	49.9	0.0	150.0	173.9	0.0	62.9
LnGrp LOS	D	A	E	F	A	A	D	A	F	F	A	F
Approach Vol, veh/h		563			697	A		841			1399	
Approach Delay, s/veh		56.8			40.7			139.3			103.3	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.1	54.9		30.0	31.0	39.0		30.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	* 46		25.0	23.0	34.0		25.0				
Max Q Clear Time (g_c+I1), s	7.7	49.9		27.0	26.5	37.0		28.5				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	92.0
HCM 6th LOS	F

Notes

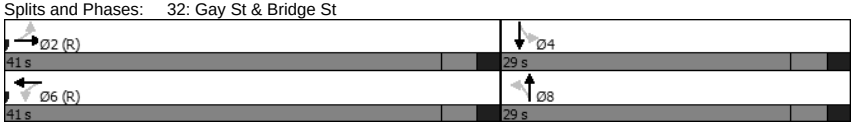
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (vph)	139	303	29	23	417	80	17	301	35	52	91	116
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	14	14	8	14	14	14	10	10	10	13	13	13
Grade (%)		1%			0%			2%			2%	
Storage Length (ft)	0		0	0		0	0		0	95		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			70		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.99		0.98	0.97	
Frt		0.992			0.979			0.987			0.916	
Flt Protected		0.985			0.998			0.998		0.950		
Satd. Flow (prot)	0	1842	0	0	1839	0	0	1625	0	1715	1616	0
Flt Permitted		0.740			0.972			0.980		0.365		
Satd. Flow (perm)	0	1378	0	0	1790	0	0	1594	0	649	1616	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		369			664			193			1199	
Travel Time (s)		10.1			18.1			5.3			32.7	
Confl. Peds. (#/hr)	20		19	19		20	13		18	18		13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	6%	0%	0%	2%	0%	3%
Adj. Flow (vph)	145	316	30	24	434	83	18	314	36	54	95	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	491	0	0	541	0	0	368	0	54	216	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left					
Leading Detector (ft)	20	35		20	35		20	35		35	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		-5	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	26.0	26.0		26.0	26.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0		25.0	25.0	
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	
Maximum Green (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0			4.0			4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	8.0	8.0		8.0	8.0		9.0	9.0		9.0	9.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	17	17		17	17		17	17		17	17	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 30 (43%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 32: Gay St & Bridge St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Future Volume (veh/h)	139	303	29	23	417	80	17	301	35	52	91	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.98		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1852	1852	1723	1872	1857	1857	1693	1778	1778	1820	1849	1805
Adj Flow Rate, veh/h	145	316	30	24	434	83	18	314	36	54	95	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	6	0	0	2	0	3
Cap, veh/h	292	612	55	76	918	170	64	392	44	264	188	239
Arrive On Green	0.61	0.63	0.61	1.00	1.00	1.00	0.25	0.26	0.25	0.26	0.26	0.25
Sat Flow, veh/h	361	978	87	36	1467	272	39	1508	168	993	722	920
Grp Volume(v), veh/h	491	0	0	541	0	0	368	0	0	54	0	216
Grp Sat Flow(s),veh/h/ln	1426	0	0	1774	0	0	1715	0	0	993	0	1642
Q Serve(g_s), s	7.6	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	7.9
Cycle Q Clear(g_c), s	12.4	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	6.2	0.0	7.9
Prop In Lane	0.30		0.06	0.04		0.15	0.05		0.10	1.00		0.56
Lane Grp Cap(c), veh/h	939	0	0	1139	0	0	475	0	0	264	0	427
V/C Ratio(X)	0.52	0.00	0.00	0.48	0.00	0.00	0.77	0.00	0.00	0.20	0.00	0.51
Avail Cap(c_a), veh/h	939	0	0	1139	0	0	639	0	0	361	0	586
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.67	0.00	0.00	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	7.1	0.0	0.0	0.0	0.0	0.0	24.5	0.0	0.0	21.5	0.0	22.3
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.0	0.0	0.0	4.2	0.0	0.0	0.4	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.2	0.0	0.0	0.5	0.0	0.0	10.3	0.0	0.0	1.3	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	1.0	0.0	0.0	28.7	0.0	0.0	21.9	0.0	23.2
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		491			541			368			270	
Approach Delay, s/veh		9.2			1.0			28.7			23.0	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.8		22.2		47.8		22.2				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		36.0		24.0		36.0		24.0				
Max Q Clear Time (g_c+I1), s		14.4		9.9		2.5		16.3				
Green Ext Time (p_c), s		2.3		0.9		2.3		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Volume (vph)	9	845	21	50	680	19	0	0	0	53	6	43
Future Volume (vph)	9	845	21	50	680	19	0	0	0	53	6	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.997						0.943	
Flt Protected					0.997						0.975	
Satd. Flow (prot)	0	2104	0	0	1772	0	0	0	0	0	1647	0
Flt Permitted					0.997						0.975	
Satd. Flow (perm)	0	2104	0	0	1772	0	0	0	0	0	1647	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			749			322			393	
Travel Time (s)		17.9			20.4			8.8			10.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	9	880	22	52	708	20	0	0	0	55	6	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	911	0	0	780	0	0	0	0	0	106	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	9	845	21	50	680	19	0	0	0	53	6	43
Future Vol, veh/h	9	845	21	50	680	19	0	0	0	53	6	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	880	22	52	708	20	0	0	0	55	6	45

Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	728	0	0	902	0	0		1731	1742	718
Stage 1	-	-	-	-	-	-		822	822	-
Stage 2	-	-	-	-	-	-		909	920	-
Critical Hdwy	4.3	-	-	4.3	-	-		6.62	6.72	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-		5.62	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.62	5.72	-
Follow-up Hdwy	3	-	-	3	-	-		3.5	4.018	3.1
Pot Cap-1 Maneuver	671	-	-	581	-	-		94	79	441
Stage 1	-	-	-	-	-	-		459	371	-
Stage 2	-	-	-	-	-	-		414	332	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	671	-	-	581	-	-		78	0	441
Mov Cap-2 Maneuver	-	-	-	-	-	-		78	0	-
Stage 1	-	-	-	-	-	-		447	0	-
Stage 2	-	-	-	-	-	-		351	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.8	112.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	671	-	-	581	-	-	124
HCM Lane V/C Ratio	0.014	-	-	0.09	-	-	0.857
HCM Control Delay (s)	10.4	0	-	11.8	0	-	112.4
HCM Lane LOS	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	5.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	853	10	4	651	72	149
Future Volume (vph)	853	10	4	651	72	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.909	
Flt Protected					0.984	
Satd. Flow (prot)	2096	0	0	2101	1954	0
Flt Permitted					0.984	
Satd. Flow (perm)	2096	0	0	2101	1954	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	749			150	303	
Travel Time (s)	20.4			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	927	11	4	708	78	162
Shared Lane Traffic (%)						
Lane Group Flow (vph)	938	0	0	712	240	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	27.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	853	10	4	651	72	149
Future Vol, veh/h	853	10	4	651	72	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	927	11	4	708	78	162

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	938	0	1649	933
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	716	-
Critical Hdwy	-	-	4.3	-	5.02	5.52
Critical Hdwy Stg 1	-	-	-	-	4.02	-
Critical Hdwy Stg 2	-	-	-	-	4.02	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	564	-	*88	404
Stage 1	-	-	-	-	*609	-
Stage 2	-	-	-	-	*569	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	564	-	*87	404
Mov Cap-2 Maneuver	-	-	-	-	*87	-
Stage 1	-	-	-	-	*609	-
Stage 2	-	-	-	-	*563	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	217.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	185	-	-	564	-
HCM Lane V/C Ratio	1.298	-	-	0.008	-
HCM Control Delay (s)	217.6	-	-	11.4	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	13.6	-	-	0	-

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	817	176	31	679	0	0
Future Volume (vph)	817	176	31	679	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976					
Flt Protected				0.998		
Satd. Flow (prot)	2077	0	0	2107	0	1863
Flt Permitted				0.998		
Satd. Flow (perm)	2077	0	0	2107	0	1863
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	869	187	33	722	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1056	0	0	755	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	817	176	31	679	0	0
Future Vol, veh/h	817	176	31	679	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	869	187	33	722	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1056	0	-	963
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	511	-	0	324
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	511	-	-	324
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	511	-
HCM Lane V/C Ratio	-	-	-	0.065	-
HCM Control Delay (s)	0	-	-	12.5	0
HCM Lane LOS	A	-	-	B	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↰	
Traffic Volume (vph)	936	0	0	637	23	0
Future Volume (vph)	936	0	0	637	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	0%			0%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	2132	0	0	2111	2016	0
Flt Permitted					0.950	
Satd. Flow (perm)	2132	0	0	2111	2016	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	190			297	454	
Travel Time (s)	5.2			8.1	12.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	985	0	0	671	24	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	985	0	0	671	24	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↰	
Traffic Vol, veh/h	936	0	0	637	23	0
Future Vol, veh/h	936	0	0	637	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-1	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	985	0	0	671	24	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	1656	985
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	671	-
Critical Hdwy	-	-	-	-	6.22	6.12
Critical Hdwy Stg 1	-	-	-	-	5.22	-
Critical Hdwy Stg 2	-	-	-	-	5.22	-
Follow-up Hdwy	-	-	-	-	3	3.1
Pot Cap-1 Maneuver	-	0	0	-	127	323
Stage 1	-	0	0	-	422	-
Stage 2	-	0	0	-	592	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	127	323
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	592	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	39.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	127	-	-
HCM Lane V/C Ratio	0.191	-	-
HCM Control Delay (s)	39.9	-	-
HCM Lane LOS	E	-	-
HCM 95th %tile Q(veh)	0.7	-	-

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1260	814	0	0	446
Future Volume (vph)	0	1260	814	0	0	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1286	831	0	0	455
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1286	831	0	0	455
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	29.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1260	814	0	0	446
Future Vol, veh/h	0	1260	814	0	0	446
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1286	831	0	0	455

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	831
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 363
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 363
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	166.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	363
HCM Lane V/C Ratio	-	-	1.254
HCM Control Delay (s)	-	-	166.1
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	20

Notes				
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix M

2027 Future without Development Capacity/Level-of-Service Analysis Worksheets

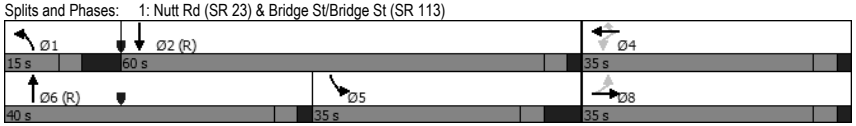
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	173	53	63	398	268	78	364	51	374	740	127
Future Volume (vph)	54	173	53	63	398	268	78	364	51	374	740	127
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00		1.00				1.00	
Frt		0.965				0.850		0.982			0.978	
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1580	1630	0	0	1646	1353	1588	1683	0	1572	1816	0
Flt Permitted	0.129				0.768		0.950			0.950		
Satd. Flow (perm)	215	1630	0	0	1273	1353	1587	1683	0	1572	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				295		7			11	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			246	
Travel Time (s)		17.2			17.9			17.1			4.8	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	4%	2%	0%	1%	5%	0%	4%	8%	1%	3%	0%
Adj. Flow (vph)	59	190	58	69	437	295	86	400	56	411	813	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	248	0	0	506	295	86	456	0	411	953	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

McMahon Associates, Inc.
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)
Steelworks Mixed-Use
2027 w/ Dev | Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	15.0	40.0		35.0	60.0	
Total Split (%)	31.8%	31.8%		31.8%	31.8%	31.8%	13.6%	36.4%		31.8%	54.5%	
Maximum Green (s)	30.0	30.0		30.0	30.0	30.0	7.0	35.0		27.0	55.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings
2027 w/ Dev | Weekday AM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\5A - 2027 W\AM.syn
Synchro 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	173	53	63	398	268	78	364	51	374	740	127
Future Volume (veh/h)	54	173	53	63	398	268	78	364	51	374	740	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1846	1794	1780	1724	1794	1738	1682	1780	1822	1866
Adj Flow Rate, veh/h	59	190	58	69	437	0	86	400	56	411	813	140
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	4	2	0	1	5	0	4	8	1	3	0
Cap, veh/h	175	376	115	73	302		124	437	61	732	947	163
Arrive On Green	0.28	0.28	0.27	0.27	0.28	0.00	0.07	0.29	0.28	0.43	0.63	0.62
Sat Flow, veh/h	939	1336	408	125	1070	1461	1709	1491	209	1696	1514	261
Grp Volume(v), veh/h	59	0	248	506	0	0	86	0	456	411	0	953
Grp Sat Flow(s),veh/h/ln	939	0	1743	1196	0	1461	1709	0	1700	1696	0	1775
Q Serve(g_s), s	0.0	0.0	13.1	16.9	0.0	0.0	5.4	0.0	28.5	20.0	0.0	47.9
Cycle Q Clear(g_c), s	15.5	0.0	13.1	30.0	0.0	0.0	5.4	0.0	28.5	20.0	0.0	47.9
Prop In Lane	1.00		0.23	0.14		1.00	1.00		0.12	1.00		0.15
Lane Grp Cap(c), veh/h	175	0	491	363	0		124	0	498	732	0	1110
V/C Ratio(X)	0.34	0.00	0.50	1.39	0.00		0.69	0.00	0.91	0.56	0.00	0.86
Avail Cap(c_a), veh/h	175	0	491	363	0		124	0	556	732	0	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	33.2	42.6	0.0	0.0	49.8	0.0	37.6	23.4	0.0	16.8
Incr Delay (d2), s/veh	1.1	0.0	0.8	192.8	0.0	0.0	15.2	0.0	23.9	1.0	0.0	8.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.0	9.6	45.7	0.0	0.0	5.1	0.0	21.2	12.5	0.0	27.3
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	35.1	0.0	34.0	235.5	0.0	0.0	65.0	0.0	61.5	24.4	0.0	25.4
LnGrp LOS	D	A	C	F	A	A	E	A	E	C	A	C
Approach Vol, veh/h		307			801	A		542			1364	
Approach Delay, s/veh		34.2			148.7			62.1			25.1	
Approach LOS		C			F			E			C	

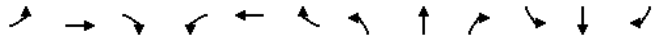
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	75.8		35.0	54.5	36.2		35.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 55		30.0	27.0	35.0		30.0				
Max Q Clear Time (g_c+I1), s	7.9	49.9		32.0	22.5	30.5		18.0				
Green Ext Time (p_c), s	0.0	2.1		0.0	0.7	0.7		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		65.5	
HCM 6th LOS		E	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	533	16	19	711	9	0	0	0	34	3	18
Future Volume (vph)	10	533	16	19	711	9	0	0	0	34	3	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.998						0.955	
Flt Protected		0.999			0.999						0.970	
Satd. Flow (prot)	0	2006	0	0	1750	0	0	0	0	0	1580	0
Flt Permitted		0.999			0.999						0.970	
Satd. Flow (perm)	0	2006	0	0	1750	0	0	0	0	0	1580	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			251			322			393	
Travel Time (s)		17.9			6.8			8.8			10.7	
Confl. Peds. (#/hr)	8					8				4		1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	28%	3%	0%	0%	0%	0%	4%	0%	14%
Adj. Flow (vph)	10	549	16	20	733	9	0	0	0	35	3	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	575	0	0	762	0	0	0	0	0	57	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

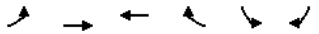
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	10	533	16	19	711	9	0	0	0	34	3	18
Future Vol, veh/h	10	533	16	19	711	9	0	0	0	34	3	18
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	4	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	6	0	28	3	0	0	0	0	4	0	14
Mvmt Flow	10	549	16	20	733	9	0	0	0	35	3	19

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	750	0	0	565	0	0			1367	1371	747
Stage 1	-	-	-	-	-	-			786	786	-
Stage 2	-	-	-	-	-	-			581	585	-
Critical Hdwy	4.3	-	-	4.6	-	-			6.64	6.7	6.44
Critical Hdwy Stg 1	-	-	-	-	-	-			5.64	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.64	5.7	-
Follow-up Hdwy	3	-	-	3.3	-	-			3	4	3.2
Pot Cap-1 Maneuver	659	-	-	679	-	-			162	137	405
Stage 1	-	-	-	-	-	-			477	389	-
Stage 2	-	-	-	-	-	-			609	485	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	654	-	-	679	-	-			148	0	402
Mov Cap-2 Maneuver	-	-	-	-	-	-			148	0	-
Stage 1	-	-	-	-	-	-			463	0	-
Stage 2	-	-	-	-	-	-			574	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.3	32
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	-	-	679	-	-	189
HCM Lane V/C Ratio	0.016	-	-	0.029	-	-	0.3
HCM Control Delay (s)	10.6	0	-	10.5	0	-	32
HCM Lane LOS	B	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	533	708	37	28	31
Future Volume (vph)	34	533	708	37	28	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		3%	2%		0%	
Storage Length (ft)	75			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.929	
Flt Protected	0.950				0.977	
Satd. Flow (prot)	1743	1766	1814	0	1691	0
Flt Permitted	0.950				0.977	
Satd. Flow (perm)	1743	1766	1814	0	1691	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		251	498		211	
Travel Time (s)		6.8	13.6		4.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	3%	2%	2%	2%
Adj. Flow (vph)	38	592	787	41	31	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	592	828	0	65	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	533	708	37	28	31
Future Vol, veh/h	34	533	708	37	28	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	2	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	6	3	2	2	2
Mvmt Flow	38	592	787	41	31	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	828	0	-	0	1476	808
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	668	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	*524	-	-	-	*69	*507
Stage 1	-	-	-	-	*524	-
Stage 2	-	-	-	-	*572	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	*524	-	-	-	*64	*507
Mov Cap-2 Maneuver	-	-	-	-	*269	-
Stage 1	-	-	-	-	*486	-
Stage 2	-	-	-	-	*572	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 524	-	-	-	357
HCM Lane V/C Ratio	0.072	-	-	-	0.184
HCM Control Delay (s)	12.4	-	-	-	17.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	504	4	2	695	50	61
Future Volume (vph)	504	4	2	695	50	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.926	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	2019	0	2035	2060	1936	0
Flt Permitted			0.950		0.978	
Satd. Flow (perm)	2019	0	2035	2060	1936	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	498			104	283	
Travel Time (s)	13.6			2.8	7.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	5%	0%	0%	4%	7%	2%
Adj. Flow (vph)	542	4	2	747	54	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	546	0	2	747	120	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	504	4	2	695	50	61
Future Vol, veh/h	504	4	2	695	50	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	0	0	4	7	2
Mvmt Flow	542	4	2	747	54	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	546	0	1295	544
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	751	-
Critical Hdwy	-	-	4.3	-	5.07	5.52
Critical Hdwy Stg 1	-	-	-	-	4.07	-
Critical Hdwy Stg 2	-	-	-	-	4.07	-
Follow-up Hdwy	-	-	3	-	3.2	3.1
Pot Cap-1 Maneuver	-	-	778	-	*176	632
Stage 1	-	-	-	-	*767	-
Stage 2	-	-	-	-	*491	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	778	-	*175	632
Mov Cap-2 Maneuver	-	-	-	-	*347	-
Stage 1	-	-	-	-	*767	-
Stage 2	-	-	-	-	*490	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	461	-	-	778	-
HCM Lane V/C Ratio	0.259	-	-	0.003	-
HCM Control Delay (s)	15.5	-	-	9.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	483	82	7	697	0	0
Future Volume (vph)	483	82	7	697	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.980					
Flt Protected			0.950			
Satd. Flow (prot)	2040	0	2046	2091	0	1900
Flt Permitted			0.950			
Satd. Flow (perm)	2040	0	2046	2091	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	104			214	356	
Travel Time (s)	2.8			5.8	9.7	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	3%	0%	0%
Adj. Flow (vph)	531	90	8	766	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	621	0	8	766	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	483	82	7	697	0	0
Future Vol, veh/h	483	82	7	697	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	3	0	0
Mvmt Flow	531	90	8	766	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	621	0	-	576
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.3
Pot Cap-1 Maneuver	-	-	732	-	0	521
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	732	-	-	521
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	732	-
HCM Lane V/C Ratio	-	-	-	0.011	-
HCM Control Delay (s)	0	-	-	10	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	437	0	0	632	16	27	0	15	46	0	46
Future Volume (vph)	14	437	0	0	632	16	27	0	15	46	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.952				0.850
Flt Protected	0.950							0.969		0.950		
Satd. Flow (prot)	1770	2071	0	0	2085	0	0	1727	0	1770	0	1583
Flt Permitted	0.950							0.969		0.950		
Satd. Flow (perm)	1770	2071	0	0	2085	0	0	1727	0	1770	0	1583
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		214			305			454			284	
Travel Time (s)		5.8			8.3			12.4			7.7	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	4%	0%	0%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	16	497	0	0	718	18	31	0	17	52	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	497	0	0	736	0	0	48	0	52	0	52
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	437	0	0	632	16	27	0	15	46	0	46
Future Vol, veh/h	14	437	0	0	632	16	27	0	15	46	0	46
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	75	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-1	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	4	0	0	3	2	2	2	2	2	2	2
Mvmt Flow	16	497	0	0	718	18	31	0	17	52	0	52

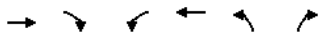
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	736	0	-	-	-	0	1256	1265	497	1265	-	727
Stage 1	-	-	-	-	-	-	529	529	-	727	-	-
Stage 2	-	-	-	-	-	-	727	736	-	538	-	-
Critical Hdwy	4.3	-	-	-	-	-	6.92	6.32	6.12	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Follow-up Hdwy	3	-	-	-	-	-	3	4.018	3.1	3	-	3.1
Pot Cap-1 Maneuver	*584	-	0	0	-	-	*126	*122	613	*116	0	*565
Stage 1	-	-	0	0	-	-	*622	*543	-	*583	0	-
Stage 2	-	-	0	0	-	-	*584	*436	-	*597	0	-
Platoon blocked, %	1	-			-	-	1	1		1		1
Mov Cap-1 Maneuver	*584	-	-	-	-	-	*112	*119	613	*110	-	*565
Mov Cap-2 Maneuver	-	-	-	-	-	-	*112	*119	-	*110	-	-
Stage 1	-	-	-	-	-	-	*605	*528	-	*567	-	-
Stage 2	-	-	-	-	-	-	*530	*436	-	*564	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	37.4	38.2
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	158	* 584	-	-	-	110	565
HCM Lane V/C Ratio	0.302	0.027	-	-	-	0.475	0.093
HCM Control Delay (s)	37.4	11.3	-	-	-	64.4	12
HCM Lane LOS	E	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1.2	0.1	-	-	-	2.1	0.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

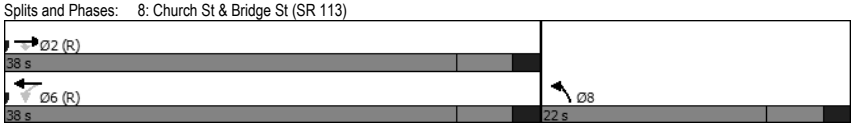


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	382	115	3	532	12	3
Future Volume (vph)	382	115	3	532	12	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1615	1400	1565	1631	1606	0
Flt Permitted			0.510		0.960	
Satd. Flow (perm)	1615	1400	840	1631	1606	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		131			3	
Link Speed (mph)	25			25	25	
Link Distance (ft)	305			218	489	
Travel Time (s)	8.3			5.9	13.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	2%	2%	3%	2%	2%
Adj. Flow (vph)	434	131	3	605	14	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	434	131	3	605	17	0
Number of Detectors	1	1	1	1	1	
Detector Template						
Leading Detector (ft)	35	35	35	35	35	
Trailing Detector (ft)	-5	-5	-5	-5	-5	
Detector 1 Position(ft)	-5	-5	-5	-5	-5	
Detector 1 Size(ft)	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	38.0	38.0	38.0	38.0	22.0	
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	
Maximum Green (s)	32.0	32.0	32.0	32.0	16.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church St & Bridge St (SR 113)



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	382	115	3	532	12	3
Future Volume (veh/h)	382	115	3	532	12	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1744	1772	1772	1758	1809	1809
Adj Flow Rate, veh/h	434	131	3	605	14	3
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	2	2	3	2	2
Cap, veh/h	1386	1194	703	1398	50	11
Arrive On Green	0.80	0.80	0.80	0.80	0.04	0.02
Sat Flow, veh/h	1744	1502	801	1758	1316	282
Grp Volume(v), veh/h	434	131	3	605	18	0
Grp Sat Flow(s),veh/h/ln	1744	1502	801	1758	1692	0
Q Serve(g_s), s	4.1	1.2	0.1	6.5	0.6	0.0
Cycle Q Clear(g_c), s	4.1	1.2	4.1	6.5	0.6	0.0
Prop In Lane		1.00	1.00		0.78	0.17
Lane Grp Cap(c), veh/h	1386	1194	703	1398	65	0
V/C Ratio(X)	0.31	0.11	0.00	0.43	0.28	0.00
Avail Cap(c_a), veh/h	1386	1194	703	1398	479	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	1.7	1.4	2.2	1.9	28.1	0.0
Incr Delay (d2), s/veh	0.6	0.2	0.0	1.0	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.3	0.0	1.9	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.3	1.6	2.3	2.9	31.4	0.0
LnGrp LOS	A	A	A	A	C	A
Approach Vol, veh/h	565			608	18	
Approach Delay, s/veh	2.1			2.9	31.4	
Approach LOS	A			A	C	

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		52.7			52.7	7.3
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		32.0			32.0	16.0
Max Q Clear Time (g_c+I1), s		6.6			9.0	3.1
Green Ext Time (p_c), s		5.1			5.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	3.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1241	418	0	0	268
Future Volume (vph)	0	1241	418	0	0	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1809	0	0	1542
Flt Permitted						
Satd. Flow (perm)	0	1853	1809	0	0	1542
Link Speed (mph)		35	35		30	
Link Distance (ft)		731	246		147	
Travel Time (s)		14.2	4.8		3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	4%	2%	2%	5%
Adj. Flow (vph)	0	1364	459	0	0	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1364	459	0	0	295
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge Street RT
Steelworks Mixed-Use
2027 w/ Dev | Weekday AM

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1241	418	0	0	268
Future Vol, veh/h	0	1241	418	0	0	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	2	4	2	2	5
Mvmt Flow	0	1364	459	0	0	295

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	459
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	610
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	610
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	610
HCM Lane V/C Ratio	-	-	0.483
HCM Control Delay (s)	-	-	16.3
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2.6

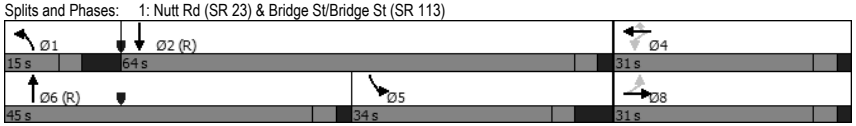
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	320	28	46	248	445	64	684	70	443	598	72
Future Volume (vph)	129	320	28	46	248	445	64	684	70	443	598	72
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00				1.00	
Frt		0.988				0.850		0.986			0.984	
Flt Protected	0.950				0.992		0.950			0.950		
Satd. Flow (prot)	1580	1736	0	0	1644	1407	1557	1734	0	1557	1842	0
Flt Permitted	0.308				0.517		0.950			0.950		
Satd. Flow (perm)	512	1736	0	0	857	1407	1555	1734	0	1557	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				454		5			9	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	1%	1%	2%	2%	0%	2%	2%	0%
Adj. Flow (vph)	132	327	29	47	253	454	65	698	71	452	610	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	356	0	0	300	454	65	769	0	452	683	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	

McMahon Associates, Inc. Steelworks Mixed-Use
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113) 2027 w/ Dev | Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	15.0	45.0		34.0	64.0	
Total Split (%)	28.2%	28.2%		28.2%	28.2%	28.2%	13.6%	40.9%		30.9%	58.2%	
Maximum Green (s)	26.0	26.0		26.0	26.0	26.0	7.0	40.0		26.0	59.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings 2027 w/ Dev | Weekday PM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\5A - 2027 W\PM.syn Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	320	28	46	248	445	64	684	70	443	598	72
Future Volume (veh/h)	129	320	28	46	248	445	64	684	70	443	598	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1875	1875	1794	1780	1780	1766	1766	1794	1766	1837	1866
Adj Flow Rate, veh/h	132	327	29	47	253	0	65	698	71	452	610	73
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	0	1	1	2	2	0	2	2	0
Cap, veh/h	176	417	37	52	183		108	588	60	413	848	101
Arrive On Green	0.25	0.25	0.24	0.24	0.25	0.00	0.06	0.37	0.36	0.25	0.53	0.52
Sat Flow, veh/h	1112	1697	150	59	747	1509	1682	1577	160	1682	1609	193
Grp Volume(v), veh/h	132	0	356	300	0	0	65	0	769	452	0	683
Grp Sat Flow(s),veh/h/ln	1112	0	1847	806	0	1509	1682	0	1737	1682	0	1802
Q Serve(g_s), s	1.5	0.0	19.8	6.2	0.0	0.0	4.1	0.0	41.0	27.0	0.0	31.8
Cycle Q Clear(g_c), s	27.0	0.0	19.8	26.0	0.0	0.0	4.1	0.0	41.0	27.0	0.0	31.8
Prop In Lane	1.00		0.08	0.16		1.00	1.00		0.09	1.00		0.11
Lane Grp Cap(c), veh/h	176	0	453	228	0		108	0	648	413	0	950
V/C Ratio(X)	0.75	0.00	0.79	1.31	0.00		0.60	0.00	1.19	1.09	0.00	0.72
Avail Cap(c_a), veh/h	176	0	453	228	0		122	0	648	413	0	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.6	0.0	38.8	42.8	0.0	0.0	50.1	0.0	34.5	41.5	0.0	19.9
Incr Delay (d2), s/veh	16.1	0.0	8.8	169.0	0.0	0.0	6.5	0.0	99.4	72.3	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.9	0.0	15.3	27.3	0.0	0.0	3.5	0.0	49.3	27.8	0.0	19.8
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	60.7	0.0	47.6	211.9	0.0	0.0	56.6	0.0	133.9	113.8	0.0	24.6
LnGrp LOS	E	A	D	F	A	A	E	A	F	F	A	C
Approach Vol, veh/h		488			754	A		834			1135	
Approach Delay, s/veh		51.2			84.3			127.9			60.1	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	65.0		31.0	34.0	45.0		31.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	* 59		26.0	26.0	40.0		26.0				
Max Q Clear Time (g_c+I1), s	6.6	33.8		28.0	29.5	43.0		29.5				
Green Ext Time (p_c), s	0.0	2.8		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		82.0	
HCM 6th LOS		F	

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	688	26	20	676	25	0	0	0	36	2	28
Future Volume (vph)	26	688	26	20	676	25	0	0	0	36	2	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.995						0.943	
Flt Protected		0.998			0.999						0.973	
Satd. Flow (prot)	0	2094	0	0	1791	0	0	0	0	0	1677	0
Flt Permitted		0.998			0.999						0.973	
Satd. Flow (perm)	0	2094	0	0	1791	0	0	0	0	0	1677	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			220			322			393	
Travel Time (s)		17.9			6.0			8.8			10.7	
Confl. Peds. (#/hr)	4					4				2		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	4%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	27	717	27	21	704	26	0	0	0	38	2	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	771	0	0	751	0	0	0	0	0	69	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

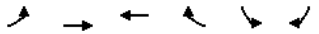
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	26	688	26	20	676	25	0	0	0	36	2	28
Future Vol, veh/h	26	688	26	20	676	25	0	0	0	36	2	28
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	1	4	0	1	0	0	0	0	0	0	0
Mvmt Flow	27	717	27	21	704	26	0	0	0	38	2	29

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	734	0	0	744	0	0				1550	1561	722
Stage 1	-	-	-	-	-	-				763	763	-
Stage 2	-	-	-	-	-	-				787	798	-
Critical Hdwy	4.3	-	-	4.3	-	-				6.6	6.7	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-				5.6	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.6	5.7	-
Follow-up Hdwy	3	-	-	3	-	-				3	4	3.1
Pot Cap-1 Maneuver	668	-	-	662	-	-				125	104	441
Stage 1	-	-	-	-	-	-				495	399	-
Stage 2	-	-	-	-	-	-				481	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	666	-	-	662	-	-				109	0	439
Mov Cap-2 Maneuver	-	-	-	-	-	-				109	0	-
Stage 1	-	-	-	-	-	-				459	0	-
Stage 2	-	-	-	-	-	-				454	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0.3	42.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	666	-	-	662	-	-	162
HCM Lane V/C Ratio	0.041	-	-	0.031	-	-	0.424
HCM Control Delay (s)	10.6	0	-	10.6	0	-	42.7
HCM Lane LOS	B	A	-	B	A	-	E
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	1.9



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	48	677	689	47	31	31
Future Volume (vph)	48	677	689	47	31	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		3%	2%		0%	
Storage Length (ft)	75			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1743	1853	1844	0	1694	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1743	1853	1844	0	1694	0
Link Speed (mph)		30	25		30	
Link Distance (ft)		220	530		249	
Travel Time (s)		5.0	14.5		5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%
Adj. Flow (vph)	52	736	749	51	34	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	736	800	0	68	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	677	689	47	31	31
Future Vol, veh/h	48	677	689	47	31	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	2	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2
Mvmt Flow	52	736	749	51	34	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	800	0	-	0	1615	775
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	840	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	*559	-	-	-	*47	*541
Stage 1	-	-	-	-	*559	-
Stage 2	-	-	-	-	*471	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	*559	-	-	-	*43	*541
Mov Cap-2 Maneuver	-	-	-	-	*242	-
Stage 1	-	-	-	-	*507	-
Stage 2	-	-	-	-	*471	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	18.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 559	-	-	-	334
HCM Lane V/C Ratio	0.093	-	-	-	0.202
HCM Control Delay (s)	12.1	-	-	-	18.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	633	4	6	565	94	141
Future Volume (vph)	633	4	6	565	94	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.919	
Flt Protected			0.950		0.980	
Satd. Flow (prot)	2078	0	2035	2121	2007	0
Flt Permitted			0.950		0.980	
Satd. Flow (perm)	2078	0	2035	2121	2007	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	530			150	303	
Travel Time (s)	14.5			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	1%	0%	0%
Adj. Flow (vph)	688	4	7	614	102	153
Shared Lane Traffic (%)						
Lane Group Flow (vph)	692	0	7	614	255	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	633	4	6	565	94	141
Future Vol, veh/h	633	4	6	565	94	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	688	4	7	614	102	153

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	692	0	1318	690
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	628	-
Critical Hdwy	-	-	4.3	-	5	5.5
Critical Hdwy Stg 1	-	-	-	-	4	-
Critical Hdwy Stg 2	-	-	-	-	4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	691	-	*202	537
Stage 1	-	-	-	-	*733	-
Stage 2	-	-	-	-	*648	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	691	-	*200	537
Mov Cap-2 Maneuver	-	-	-	-	*403	-
Stage 1	-	-	-	-	*733	-
Stage 2	-	-	-	-	*642	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	21.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	474	-	-	691	-
HCM Lane V/C Ratio	0.539	-	-	0.009	-
HCM Control Delay (s)	21.1	-	-	10.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	3.1	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	656	118	5	576	0	0
Future Volume (vph)	656	118	5	576	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979					
Flt Protected			0.950			
Satd. Flow (prot)	2067	0	2006	2132	0	1900
Flt Permitted			0.950			
Satd. Flow (perm)	2067	0	2006	2132	0	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	1%	0%	0%
Adj. Flow (vph)	698	126	5	613	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	824	0	5	613	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	656	118	5	576	0	0
Future Vol, veh/h	656	118	5	576	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	1	0	0
Mvmt Flow	698	126	5	613	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	824	0	-	761
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	620	-	0	427
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	620	-	-	427
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	620	-
HCM Lane V/C Ratio	-	-	-	0.009	-
HCM Control Delay (s)	0	-	-	10.9	-
HCM Lane LOS	A	-	-	B	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	624	0	0	558	41	32	0	16	45	0	29
Future Volume (vph)	40	624	0	0	558	41	32	0	16	45	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.991			0.955				0.850
Flt Protected	0.950							0.968		0.950		
Satd. Flow (prot)	1770	2111	0	0	2111	0	0	1731	0	1770	0	1583
Flt Permitted	0.950							0.968		0.950		
Satd. Flow (perm)	1770	2111	0	0	2111	0	0	1731	0	1770	0	1583
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		190			297			454			310	
Travel Time (s)		5.2			8.1			12.4			8.5	
Confl. Peds. (#/hr)			4	4								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	1%	2%	3%	2%	0%	2%	2%	2%
Adj. Flow (vph)	42	657	0	0	587	43	34	0	17	47	0	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	657	0	0	630	0	0	51	0	47	0	31
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	624	0	0	558	41	32	0	16	45	0	29
Future Vol, veh/h	40	624	0	0	558	41	32	0	16	45	0	29
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-1	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	0	0	1	2	3	2	0	2	2	2
Mvmt Flow	42	657	0	0	587	43	34	0	17	47	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	630	0	-	-	-	0	1365	1371	657	1359	-	609
Stage 1	-	-	-	-	-	-	741	741	-	609	-	-
Stage 2	-	-	-	-	-	-	624	630	-	750	-	-
Critical Hdwy	4.3	-	-	-	-	-	6.93	6.32	6.1	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.93	5.32	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.93	5.32	-	6.12	-	-
Follow-up Hdwy	3	-	-	-	-	-	3	4.018	3.1	3	-	3.1
Pot Cap-1 Maneuver	*693	-	0	0	-	-	*98	*103	500	*93	0	*670
Stage 1	-	-	0	0	-	-	*475	*441	-	*692	0	-
Stage 2	-	-	0	0	-	-	*693	*517	-	*451	0	-
Platoon blocked, %	1	-			-	-	1	1		1		1
Mov Cap-1 Maneuver	*693	-	-	-	-	-	*89	*97	500	*86	-	*670
Mov Cap-2 Maneuver	-	-	-	-	-	-	*89	*97	-	*86	-	-
Stage 1	-	-	-	-	-	-	*446	*414	-	*650	-	-
Stage 2	-	-	-	-	-	-	*661	*517	-	*409	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	53.3	58.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	123	* 693	-	-	-	86	670
HCM Lane V/C Ratio	0.411	0.061	-	-	-	0.551	0.046
HCM Control Delay (s)	53.3	10.5	-	-	-	89.3	10.6
HCM Lane LOS	F	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1.8	0.2	-	-	-	2.4	0.1

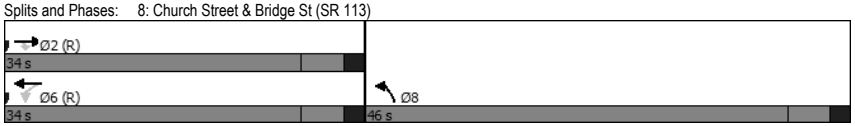
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	500	178	21	535	56	16
Future Volume (vph)	500	178	21	535	56	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.970	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	1647	1428	1596	1663	1596	0
Flt Permitted			0.446		0.963	
Satd. Flow (perm)	1647	1428	749	1663	1596	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		151			17	
Link Speed (mph)	25			25	25	
Link Distance (ft)	297			194	518	
Travel Time (s)	8.1			5.3	14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	1%	3%	0%
Adj. Flow (vph)	526	187	22	563	59	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	526	187	22	563	76	0
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	10.0	10.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	34.0	34.0	34.0	34.0	46.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (%)	42.5%	42.5%	42.5%	42.5%	57.5%	
Maximum Green (s)	28.0	28.0	28.0	28.0	40.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 46 (58%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church Street & Bridge St (SR 113)



McMahon Associates, Inc.
8: Church Street & Bridge St (SR 113)
Steelworks Mixed-Use
2027 w/ Dev | Weekday PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	500	178	21	535	56	16
Future Volume (veh/h)	500	178	21	535	56	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1772	1800	1800	1786	1795	1837
Adj Flow Rate, veh/h	526	187	22	563	59	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	1	3	0
Cap, veh/h	1412	1215	594	1423	100	29
Arrive On Green	0.80	0.80	0.80	0.80	0.08	0.07
Sat Flow, veh/h	1772	1525	709	1786	1276	368
Grp Volume(v), veh/h	526	187	22	563	77	0
Grp Sat Flow(s),veh/h/ln	1772	1525	709	1786	1665	0
Q Serve(g_s), s	6.9	2.3	0.7	7.5	3.6	0.0
Cycle Q Clear(g_c), s	6.9	2.3	7.6	7.5	3.6	0.0
Prop In Lane		1.00	1.00		0.77	0.22
Lane Grp Cap(c), veh/h	1412	1215	594	1423	130	0
V/C Ratio(X)	0.37	0.15	0.04	0.40	0.59	0.00
Avail Cap(c_a), veh/h	1412	1215	594	1423	853	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.3	1.9	3.4	2.4	35.7	0.0
Incr Delay (d2), s/veh	0.8	0.3	0.1	0.8	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	0.9	0.2	3.3	3.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.1	2.2	3.6	3.2	41.7	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	713			585	77	
Approach Delay, s/veh	2.9			3.3	41.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2				6	8
Phs Duration (G+Y+Rc), s		68.7				68.7	11.3
Change Period (Y+Rc), s		6.0				6.0	6.0
Max Green Setting (Gmax), s		28.0				28.0	40.0
Max Q Clear Time (g_c+I1), s		9.4				10.1	6.1
Green Ext Time (p_c), s		7.5				6.7	0.3

Intersection Summary	
HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1113	813	0	0	445
Future Volume (vph)	0	1113	813	0	0	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1136	830	0	0	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1136	830	0	0	454
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge St RT

Steelworks Mixed-Use
2027 w/ Dev | Weekday PM

Intersection	
Int Delay, s/veh	31

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1113	813	0	0	445
Future Vol, veh/h	0	1113	813	0	0	445
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1136	830	0	0	454

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	830
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 363
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 363
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	165
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	363
HCM Lane V/C Ratio	-	-	1.251
HCM Control Delay (s)	-	-	165
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	19.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

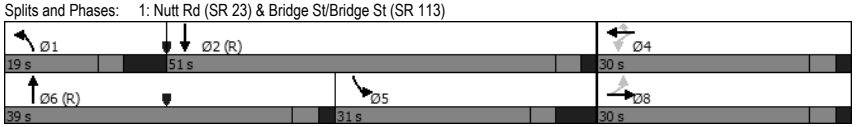
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	367	69	70	218	461	88	684	90	518	813	59
Future Volume (vph)	130	367	69	70	218	461	88	684	90	518	813	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	11	11	10	10	10	10	12	12	10	14	14
Grade (%)		-2%			1%			1%			1%	
Storage Length (ft)	100		0	0		390	725		0	350		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	60			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976				0.850		0.983			0.990	
Flt Protected	0.950				0.988		0.950			0.950		
Satd. Flow (prot)	1580	1696	0	0	1619	1393	1557	1726	0	1557	1854	0
Flt Permitted	0.349				0.276		0.950			0.950		
Satd. Flow (perm)	581	1696	0	0	452	1393	1557	1726	0	1557	1854	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				470		7			5	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		630			655			876			216	
Travel Time (s)		17.2			17.9			17.1			4.2	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	133	374	70	71	222	470	90	698	92	529	830	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	444	0	0	293	470	90	790	0	529	890	0
Number of Detectors	1	1		1	3	0	1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	35	35		20	55	0	35	35		35	35	
Trailing Detector (ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Position(ft)	-5	-5		0	-3	0	-5	-5		-5	-5	
Detector 1 Size(ft)	40	40		20	5	20	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)					15							
Detector 2 Size(ft)					5							
Detector 2 Type					Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)					0.0							
Detector 3 Position(ft)					30							
Detector 3 Size(ft)					25							
Detector 3 Type					Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)					0.0							
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4						

McMahon Associates, Inc.
1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)
Steelworks Mixed-Use
2027 w/ Dev | Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	15.0		7.0	15.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	15.0	26.0		15.0	26.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	19.0	39.0		31.0	51.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	19.0%	39.0%		31.0%	51.0%	
Maximum Green (s)	25.0	25.0		25.0	25.0	25.0	11.0	34.0		23.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	5.0	2.0		5.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0			4.0	4.0	7.0	4.0		7.0	4.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		10.0			10.0	
Flash Dont Walk (s)	18.0	18.0		18.0	18.0	18.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0			0	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green, Master Intersection	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Nutt Rd (SR 23) & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings
2027 w/ Dev | Saturday Midday
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\5A - 2027 W\SAT.syn Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	367	69	70	218	461	88	684	90	518	813	59
Future Volume (veh/h)	130	367	69	70	218	461	88	684	90	518	813	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1846	1860	1846	1766	1766	1766	1766	1766	1766	1766	1837	1837
Adj Flow Rate, veh/h	133	374	70	71	222	0	90	698	92	529	830	60
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	1	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	396	74	48	83		136	535	71	404	811	59
Arrive On Green	0.26	0.26	0.25	0.25	0.26	0.00	0.08	0.35	0.34	0.24	0.48	0.47
Sat Flow, veh/h	1144	1524	285	13	319	1497	1682	1529	201	1682	1693	122
Grp Volume(v), veh/h	133	0	444	293	0	0	90	0	790	529	0	890
Grp Sat Flow(s),veh/h/ln	1144	0	1809	332	0	1497	1682	0	1730	1682	0	1815
Q Serve(g_s), s	0.2	0.0	24.1	0.9	0.0	0.0	5.2	0.0	35.0	24.0	0.0	47.9
Cycle Q Clear(g_c), s	24.7	0.0	24.1	25.0	0.0	0.0	5.2	0.0	35.0	24.0	0.0	47.9
Prop In Lane	1.00		0.16	0.24		1.00	1.00		0.12	1.00		0.07
Lane Grp Cap(c), veh/h	218	0	470	128	0		136	0	606	404	0	869
V/C Ratio(X)	0.61	0.00	0.94	2.29	0.00		0.66	0.00	1.30	1.31	0.00	1.02
Avail Cap(c_a), veh/h	218	0	470	128	0		202	0	606	404	0	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	36.4	36.6	0.0	0.0	44.6	0.0	32.6	38.0	0.0	26.1
Incr Delay (d2), s/veh	4.8	0.0	27.9	606.3	0.0	0.0	5.3	0.0	148.8	156.4	0.0	36.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	0.0	20.4	42.7	0.0	0.0	4.2	0.0	57.6	40.9	0.0	37.2
Unsig. Movement Delay, s/veh						0.00						
LnGrp Delay(d),s/veh	41.5	0.0	64.3	642.9	0.0	0.0	49.9	0.0	181.4	194.4	0.0	62.9
LnGrp LOS	D	A	E	F	A	A	D	A	F	F	A	F
Approach Vol, veh/h		577			763	A		880			1419	
Approach Delay, s/veh		59.0			246.9			167.9			111.9	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.1	54.9		30.0	31.0	39.0		30.0				
Change Period (Y+Rc), s	8.0	* 8		5.0	8.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	* 46		25.0	23.0	34.0		25.0				
Max Q Clear Time (g_c+I1), s	7.7	49.9		27.0	26.5	37.0		27.2				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		145.4	
HCM 6th LOS		F	

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [WBR] is included in calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	916	21	50	746	19	0	0	0	53	6	43
Future Volume (vph)	9	916	21	50	746	19	0	0	0	53	6	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	11	11	11	10	10	10	11	11	11
Grade (%)		2%			2%			-1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.997						0.943	
Flt Protected					0.997						0.975	
Satd. Flow (prot)	0	2104	0	0	1772	0	0	0	0	0	1647	0
Flt Permitted					0.997						0.975	
Satd. Flow (perm)	0	2104	0	0	1772	0	0	0	0	0	1647	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		655			224			322			393	
Travel Time (s)		17.9			6.1			8.8			10.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	9	954	22	52	777	20	0	0	0	55	6	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	985	0	0	849	0	0	0	0	0	106	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary		
Area Type:	Other	
Control Type: Unsignalized		

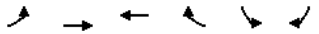
Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	9	916	21	50	746	19	0	0	0	53	6	43
Future Vol, veh/h	9	916	21	50	746	19	0	0	0	53	6	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	2	-	-	2	-	-	-1	-	-	1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	954	22	52	777	20	0	0	0	55	6	45

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	797	0	0	976	0	0			1874	1885	787
Stage 1	-	-	-	-	-	-			891	891	-
Stage 2	-	-	-	-	-	-			983	994	-
Critical Hdwy	4.3	-	-	4.3	-	-			6.62	6.72	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-			5.62	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.62	5.72	-
Follow-up Hdwy	3	-	-	3	-	-			3	4.018	3.1
Pot Cap-1 Maneuver	634	-	-	547	-	-			76	64	402
Stage 1	-	-	-	-	-	-			423	343	-
Stage 2	-	-	-	-	-	-			379	306	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	634	-	-	547	-	-			61	0	402
Mov Cap-2 Maneuver	-	-	-	-	-	-			61	0	-
Stage 1	-	-	-	-	-	-			410	0	-
Stage 2	-	-	-	-	-	-			314	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.8	195.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	634	-	-	547	-	-	98
HCM Lane V/C Ratio	0.015	-	-	0.095	-	-	1.084
HCM Control Delay (s)	10.8	0	-	12.3	0	-	195.9
HCM Lane LOS	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	6.8



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	63	871	739	59	55	50
Future Volume (vph)	63	871	739	59	55	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		3%	2%		0%	
Storage Length (ft)	75			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.990		0.936	
Flt Protected	0.950				0.974	
Satd. Flow (prot)	1743	1853	1826	0	1698	0
Flt Permitted	0.950				0.974	
Satd. Flow (perm)	1743	1853	1826	0	1698	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		224	525		251	
Travel Time (s)		6.1	14.3		6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%
Adj. Flow (vph)	68	947	803	64	60	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	947	867	0	114	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	871	739	59	55	50
Future Vol, veh/h	63	871	739	59	55	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	3	2	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	2	2	2	2
Mvmt Flow	68	947	803	64	60	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	867	0	-	0	1918	835
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	1083	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	504	-	-	-	*~ 15	*501
Stage 1	-	-	-	-	*518	-
Stage 2	-	-	-	-	*357	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	504	-	-	-	*~ 13	*501
Mov Cap-2 Maneuver	-	-	-	-	*187	-
Stage 1	-	-	-	-	*448	-
Stage 2	-	-	-	-	*357	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	28.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	504	-	-	-	267
HCM Lane V/C Ratio	0.136	-	-	-	0.427
HCM Control Delay (s)	13.3	-	-	-	28.2
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	916	10	4	723	72	149
Future Volume (vph)	916	10	4	723	72	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16
Grade (%)	3%			1%	-7%	
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.909	
Flt Protected			0.950		0.984	
Satd. Flow (prot)	2098	0	1996	2101	1954	0
Flt Permitted			0.950		0.984	
Satd. Flow (perm)	2098	0	1996	2101	1954	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	525			150	303	
Travel Time (s)	14.3			4.1	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	996	11	4	786	78	162
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1007	0	4	786	240	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	916	10	4	723	72	149
Future Vol, veh/h	916	10	4	723	72	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	3	-	-	1	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	996	11	4	786	78	162

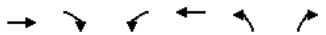
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1007	0	1796	1002
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	794	-
Critical Hdwy	-	-	4.3	-	5.02	5.52
Critical Hdwy Stg 1	-	-	-	-	4.02	-
Critical Hdwy Stg 2	-	-	-	-	4.02	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	533	-	*~ 54	373
Stage 1	-	-	-	-	*578	-
Stage 2	-	-	-	-	*518	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	533	-	*~ 53	373
Mov Cap-2 Maneuver	-	-	-	-	*272	-
Stage 1	-	-	-	-	*578	-
Stage 2	-	-	-	-	*514	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	39.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	333	-	-	533	-
HCM Lane V/C Ratio	0.721	-	-	0.008	-
HCM Control Delay (s)	39.4	-	-	11.8	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	5.3	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	880	176	31	754	0	0
Future Volume (vph)	880	176	31	754	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	12	12
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.978					
Flt Protected			0.950			
Satd. Flow (prot)	2082	0	2006	2111	0	1863
Flt Permitted			0.950			
Satd. Flow (perm)	2082	0	2006	2111	0	1863
Link Speed (mph)	25			25	25	
Link Distance (ft)	150			190	482	
Travel Time (s)	4.1			5.2	13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	936	187	33	802	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	33	802	0	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	880	176	31	754	0	0
Future Vol, veh/h	880	176	31	754	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	2	2	2	2	2
Mvmt Flow	936	187	33	802	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1123	0	-	1030
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.3	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3	-	-	3.1
Pot Cap-1 Maneuver	-	-	483	-	0	295
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	483	-	-	295
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	483	-
HCM Lane V/C Ratio	-	-	-	0.068	-
HCM Control Delay (s)	0	-	-	13	-
HCM Lane LOS	A	-	-	B	-
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	974	0	0	684	23	23	0	0	25	0	37
Future Volume (vph)	34	974	0	0	684	23	23	0	0	25	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996							0.850
Flt Protected	0.950							0.950		0.950		
Satd. Flow (prot)	1770	2132	0	0	2103	0	0	1778	0	1770	0	1583
Flt Permitted	0.950							0.950		0.950		
Satd. Flow (perm)	1770	2132	0	0	2103	0	0	1778	0	1770	0	1583
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		190			297			454			296	
Travel Time (s)		5.2			8.1			12.4			6.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	36	1025	0	0	720	24	24	0	0	26	0	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1025	0	0	744	0	0	24	0	26	0	39
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	22.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	974	0	0	684	23	23	0	0	25	0	37
Future Vol, veh/h	34	974	0	0	684	23	23	0	0	25	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	75	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-1	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	1025	0	0	720	24	24	0	0	26	0	39

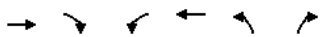
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	744	0	-	-	-	0	1829	1841	1025	1829	-	732
Stage 1	-	-	-	-	-	-	1097	1097	-	732	-	-
Stage 2	-	-	-	-	-	-	732	744	-	1097	-	-
Critical Hdwy	4.3	-	-	-	-	-	6.92	6.32	6.12	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.12	-	-
Follow-up Hdwy	3	-	-	-	-	-	3	4.018	3.1	3	-	3.1
Pot Cap-1 Maneuver	*569	-	0	0	-	-	*~ 19	*23	306	*~ 16	0	*551
Stage 1	-	-	0	0	-	-	*301	*307	-	*569	0	-
Stage 2	-	-	0	0	-	-	*569	*425	-	*284	0	-
Platoon blocked, %	1	-			-	-	1	1		1		1
Mov Cap-1 Maneuver	*569	-	-	-	-	-	*~ 16	*22	306	*~ 15	-	*551
Mov Cap-2 Maneuver	-	-	-	-	-	-	*~ 16	*22	-	*~ 15	-	-
Stage 1	-	-	-	-	-	-	*282	*288	-	*533	-	-
Stage 2	-	-	-	-	-	-	*529	*425	-	*266	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	$ 753.6	$ 362.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	16	* 569	-	-	-	15	551
HCM Lane V/C Ratio	1.513	0.063	-	-	-	1.754	0.071
HCM Control Delay (s)	$ 753.6	11.8	-	-	-	$ 881.9	12
HCM Lane LOS	F	B	-	-	-	F	B
HCM 95th %tile Q(veh)	3.6	0.2	-	-	-	3.9	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

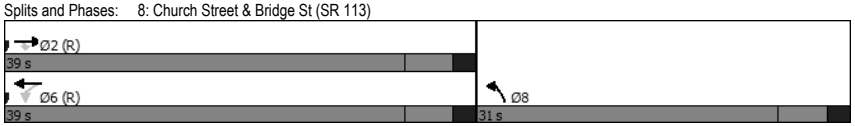


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	765	232	34	712	45	7
Future Volume (vph)	765	232	34	712	45	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	11	11
Grade (%)	0%			0%	-1%	
Storage Length (ft)		125	75		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			45		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.982	
Flt Protected			0.950		0.958	
Satd. Flow (prot)	1663	1400	1565	1647	1613	0
Flt Permitted			0.303		0.958	
Satd. Flow (perm)	1663	1400	499	1647	1613	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		182			7	
Link Speed (mph)	25			25	25	
Link Distance (ft)	297			194	518	
Travel Time (s)	8.1			5.3	14.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	805	244	36	749	47	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	805	244	36	749	54	0
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	
Switch Phase						
Minimum Initial (s)	20.0	20.0	10.0	10.0	5.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	24.0	
Total Split (s)	39.0	39.0	39.0	39.0	31.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (%)	55.7%	55.7%	55.7%	55.7%	44.3%	
Maximum Green (s)	33.0	33.0	33.0	33.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	5.0	5.0	5.0	5.0	4.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 16 (23%), Referenced to phase 2:EBT and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 8: Church Street & Bridge St (SR 113)

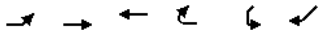


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	765	232	34	712	45	7
Future Volume (veh/h)	765	232	34	712	45	7
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1786	1772	1772	1772	1809	1809
Adj Flow Rate, veh/h	805	244	36	749	47	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	2	2	2	2
Cap, veh/h	1422	1195	423	1410	89	13
Arrive On Green	0.80	0.80	0.80	0.80	0.06	0.05
Sat Flow, veh/h	1786	1502	510	1772	1451	216
Grp Volume(v), veh/h	805	244	36	749	55	0
Grp Sat Flow(s),veh/h/ln	1786	1502	510	1772	1697	0
Q Serve(g_s), s	11.7	2.8	2.0	10.5	2.2	0.0
Cycle Q Clear(g_c), s	11.7	2.8	13.7	10.5	2.2	0.0
Prop In Lane		1.00	1.00		0.85	0.13
Lane Grp Cap(c), veh/h	1422	1195	423	1410	104	0
V/C Ratio(X)	0.57	0.20	0.09	0.53	0.53	0.00
Avail Cap(c_a), veh/h	1422	1195	423	1410	630	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.7	1.7	5.2	2.5	31.9	0.0
Incr Delay (d2), s/veh	1.6	0.4	0.4	1.4	5.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.6	0.9	0.4	4.0	1.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	2.1	5.6	4.0	37.8	0.0
LnGrp LOS	A	A	A	A	D	A
Approach Vol, veh/h	1049			785	55	
Approach Delay, s/veh	3.8			4.0	37.8	
Approach LOS	A			A	D	

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		60.7			60.7	9.3
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		33.0			33.0	25.0
Max Q Clear Time (g_c+I1), s		14.2			16.2	4.7
Green Ext Time (p_c), s		11.6			9.1	0.2

Intersection Summary		
HCM 6th Ctrl Delay	4.9	
HCM 6th LOS	A	

Notes
User approved volume balancing among the lanes for turning movement.



Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	1390	814	0	0	461
Future Volume (vph)	0	1390	814	0	0	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	2%		3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	1853	1844	0	0	1619
Flt Permitted						
Satd. Flow (perm)	0	1853	1844	0	0	1619
Link Speed (mph)		35	35		25	
Link Distance (ft)		746	216		152	
Travel Time (s)		14.5	4.2		4.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	0	1418	831	0	0	470
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1418	831	0	0	470
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

McMahon Associates, Inc.
22: Nutt Rd (SR 23) & Bridge St RT

Steelworks Mixed-Use
2027 w/ Dev | Saturday Midday

Intersection	
Int Delay, s/veh	31.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	1390	814	0	0	461
Future Vol, veh/h	0	1390	814	0	0	461
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	2	-	3	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	1418	831	0	0	470

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	831
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.1
Pot Cap-1 Maneuver	0	-	-	0	0	~ 363
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	~ 363
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	182.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	SWLn1
Capacity (veh/h)	-	-	363
HCM Lane V/C Ratio	-	-	1.296
HCM Control Delay (s)	-	-	182.6
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	21.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix N

Gap Study

Table 1B. Bridge Street (S.R. 0113) at Hall Street
Westbound Hall Street Street Left-Turn

	Interval	Bridge Street (S.R. 0113) Combined Gaps															
		2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22-23	24-25	26-27	28-29	>29	Total
RAW GAP DATA	**4:30**	6	6	14	7	3	4	0	2	0	0	0	0	0	0	0	42
	4:45	7	9	8	10	5	2	2	1	0	0	0	0	0	0	0	44
	5:00	2	9	7	5	3	1	0	1	0	1	0	0	0	0	2	31
	5:15	2	8	5	2	6	4	0	0	1	0	2	0	1	1	0	32
	Total	17	32	34	24	17	11	2	4	1	1	2	0	1	1	2	149
	Gap Size Factor	0	0	0	1	2	2	3	4	4	5	6	6	7	8	8	
USEABLE GAPS	**4:30**	0	0	0	7	6	8	0	8	0	0	0	0	0	0	0	29
	4:45	0	0	0	10	10	4	6	4	0	0	0	0	0	0	0	34
	5:00	0	0	0	5	6	2	0	4	0	5	0	0	0	0	16	38
	5:15	0	0	0	2	12	8	0	0	4	0	12	0	7	8	0	53
	Useable Gaps	0	0	0	24	34	22	6	16	4	5	12	0	7	8	16	**154**

Gap Size Factor Calculation NB Left-Turn onto Bridge Street Weekday PM Peak Hour			
Gap Size Factor	Critical Headway (s) [1]	Followup Headway (s) [1]	Total Required Gap (s)
1	6.2		6.2
2	6.2	3.0	9.2
3	9.2	3.0	12.2
4	12.2	3.0	15.2
5	15.2	3.0	18.2
6	18.2	3.0	21.2
7	21.2	3.0	24.2
8	24.2	3.0	27.2
9	27.2	3.0	30.2

(1) Based on Tables 10-11 and 10-12 in the *PennDOT Publication 46, Traffic Engineering Manual* .

McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville
Location: Bridge Street & Hall Street
Counter: LB

File Name : phxGAP01p
Site Code : 12345678
Start Date : 10/19/2020
Page No : 1

Directions Printed: Combined

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
16:30	2	6	6	14	7	3	4	0	2	0	0	0	0	0	0	0	42	6 - 7
16:45	0	7	9	8	10	5	2	2	1	0	0	0	0	0	0	0	44	6 - 7
Total	2	13	15	22	17	8	6	2	3	0	0	0	0	0	0	0	86	6 - 7
17:00	0	2	9	7	5	3	1	0	1	0	1	0	0	0	0	2	31	6 - 7
17:15	0	2	8	5	2	6	4	0	0	1	0	2	0	1	1	0	32	8 - 9
Grand Total	2	17	32	34	24	17	11	2	4	1	1	2	0	1	1	2	149	6 - 7
Total %		11.4	21.5	22.8	16.1	11.4	7.4	1.3	2.7	0.7	0.7	1.3	0.0	0.7	0.7	1.3		

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Fort Washington, PA 19034

Municipality: Phoenixville
Location: Bridge Street & Hall Street
Counter: LB

File Name : phxGAP01p
Site Code : 12345678
Start Date : 10/19/2020
Page No : 1

Directions Printed: Eastbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
16:30	0	2	3	3	5	7	3	2	1	0	2	2	0	2	1	2	35	10 - 11
16:45	0	1	6	7	6	3	4	2	1	1	1	1	0	2	0	4	39	8 - 9
Total	0	3	9	10	11	10	7	4	2	1	3	3	0	4	1	6	74	10 - 11
17:00	0	0	5	4	4	1	2	0	1	0	2	1	1	2	0	4	27	10 - 11
17:15	0	0	3	5	3	3	2	1	2	1	0	3	1	0	1	4	29	12 - 13
Grand Total	0	3	17	19	18	14	11	5	5	2	5	7	2	6	2	14	130	10 - 11
Total %		2.3	13.1	14.6	13.8	10.8	8.5	3.8	3.8	1.5	3.8	5.4	1.5	4.6	1.5	10.8		

McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Phoenixville
Location: Bridge Street & Hall Street
Counter: LB

File Name : phxGAP01p
Site Code : 12345678
Start Date : 10/19/2020

Directions Printed: Westbound

Start Time	Volume	2 - 3	4 - 5	6 - 7	8 - 9	10 - 11	12 - 13	14 - 15	16 - 17	18 - 19	20 - 21	22 - 23	24 - 25	26 - 27	28 - 29	>29	Int. Total	Average
16:30	2	2	4	6	7	5	8	1	2	2	1	2	0	1	0	1	42	10 - 11
16:45	0	1	8	8	7	4	2	2	2	0	3	1	0	0	1	3	42	8 - 9
Total	2	3	12	14	14	9	10	3	4	2	4	3	0	1	1	4	84	8 - 9
17:00	0	2	5	3	4	4	2	2	1	1	2	1	1	0	2	3	33	10 - 11
17:15	0	2	5	5	6	5	3	1	1	3	3	0	0	1	0	3	38	10 - 11
Grand Total	2	7	22	22	24	18	15	6	6	6	9	4	1	2	3	10	155	10 - 11
Total %		4.5	14.2	14.2	15.5	11.6	9.7	3.9	3.9	3.9	5.8	2.6	0.6	1.3	1.9	6.5		

Appendix O

Hall Street Extension
Traffic Signal Analysis

		BRIDGE STREET (S.R. 0113) EASTBOUND		BRIDGE STREET (S.R. 0113) WESTBOUND		HALL STREET NORTHBOUND			HALL STREET EXT SOUTHBOUND	
		LEFT	THROUGH	THROUGH	RIGHT	LEFT	THROUGH	RIGHT	LEFT	RIGHT
EXISTING TRAFFIC VOLUMES	6:00 AM		246	239		20		6		
	7:00 AM		375	455		28		9		
	8:00 AM		393	395		19		17		
	9:00 AM		313	280		32		14		
	3:00 PM		390	385		24		10		
	4:00 PM		526	493		38		17		
	5:00 PM		548	492		24		7		
	6:00 PM		336	312		11		5		
BACKGROUND GROWTH (0.48% PER YEAR TO 2022)	6:00 AM		4	3		0		0		
	7:00 AM		5	7		0		0		
	8:00 AM		6	6		0		0		
	9:00 AM		5	4		0		0		
	3:00 PM		6	6		0		0		
	4:00 PM		8	7		1		0		
	5:00 PM		8	7		0		0		
	6:00 PM		5	5		0		0		
BACKGROUND DEVELOPMENTS [1]	6:00 AM		42	38						
	7:00 AM		**64**	**72**						
	8:00 AM		67	63						
	9:00 AM		53	44						
	3:00 PM		75	76						
	4:00 PM		**101**	**97**						
	5:00 PM		105	97						
	6:00 PM		65	61						
PARADISE STREET DIVERSIONS [2]	6:00 AM		-32	-32						
	7:00 AM		**-49**	**-60**						
	8:00 AM		-51	-52						
	9:00 AM		-41	-37						
	3:00 PM		-47	-74						
	4:00 PM		**-63**	**-95**						
	5:00 PM		-66	-95						
	6:00 PM		-40	-60						
RESIDENTIAL SITE TRIP DISTRIBUTIONS [3]	6:00 AM	35%	10%	15%	10%				25%	43%
	7:00 AM	35%	10%	15%	10%				25%	43%
	8:00 AM	35%	10%	15%	10%				25%	43%
	9:00 AM	35%	10%	15%	10%				25%	43%
	3:00 PM	35%	10%	15%	10%				25%	43%
	4:00 PM	35%	10%	15%	10%				25%	43%
	5:00 PM	35%	10%	15%	10%				25%	43%
	6:00 PM	35%	10%	15%	10%				25%	43%
COMMERCIAL SITE TRIP DISTRIBUTIONS [4]	6:00 AM		50%	50%						
	7:00 AM		50%	50%						
	8:00 AM		50%	50%						
	9:00 AM		50%	50%						
	3:00 PM		50%	50%						
	4:00 PM		50%	50%						
	5:00 PM		50%	50%						
	6:00 PM		50%	50%						
RESIDENTIAL SITE TRIP ASSIGNMENTS	6:00 AM	5	6	2	1				14	25
	7:00 AM	12	11	5	3				27	46
	8:00 AM	14	9	6	4				24	40
	9:00 AM	10	5	4	3				13	22
	3:00 PM	9	3	4	3				7	12
	4:00 PM	15	4	6	4				9	16
	5:00 PM	21	4	9	6				11	18
	6:00 PM	20	4	8	6				11	18
COMMERCIAL SITE TRIP ASSIGNMENTS	6:00 AM		8	12						
	7:00 AM		18	26						
	8:00 AM		31	40						
	9:00 AM		39	63						
	3:00 PM		19	24						
	4:00 PM		20	28						
	5:00 PM		22	32						
	6:00 PM		21	28						
UNCLE B'S BAR B Q	6:00 AM								0	0
	7:00 AM								0	0
	8:00 AM								0	0
	9:00 AM								0	0
	3:00 PM								6	6
	4:00 PM								6	6
	5:00 PM								9	9
	6:00 PM								12	12
HALL STREET DIVERSIONS [5]	6:00 AM		-9	-7	7				9	
	7:00 AM		-17	-8	8				17	
	8:00 AM		-19	-8	8				19	
	9:00 AM		-15	-8	8				15	
	3:00 PM		-17	-10	10				17	
	4:00 PM		-19	-14	14				19	
	5:00 PM		-23	-14	14				23	
	6:00 PM		-18	-10	10				18	
WHEATLAND STREET DIVERSION [6]	6:00 AM		-12						12	
	7:00 AM		-19						19	
	8:00 AM		-16						16	
	9:00 AM		-16						16	
	3:00 PM		-16						16	
	4:00 PM		-21						21	
	5:00 PM		-24						24	
	6:00 PM		-15						15	
723 WHEATLAND STREET [7]	6:00 AM								5	
	7:00 AM								10	
	8:00 AM								9	
	9:00 AM								5	
	3:00 PM								4	
	4:00 PM								6	
	5:00 PM								7	
	6:00 PM								7	
PARARIDSE VILLAGE [8]	6:00 AM								3	
	7:00 AM								14	
	8:00 AM								23	
	9:00 AM								39	
	3:00 PM								41	
	4:00 PM								43	
	5:00 PM								43	
	6:00 PM								39	
2022 PROJECTED TRAFFIC VOLUMES	6:00 AM	5	253	255	8	20	0	6	43	25
	7:00 AM	12	388	497	11	28	0	9	87	46
	8:00 AM	14	420	450	12	19	0	17	91	40
	9:00 AM	10	343	350	11	32	0	14	88	22
	3:00 PM	9	413	411	13	24	0	10	91	18
	4:00 PM	15	556	522	18	39	0	17	104	22
	5:00 PM	21	574	528	20	24	0	7	117	27
	6:00 PM	20	358	344	16	11	0	5	102	30

(1) Due to the multitude of background developments, the total peak hour trip generation of all background developments was applied to the intersection peak hour (bolded values). Values for other hours were calculated based on hourly change in existing peak hour traffic volumes, compared to the peak hour within each peak period.

(2) Total peak hour diversions hour were applied to the intersection peak hour (bolded values). Values for other hours were calculated based on hourly change in existing peak hour traffic volumes, compared to the peak hour within each peak period.

(3) As shown in Figure 4A of the TIS.

(4) As shown in Figure 4B of the TIS.

(5) Assumed to be 5 percent of the southbound Nutt Road (S.R. 0023) left-turn and 3 percent of the westbound Bridge Street (S.R. 0113) right-turn at the intersection of Nutt Road (S.R. 0023) and Bridge Street (S.R. 0113) intersection. Existing count data is provided in Appendix D of the TIS.

(6) In order to improve operations at the intersection of Bridge Street (S.R. 0113) and Wheatland Street, a peak hour restriction would ban left-turns from Wheatland Street onto Bridge Street (S.R. 0113). Diversions based on existing count data.

(7) Based on site trip distibutions and trip generation presented in the *Traffic Impact Study Westrum Luxor Phoenixville* prepared by McMahon Associates, Inc. and dated February 4, 2020.

(8) Based on a preliminary plan, it is proposed to construct 46 apartments and 31,450 square feet of retail at the intersection of the Hall Street extension and Paradise Street.

Traffic Signal Warrant Analysis Workbook

STUDY AND ANALYSIS INFORMATION

Municipality:	Phoenixville Borough	**Analysis Date:**	9/16/2021
County:	Chester County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Agency/Company Name:**	McMahon

Analysis Information

Data Collection Date:	1/7/2020
Day of the Week:	Tuesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	Bridge Street (S.R. 0113)
Major Street Approach #1 Direction:	E-Bound
Major Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	25	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Hall Street
Minor Street Approach #1 Direction:	N-Bound
Minor Street Approach #2 Direction:	N/A

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**No**	**N/A**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**Yes**
Warrant 3, Peak Hour	**No**	**N/A**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**Yes**	**Yes**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH

Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (N-Bound)	Minor Street Approach #2 (N/A)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 AM	12:14 AM			0		
12:15 AM	12:29 AM			0		
12:30 AM	12:44 AM			0		
12:45 AM	12:59 AM			0		
1:00 AM	1:14 AM			0		
1:15 AM	1:29 AM			0		
1:30 AM	1:44 AM			0		
1:45 AM	1:59 AM			0		
2:00 AM	2:14 AM			0		
2:15 AM	2:29 AM			0		
2:30 AM	2:44 AM			0		
2:45 AM	2:59 AM			0		
3:00 AM	3:14 AM			0		
3:15 AM	3:29 AM			0		
3:30 AM	3:44 AM			0		
3:45 AM	3:59 AM			0		
4:00 AM	4:14 AM			0		
4:15 AM	4:29 AM			0		
4:30 AM	4:44 AM			0		
4:45 AM	4:59 AM			0		
5:00 AM	5:14 AM			0		
5:15 AM	5:29 AM			0		
5:30 AM	5:44 AM			0		
5:45 AM	5:59 AM			0		
6:00 AM	6:14 AM	258	263	521	26	68
6:15 AM	6:29 AM			0		
6:30 AM	6:44 AM			0		
6:45 AM	6:59 AM			0		
7:00 AM	7:14 AM	400	508	908	37	133
7:15 AM	7:29 AM			0		
7:30 AM	7:44 AM			0		
7:45 AM	7:59 AM			0		
8:00 AM	8:14 AM	434	462	896	36	131
8:15 AM	8:29 AM			0		
8:30 AM	8:44 AM			0		
8:45 AM	8:59 AM			0		
9:00 AM	9:14 AM	353	361	714	46	110
9:15 AM	9:29 AM			0		
9:30 AM	9:44 AM			0		
9:45 AM	9:59 AM			0		
10:00 AM	10:14 AM			0		
10:15 AM	10:29 AM			0		
10:30 AM	10:44 AM			0		
10:45 AM	10:59 AM			0		
11:00 AM	11:14 AM			0		
11:15 AM	11:29 AM			0		
11:30 AM	11:44 AM			0		
11:45 AM	11:59 AM			0		

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH

Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (N-Bound)	Minor Street Approach #2 (N/A)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 PM	12:14 PM			0		
12:15 PM	12:29 PM			0		
12:30 PM	12:44 PM			0		
12:45 PM	12:59 PM			0		
1:00 PM	1:14 PM			0		
1:15 PM	1:29 PM			0		
1:30 PM	1:44 PM			0		
1:45 PM	1:59 PM			0		
2:00 PM	2:14 PM			0		
2:15 PM	2:29 PM			0		
2:30 PM	2:44 PM			0		
2:45 PM	2:59 PM			0		
3:00 PM	3:14 PM	422	424	846	34	109
3:15 PM	3:29 PM			0		
3:30 PM	3:44 PM			0		
3:45 PM	3:59 PM			0		
4:00 PM	4:14 PM	571	540	1111	56	126
4:15 PM	4:29 PM			0		
4:30 PM	4:44 PM			0		
4:45 PM	4:59 PM			0		
5:00 PM	5:14 PM	595	548	1143	31	144
5:15 PM	5:29 PM			0		
5:30 PM	5:44 PM			0		
5:45 PM	5:59 PM			0		
6:00 PM	6:14 PM	378	360	738	16	132
6:15 PM	6:29 PM			0		
6:30 PM	6:44 PM			0		
6:45 PM	6:59 PM			0		
7:00 PM	7:14 PM			0		
7:15 PM	7:29 PM			0		
7:30 PM	7:44 PM			0		
7:45 PM	7:59 PM			0		
8:00 PM	8:14 PM			0		
8:15 PM	8:29 PM			0		
8:30 PM	8:44 PM			0		
8:45 PM	8:59 PM			0		
9:00 PM	9:14 PM			0		
9:15 PM	9:29 PM			0		
9:30 PM	9:44 PM			0		
9:45 PM	9:59 PM			0		
10:00 PM	10:14 PM			0		
10:15 PM	10:29 PM			0		
10:30 PM	10:44 PM			0		
10:45 PM	10:59 PM			0		
11:00 PM	11:14 PM			0		
11:15 PM	11:29 PM			0		
11:30 PM	11:44 PM			0		
11:45 PM	11:59 PM			0		

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH						
Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (N-Bound)	Minor Street Approach #2 (N/A)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
Approach Totals:		3411	3466	6877	282	953

MUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Combination of Conditions A and B Necessary?*: No

**Only applicable for Warrant 1 if after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems. See Section 4C.02 of the 2009 MUTCD for application.*

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor street approach (one direction only)			
Major Street	**Minor Street**	**100%**	**80%**	**70%**	**56%**	**100%**	**80%**	**70%**	**56%**
1	**1**	500	400	350	280	150	120	105	84
2 or More	**1**	600	480	420	336	150	120	105	84
2 or More	**2 or More**	600	480	420	336	200	160	140	112
1	**2 or More**	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor street approach (one direction only)			
Major Street	**Minor Street**	**100%**	**80%**	**70%**	**56%**	**100%**	**80%**	**70%**	**56%**
1	**1**	750	600	525	420	75	60	53	42
2 or More	**1**	900	720	630	504	75	60	53	42
2 or More	**2 or More**	900	720	630	504	100	80	70	56
1	**2 or More**	750	600	525	420	100	80	70	56

Condition A Evaluation

Number of Unique Hours Met: **0** **Condition A Satisfied?** **No**

Condition B Evaluation

Number of Unique Hours Met: **5** **Condition B Satisfied?** **No**

Combination of Condition A and Condition B Evaluation

Number of Unique Hours Met for Condition A: **N/A**

Number of Unique Hours Met for Condition B: **N/A**

Combination of Condition A and Condition B Satisfied? **N/A**

MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

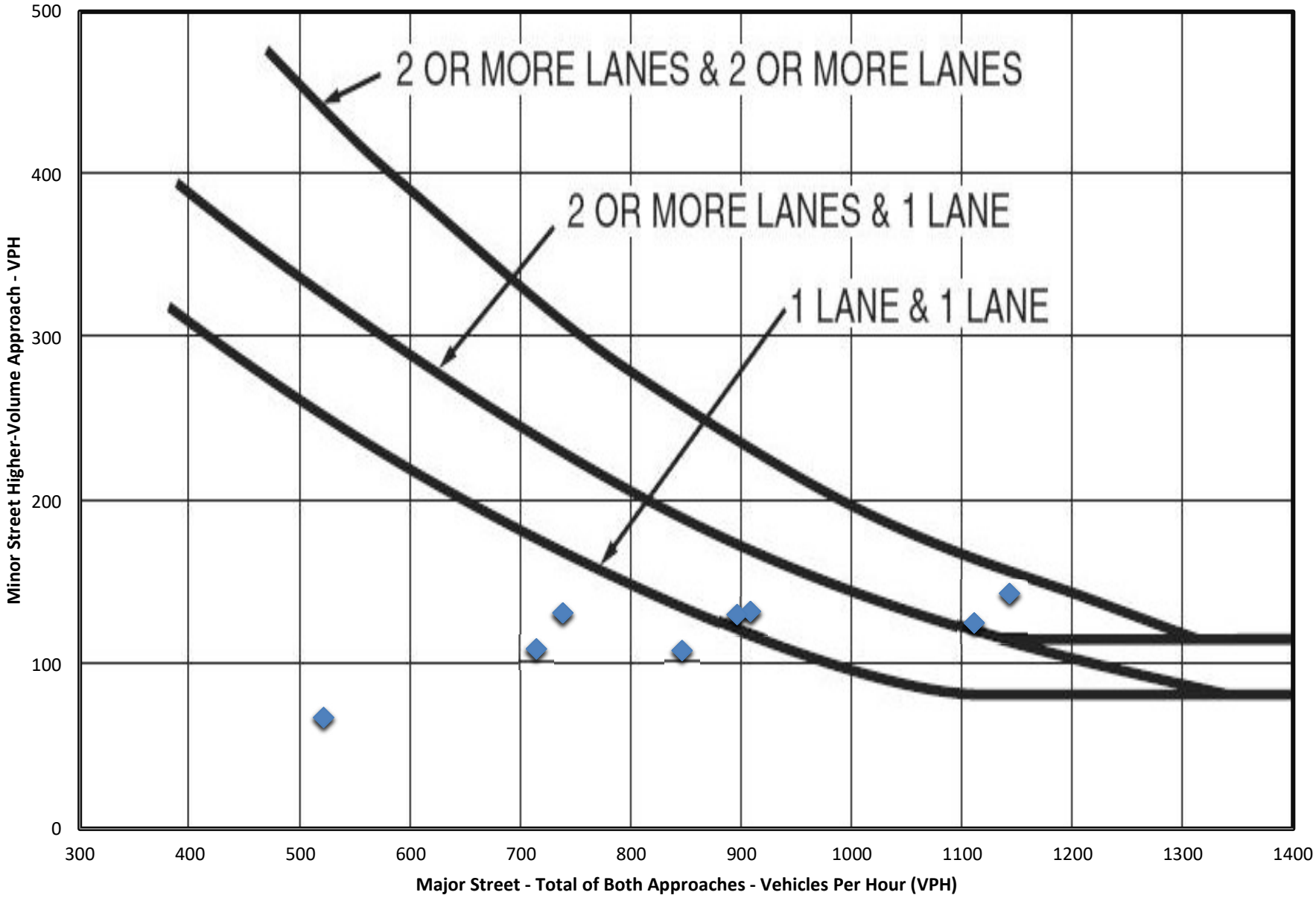
Total Number of Unique Hours Met On Figure 4C-1
4

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	521	68	
5:30 AM	521	68	
5:45 AM	521	68	
6:00 AM	521	68	
6:15 AM	908	133	Met
6:30 AM	908	133	Met
6:45 AM	908	133	Met
7:00 AM	908	133	Met
7:15 AM	896	131	Met
7:30 AM	896	131	Met
7:45 AM	896	131	Met
8:00 AM	896	131	Met
8:15 AM	714	110	
8:30 AM	714	110	
8:45 AM	714	110	
9:00 AM	714	110	
9:15 AM	0	0	
9:30 AM	0	0	
9:45 AM	0	0	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	846	109	
2:30 PM	846	109	
2:45 PM	846	109	
3:00 PM	846	109	
3:15 PM	1111	126	Met
3:30 PM	1111	126	Met
3:45 PM	1111	126	Met
4:00 PM	1111	126	Met
4:15 PM	1143	144	Met
4:30 PM	1143	144	Met
4:45 PM	1143	144	Met
5:00 PM	1143	144	Met
5:15 PM	738	132	
5:30 PM	738	132	
5:45 PM	738	132	
6:00 PM	738	132	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

MUTCD Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



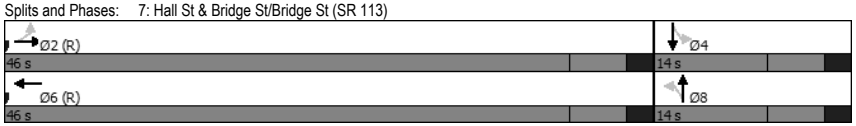
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	388	0	0	497	11	28	0	9	87	0	46
Future Volume (vph)	12	388	0	0	497	11	28	0	9	87	0	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.997			0.968			0.954	
Flt Protected	0.950							0.963			0.968	
Satd. Flow (prot)	1676	1962	0	0	1975	0	0	1653	0	0	1630	0
Flt Permitted	0.413							0.745			0.777	
Satd. Flow (perm)	729	1962	0	0	1975	0	0	1279	0	0	1308	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					4			55			55	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		214			305			454			284	
Travel Time (s)		5.8			8.3			12.4			7.7	
Confl. Peds. (#/hr)			1	1								
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	4%	0%	0%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	14	441	0	0	565	13	32	0	10	99	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	441	0	0	578	0	0	42	0	0	151	0
Number of Detectors	1	1			1		1	1		1	1	
Detector Template							Left			Left		
Leading Detector (ft)	35	35			35		20	35		20	35	
Trailing Detector (ft)	-5	-5			-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5			-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40			40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2			6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0			20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.0	26.0			44.0		24.0	24.0		24.0	24.0	
Total Split (s)	46.0	46.0			46.0		14.0	14.0		14.0	14.0	
Total Split (%)	76.7%	76.7%			76.7%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	40.0	40.0			40.0		8.0	8.0		8.0	8.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	

McMahon Associates, Inc.
7: Hall St & Bridge St/Bridge St (SR 113)
Steelworks Mixed-Use
2027 w/ Dev | Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max			C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			9.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 55 (92%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: Hall St & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings
2027 w/ Dev | Weekday AM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\5B - 2027 W IMPVTS\AM.Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	388	0	0	497	11	28	0	9	87	0	46
Future Volume (veh/h)	12	388	0	0	497	11	28	0	9	87	0	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1814	0	0	1828	1772	1881	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	14	441	0	0	565	12	32	0	10	99	0	52
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	4	0	0	3	2	2	2	2	2	2	2
Cap, veh/h	665	1248	0	0	1227	26	259	15	53	229	8	72
Arrive On Green	0.69	0.69	0.00	0.00	1.00	1.00	0.13	0.00	0.13	0.13	0.00	0.13
Sat Flow, veh/h	792	1814	0	0	1784	38	1054	107	363	892	53	497
Grp Volume(v), veh/h	14	441	0	0	0	577	42	0	0	151	0	0
Grp Sat Flow(s),veh/h/ln	792	1814	0	0	0	1821	1523	0	0	1442	0	0
Q Serve(g_s), s	0.3	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0
Cycle Q Clear(g_c), s	0.3	6.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	6.0	0.0	0.0
Prop In Lane	1.00		0.00	0.00		0.02	0.76		0.24	0.66		0.34
Lane Grp Cap(c), veh/h	665	1248	0	0	0	1253	302	0	0	285	0	0
V/C Ratio(X)	0.02	0.35	0.00	0.00	0.00	0.46	0.14	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	665	1248	0	0	0	1253	308	0	0	291	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.92	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.0	3.9	0.0	0.0	0.0	0.0	22.9	0.0	0.0	24.9	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.0	0.0	0.0	1.1	0.2	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	3.2	0.0	0.0	0.0	0.7	1.0	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	4.6	0.0	0.0	0.0	1.1	23.1	0.0	0.0	26.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		455			577			42			151	
Approach Delay, s/veh		4.6			1.1			23.1			26.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.3		13.7		46.3		13.7				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		40.0		8.0		40.0		8.0				
Max Q Clear Time (g_c+I1), s		8.5		8.0		2.5		3.4				
Green Ext Time (p_c), s		1.8		0.0		2.4		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			6.3									
HCM 6th LOS			A									

Notes

User approved pedestrian interval to be less than phase max green.

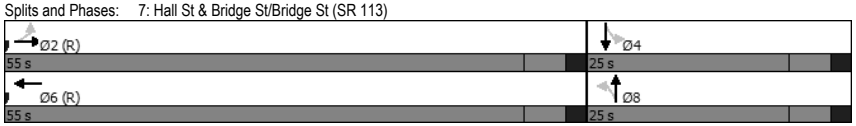
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	574	0	0	528	20	24	0	7	117	0	27
Future Volume (vph)	21	574	0	0	528	20	24	0	7	117	0	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	16	16	16	12	16	12	16	12	12	12
Grade (%)		0%			0%			-1%			0%	
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	50			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.995			0.970			0.975	
Flt Protected	0.950							0.962			0.961	
Satd. Flow (prot)	1676	2000	0	0	2009	0	0	1649	0	0	1653	0
Flt Permitted	0.399							0.775			0.744	
Satd. Flow (perm)	704	2000	0	0	2009	0	0	1329	0	0	1280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5			41			41	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		190			297			454			310	
Travel Time (s)		5.2			8.1			12.4			8.5	
Confl. Peds. (#/hr)			4	4								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	0%	0%	1%	2%	3%	2%	0%	2%	2%	2%
Adj. Flow (vph)	22	604	0	0	556	21	25	0	7	123	0	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	604	0	0	577	0	0	32	0	0	151	0
Number of Detectors	1	1			1		1	1		1	1	
Detector Template							Left			Left		
Leading Detector (ft)	35	35			35		20	35		20	35	
Trailing Detector (ft)	-5	-5			-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5			-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40			40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2			6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0			20.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.0	26.0			26.0		24.0	24.0		24.0	24.0	
Total Split (s)	55.0	55.0			55.0		25.0	25.0		25.0	25.0	
Total Split (%)	68.8%	68.8%			68.8%		31.3%	31.3%		31.3%	31.3%	
Maximum Green (s)	49.0	49.0			49.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	

McMahon Associates, Inc. Steelworks Mixed-Use
7: Hall St & Bridge St/Bridge St (SR 113) 2027 w/ Dev | Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max			C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0			9.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 30 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	

Splits and Phases: 7: Hall St & Bridge St/Bridge St (SR 113)



Lanes, Volumes, Timings 2027 w/ Dev | Weekday PM
\\extfs\MCM\eng\PHOENBO1\816819 - Steelworks\Traffic\Analysis\2022-01 Revised TIS\SYNCHRO\5B - 2027 W IMPVTS\PM.Synchro 10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	574	0	0	528	20	24	0	7	117	0	27
Future Volume (veh/h)	21	574	0	0	528	20	24	0	7	117	0	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1843	0	0	1857	1772	1866	1809	1911	1772	1772	1772
Adj Flow Rate, veh/h	22	604	0	0	556	21	25	0	7	123	0	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	0	0	1	2	3	2	0	2	2	2
Cap, veh/h	671	1350	0	0	1303	49	241	10	48	244	1	37
Arrive On Green	0.73	0.73	0.00	0.00	1.00	1.00	0.13	0.00	0.13	0.13	0.00	0.13
Sat Flow, veh/h	792	1843	0	0	1778	67	1130	73	337	1139	8	261
Grp Volume(v), veh/h	22	604	0	0	0	577	32	0	0	151	0	0
Grp Sat Flow(s),veh/h/ln	792	1843	0	0	0	1845	1540	0	0	1408	0	0
Q Serve(g_s), s	0.6	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0
Cycle Q Clear(g_c), s	0.6	10.4	0.0	0.0	0.0	0.0	1.4	0.0	0.0	8.3	0.0	0.0
Prop In Lane	1.00		0.00	0.00		0.04	0.78		0.22	0.81		0.19
Lane Grp Cap(c), veh/h	671	1350	0	0	0	1352	280	0	0	264	0	0
V/C Ratio(X)	0.03	0.45	0.00	0.00	0.00	0.43	0.11	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	671	1350	0	0	0	1352	428	0	0	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.9	4.3	0.0	0.0	0.0	0.0	30.4	0.0	0.0	33.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.1	0.0	0.0	0.0	0.9	0.2	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	6.0	0.0	0.0	0.0	0.6	1.0	0.0	0.0	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	5.3	0.0	0.0	0.0	0.9	30.6	0.0	0.0	35.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	D	A	A
Approach Vol, veh/h		626			577			32			151	
Approach Delay, s/veh		5.2			0.9			30.6			35.3	
Approach LOS		A			A			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		63.6		16.4		63.6		16.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		49.0		19.0		49.0		19.0				
Max Q Clear Time (g_c+I1), s		12.9		10.3		2.5		3.4				
Green Ext Time (p_c), s		2.7		0.3		2.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									