Brighton Approach Bridge Improvement

HAM-27-3.58 PID 104788

City of Cincinnati

Department of Transportation and Engineering

Alternatives Evaluation Report

02/04/2022

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I. Introduction

This report evaluates alternative improvements and identifies a preferred alternative for the Brighton Approach bridge (No. HAM-27-0358 SFN 3101533) over Central Parkway (US 27) in the City of Cincinnati. Brighton Approach is generally a north-south bridge that carries vehicular and pedestrian traffic between Central Avenue/Colerain Avenue/Harrison Avenue and West McMicken Avenue over Central Parkway (US 27) (Exhibit A). It is a two-way, two-lane bridge with a sidewalk on the east side. Brighton Approach is a local road with an approximate Average Daily Traffic (ADT) of 753 vehicles with approximately 42 pedestrians per day.

Central Parkway (US 27) generally runs north-south through downtown Cincinnati. It is a four-lane road with a sidewalk on both sides within the Brighton Approach Bridge limits. Central Parkway (US 27) was constructed over the, now abandoned, subway tunnel. It is a Principal Arterial with an approximate ADT of 14,880 vehicles.

The Brighton Approach bridge was originally constructed circa 1926. It is a reinforced concrete T-beam bridge supported by integral reinforced concrete piers. All piers are founded on spread footings, with many of the south approach span piers bearing directly on top of abandoned subway tunnels. Rehabilitation projects were completed on the bridge in 1948, 1976, and 1991. Throughout these rehabilitations, the original architecture of the bridge has largely been maintained. The bridge currently has an overall rating of poor, corresponding to advanced section loss, deterioration, and spalling on the structural members. The structure is eligible for the National Register of Historic Places (NRHP) and ranks Moderate on ODOT's Historic Bridge List.

Beginning in 2007, ODOT assumed major maintenance responsibility for the bridge due to a change to the Ohio Revised Code implemented at that time, requiring that bridges built appurtenant to the construction of a state or U.S. route are the responsibility of ODOT. In 2016, an ODOT directed consultant completed a Feasibility Study to rehabilitate the bridge. In 2017 an addendum to that study was completed that considered seven alternatives to remove, repair, or replace the bridge. During the historic research completed during these studies it was revealed that the current Brighton Approach bridge is not the original bridge at this location. It became evident that the Miami-Erie canal was constructed through this location around 1830 and that the first bridge at this location was constructed in 1890. Further, it appears the main purpose for the bridge in 1890 was related to the streetcar and that the bridge did not serve a purpose to the construction or function of Central Parkway (US 27) (or the canal). Therefore, the bridge was not built appurtenant to the construction of Central Parkway (US 27), and major maintenance responsibility was transferred to the City of Cincinnati.

II. Purpose and Need

The purpose of the project is to improve the safety of the travelling public on Brighton Approach and Central Parkway (US 27) within the limits of the Brighton Approach Bridge.

The primary need for the project is to address the structural deficiencies of the bridge.

Secondary needs for the project include:

- Preserve a connection across Central Parkway (US 27).
- Eliminate support of the bridge on top of the existing abandoned subway tunnel.
- Eliminate the posted weight limits on the bridge.
- Increase the vertical clearance under the bridge to meet current standard.
- Improve pedestrian and bicycle safety and access along Central Parkway (US 27) within the project area.
- Honor the historic nature of the bridge and surrounding buildings eligible for The National Register of Historic Places.
- Maintain traffic on Central Parkway (US 27) during construction.

III. Alternatives

This alternatives evaluation report (AER) considers four (4) alternatives:

- Alternative 1 – No Build
- Alternative 2 – Complete bridge replacement (see Exhibit B)
- Alternative 3 – Replace bridge with pedestrian only bridge (see Exhibit C)
- Alternative 4 – Remove existing bridge with no replacement (includes installing ADA compliant access on north side of Central Parkway (US 27) (see Exhibit D)

A. Previous Feasibility Studies

ODOT's 2016 Feasibility Study of the Brighton Approach bridge included extensive field sampling and testing which showed much of the existing concrete is in fair to poor condition. The recommended rehabilitation work included extensive application of fiber reinforced polymer (FRP) materials to strengthen, repair, and protect the concrete. There is little confidence that the concrete is of sufficient quality for the FRP to perform successfully as a structural repair. Furthermore, even if structural repairs were to be successful, the desired ductile behavior of the bridge beams at ultimate loads could be changed to unpredictable brittle behavior, and FRP material would cover the concrete beneath it hindering future inspections.

ODOT's 2017 Feasibility Study Addendum analyzed seven (7) alternatives. These alternatives included a no build alternative, 3 rehabilitation alternatives, 2 replacement alternatives, and a removal alternative. The rehabilitation alternatives in particular had relatively high life cycle costs and, along with the replacement alternatives, did not address several needs of the project including: improving vertical and horizontal clearances, improving safety pedestrian/bicycle safety and access along Central Parkway (US 27), and eliminating the bridge being supported by the existing abandoned subway tunnel. Based on this assessment, the City developed the four (4) alternatives for the current alternatives

study. These alternatives include a no build alternative, two alternatives to remove and replace the existing bridge, and an alternative to remove the bridge with no replacement and add an ADA access on the north side of Central Parkway (US 27)

B. Current Alternatives Study

Four (4) alternative improvements have been identified to be studied further in this report:

- **Alternative 1 – No Build**
- **Alternative 2 – Complete replacement with new vehicular bridge**.
  This alternative will build a single span bridge (approximately 100') over Central Parkway (US 27) following the existing Brighton Approach bridge alignment. The north abutment, located at the back of the eastern walk on Central Parkway (US 27), will be supported on drilled shafts. The south abutment will be located at the back of the western walk on Central Parkway (US 27). The abutment will need to be protected using a concrete barrier in front of the abutment. This will place the south abutment outside of the subway tunnel footprint, allowing for deep foundations. Straight steel girders or prestressed concrete I-beams can be used for the bridge superstructure. While straight steel girders can be used to minimize superstructure depth, the prestressed concrete I-beams meet the secondary project need requirement to honor the historic nature of the bridge by closely matching the appearance of the existing concrete beams. Prestressed concrete I-beams will be further studied as part of the detailed design phase.

  One of the secondary needs of this project is to eliminate support of the bridge on top of the abandoned subway tunnel. From the southern abutment to the tie-in point at Colerain Avenue, Brighton Approach crosses over the abandoned tunnel. Currently, several of the existing bridge footings bear directly on the tunnel roof in this area. This study investigated using span configurations which would locate the substructure units beyond the tunnel limits. These configurations required long, deep beams which would impact vertical clearance on Central Parkway and would be cost prohibitive. They also required support systems that would create pedestrian access and safety issues like the existing bridge. Due to these limitations this option was eliminated from further investigation. A second option investigated was to drill support shafts through the tunnel ceiling and floor to sound substrate to support the superstructure of the bridge independently from the tunnel. Again, this eliminated support on top of the tunnel but drilling through the ceiling and floor would be expensive and carried a risk of damage to adjacent portions of the tunnel. There is also a 48" diameter water transmission main located in the tunnel through the project area. The drilled shafts would need to avoid the water main and could potentially limit access for future maintenance and repairs to the water main. In addition, due to confined space regulations, the watermain must be shut off to work safely in the tunnel, and such shut offs are typically limited to the winter months and no longer than a few days at a time in order to maintain water quality and continue to meet demand. Due to these limitations and the associated prohibitive costs, this option was also eliminated from further investigation. A third option was to support Brighton Approach, from the southern abutment to the tie-in at Colerain Ave, with

lightweight fill between retaining walls founded on strip footings. The lightweight fill and retaining walls did not eliminate the load on top of the existing subway tunnel but greatly reduces it. The lightweight fill with retaining walls was more cost effect than the other two options. The City also determined that the benefit of fully removing the load over the tunnel is not justified. As part of this alternative, tunnel repairs/rehab will be considered. This option is being further studied for optimization as part of detailed design phase. The estimated construction cost for Alternative 2 assumes lightweight fill with retaining walls.

Depending on the design loads and where the support over the tunnel occurs soil stabilization techniques around the tunnel could be implemented to help reduce loads. Soil stabilization involves using binder materials in soils to improve their geotechnical properties such as durability and strength. The soils above and around the tunnel can be solidified to support the proposed wall loads over the existing tunnel.

Due to the historic nature of the bridge, the City is following a formal process mandated by Federal law by working with the Ohio Department of Transportation (ODOT) and State Historic Preservation Office (SHPO) to consider the effects of the project on the historic bridge whereby Consulting Parties will have the opportunity to provide input on the project and efforts to mitigate the removal of the bridge. One potential mitigation effort is to maintain the look of the existing bridge. There are several options to consider:

- The existing railing could be saw cut, removed, and reused. The railing could be placed on the proposed bridge; however, the railing is not MASH/NCHRP test level (TL) rated. The railing would need protected by a TL rated vehicular barrier, adding additional width to the bridge. This option is under further investigation to determine its feasibility.
- A form-liner on an approved ODOT TL rated railing can be used to mimic the existing railing appearance.
- Other DOT's have TL rated barrier that may better match aesthetics.
- Decorative vandal protection fencing could be designed to capture the look of the existing bridge. Various shapes, designs, wording, and colors can easily be incorporated into the vandal protection fence.
- Use a combination of decorative vandal protection fencing and form lined barriers.
- Form-lined designs can be incorporated on the abutments and walls.
- Salvage and reuse of all the bridge light poles will be a consideration. There will be further study on the feasibility of reusing of the light poles on the new bridge.
- Several panels of the railing along with an existing light pole can be salvaged and mounted along with a story board for the public to view. The storyboards can provide historical information and photos of the bridge.

- Precast concrete fascia panels can be installed outside of the bridge beams. These can be cast in any shape and size to mimic the appearance of the existing bridge.
- The existing light poles could be removed and reused on the new bridge.
- Any combination of paint and concrete sealing combinations can be utilized.

- **Alternative 3 - Complete bridge replacement with new pedestrian bridge.** This alternative included construction of a new bridge for pedestrian use only. The bridge crossed Central Parkway (US 27) at approximately the same location as the existing Brighton Approach bridge. The bridge was 12' wide, single span structure. The 12' wide bridge allows for bicycles to also use the bridge. This bridge was designed for pedestrian use only with a cast-in-place wearing surface.

  The north abutment was located behind the existing walk on the north side of Central Parkway (US 27). The south abutment was located at the back of the southern walk on Central Parkway (US 27). The bridge was designed with an ADA compliant switchback ramp on the south side of Central Parkway (US 27). This ramp was approximately 450' long to meet ADA requirements. This switchback ramp occupied the space between Colerain Ave. and Central Parkway (US 27) south sidewalks. Similar to alternative 2 the ramp was supported by lightweight fill between retaining walls. The retaining walls were founded on strip footings. The north end of the bridge tied-in at the existing sidewalk along the east side of Brighton Approach.

  Similar to alternative 2, due to the historic nature of the existing bridge, efforts to mitigate the removal of the bridge are required. One potential mitigation effort is to mimic the look of the existing bridge. Decorative bridge railing, lighting, and form-liners that mimic the existing bridge can be used on this pedestrian structure.

- **Alternative 4 - Remove existing bridge with no replacement.** This alternative included an ADA compliant switchback sidewalk constructed in conjunction with removal of the existing Brighton Approach bridge. This switchback sidewalk allows access between McMicken Street and Central Parkway (US 27). This ramp is in the existing City owned parcel on the north side of Central Parkway (US 27) and uses the existing pedestrian crosswalk at Brighton Place.

IV. Key Issues

The key issues used to evaluate the alternatives include the following:

- Purpose and Need (Primary) – Address structural deficiency of bridge
- Design Impacts
    - Vertical and horizontal clearances on Central Parkway (US 27)
    - Vertical and horizontal alignment on Brighton Approach
    - Vehicular weight restrictions
- Traffic Impacts (vehicular, bicycle, and pedestrian)
- Maintenance of Traffic Impacts
- Construction Costs/Life Cycle Costs
- Utility Impacts
- Right-of-Way Impacts
- Environmental Impacts/Public Input

A. Purpose and Need (Primary) – Address Structural Deficiency

Alternative 1 – No Build

This alternative does not address the structural deficiency of the bridge.

Alternative 2 – Complete replacement with a new vehicular bridge

This alternative addresses the structural deficiency of the bridge by removing and replacing it with a new bridge.

Alternative 3 – Complete replacement with a new pedestrian bridge

This alternative addresses the structural deficiency of the bridge by removing and replacing it with a new pedestrian only bridge.

Alternative 4 – Remove existing bridge with no replacement

This alternative addresses the structural deficiency of the bridge by removing the existing bridge.

B. Design Impacts

Alternative 1 – No Build

This alternative does not include any new construction. This alternative does not address deficient vertical and horizontal clearances on Central Parkway (US 27) or vertical and horizontal alignment on Brighton Approach. Structural capacity would not be improved. This alternative does not eliminate load on the subway tunnel. It also does not eliminate the multiple short spans on the south end of the bridge that encourage loitering and homeless camps creating the perception of an unsafe environment for pedestrians. The bridge service life ranges between 5 to 15 years, then it will need to be removed.

Alternative 2 – Complete replacement with a new vehicular bridge

This alternative provides, at a minimum, the required 16.5' vertical clearance on Central Parkway (US 27). The 8' minimum required horizontal clearance on Central Parkway (US 27) is met along the east and west side of Central Parkway (US 27). This option provides 8' wide sidewalks on both sides of Central Parkway (US 27). The proposed drilled shafts for the

southern Brighton Approach bridge abutment will not impact the subway tunnel. This option will also meet vehicular load requirements. Horizontal and vertical alignments on Brighton Approach are similar to existing.

Alternative 3 – Complete replacement with a new pedestrian bridge
This alternative eliminates the vehicular bridge. It meets the required vertical and horizontal clearances on Central Parkway (US 27). This alternative will eliminate bridge supports over the subway tunnel. The proposed drilled shafts for the southern Brighton Approach bridge abutment will not impact the subway tunnel.

Alternative 4 – Remove existing bridge with no replacement
This alternative eliminates the vehicular bridge. It provides all required vertical and horizontal clearances on Central Parkway (US 27) and eliminates supports on the subway tunnel.

C. Traffic Impacts

Vehicular and pedestrian count data was collected on the Brighton Approach Bridge by Carpenter Marty Transportation for a full 24 hours for both a weekday (Wednesday, May 12, 2021) and a weekend day (Saturday, May 15, 2021). This data along with StreetLight data was used to conduct capacity analysis to compare the existing conditions to the Brighton Approach bridge being closed (Alternatives 3 & 4). The full traffic report and data can be found in Exhibit F. Below is a summary of traffic impacts of each alternative.

Alternative 1 & 2
Existing traffic patterns and volumes would not be impacted if nothing was done to the bridge or if it was replaced with a new vehicular bridge.

Alternative 3 & 4
With the closure of the Brighton Approach bridge to vehicular traffic, several intersections are anticipated to experience an increase in traffic. These intersections are:

- Central Parkway (US 27) & Western Hills Viaduct & W. McMillan Street
- Colerain Avenue/Brighton Approach & Harrison Avenue/Central Avenue
- Brighton Place & Central Parkway (US 27)
- Central Parkway (US 27) & Ravine Street
- Central Avenue & Brighton Place

Capacity Analysis
The traffic volumes were used to conduct capacity analysis to compare the existing conditions to the vehicular bridge closure alternatives. The HCM 6th Edition module of Synchro Version 11 software was used to analyze capacity at five study intersections that were determined to see the largest impacts to operations. **Tables 2** and **3** show a summary of the Weekday and Weekend capacity analysis results.

Table 2 – Weekday Capacity Analysis Summary

Intersection *Control*	Approach	Existing Conditions		Bridge Closure Alternative	
		AM Peak	PM Peak	AM Peak	PM Peak
Central Parkway & Western Hills Viaduct & W. McMillan Street *Signalized*	Eastbound	D/39.6	B/14.9	D/39.6	B/14.9
	Westbound	A/3.0	C/21.1	C/27.1	C/21.2
	Northbound	C/28.0	C/25.7	D/42.3	C/25.2
	Southbound	D/20.2	C/20.7	A/3.3	C/23.1
	Total	**D/36.3**	**C/21.7**	**D/36.5**	**C/22.2**
Colerain Avenue/ Brighton Approach & Harrison Avenue/ Central Avenue *Stop-Controlled*	Eastbound	A/0.6	A/1.1	A/0.3	A/0.3
	Westbound	A/1.7	A/0.7	A/4.0	A/0.8
	Southbound	B/10.3	B/12.3	B/10.8	B/11.4
Brighton Place & Central Parkway *Signalized*	Eastbound	C/29.2	B/20.0	C/31.1	C/21.6
	Westbound	A/8.3	B/10.7	A/8.9	B/11.8
	Northbound	B/19.4	B/19.7	C/20.9	C/22.5
	Total	**C/23.6**	**B/15.0**	**C/24.6**	**B/16.9**
Central Parkway & Ravine Street[1] *Stop-Controlled*	Eastbound	A/0.8	A/2.0	A/1.3	A/3.1
	Westbound	A/0.0	A/0.0	A/0.0	A/0.0
	Southbound	C/17.3	F/157.9	C/18.7	F/241.8
Central Avenue & Brighton Place *Stop-Controlled*	Eastbound	B/11.8	B/14.7	B/13.7	C/21.8
	Westbound	A/9.2	B/10.7	A/8.9	A/9.9
	Southbound	A/4.2	A/2.0	A/3.3	A/2.0

Table 3 – Weekend Capacity Analysis Summary

Intersection *Control*	Approach	Existing Conditions		Bridge Closure Alternative	
		AM Peak	PM Peak	AM Peak	PM Peak
Central Parkway & Western Hills Viaduct & W. McMillan Street *Signalized*	Eastbound	B/12.2	B/18.2	B/12.2	B/18.2
	Westbound	A/0.6	B/11.8	A/0.7	B/11.8
	Northbound	C/20.7	C/23.0	B/19.3	C/22.4
	Southbound	B/13.4	B/15.7	B/13.8	B/17.5
	Total	**B/13.2**	**B/18.5**	**B/13.1**	**B/18.7**
Colerain Avenue/ Brighton Approach & Harrison Avenue/ Central Avenue *Stop-Controlled*	Eastbound	A/0.9	A/0.9	A/0.7	A/0.5
	Westbound	A/1.8	A/1.1	A/3.5	A/2.7
	Southbound	A/9.0	A/9.6	A/9.3	A/9.9
Brighton Place & Central Parkway *Signalized*	Eastbound	B/16.8	B/17.8	B/17.0	B/18.0
	Westbound	A/8.5	A/9.3	A/8.7	A/9.4
	Northbound	B/16.0	B/17.1	B/16.6	B/17.9
	Total	**B/14.1**	**B/13.6**	**B/14.4**	**B/14.1**
Central Parkway & Ravine Street *Stop-Controlled*	Eastbound	A/0.7	A/1.4	A/1.2	A/2.0
	Westbound	A/0.0	A/0.0	A/0.0	A/0.0
	Southbound	B/11.7	D/31.3	B/12.1	E/37.1
Central Avenue & Brighton Place *Stop-Controlled*	Eastbound	A/9.5	B/10.4	A/9.9	B/11.1
	Westbound	A/8.9	A/9.2	A/8.8	A/8.9
	Southbound	A/4.2	A/2.9	A/3.4	A/2.7

[1] 2021 count data utilized as the base for analysis of this intersection instead of 2019 StreetLight volumes.

As can be seen, all intersections operate with acceptable LOS in the existing conditions and continue to operate acceptably with the bridge closure, except for the intersection of Central Parkway & Ravine Street. The southbound, stop-controlled approach to this intersection experiences excessive delays during the PM peak in the existing conditions, which is expected to worsen with the bridge closure. A planning-level signal warrant analysis was conducted at this intersection, and it was determined the intersection likely meets signal warrants in the bridge closure alternative but not in the existing conditions. The intersection of Central Parkway & Ravine Street could be studied further to determine if there are mitigation strategies to address the existing delays.

All other nearby intersections operate acceptably and are not expected to experience significant increases in delay due to the rerouting of traffic due to the bridge closure. Note, these results are expected to be conservative due to the difference in volumes between the StreetLight data and the collected data. Further discussion on this data can be found in the full traffic report in Exhibit F.

D. Maintenance of Traffic Impacts

Alternative 1 – No Build

No maintenance of traffic required.

Alternatives 2 – 4

Brighton Approach bridge will be closed during construction. Vehicle traffic on Brighton Approach will be detoured and vehicle traffic on Central Parkway (US 27) will be maintained through the construction area. Pedestrian traffic will be detoured around the construction area.

Brighton Approach vehicle traffic: Westbound Central Avenue, eastbound Harrison Avenue, and northbound Colerain Avenue will be detoured at Brighton Place, north on Central Parkway (US 27), then north/east on W McMillan Avenue to W McMicken Avenue. Southbound W McMicken Avenue will be detoured south on W McMicken Avenue to Ravine Street, then south to Central Parkway (US 27), and then north on Central Parkway (US 27) to Brighton Place, then to Central Avenue. Northbound W McMicken Avenue will be detoured at the intersection to the bridge north to westbound W McMillan Avenue.

Central Parkway (US 27) vehicle traffic: Central Parkway (US 27) is a 50’ wide pavement section consisting of four – 10’ traffic lanes and two – 5’ bike lanes. Construction and/or removal of the Brighton Approach bridge will happen in phases. The bridge will be demolished first, then the new bridge will be constructed. Both construction activities will require two phases of maintenance of traffic (MOT). MOT Phase 1 will shift traffic to the east side of Central Parkway (US 27), so work can take place along the west side. MOT Phase 2 will shift traffic to the west side of Central Parkway so construction can take place along the east side. Short periods of full closure and detour will be required on Central Parkway (US 27). These closures will occur at two different stages of construction: the first so the existing bridge can be

fully removed, and the second so new bridge beams can be set. These closures can take place on weekends or at night to minimize impact to traffic.

In MOT Phase 1, traffic will be shifted east to two – 10' lane in each direction to allow for construction on the west side. The dedicated bike lanes will be removed for a short stretch during construction. Bike and vehicle traffic will have a shared use lanes through the construction area.

Once MOT Phase 1 construction is complete, traffic will be shifted west for MOT Phase 2 construction on the east side. Lane width and bike lane reductions will remain in place from MOT Phase 1.

Pedestrian traffic: On Brighton Approach, pedestrian traffic will be detoured to the Central Parkway (US 27) pedestrian detour (see below), then north to W McMillan Avenue, then to W McMicken Avenue.

The existing sidewalks on both sides of Central Parkway (US 27) will be closed within the construction area. Northbound Central Parkway (US 27) pedestrian traffic will be detoured at Brighton Place with the east side being detoured across Central Parkway (US 27) to the west side. Pedestrians will then go west to Colerain Avenue then north utilizing the existing sidewalk on the west side. ADA compliant curb ramps will be installed on both sides of Colerain Avenue for a crossing to the east side past the construction area. Sidewalk will be installed to connect Colerain Avenue back to the existing sidewalk on Central Parkway (US 27). Southbound pedestrian traffic will use the same detour in reverse. Pedestrians on the east side will be detoured to the west at Western Hills Viaduct.

E. Construction/Life Cycle Costs

Life cycle costs are based on the ODOT Future Bridge Maintenance Cost Guidelines. The significant maintenance costs incurred throughout each alternative's life cycle – sealing, overlay, deck replacement, superstructure replacement, and/or total replacement – were estimated based on the ODOT guidance. Estimated durations for each type of maintenance are as follows:

Sealing – 20 years, 50 years, 75 years
Overlay – 20 years, 35 years, 70 years, 85 years
Deck Replacement – 50 years
Total Life Span (total replacement) – 100 years

For all alternatives, it was assumed that at the end of the current structure's service life it would be replaced in its entirety. The cost for full bridge replacement was assumed equal to the construction cost.

Alternative	Estimated Cost of Construction	Life Cycle Cost (Cost over 100 Year Life Span)
Alternative 1 (No Build)	$0	$7,000,000
Alternative 2	$4,900,000	$6,200,000
Alternative 3	$2,400,000	$3,100,000
Alternative 4	$1,500,000	$1,700,000

Includes 25% contingency for initial construction

F. Utility Impacts

The Brighton Approach bridge has several utilities in the project area that may be impacted by the improvements. Below is a summary of utilities that could be impacted by each alternative.

Alternatives 1 – No Build

The No Build alternative will have no impact on utilities.

Alternative 2 – Complete replacement with a new vehicular bridge

- The construction and removal of the Brighton Approach bridge will require protection of the cell tower to the southwest of the bridge. This tower should be out of the construction zone.
- City of Cincinnati has lighting conduit and lights along the east side of Central Parkway (US 27). This conduit and a couple lights may need to be replaced due to construction.
- Duke Electric has an overhead primary line at the north end of the Brighton Approach bridge. This line should be out of the construction zone but will need to be protected.
- Greater Cincinnati Water Works' (GCWW) crosstown feeder runs in the subway tunnel. If needed, this line will need to be shut down for crews to work in the tunnel. This will limit construction schedule.
- MSD has a sanitary main in Central Parkway (US 27) running under the south end of Brighton Approach bridge, approximately 30' deep. This main is not anticipated to be impacted by construction of the new bridge due to its depth and location.
- Spectrum also has lines running through the subway tunnel. Any work in the tunnel will require coordination.

Alternative 3 – Complete replacement with a new pedestrian bridge

- The removal of the existing Brighton Approach bridge and the new pedestrian bridge construction will require protection of the cell tower to the southwest of the bridge. This tower should be out of the construction zone.

- City of Cincinnati has a signal and interconnect at Brighton Place. The signal poles on the east side of Central Parkway (US 27) may need relocation due to the switchback ramp from McMicken Avenue. Lighting conduit and lights along the east side of Central Parkway (US 27) may also need to be replaced due to construction of the new bridge.
- Duke Electric has an overhead primary line at the north end of Brighton Approach bridge. This line should be out of the construction zone but will need to be protected.
- GCWW's crosstown feeder runs in the subway tunnel. The new pedestrian bridge will not need foundation in the tunnel, so this will avoid impacts to this main.
- MSD has a sanitary main in Central Parkway (US 27) running under the south end of Brighton Approach bridge, approximately 30' deep. The new pedestrian bridge should avoid this main. This main is not anticipated to be impacted by construction of the new bridge due to its depth and location.
- Spectrum also has lines running through subway tunnel. The new pedestrian bridge will not need foundation in the tunnel, so this will avoid impacts.

Alternative 4 – Remove existing bridge with no replacement

Removal of the existing bridge will have limited impact on utilities. Overhead utilities at the north end of Brighton Approach bridge will need to be protected during the bridge removal.

- City of Cincinnati has a signal and interconnect at Brighton Place. The signal poles on the east side of Central Parkway (US 27) may need relocation due to the switchback ramp from McMicken Avenue. Lighting conduit and lights along the east side of Central Parkway (US 27) may also need to be replaced due to removal of the existing bridge.
- Duke Gas has an underground main that runs along the east side of the City owned property where the switch back ramp will be located. The ramp design will be located to avoid this main.

G. Right-of-Way Impacts

Alternatives 1 – No Build

The No Build alternative will have no impact on Right-of-Way.

Alternative 2 – Complete replacement with a new vehicular bridge

The construction of a new bridge may require temporary construction easements at the north end on either side of the bridge. No permanent right-of-way will be required.

Alternative 3 – Complete replacement with a new pedestrian bridge

The construction of a new pedestrian bridge will not require additional right-of-way or temporary construction easements.

Alternative 4 – Remove existing bridge with no replacement

Construction of the ADA compliant switchback sidewalk on the north side of Central Parkway (US 27) will be on City owned property. Additional right-of-way will not be required for the sidewalk. Temporary construction easements may be required along the east side of the property.

H. Environmental Impacts/Public Input

The environmental process hasn't been complete and is ongoing, but much of the groundwork/scope has been laid out for most of the various parts of the NEPA document. It has been determined the project site is ecologically exempt and there are no 4(f)/6(f) recreation facilities impacted. Section 106 still needs further work based on the preferred alternative, but it has been initially identified that none of the alternatives will have an adverse impact to the surrounding historical buildings. It has also been preliminarily determined that alternatives 2, 3, and 4 would have adverse impacts to the Historically Eligible Brighton Approach Bridge. A virtual public meeting has been held and responses to questions from that meeting have been provided, see Exhibit G for the response letter. Section 106 Consulting Party process is ongoing with a mailing list complete and consulting parties identified.

Comments received during the virtual public meeting and comment period were concerned about the removal of the bridge and its impact on the connection between the surrounding neighborhoods. Others were concerned about the removal of the bridge because it contributes to the overall historic "feel" of the area. Other comments expressed approval of the removal of the bridge and had additional questions on the pedestrian-only alternatives. Letters of support in favor of Alternative 2 were received from the CUF Neighborhood Association, the West End Community Council, and the West End Neighborhood Development Corporation. The West McMicken Improvement Association submitted a letter stating a preference for a full renovation of the existing bridge for both vehicles and pedestrians, but also expressed support for Alternative 2

V. Comparison of Alternatives

See Exhibit E for Alternatives Comparison Matrix.

VI. Conclusion

Based on alternatives comparison and considering all the comments from the public and other project stakeholders, it is our recommendation that Alternative 2 (replacing the bridge with a new bridge for both vehicles and pedestrians) be selected to proceed to the next phase of design.

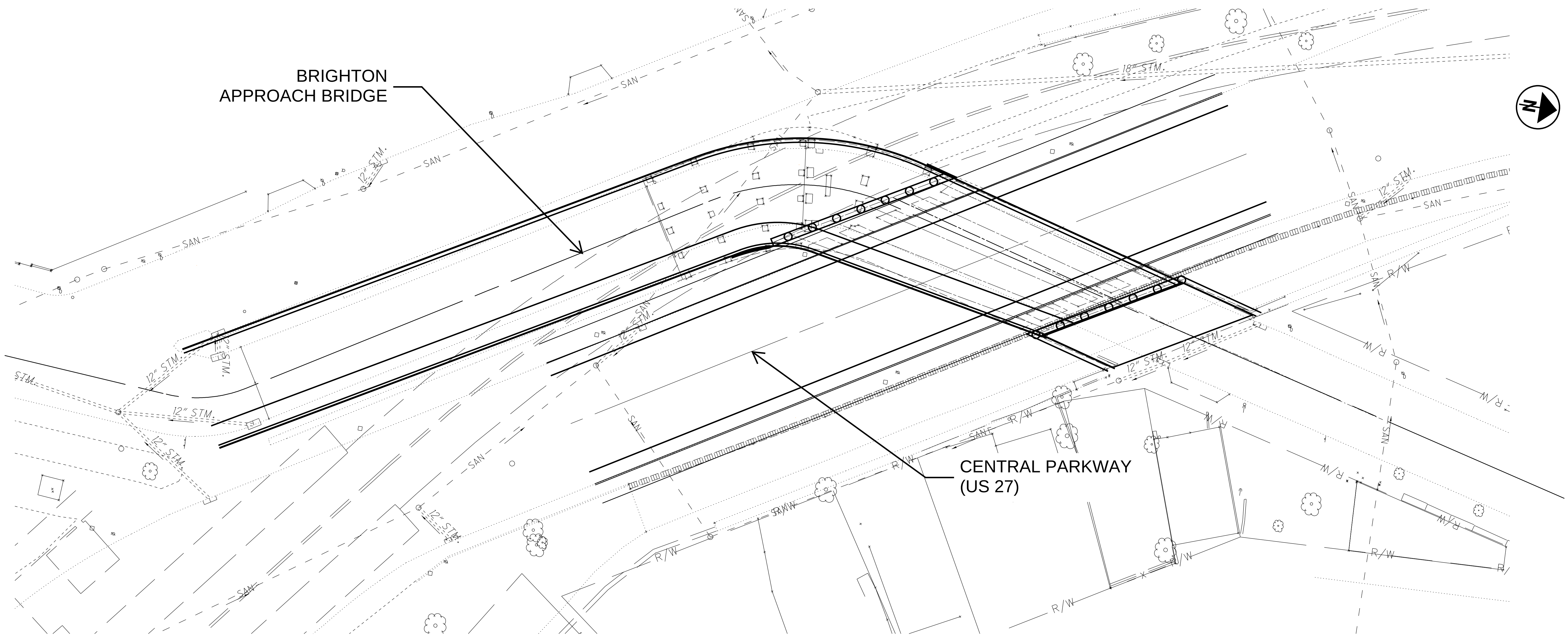
Alternative 2, while a costly alternative, meets the primary need of the project which is to address the structural deficiency of the Brighton Approach Bridge. It also addresses many secondary needs that the other alternatives did not. Alternative 2 maintains a vehicular and pedestrian connection across Central Parkway (US 27), eliminates the posted weight limits, improves vehicular clearances on Central Parkway, improves pedestrian and bicycle safety and access on Central Parkway (US 27), and will maintain traffic on Central Parkway (US 27) during construction.

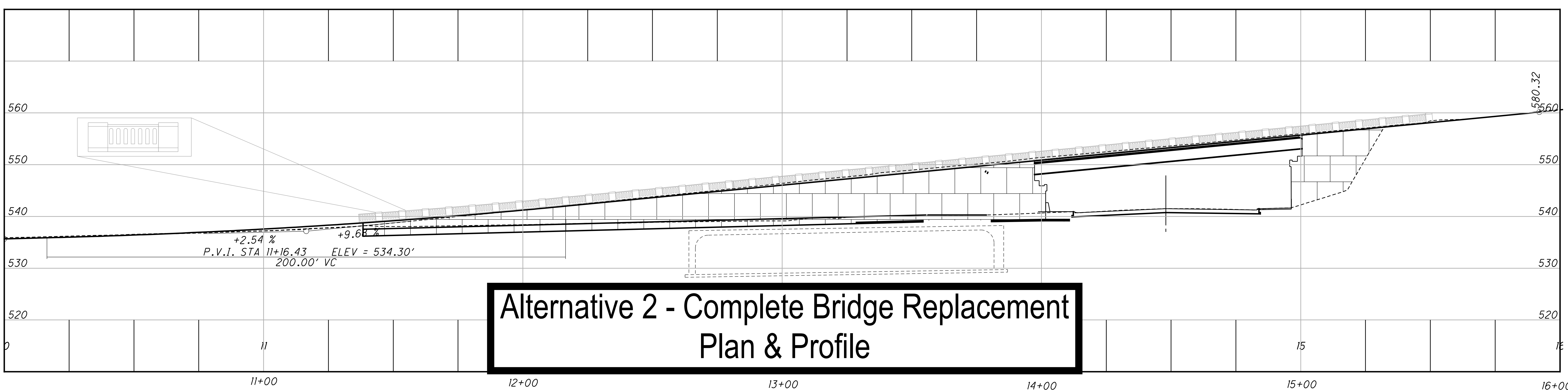
The project team received feedback from area residents, community groups, and individual stakeholders during the public meeting, our follow up outreach efforts, and the subsequent comment period. After reviewing the feedback, the concern that stood out the most was losing the connection between neighborhoods that the bridge provides. There was a desire to keep that connection for both vehicles and pedestrians to promote safety, foster future development, and honor the historic and aesthetic significance of the bridge to the area.

Exhibit A


Brighton Approach Bridge
Vicinity Map
Legend
Western Hills Viaduct
Brighton Approach Bridge
Harrison Ave.
McMicken Ave.
Central Parkway
Central Ave.
I-75
Google Earth
© 2021 Google
N
1000 ft

Exhibit B





Alternative 2 - Complete Bridge Replacement Plan & Profile

PROFILE ALONG ℄ CONSTRUCTION BRIGHTON APPROACH

SITE PLAN
BRIDGE NO. HAM-27-0358
BRIGHTON APPROACH OVER U.S. 27 (CENTRAL PARKWAY)

HAMILTON COUNTY
STA.
STA.

STRUCTURE FILE NUMBER 3101533

CARPENTER MARTY transportation

HAM-27-3.58
PID No. 104788

1 / 4

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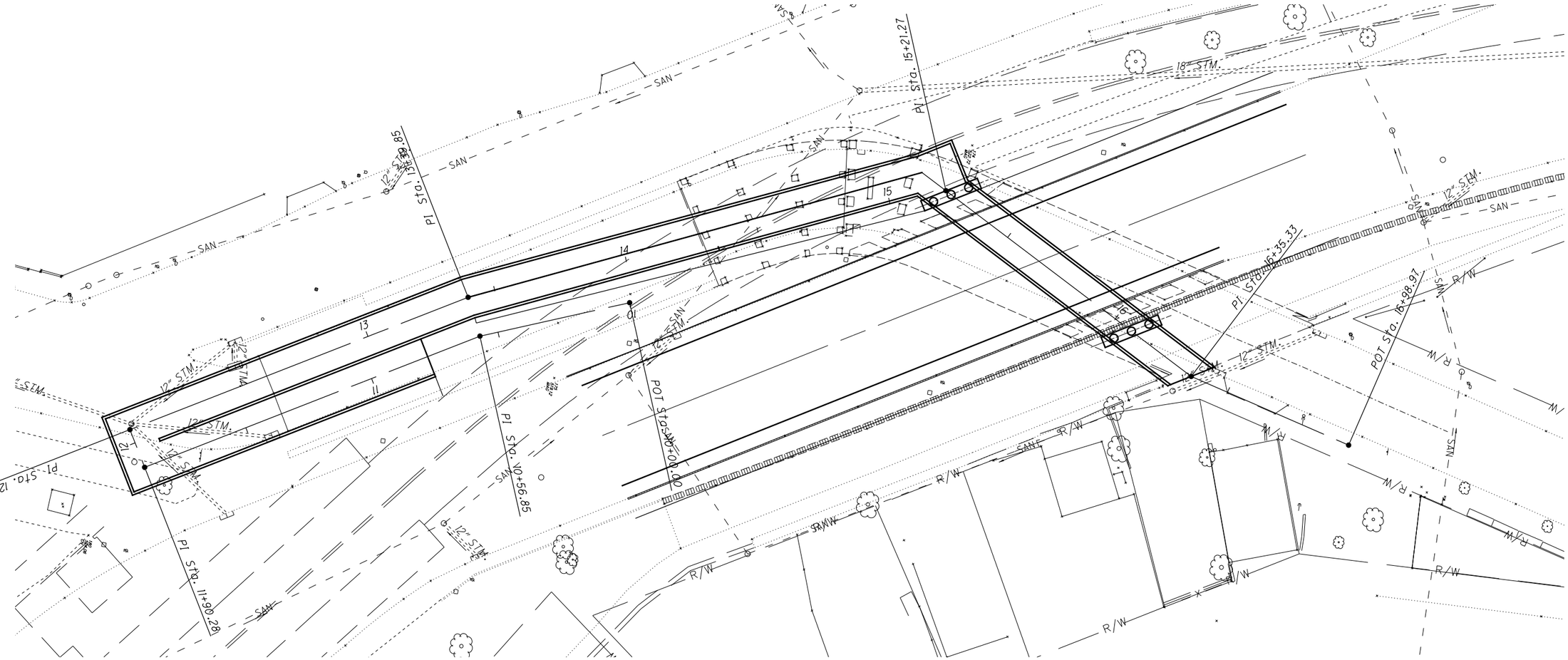
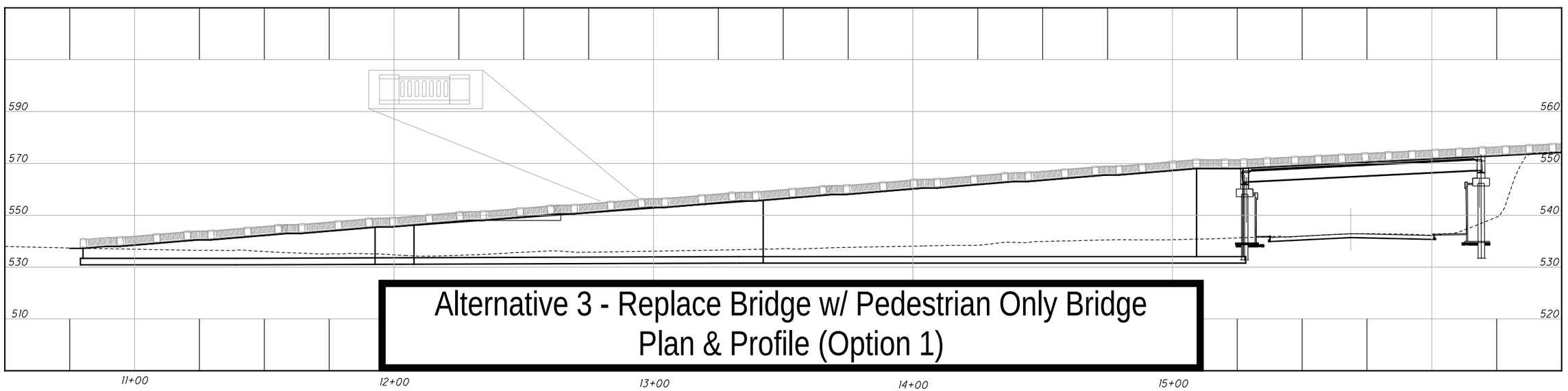
Alternative 2 - Complete Bridge Replacement Rendering

Exhibit C





Alternative 3 - Replace Bridge w/ Pedestrian Only Bridge
Plan & Profile (Option 1)

PROFILE ALONG ℄ CONSTRUCTION BRIGHTON APPROACH

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DESIGN AGENCY
CARPENTER MARTY transportation
6612 SINCLAIRE DR. COLUMBUS, OH 43229
ARCHITECT - CONSULTING

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED	REVISED	STRUCTURE FILE NUMBER 3101533	

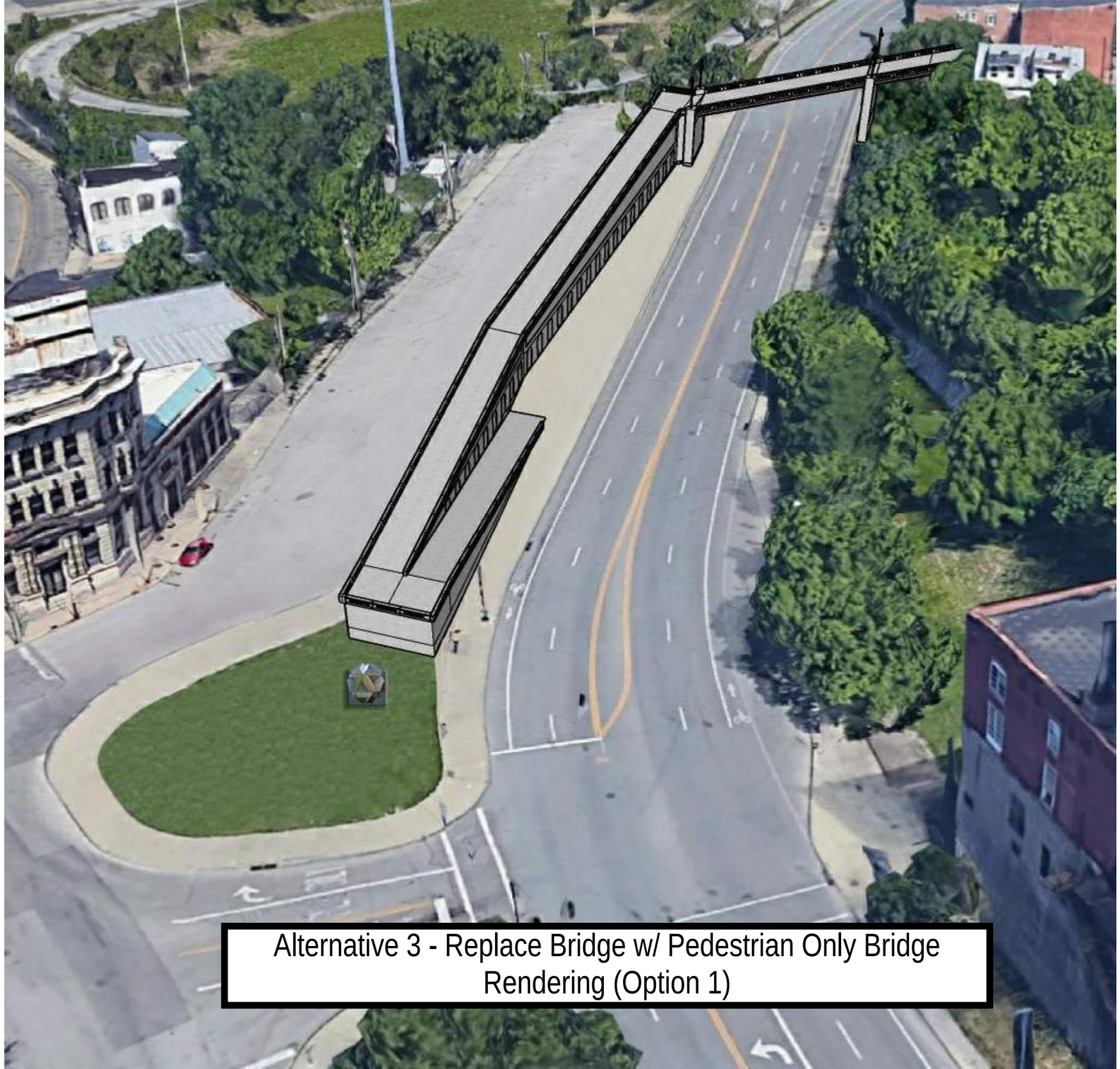
HAMILTON COUNTY
STA.
STA.

SITE PLAN
BRIDGE NO. HAM-27-0358
BRIGHTON APPROACH OVER U.S. 27 (CENTRAL PARKWAY)

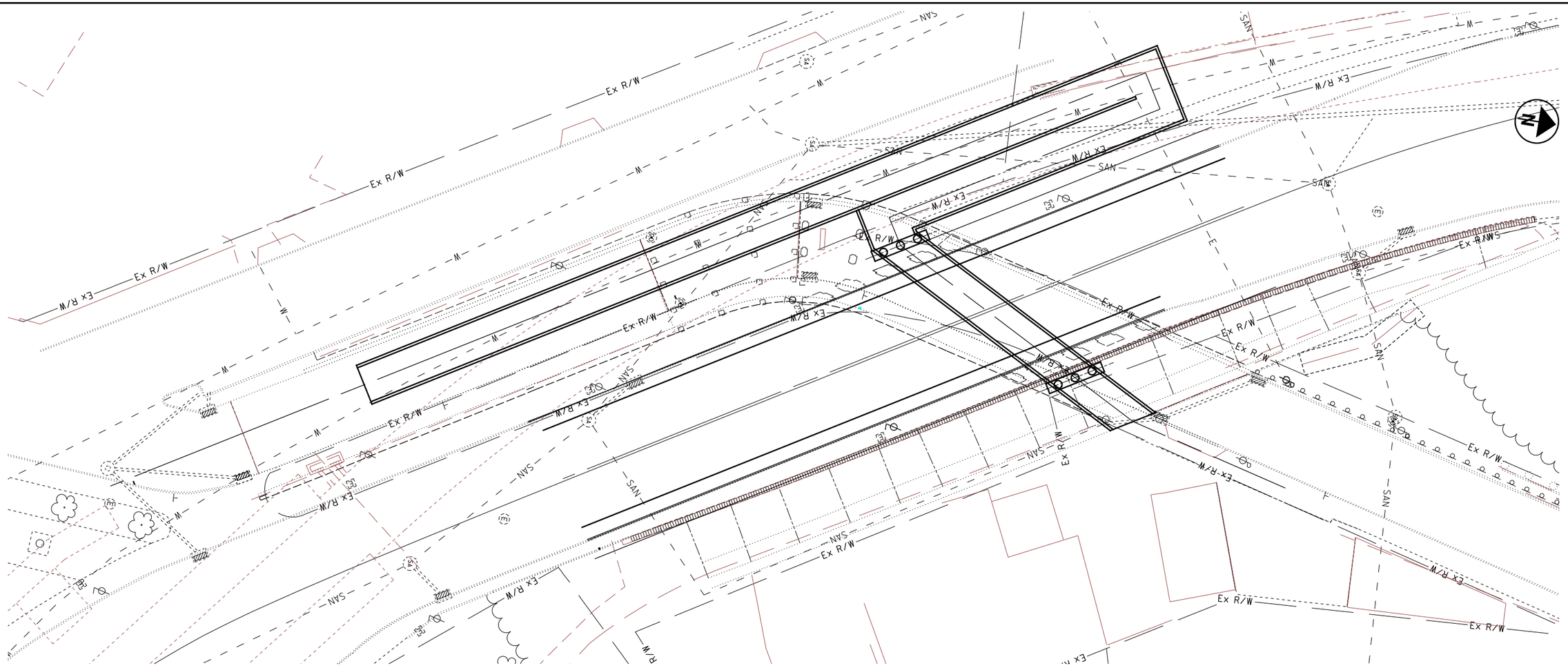
HAM-27-3.58
PID No. 104788

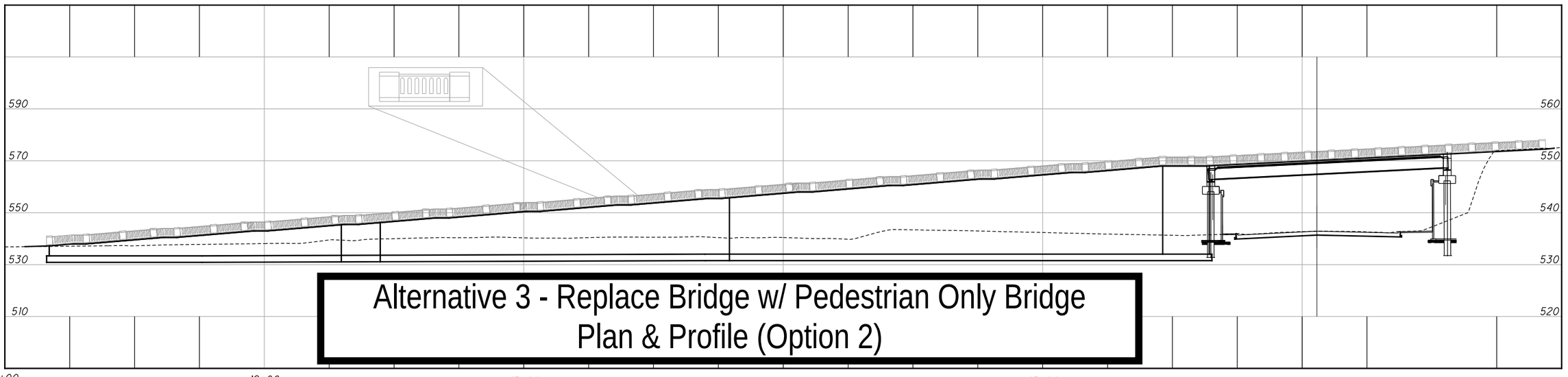
1 / 4

0
0



Alternative 3 - Replace Bridge w/ Pedestrian Only Bridge Rendering (Option 1)





Alternative 3 - Replace Bridge w/ Pedestrian Only Bridge
Plan & Profile (Option 2)

PROFILE ALONG ℄ CONSTRUCTION BRIGHTON APPROACH

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DESIGN AGENCY
CARPENTER MARTY transportation
6612 SINCLAIRE DR. COLUMBUS, OH 43229
ARCHITECT CERTIFICATE

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED	REVISED	STRUCTURE FILE NUMBER 3101533	

HAMILTON COUNTY
STA.
STA.

SITE PLAN
BRIDGE NO. HAM-27-0358
BRIGHTON APPROACH OVER U.S. 27 (CENTRAL PARKWAY)

HAM-27-3.58
PID No. 104788

1 / 4

Alternative 3 - Replace Bridge w/ Pedestrian Only Bridge Rendering (Option 2)

Exhibit D

Alternative 4 - Remove Existing Bridge, Include ADA Switchback Sidewalk

Rendering

HAM-027-03.58

PID No. 104788

DRAWING 13 - ALTERNATIVE 7

BRIDGE NO. HAM-027-0358

BRIGHTON BRIDGE OVER US 27 (CENTRAL PARKWAY)

DESIGNED	DRAWN	REVIEWED	DATE
KGR	KGR	JTH	6/17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
TMB	10/17	3101533	

DESIGN AGENCY
AECOM
525 Vine Street
Suite 1800
Cincinnati, Ohio 45202

Exhibit E

HAM-27-3.58 AER Alternatives Comparison Matrix					
Evaluation Criteria		**Alternative 1** - No Build - No new Construction - Continue to Perform Maintenance	**Alternative 2** - Remove Existing Bridge - Construct with New Vehicular and Pedestrian Bridge - Include aesthetic design on the bridge to provide historic bridge impact mitigation	**Alternative 3** - Remove Existing Bridge - Construct New Pedestrian Only Bridge - Include aesthetic design on the bridge to provide historic bridge impact mitigation	**Alternative 4** - Remove Existing Bridge - No New Bridge Construction - Install ADA compliant switchback sidewalk on hillside north of Central Parkway (US 27)
Purpose and Need (Primary)					
Address Structural Deficiency of the Bridge		Does not address Structural Deficiency	Addresses Structural Deficiency	Addresses Structural Deficiency	Addresses Structural Deficiency
Design Impacts					
Central Parkway (US 27)	Provide Adequate Vertical Clearance under Brighton Bridge	Not provided	Provided	Provided	Provided
	Provide Adequate Horizontal Clearance under Brighton Bridge for Pedestrians/Bicyclists	Not provided	Provided	Provided	Provided
Brighton Approach	Vehicular Weight Restriction	Required	Not Required	N/A	N/A
Traffic Impacts					
Vehicular		Not Impacted	Not Impacted	Minor impact to capacity at Ravine St. & Central Parkway Intersection	Minor impact to capacity at Ravine St. & Central Parkway Intersection
Pedestrian		Not Impacted	Not Impacted	Not Impacted	Pedestrians will use newly constructed switchback sidewalk to get from McMicken to Central Parkway
Bicycle		Not Impacted	Not Impacted	Not Impacted	Not Impacted
Maintenance of Traffic					
Central Parkway (US 27)		None required	Part width construction, narrow lanes, lane shifts, and shared bike/vehicular lanes	Part width construction, narrow lanes, lane shifts, and shared bike/vehicular lanes	Part width construction, narrow lanes, lane shifts, and shared bike/vehicular lanes
Brighton Approach		None required	Detour Traffic	Detour Traffic	Detour Traffic
Environmental Impacts					
Section 106 of the National Historic Preservation Act of 1966		No adverse effects	Adverse effects	Adverse effects	Adverse effects
Construction Cost/Life Cycle Cost					
Construction Cost		$ -	$ 4,900,000	$ 2,400,000	$ 1,500,000
Life Cycle Cost		$ 7,000,000	$ 6,200,000	$ 3,100,000	$ 1,700,000
Right-of-Way Impacts					
Permanent Right-of-Way		Not Required	Strip take from 1 parcel	Not Required	Not Required
Temporary Construction Easement		Not Required	Potentially easements from 2 parcels	Not Required	Potentially easements from 1 parcel

Exhibit F

Data Collection

Vehicular and pedestrian count data was collected on the Brighton Approach Bridge by Carpenter Marty Transportation for a full 24 hours for both a weekday (Wednesday, May 12, 2021) and a weekend day (Saturday, May 15, 2021). Average daily traffic (ADT) data collected is summarized in **Table 1**. Detailed count data is provided in **Appendix A**.

Table 1 – ADT Summary

Day	Vehicle	Bicycle (on roadway)	Bicycle (on sidewalk)	Pedestrian
Wednesday	753	1	1	42
Saturday	648	8	3	54

StreetLight data was then used to obtain turning movement traffic volumes for several nearby intersections which are expected to experience impacts from the redistribution of vehicular traffic caused by the bridge closure. StreetLight produces origin-destination (OD) data by utilizing cell phone location services which can be manipulated to track travel patterns. The OD data shows the relative amount of traffic that passes through a user-defined zone (the origin) and exits or passes through a separate zone (the destination). OD matrices for each intersection were used to determine turning movements for AM and PM peak hours. A common peak hour was used for all intersections. The Streetlight data utilized in this study is the average daily traffic for a typical weekday (Tuesday-Thursday) and a weekend day (Saturday-Sunday) in 2019.

StreetLight data was obtained for the following nearby intersections:

- W. McMicken Avenue & W. McMillan Street
- Central Parkway & W. McMillan Street/Western Hills Viaduct
- W. McMicken Avenue & Brighton Approach
- W. McMicken Avenue & Ravine Street
- Central Parkway & Brighton Place
- Central Parkway & Ravine Street
- Brighton Approach & Colerain Avenue
- Harrison Avenue/Central Avenue & Brighton Approach/Colerain Avenue
- Central Avenue & Brighton Place

Note, volumes on the Brighton Approach bridge from StreetLight were much greater than the volumes collected in the field. The weekday 2021 ADT collected in the field was 753 and the 2019 ADT from StreetLight was 2,675. The data discrepancies are expected to be due to the following reasons:

- The count data was collected on a single typical weekday in 2021, compared to StreetLight data which is an average of typical weekdays 2019
- COVID impacts on traffic volumes and seasonal adjustment factors should be considered when comparing the volumes
- Since Brighton Approach is a local roadway, StreetLight may have difficulty recognizing the street. The StreetLight volume on this roadway is likely larger

because it is being influenced by "data noise" from other nearby roadways. StreetLight data for the other surrounding roadways are expected to be more in line with actual traffic volumes.

As the Streetlight data showed a larger number of vehicles utilizing the Brighton Approach bridge, the Streetlight data was used to analyze capacity at all intersections, as it would be expected to produce conservative results. Since the data is already expected to be conservative, an analysis year of 2019 was utilized, and no growth rates were applied to the volumes.

After initial analysis was completed using the StreetLight data, it was requested the intersections of Ravine Street with W. McMicken Avenue and Central Parkway have data collected to be compared to StreetLight data. Weekday count data was collected at the Ravine Street intersections from 7:30-9:30 AM and 4:00-6:00 PM on Tuesday, August 17, 2021. The volumes and analysis described below utilize 2021 count data for the weekday Ravine Street intersections analysis. All other weekday intersection analysis and all weekend analysis utilizes StreetLight data. No growth rates were applied to any of the count data.

Traffic Volume Calculations

StreetLight also produces Top Routes data, which uses the same cell phone locations services and OD data to determine the most utilized routes to or from a user-defined zone. This function was utilized to determine the most used pathways to and from the Brighton Approach bridge. This data was then used to predict how those routes would change with the closure of the bridge and create redistributed traffic volumes for the nearby impacted intersection. After redistributing volumes, any allowable movement was rounded up to 10 vehicles minimum. Detailed traffic volume calculations are provided in **Appendix B**.

Capacity Analysis

The traffic volumes were used to conduct capacity analysis to compare the existing conditions to the Bridge Closure Alternative. The HCM 6th Edition module of Synchro Version 11 software was used to analyze capacity at five study intersections that were determined to see the largest impacts to operations. **Tables 2** and **3** show a summary of the Weekday and Weekend capacity analysis results.

Table 2 – Weekday Capacity Analysis Summary

Intersection ***Control***	**Approach**	**Existing Conditions**		**Bridge Closure Alternative**	
		AM Peak	**PM Peak**	**AM Peak**	**PM Peak**
Central Parkway & Western Hills Viaduct & W. McMillan Street *Signalized*	Eastbound	D/39.6	B/14.9	D/39.6	B/14.9
	Westbound	A/3.0	C/21.1	C/27.1	C/21.2
	Northbound	C/28.0	C/25.7	D/42.3	C/25.2
	Southbound	D/20.2	C/20.7	A/3.3	C/23.1
	Total	**D/36.3**	**C/21.7**	**D/36.5**	**C/22.2**
Colerain Avenue/ Brighton Approach & Harrison Avenue/	Eastbound	A/0.6	A/1.1	A/0.3	A/0.3
	Westbound	A/1.7	A/0.7	A/4.0	A/0.8

Central Avenue *Stop-Controlled*	Southbound	B/10.3	B/12.3	B/10.8	B/11.4
Brighton Place & Central Parkway *Signalized*	Eastbound	C/29.2	B/20.0	C/31.1	C/21.6
	Westbound	A/8.3	B/10.7	A/8.9	B/11.8
	Northbound	B/19.4	B/19.7	C/20.9	C/22.5
	Total	**C/23.6**	**B/15.0**	**C/24.6**	**B/16.9**
Central Parkway & Ravine Street[1] *Stop-Controlled*	Eastbound	A/0.8	A/2.0	A/1.3	A/3.1
	Westbound	A/0.0	A/0.0	A/0.0	A/0.0
	Southbound	C/17.3	F/157.9	C/18.7	F/241.8
Central Avenue & Brighton Place *Stop-Controlled*	Eastbound	B/11.8	B/14.7	B/13.7	C/21.8
	Westbound	A/9.2	B/10.7	A/8.9	A/9.9
	Southbound	A/4.2	A/2.0	A/3.3	A/2.0

Table 3 – Weekend Capacity Analysis Summary

Intersection *Control*	**Approach**	**Existing Conditions**		**Bridge Closure Alternative**	
		AM Peak	**PM Peak**	**AM Peak**	**PM Peak**
Central Parkway & Western Hills Viaduct & W. McMillan Street *Signalized*	Eastbound	B/12.2	B/18.2	B/12.2	B/18.2
	Westbound	A/0.6	B/11.8	A/0.7	B/11.8
	Northbound	C/20.7	C/23.0	B/19.3	C/22.4
	Southbound	B/13.4	B/15.7	B/13.8	B/17.5
	Total	**B/13.2**	**B/18.5**	**B/13.1**	**B/18.7**
Colerain Avenue/ Brighton Approach & Harrison Avenue/ Central Avenue *Stop-Controlled*	Eastbound	A/0.9	A/0.9	A/0.7	A/0.5
	Westbound	A/1.8	A/1.1	A/3.5	A/2.7
	Southbound	A/9.0	A/9.6	A/9.3	A/9.9
Brighton Place & Central Parkway *Signalized*	Eastbound	B/16.8	B/17.8	B/17.0	B/18.0
	Westbound	A/8.5	A/9.3	A/8.7	A/9.4
	Northbound	B/16.0	B/17.1	B/16.6	B/17.9
	Total	**B/14.1**	**B/13.6**	**B/14.4**	**B/14.1**
Central Parkway & Ravine Street *Stop-Controlled*	Eastbound	A/0.7	A/1.4	A/1.2	A/2.0
	Westbound	A/0.0	A/0.0	A/0.0	A/0.0
	Southbound	B/11.7	D/31.3	B/12.1	E/37.1
Central Avenue & Brighton Place *Stop-Controlled*	Eastbound	A/9.5	B/10.4	A/9.9	B/11.1
	Westbound	A/8.9	A/9.2	A/8.8	A/8.9
	Southbound	A/4.2	A/2.9	A/3.4	A/2.7

As can be seen, all intersections operate with acceptable LOS in the existing conditions and continue to operate acceptably with the bridge closure, except for the intersection of Central Parkway & Ravine Street. The southbound, stop-controlled approach to this intersection experiences excessive delays during the PM peak in the existing conditions, which is expected to worsen with the bridge closure. A planning-level signal warrant analysis was conducted at this intersection, and it was determined the intersection likely meets signal warrants in the bridge closure alternative but not in the existing conditions. It is recommended the intersection of Central Parkway & Ravine Street be studied further, regardless of the Brighton Approach bridge closure, to determine the correct mitigation for the intersection to address the existing delays.

All other nearby intersections operate acceptably and are not expected to experience significant increases in delay due to the rerouting of traffic due to the bridge closure. Note,

[1] 2021 count data utilized as the base for analysis of this intersection instead of 2019 StreetLight volumes.

these results are expected to be conservative due to the difference in volumes between the StreetLight data and the collected data. Detailed capacity analysis is provided in **Appendix C**.

Pedestrian/Bicycle Impacts

As shown in **Table 1**, the Brighton Approach Bridge was utilized by approximately 42 pedestrians and two bicycles on a weekday and 54 pedestrians and 11 bicycles on a weekend day. If the bridge was closed to pedestrian and bicycle traffic, these volumes would be forced to redistribute throughout the roadway network. While other routes are available, the ADA compliance of those routes and the distance required to reroute could be significant for a pedestrian.

StreetLight data was also used to determine where pedestrians are generally going to and coming from if they are walking across the Brighton Approach Bridge. Approximately 71-72% of the pedestrians on the bridge are traveling to/from the south. Distributions of pedestrian traffic by origin and destination can be seen in **Appendix D**.

Appendix A
Count Data

CARPENTER MARTY transportation

Appendix A

Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 12:00AM	0	**0**	0	**0**	**0**
12:15AM	0	**0**	0	**0**	**0**
12:30AM	0	**0**	0	**0**	**0**
12:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
1:00AM	0	**0**	0	**0**	**0**
1:15AM	0	**0**	0	**0**	**0**
1:30AM	0	**0**	0	**0**	**0**
1:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
2:00AM	0	**0**	0	**0**	**0**
2:15AM	0	**0**	0	**0**	**0**
2:30AM	0	**0**	0	**0**	**0**
2:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
3:00AM	0	**0**	0	**0**	**0**
3:15AM	0	**0**	0	**0**	**0**
3:30AM	0	**0**	0	**0**	**0**
3:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
4:00AM	0	**0**	0	**0**	**0**
4:15AM	0	**0**	0	**0**	**0**
4:30AM	0	**0**	0	**0**	**0**
4:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
5:00AM	0	**0**	0	**0**	**0**
5:15AM	0	**0**	0	**0**	**0**
5:30AM	0	**0**	0	**0**	**0**
5:45AM	0	**0**	2	**2**	**2**
Hourly Total	0	**0**	2	**2**	**0**
6:00AM	0	**0**	1	**1**	**1**
6:15AM	0	**0**	0	**0**	**0**
6:30AM	0	**0**	1	**1**	**1**
6:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	2	**2**	**0**
7:00AM	0	**0**	0	**0**	**0**
7:15AM	0	**0**	0	**0**	**0**
7:30AM	0	**0**	1	**1**	**1**
7:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	1	**1**	**0**
8:00AM	0	**0**	0	**0**	**0**
8:15AM	0	**0**	0	**0**	**0**
8:30AM	0	**0**	0	**0**	**0**
8:45AM	1	**1**	0	**0**	**1**
Hourly Total	1	**1**	0	**0**	**0**
9:00AM	0	**0**	0	**0**	**0**
9:15AM	0	**0**	0	**0**	**0**
9:30AM	1	**1**	2	**2**	**3**
9:45AM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	2	**2**	**0**
10:00AM	0	**0**	0	**0**	**0**
10:15AM	0	**0**	0	**0**	**0**
10:30AM	0	**0**	1	**1**	**1**

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:45AM	1	**1**	1	**1**	**2**
Hourly Total	1	**1**	2	**2**	**0**
11:00AM	0	**0**	1	**1**	**1**
11:15AM	0	**0**	0	**0**	**0**
11:30AM	0	**0**	1	**1**	**1**
11:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	2	**2**	**0**
12:00PM	1	**1**	0	**0**	**1**
12:15PM	0	**0**	1	**1**	**1**
12:30PM	0	**0**	0	**0**	**0**
12:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	1	**1**	**0**
1:00PM	0	**0**	1	**1**	**1**
1:15PM	1	**1**	0	**0**	**1**
1:30PM	0	**0**	0	**0**	**0**
1:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	1	**1**	**0**
2:00PM	0	**0**	0	**0**	**0**
2:15PM	0	**0**	2	**2**	**2**
2:30PM	1	**1**	0	**0**	**1**
2:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	2	**2**	**0**
3:00PM	1	**1**	0	**0**	**1**
3:15PM	0	**0**	1	**1**	**1**
3:30PM	1	**1**	0	**0**	**1**
3:45PM	0	**0**	0	**0**	**0**
Hourly Total	2	**2**	1	**1**	**0**
4:00PM	1	**1**	2	**2**	**3**
4:15PM	0	**0**	0	**0**	**0**
4:30PM	0	**0**	0	**0**	**0**
4:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	2	**2**	**0**
5:00PM	0	**0**	0	**0**	**0**
5:15PM	2	**2**	1	**1**	**3**
5:30PM	1	**1**	0	**0**	**1**
5:45PM	2	**2**	1	**1**	**3**
Hourly Total	5	**5**	2	**2**	**0**
6:00PM	0	**0**	0	**0**	**0**
6:15PM	0	**0**	0	**0**	**0**
6:30PM	1	**1**	1	**1**	**2**
6:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	1	**1**	**0**
7:00PM	0	**0**	0	**0**	**0**
7:15PM	0	**0**	1	**1**	**1**
7:30PM	1	**1**	0	**0**	**1**
7:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	1	**1**	**0**
8:00PM	0	**0**	0	**0**	**0**
8:15PM	0	**0**	1	**1**	**1**
8:30PM	1	**1**	2	**2**	**3**
8:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	3	**3**	**0**
9:00PM	0	**0**	0	**0**	**0**
9:15PM	0	**0**	0	**0**	**0**
9:30PM	0	**0**	0	**0**	**0**
9:45PM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
10:00PM	0	**0**	0	**0**	**0**
10:15PM	0	**0**	0	**0**	**0**

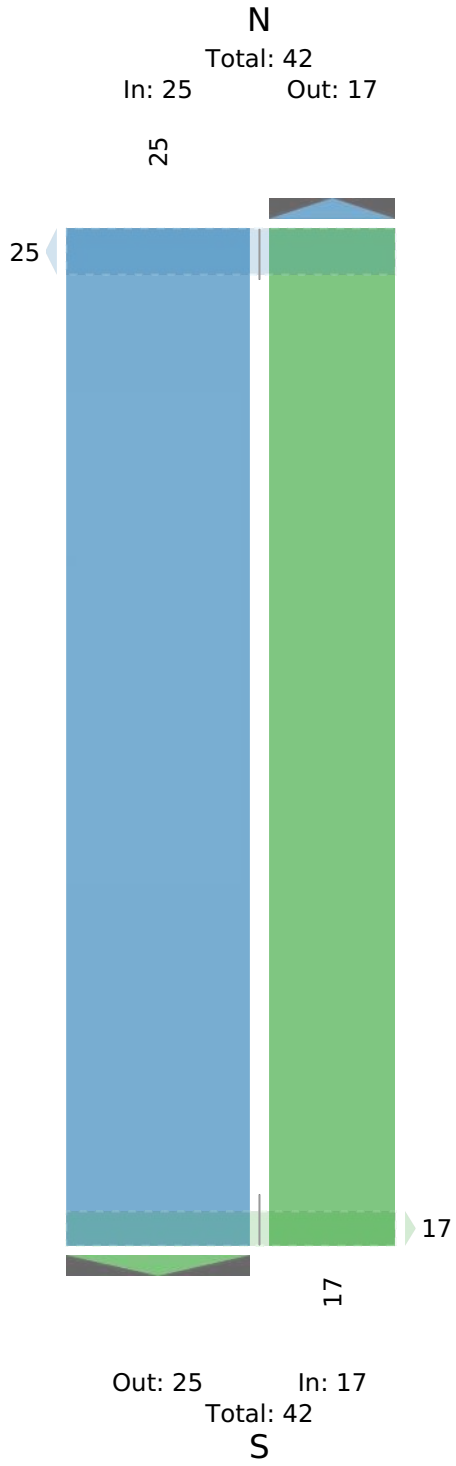
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:30PM	0	**0**	0	**0**	**0**
10:45PM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
11:00PM	0	**0**	0	**0**	**0**
11:15PM	0	**0**	0	**0**	**0**
11:30PM	0	**0**	0	**0**	**0**
11:45PM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
Total	17	**17**	25	**25**	**42**
% Approach	100%	**-**	100%	**-**	-
% Total	40.5%	**40.5%**	59.5%	**59.5%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	16	16	25	25	41
% Pedestrians	100%	94.1%	100%	100%	97.6%
Bicycles	1	1	0	0	1
% Bicycles	100%	5.9%	-	0%	2.4%

*T: Thru

Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
AM Peak (May 12 2021 5:45AM - 6:45 AM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 5:45AM	0	**0**	2	**2**	**2**
6:00AM	0	**0**	1	**1**	**1**
6:15AM	0	**0**	0	**0**	**0**
6:30AM	0	**0**	1	**1**	**1**
Total	0	**0**	4	**4**	**4**
% Approach	0%	**-**	100%	**-**	-
% Total	0%	**0%**	100%	**100%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**-**	0%	**0%**	0%
Pedestrians	0	0	4	4	4
% Pedestrians	-	0%	100%	100%	100.0%
Bicycles	0	0	0	0	0
% Bicycles	-	0%	-	0%	0.0%

*T: Thru

Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
AM Peak (May 12 2021 5:45AM - 6:45 AM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
Midday Peak (May 12 2021 11:30AM - 12:30 PM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

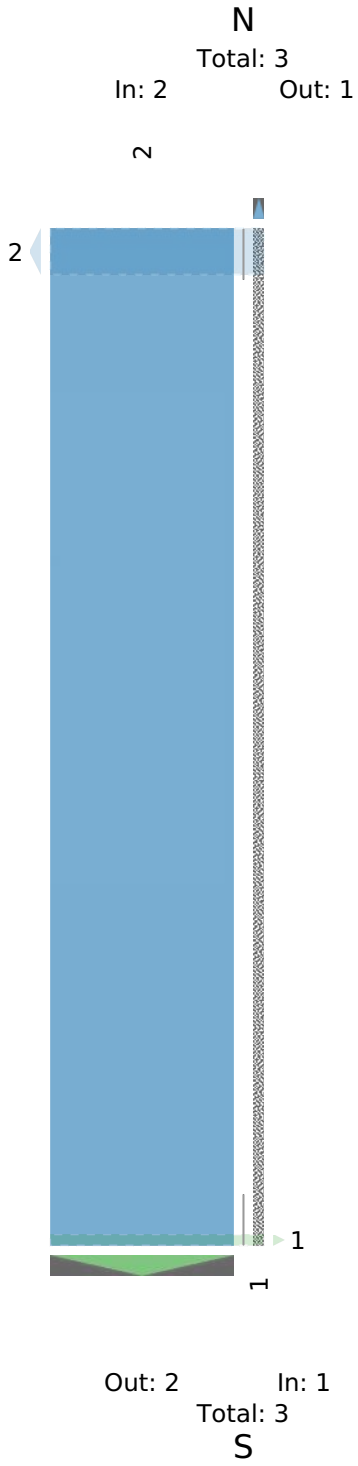
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 11:30AM	0	**0**	1	**1**	**1**
11:45AM	0	**0**	0	**0**	**0**
12:00PM	1	**1**	0	**0**	**1**
12:15PM	0	**0**	1	**1**	**1**
Total	1	**1**	2	**2**	**3**
% Approach	100%	**-**	100%	**-**	-
% Total	33.3%	**33.3%**	66.7%	**66.7%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	1	1	2	2	3
% Pedestrians	100%	100%	100%	100%	100.0%
Bicycles	0	0	0	0	0
% Bicycles	-	0%	-	0%	0.0%

*T: Thru

Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
Midday Peak (May 12 2021 11:30AM - 12:30 PM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
PM Peak (May 12 2021 5:15PM - 6:15 PM) - Overall Peak Hour
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

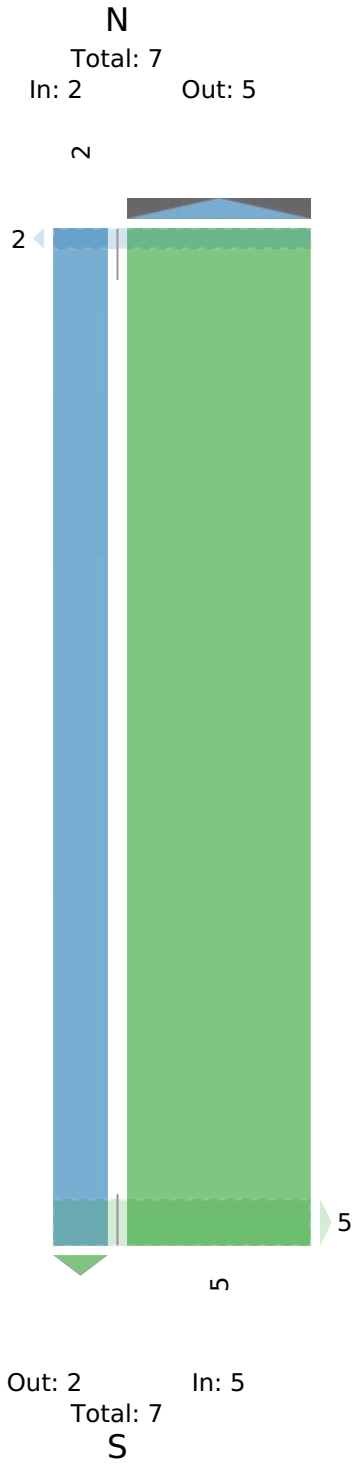
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 5:15PM	2	**2**	1	**1**	**3**
5:30PM	1	**1**	0	**0**	**1**
5:45PM	2	**2**	1	**1**	**3**
6:00PM	0	**0**	0	**0**	**0**
Total	5	**5**	2	**2**	**7**
% Approach	100%	**-**	100%	**-**	-
% Total	71.4%	**71.4%**	28.6%	**28.6%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	5	5	2	2	7
% Pedestrians	100%	100%	100%	100%	100.0%
Bicycles	0	0	0	0	0
% Bicycles	-	0%	-	0%	0.0%

*T: Thru

Brighton Approach Bridge Weekday Pedestrians - Ped & Bike Pathway

Wed May 12, 2021
PM Peak (May 12 2021 5:15PM - 6:15 PM) - Overall Peak Hour
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842215, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 12:00AM	3	**3**	1	**1**	**4**
12:15AM	0	**0**	4	**4**	**4**
12:30AM	1	**1**	0	**0**	**1**
12:45AM	3	**3**	1	**1**	**4**
Hourly Total	7	**7**	6	**6**	**13**
1:00AM	0	**0**	2	**2**	**2**
1:15AM	0	**0**	2	**2**	**2**
1:30AM	0	**0**	0	**0**	**0**
1:45AM	1	**1**	1	**1**	**2**
Hourly Total	1	**1**	5	**5**	**6**
2:00AM	1	**1**	2	**2**	**3**
2:15AM	1	**1**	1	**1**	**2**
2:30AM	0	**0**	2	**2**	**2**
2:45AM	0	**0**	0	**0**	**0**
Hourly Total	2	**2**	5	**5**	**7**
3:00AM	0	**0**	0	**0**	**0**
3:15AM	0	**0**	0	**0**	**0**
3:30AM	0	**0**	1	**1**	**1**
3:45AM	0	**0**	1	**1**	**1**
Hourly Total	0	**0**	2	**2**	**2**
4:00AM	0	**0**	1	**1**	**1**
4:15AM	1	**1**	2	**2**	**3**
4:30AM	0	**0**	1	**1**	**1**
4:45AM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	4	**4**	**5**
5:00AM	1	**1**	2	**2**	**3**
5:15AM	1	**1**	0	**0**	**1**
5:30AM	1	**1**	2	**2**	**3**
5:45AM	2	**2**	1	**1**	**3**
Hourly Total	5	**5**	5	**5**	**10**
6:00AM	3	**3**	1	**1**	**4**
6:15AM	1	**1**	0	**0**	**1**
6:30AM	2	**2**	2	**2**	**4**
6:45AM	0	**0**	2	**2**	**2**
Hourly Total	6	**6**	5	**5**	**11**
7:00AM	1	**1**	3	**3**	**4**
7:15AM	3	**3**	2	**2**	**5**
7:30AM	1	**1**	8	**8**	**9**
7:45AM	4	**4**	3	**3**	**7**
Hourly Total	9	**9**	16	**16**	**25**
8:00AM	4	**4**	6	**6**	**10**
8:15AM	2	**2**	4	**4**	**6**
8:30AM	7	**7**	5	**5**	**12**
8:45AM	2	**2**	2	**2**	**4**
Hourly Total	15	**15**	17	**17**	**32**
9:00AM	2	**2**	3	**3**	**5**
9:15AM	2	**2**	3	**3**	**5**
9:30AM	6	**6**	3	**3**	**9**
9:45AM	3	**3**	5	**5**	**8**
Hourly Total	13	**13**	14	**14**	**27**
10:00AM	6	**6**	8	**8**	**14**
10:15AM	4	**4**	1	**1**	**5**
10:30AM	4	**4**	4	**4**	**8**

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:45AM	3	**3**	7	**7**	**10**
Hourly Total	17	**17**	20	**20**	**37**
11:00AM	7	**7**	6	**6**	**13**
11:15AM	4	**4**	3	**3**	**7**
11:30AM	6	**6**	7	**7**	**13**
11:45AM	6	**6**	4	**4**	**10**
Hourly Total	23	**23**	20	**20**	**43**
12:00PM	8	**8**	5	**5**	**13**
12:15PM	6	**6**	6	**6**	**12**
12:30PM	7	**7**	7	**7**	**14**
12:45PM	8	**8**	8	**8**	**16**
Hourly Total	29	**29**	26	**26**	**55**
1:00PM	7	**7**	6	**6**	**13**
1:15PM	5	**5**	8	**8**	**13**
1:30PM	8	**8**	5	**5**	**13**
1:45PM	2	**2**	9	**9**	**11**
Hourly Total	22	**22**	28	**28**	**50**
2:00PM	7	**7**	7	**7**	**14**
2:15PM	1	**1**	7	**7**	**8**
2:30PM	3	**3**	5	**5**	**8**
2:45PM	6	**6**	4	**4**	**10**
Hourly Total	17	**17**	23	**23**	**40**
3:00PM	3	**3**	7	**7**	**10**
3:15PM	8	**8**	8	**8**	**16**
3:30PM	6	**6**	8	**8**	**14**
3:45PM	3	**3**	15	**15**	**18**
Hourly Total	20	**20**	38	**38**	**58**
4:00PM	6	**6**	10	**10**	**16**
4:15PM	3	**3**	14	**14**	**17**
4:30PM	7	**7**	9	**9**	**16**
4:45PM	7	**7**	17	**17**	**24**
Hourly Total	23	**23**	50	**50**	**73**
5:00PM	7	**7**	11	**11**	**18**
5:15PM	10	**10**	14	**14**	**24**
5:30PM	6	**6**	6	**6**	**12**
5:45PM	6	**6**	4	**4**	**10**
Hourly Total	29	**29**	35	**35**	**64**
6:00PM	5	**5**	7	**7**	**12**
6:15PM	7	**7**	7	**7**	**14**
6:30PM	4	**4**	7	**7**	**11**
6:45PM	5	**5**	7	**7**	**12**
Hourly Total	21	**21**	28	**28**	**49**
7:00PM	9	**9**	4	**4**	**13**
7:15PM	5	**5**	3	**3**	**8**
7:30PM	3	**3**	4	**4**	**7**
7:45PM	8	**8**	2	**2**	**10**
Hourly Total	25	**25**	13	**13**	**38**
8:00PM	2	**2**	3	**3**	**5**
8:15PM	7	**7**	4	**4**	**11**
8:30PM	4	**4**	1	**1**	**5**
8:45PM	7	**7**	9	**9**	**16**
Hourly Total	20	**20**	17	**17**	**37**
9:00PM	4	**4**	3	**3**	**7**
9:15PM	3	**3**	3	**3**	**6**
9:30PM	5	**5**	6	**6**	**11**
9:45PM	4	**4**	1	**1**	**5**
Hourly Total	16	**16**	13	**13**	**29**
10:00PM	5	**5**	3	**3**	**8**
10:15PM	8	**8**	2	**2**	**10**
10:30PM	3	**3**	2	**2**	**5**

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:45PM	1	**1**	3	**3**	**4**
Hourly Total	17	**17**	10	**10**	**27**
11:00PM	2	**2**	3	**3**	**5**
11:15PM	2	**2**	4	**4**	**6**
11:30PM	2	**2**	3	**3**	**5**
11:45PM	0	**0**	0	**0**	**0**
Hourly Total	6	**6**	10	**10**	**16**
Total	344	**344**	410	**410**	**754**
% Approach	100%	**-**	100%	**-**	-
% Total	45.6%	**45.6%**	54.4%	**54.4%**	-
Lights	334	**334**	403	**403**	737
% Lights	97.1%	**97.1%**	98.3%	**98.3%**	97.7%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	10	**10**	6	**6**	16
% Buses and Single-Unit Trucks	2.9%	**2.9%**	1.5%	**1.5%**	2.1%
Bicycles on Road	0	**0**	1	**1**	1
% Bicycles on Road	0%	**0%**	0.2%	**0.2%**	0.1%

*T: Thru

Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
AM Peak (May 12 2021 10AM - 11 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

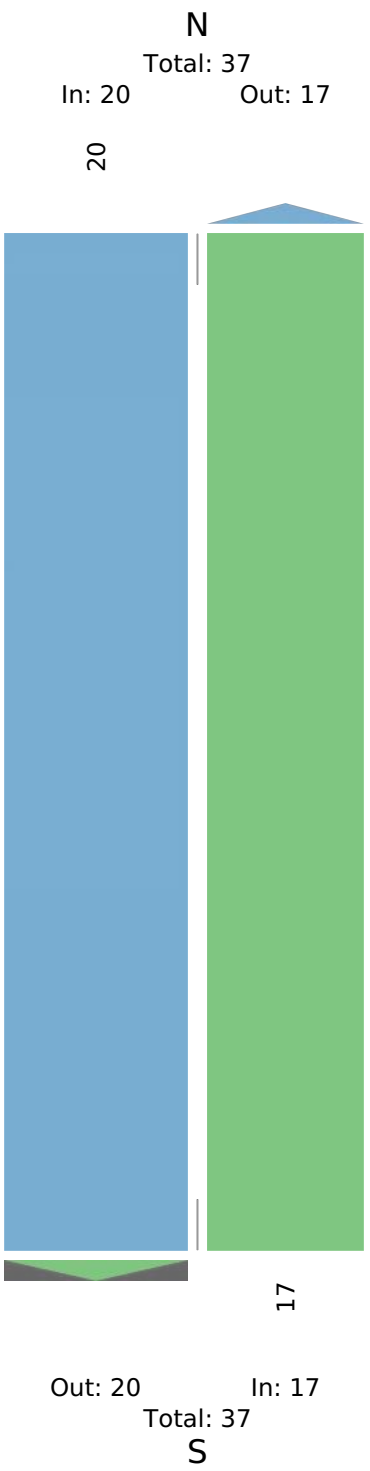
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 10:00AM	6	**6**	8	**8**	**14**
10:15AM	4	**4**	1	**1**	**5**
10:30AM	4	**4**	4	**4**	**8**
10:45AM	3	**3**	7	**7**	**10**
Total	17	**17**	20	**20**	**37**
% Approach	100%	**-**	100%	**-**	-
% Total	45.9%	**45.9%**	54.1%	**54.1%**	-
PHF	0.708	**0.708**	0.625	**0.625**	0.661
Lights	17	**17**	20	**20**	37
% Lights	100%	**100%**	100%	**100%**	100%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	0	**0**	0	**0**	0
% Buses and Single-Unit Trucks	0%	**0%**	0%	**0%**	0%
Bicycles on Road	0	**0**	0	**0**	0
% Bicycles on Road	0%	**0%**	0%	**0%**	0%

*T: Thru

Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
AM Peak (May 12 2021 10AM - 11 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
Midday Peak (May 12 2021 12PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

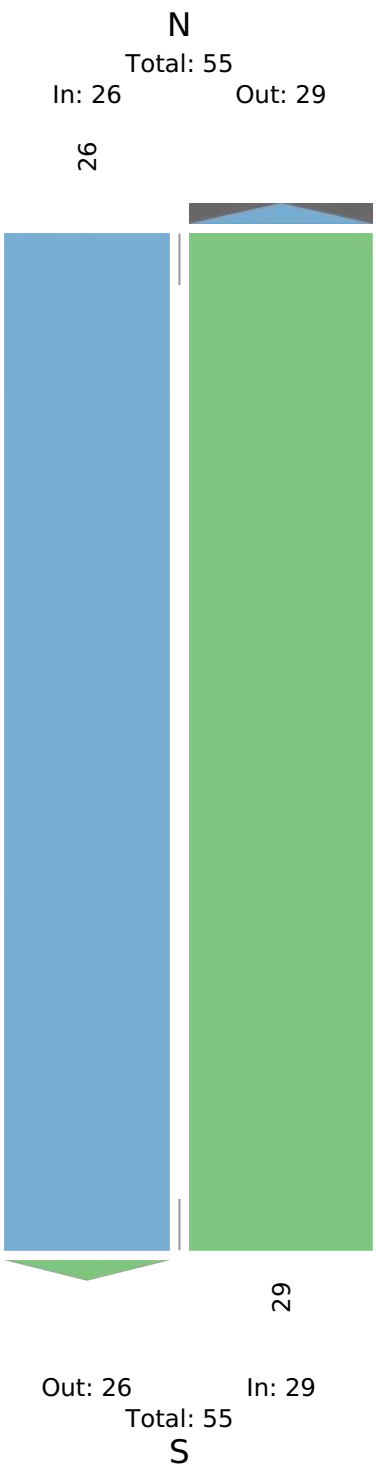
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 12:00PM	8	**8**	5	**5**	**13**
12:15PM	6	**6**	6	**6**	**12**
12:30PM	7	**7**	7	**7**	**14**
12:45PM	8	**8**	8	**8**	**16**
Total	29	**29**	26	**26**	**55**
% Approach	100%	**-**	100%	**-**	-
% Total	52.7%	**52.7%**	47.3%	**47.3%**	-
PHF	0.906	**0.906**	0.813	**0.813**	0.859
Lights	29	**29**	26	**26**	55
% Lights	100%	**100%**	100%	**100%**	100%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	0	**0**	0	**0**	0
% Buses and Single-Unit Trucks	0%	**0%**	0%	**0%**	0%
Bicycles on Road	0	**0**	0	**0**	0
% Bicycles on Road	0%	**0%**	0%	**0%**	0%

*T: Thru

Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
Midday Peak (May 12 2021 12PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
PM Peak (May 12 2021 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

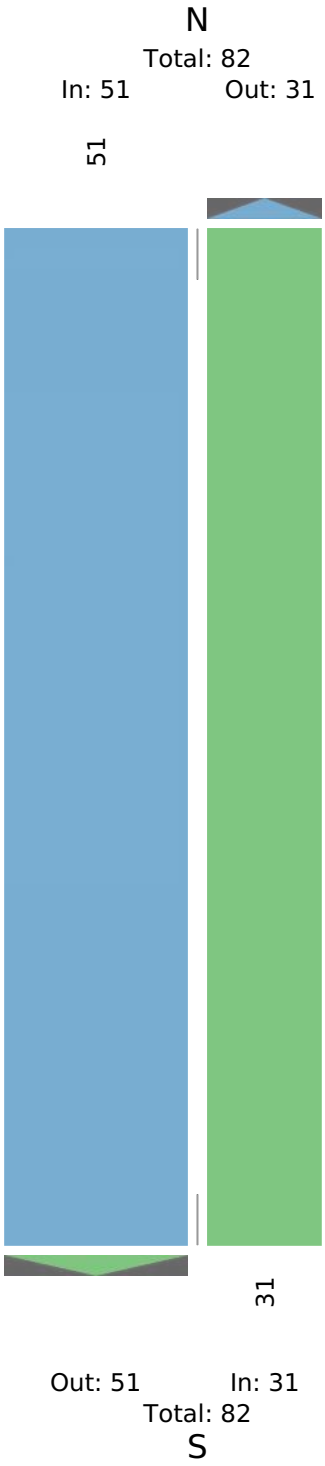
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-12 4:30PM	7	**7**	9	**9**	**16**
4:45PM	7	**7**	17	**17**	**24**
5:00PM	7	**7**	11	**11**	**18**
5:15PM	10	**10**	14	**14**	**24**
Total	31	**31**	51	**51**	**82**
% Approach	100%	**-**	100%	**-**	-
% Total	37.8%	**37.8%**	62.2%	**62.2%**	-
PHF	0.775	**0.775**	0.750	**0.750**	0.854
Lights	30	**30**	50	**50**	80
% Lights	96.8%	**96.8%**	98.0%	**98.0%**	97.6%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	1	**1**	1	**1**	2
% Buses and Single-Unit Trucks	3.2%	**3.2%**	2.0%	**2.0%**	2.4%
Bicycles on Road	0	**0**	0	**0**	0
% Bicycles on Road	0%	**0%**	0%	**0%**	0%

*T: Thru

Brighton Approach Bridge Weekday Vehicular - ATR

Wed May 12, 2021
PM Peak (May 12 2021 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842209, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway

Sat May 15, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 12:00AM	1	**1**	2	**2**	**3**
12:15AM	0	**0**	0	**0**	**0**
12:30AM	0	**0**	0	**0**	**0**
12:45AM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	2	**2**	**0**
1:00AM	0	**0**	0	**0**	**0**
1:15AM	0	**0**	0	**0**	**0**
1:30AM	0	**0**	0	**0**	**0**
1:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
2:00AM	0	**0**	0	**0**	**0**
2:15AM	0	**0**	0	**0**	**0**
2:30AM	0	**0**	0	**0**	**0**
2:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
3:00AM	0	**0**	0	**0**	**0**
3:15AM	0	**0**	0	**0**	**0**
3:30AM	0	**0**	0	**0**	**0**
3:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
4:00AM	0	**0**	0	**0**	**0**
4:15AM	0	**0**	0	**0**	**0**
4:30AM	0	**0**	0	**0**	**0**
4:45AM	0	**0**	1	**1**	**1**
Hourly Total	0	**0**	1	**1**	**0**
5:00AM	0	**0**	0	**0**	**0**
5:15AM	0	**0**	0	**0**	**0**
5:30AM	0	**0**	0	**0**	**0**
5:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
6:00AM	0	**0**	0	**0**	**0**
6:15AM	0	**0**	0	**0**	**0**
6:30AM	0	**0**	0	**0**	**0**
6:45AM	1	**1**	0	**0**	**1**
Hourly Total	1	**1**	0	**0**	**0**
7:00AM	0	**0**	0	**0**	**0**
7:15AM	0	**0**	0	**0**	**0**
7:30AM	0	**0**	0	**0**	**0**
7:45AM	1	**1**	0	**0**	**1**
Hourly Total	1	**1**	0	**0**	**0**
8:00AM	0	**0**	0	**0**	**0**
8:15AM	1	**1**	0	**0**	**1**
8:30AM	0	**0**	0	**0**	**0**
8:45AM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	0	**0**	**0**
9:00AM	0	**0**	0	**0**	**0**
9:15AM	0	**0**	0	**0**	**0**
9:30AM	0	**0**	0	**0**	**0**
9:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
10:00AM	0	**0**	0	**0**	**0**
10:15AM	0	**0**	0	**0**	**0**
10:30AM	1	**1**	1	**1**	**2**

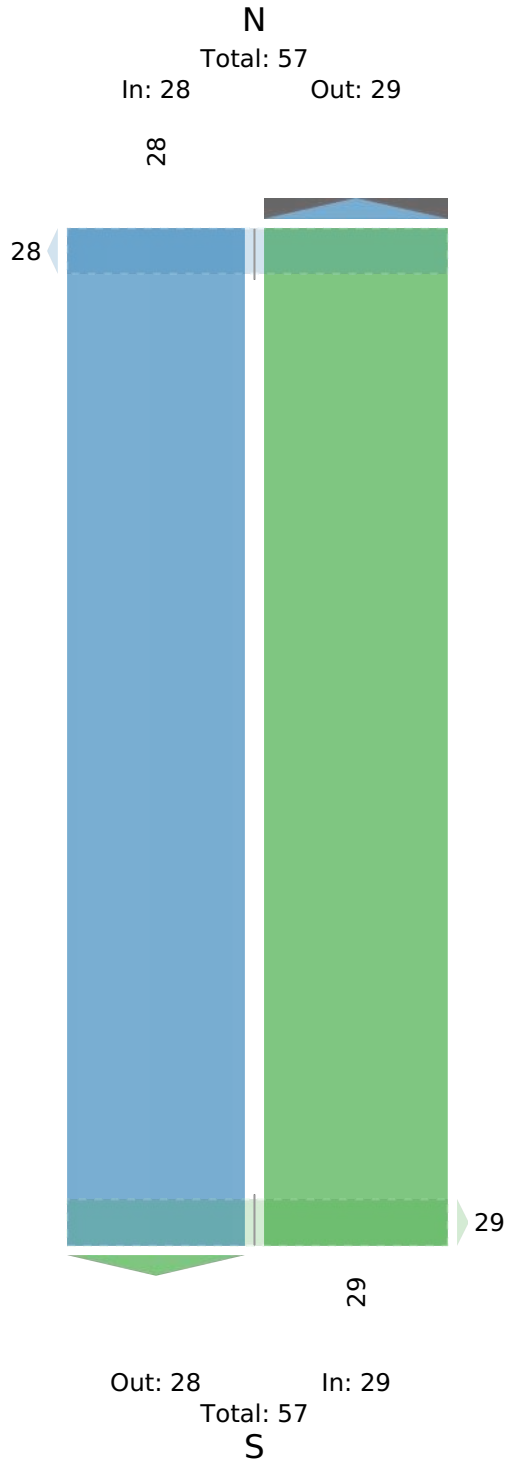
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:45AM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	1	**1**	**0**
11:00AM	0	**0**	0	**0**	**0**
11:15AM	0	**0**	0	**0**	**0**
11:30AM	0	**0**	0	**0**	**0**
11:45AM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
12:00PM	2	**2**	2	**2**	**4**
12:15PM	1	**1**	1	**1**	**2**
12:30PM	0	**0**	0	**0**	**0**
12:45PM	0	**0**	0	**0**	**0**
Hourly Total	3	**3**	3	**3**	**0**
1:00PM	0	**0**	0	**0**	**0**
1:15PM	0	**0**	2	**2**	**2**
1:30PM	2	**2**	1	**1**	**3**
1:45PM	0	**0**	0	**0**	**0**
Hourly Total	2	**2**	3	**3**	**0**
2:00PM	0	**0**	0	**0**	**0**
2:15PM	1	**1**	3	**3**	**4**
2:30PM	1	**1**	0	**0**	**1**
2:45PM	1	**1**	1	**1**	**2**
Hourly Total	3	**3**	4	**4**	**0**
3:00PM	2	**2**	1	**1**	**3**
3:15PM	1	**1**	1	**1**	**2**
3:30PM	2	**2**	2	**2**	**4**
3:45PM	3	**3**	1	**1**	**4**
Hourly Total	8	**8**	5	**5**	**0**
4:00PM	0	**0**	0	**0**	**0**
4:15PM	1	**1**	2	**2**	**3**
4:30PM	0	**0**	0	**0**	**0**
4:45PM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	2	**2**	**0**
5:00PM	0	**0**	1	**1**	**1**
5:15PM	0	**0**	0	**0**	**0**
5:30PM	0	**0**	0	**0**	**0**
5:45PM	1	**1**	2	**2**	**3**
Hourly Total	1	**1**	3	**3**	**0**
6:00PM	0	**0**	0	**0**	**0**
6:15PM	0	**0**	0	**0**	**0**
6:30PM	0	**0**	0	**0**	**0**
6:45PM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
7:00PM	0	**0**	0	**0**	**0**
7:15PM	0	**0**	1	**1**	**1**
7:30PM	0	**0**	0	**0**	**0**
7:45PM	1	**1**	1	**1**	**2**
Hourly Total	1	**1**	2	**2**	**0**
8:00PM	0	**0**	0	**0**	**0**
8:15PM	0	**0**	0	**0**	**0**
8:30PM	0	**0**	0	**0**	**0**
8:45PM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
9:00PM	0	**0**	0	**0**	**0**
9:15PM	0	**0**	0	**0**	**0**
9:30PM	0	**0**	1	**1**	**1**
9:45PM	1	**1**	1	**1**	**2**
Hourly Total	1	**1**	2	**2**	**0**
10:00PM	0	**0**	0	**0**	**0**
10:15PM	0	**0**	0	**0**	**0**

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:30PM	0	**0**	0	**0**	**0**
10:45PM	4	**4**	0	**0**	**4**
Hourly Total	4	**4**	0	**0**	**0**
11:00PM	0	**0**	0	**0**	**0**
11:15PM	0	**0**	0	**0**	**0**
11:30PM	0	**0**	0	**0**	**0**
11:45PM	0	**0**	0	**0**	**0**
Hourly Total	0	**0**	0	**0**	**0**
Total	29	**29**	28	**28**	**57**
% Approach	100%	**-**	100%	**-**	-
% Total	50.9%	**50.9%**	49.1%	**49.1%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	27	27	27	27	54
% Pedestrians	100%	93.1%	100%	96.4%	94.7%
Bicycles	2	2	1	1	3
% Bicycles	100%	6.9%	100%	3.6%	5.3%

*T: Thru

Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway
Sat May 15, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway

Sat May 15, 2021
AM Peak (WKND) (May 15 2021 12AM - 1 AM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

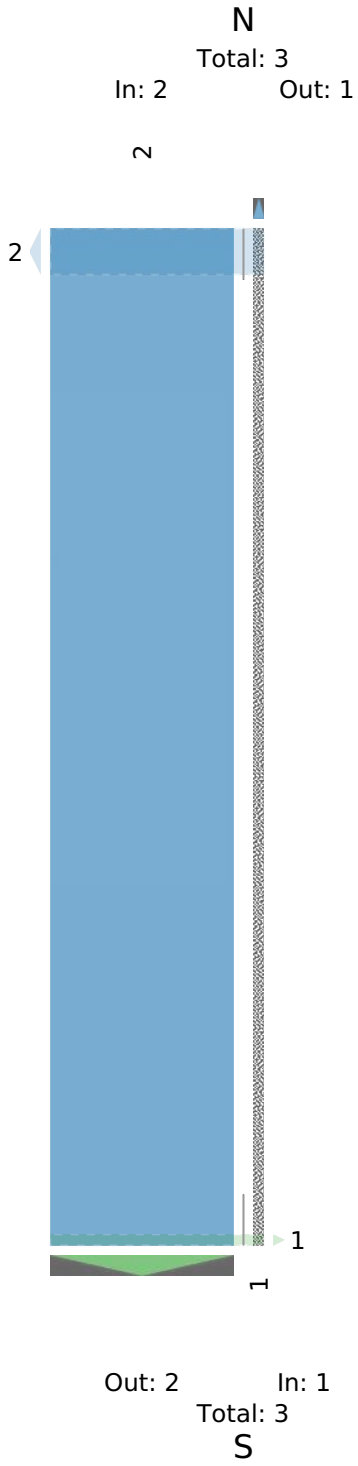
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 12:00AM	1	**1**	2	**2**	**3**
12:15AM	0	**0**	0	**0**	**0**
12:30AM	0	**0**	0	**0**	**0**
12:45AM	0	**0**	0	**0**	**0**
Total	1	**1**	2	**2**	**3**
% Approach	100%	**-**	100%	**-**	-
% Total	33.3%	**33.3%**	66.7%	**66.7%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	1	1	2	2	3
% Pedestrians	100%	100%	100%	100%	100.0%
Bicycles	0	0	0	0	0
% Bicycles	-	0%	-	0%	0.0%

*T: Thru

Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway

Sat May 15, 2021
AM Peak (WKND) (May 15 2021 12AM - 1 AM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway

Sat May 15, 2021
Midday Peak (WKND) (May 15 2021 12PM - 1 PM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

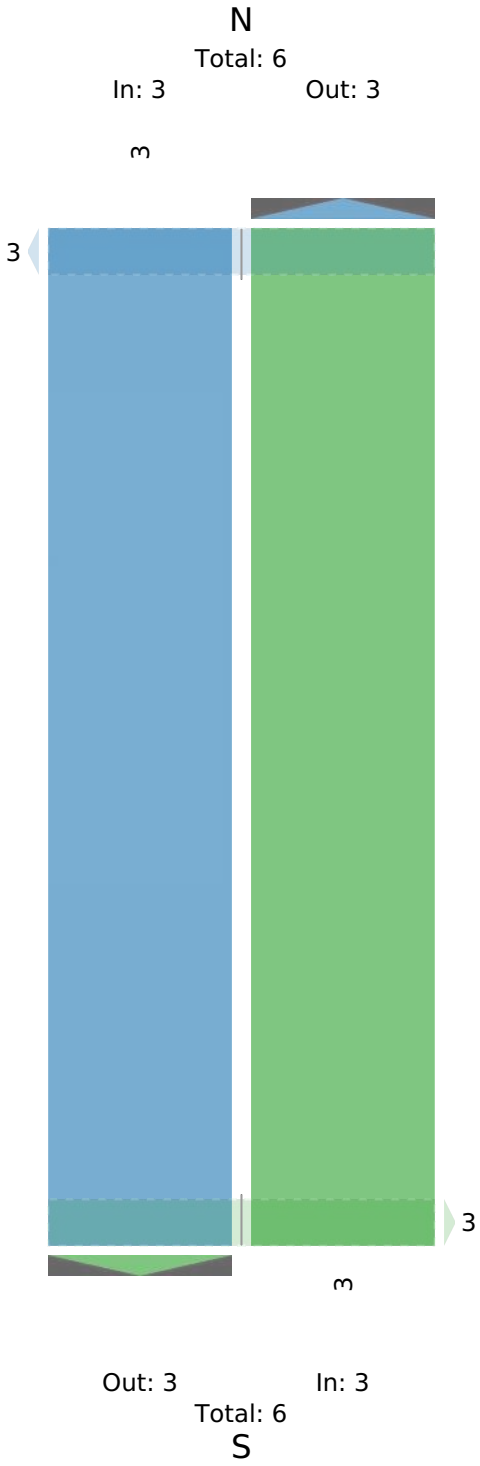
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 12:00PM	2	**2**	2	**2**	**4**
12:15PM	1	**1**	1	**1**	**2**
12:30PM	0	**0**	0	**0**	**0**
12:45PM	0	**0**	0	**0**	**0**
Total	3	**3**	3	**3**	**6**
% Approach	100%	**-**	100%	**-**	-
% Total	50.0%	**50.0%**	50.0%	**50.0%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	3	3	3	3	6
% Pedestrians	100%	100%	100%	100%	100.0%
Bicycles	0	0	0	0	0
% Bicycles	-	0%	-	0%	0.0%

*T: Thru

Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway
Sat May 15, 2021
Midday Peak (WKND) (May 15 2021 12PM - 1 PM)
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway

Sat May 15, 2021
PM Peak (WKND) (May 15 2021 3PM - 4 PM) - Overall Peak Hour
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

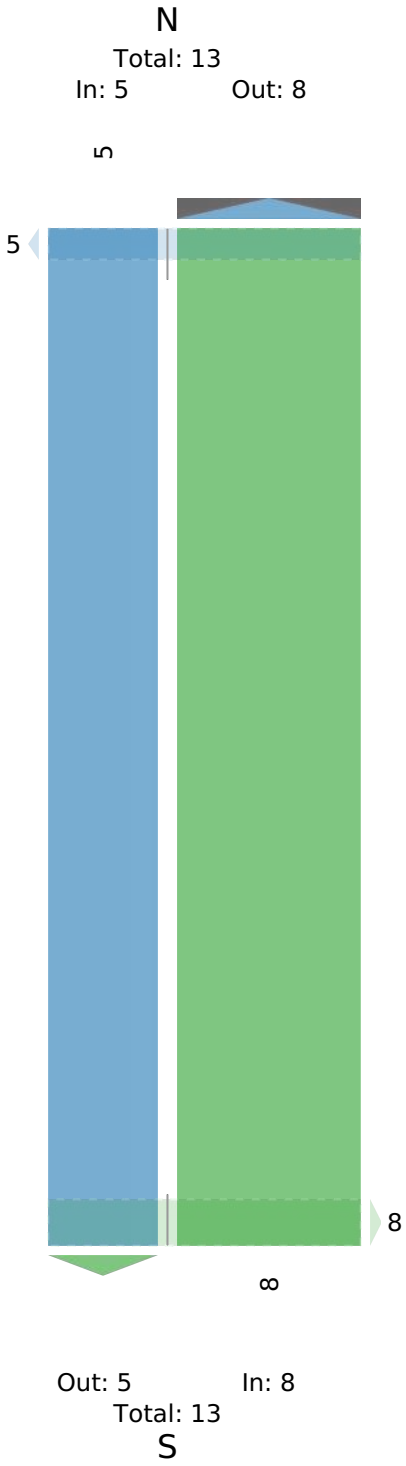
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 3:00PM	2	**2**	1	**1**	**3**
3:15PM	1	**1**	1	**1**	**2**
3:30PM	2	**2**	2	**2**	**4**
3:45PM	3	**3**	1	**1**	**4**
Total	8	**8**	5	**5**	**13**
% Approach	100%	**-**	100%	**-**	-
% Total	61.5%	**61.5%**	38.5%	**38.5%**	-
Bicycles	**0**	**0**	0		
% Bicycles	0%	**0%**	0%	**0%**	0%
Pedestrians	7	7	5	5	12
% Pedestrians	100%	87.5%	100%	100%	92.3%
Bicycles	1	1	0	0	1
% Bicycles	100%	12.5%	-	0%	7.7%

*T: Thru

Brighton Approach Bridge Weekend Pedestrians - Ped & Bike Pathway
Sat May 15, 2021
PM Peak (WKND) (May 15 2021 3PM - 4 PM) - Overall Peak Hour
All Classes (Pedestrians, Bicycles, Bicycles)
All Channels
ID: 842218, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 12:00AM	5	**5**	4	**4**	**9**
12:15AM	3	**3**	2	**2**	**5**
12:30AM	0	**0**	4	**4**	**4**
12:45AM	1	**1**	1	**1**	**2**
Hourly Total	9	**9**	11	**11**	**20**
1:00AM	3	**3**	4	**4**	**7**
1:15AM	2	**2**	1	**1**	**3**
1:30AM	1	**1**	2	**2**	**3**
1:45AM	0	**0**	1	**1**	**1**
Hourly Total	6	**6**	8	**8**	**14**
2:00AM	2	**2**	6	**6**	**8**
2:15AM	2	**2**	3	**3**	**5**
2:30AM	1	**1**	3	**3**	**4**
2:45AM	1	**1**	4	**4**	**5**
Hourly Total	6	**6**	16	**16**	**22**
3:00AM	1	**1**	0	**0**	**1**
3:15AM	4	**4**	5	**5**	**9**
3:30AM	2	**2**	1	**1**	**3**
3:45AM	0	**0**	2	**2**	**2**
Hourly Total	7	**7**	8	**8**	**15**
4:00AM	0	**0**	1	**1**	**1**
4:15AM	0	**0**	2	**2**	**2**
4:30AM	1	**1**	3	**3**	**4**
4:45AM	0	**0**	0	**0**	**0**
Hourly Total	1	**1**	6	**6**	**7**
5:00AM	0	**0**	1	**1**	**1**
5:15AM	2	**2**	3	**3**	**5**
5:30AM	0	**0**	0	**0**	**0**
5:45AM	0	**0**	0	**0**	**0**
Hourly Total	2	**2**	4	**4**	**6**
6:00AM	0	**0**	3	**3**	**3**
6:15AM	1	**1**	2	**2**	**3**
6:30AM	0	**0**	1	**1**	**1**
6:45AM	0	**0**	3	**3**	**3**
Hourly Total	1	**1**	9	**9**	**10**
7:00AM	1	**1**	0	**0**	**1**
7:15AM	0	**0**	3	**3**	**3**
7:30AM	0	**0**	2	**2**	**2**
7:45AM	0	**0**	2	**2**	**2**
Hourly Total	1	**1**	7	**7**	**8**
8:00AM	0	**0**	1	**1**	**1**
8:15AM	1	**1**	1	**1**	**2**
8:30AM	1	**1**	2	**2**	**3**
8:45AM	2	**2**	6	**6**	**8**
Hourly Total	4	**4**	10	**10**	**14**
9:00AM	3	**3**	3	**3**	**6**
9:15AM	3	**3**	3	**3**	**6**
9:30AM	0	**0**	1	**1**	**1**
9:45AM	0	**0**	8	**8**	**8**
Hourly Total	6	**6**	15	**15**	**21**
10:00AM	5	**5**	8	**8**	**13**
10:15AM	1	**1**	4	**4**	**5**
10:30AM	2	**2**	2	**2**	**4**

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:45AM	3	**3**	5	**5**	**8**
Hourly Total	11	**11**	19	**19**	**30**
11:00AM	5	**5**	2	**2**	**7**
11:15AM	3	**3**	4	**4**	**7**
11:30AM	4	**4**	0	**0**	**4**
11:45AM	7	**7**	6	**6**	**13**
Hourly Total	19	**19**	12	**12**	**31**
12:00PM	4	**4**	6	**6**	**10**
12:15PM	5	**5**	3	**3**	**8**
12:30PM	3	**3**	4	**4**	**7**
12:45PM	7	**7**	0	**0**	**7**
Hourly Total	19	**19**	13	**13**	**32**
1:00PM	6	**6**	6	**6**	**12**
1:15PM	4	**4**	7	**7**	**11**
1:30PM	3	**3**	10	**10**	**13**
1:45PM	8	**8**	6	**6**	**14**
Hourly Total	21	**21**	29	**29**	**50**
2:00PM	7	**7**	3	**3**	**10**
2:15PM	6	**6**	5	**5**	**11**
2:30PM	6	**6**	2	**2**	**8**
2:45PM	7	**7**	6	**6**	**13**
Hourly Total	26	**26**	16	**16**	**42**
3:00PM	2	**2**	7	**7**	**9**
3:15PM	7	**7**	4	**4**	**11**
3:30PM	3	**3**	6	**6**	**9**
3:45PM	5	**5**	6	**6**	**11**
Hourly Total	17	**17**	23	**23**	**40**
4:00PM	4	**4**	4	**4**	**8**
4:15PM	7	**7**	5	**5**	**12**
4:30PM	3	**3**	5	**5**	**8**
4:45PM	3	**3**	6	**6**	**9**
Hourly Total	17	**17**	20	**20**	**37**
5:00PM	2	**2**	6	**6**	**8**
5:15PM	3	**3**	8	**8**	**11**
5:30PM	9	**9**	1	**1**	**10**
5:45PM	5	**5**	4	**4**	**9**
Hourly Total	19	**19**	19	**19**	**38**
6:00PM	4	**4**	3	**3**	**7**
6:15PM	7	**7**	9	**9**	**16**
6:30PM	2	**2**	3	**3**	**5**
6:45PM	8	**8**	4	**4**	**12**
Hourly Total	21	**21**	19	**19**	**40**
7:00PM	3	**3**	3	**3**	**6**
7:15PM	8	**8**	5	**5**	**13**
7:30PM	2	**2**	7	**7**	**9**
7:45PM	3	**3**	5	**5**	**8**
Hourly Total	16	**16**	20	**20**	**36**
8:00PM	5	**5**	5	**5**	**10**
8:15PM	6	**6**	2	**2**	**8**
8:30PM	4	**4**	6	**6**	**10**
8:45PM	4	**4**	1	**1**	**5**
Hourly Total	19	**19**	14	**14**	**33**
9:00PM	6	**6**	5	**5**	**11**
9:15PM	1	**1**	5	**5**	**6**
9:30PM	7	**7**	4	**4**	**11**
9:45PM	8	**8**	6	**6**	**14**
Hourly Total	22	**22**	20	**20**	**42**
10:00PM	7	**7**	4	**4**	**11**
10:15PM	4	**4**	4	**4**	**8**
10:30PM	8	**8**	6	**6**	**14**

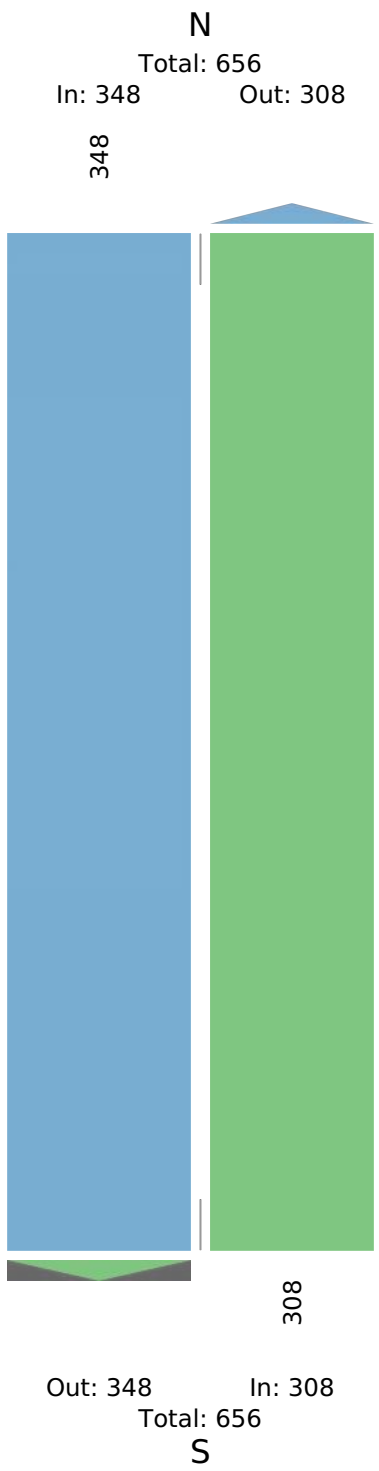
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
10:45PM	4	**4**	1	**1**	**5**
Hourly Total	23	**23**	15	**15**	**38**
11:00PM	4	**4**	3	**3**	**7**
11:15PM	3	**3**	3	**3**	**6**
11:30PM	6	**6**	6	**6**	**12**
11:45PM	2	**2**	3	**3**	**5**
Hourly Total	15	**15**	15	**15**	**30**
Total	308	**308**	348	**348**	**656**
% Approach	100%	**-**	100%	**-**	-
% Total	47.0%	**47.0%**	53.0%	**53.0%**	-
Lights	304	**304**	337	**337**	641
% Lights	98.7%	**98.7%**	96.8%	**96.8%**	97.7%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	1	**1**	6	**6**	7
% Buses and Single-Unit Trucks	0.3%	**0.3%**	1.7%	**1.7%**	1.1%
Bicycles on Road	3	**3**	5	**5**	8
% Bicycles on Road	1.0%	**1.0%**	1.4%	**1.4%**	1.2%

*T: Thru

Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
AM Peak (WKND) (May 15 2021 9:45AM - 10:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

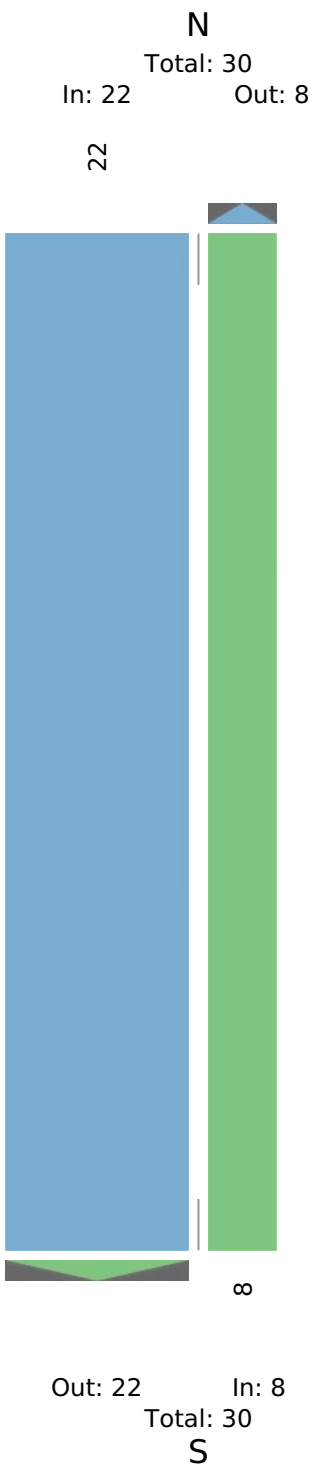
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 9:45AM	0	**0**	8	**8**	**8**
10:00AM	5	**5**	8	**8**	**13**
10:15AM	1	**1**	4	**4**	**5**
10:30AM	2	**2**	2	**2**	**4**
Total	8	**8**	22	**22**	**30**
% Approach	100%	**-**	100%	**-**	-
% Total	26.7%	**26.7%**	73.3%	**73.3%**	-
PHF	0.400	**0.400**	0.688	**0.688**	0.577
Lights	8	**8**	22	**22**	30
% Lights	100%	**100%**	100%	**100%**	100%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	0	**0**	0	**0**	0
% Buses and Single-Unit Trucks	0%	**0%**	0%	**0%**	0%
Bicycles on Road	0	**0**	0	**0**	0
% Bicycles on Road	0%	**0%**	0%	**0%**	0%

*T: Thru

Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
AM Peak (WKND) (May 15 2021 9:45AM - 10:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
Midday Peak (WKND) (May 15 2021 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

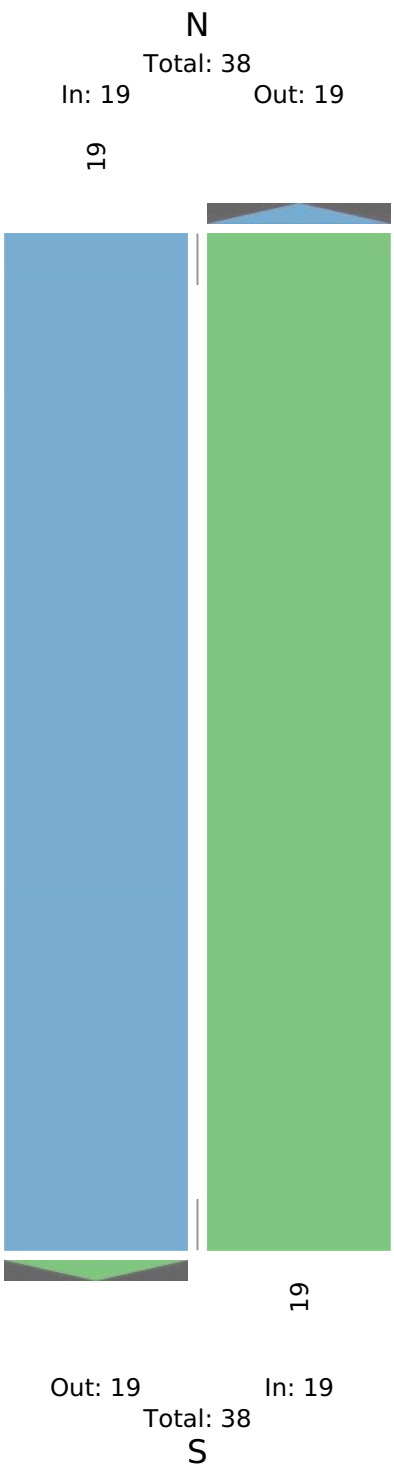
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 11:45AM	7	**7**	6	**6**	**13**
12:00PM	4	**4**	6	**6**	**10**
12:15PM	5	**5**	3	**3**	**8**
12:30PM	3	**3**	4	**4**	**7**
Total	19	**19**	19	**19**	**38**
% Approach	100%	**-**	100%	**-**	-
% Total	50.0%	**50.0%**	50.0%	**50.0%**	-
PHF	0.750	**0.750**	0.800	**0.800**	0.773
Lights	18	**18**	16	**16**	34
% Lights	94.7%	**94.7%**	84.2%	**84.2%**	89.5%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	0	**0**	0	**0**	0
% Buses and Single-Unit Trucks	0%	**0%**	0%	**0%**	0%
Bicycles on Road	1	**1**	3	**3**	4
% Bicycles on Road	5.3%	**5.3%**	15.8%	**15.8%**	10.5%

*T: Thru

Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
Midday Peak (WKND) (May 15 2021 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
PM Peak (WKND) (May 15 2021 1PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2021-05-15 1:00PM	6	**6**	6	**6**	**12**
1:15PM	4	**4**	7	**7**	**11**
1:30PM	3	**3**	10	**10**	**13**
1:45PM	8	**8**	6	**6**	**14**
Total	21	**21**	29	**29**	**50**
% Approach	100%	**-**	100%	**-**	-
% Total	42.0%	**42.0%**	58.0%	**58.0%**	-
PHF	0.656	**0.656**	0.778	**0.778**	0.875
Lights	21	**21**	28	**28**	49
% Lights	100%	**100%**	96.6%	**96.6%**	98.0%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	0	**0**	0	**0**	0
% Buses and Single-Unit Trucks	0%	**0%**	0%	**0%**	0%
Bicycles on Road	0	**0**	1	**1**	1
% Bicycles on Road	0%	**0%**	3.4%	**3.4%**	2.0%

*T: Thru

Brighton Approach Bridge Weekend Vehicular - ATR

Sat May 15, 2021
PM Peak (WKND) (May 15 2021 1PM - 2 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)
All Channels
ID: 842220, Location: 39.123219, -84.532757

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Central Parkway and Ravine Street - TMC

Tue Aug 17, 2021
Full Length (7:30 AM-9:30 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865636, Location: 39.120634, -84.526256

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US

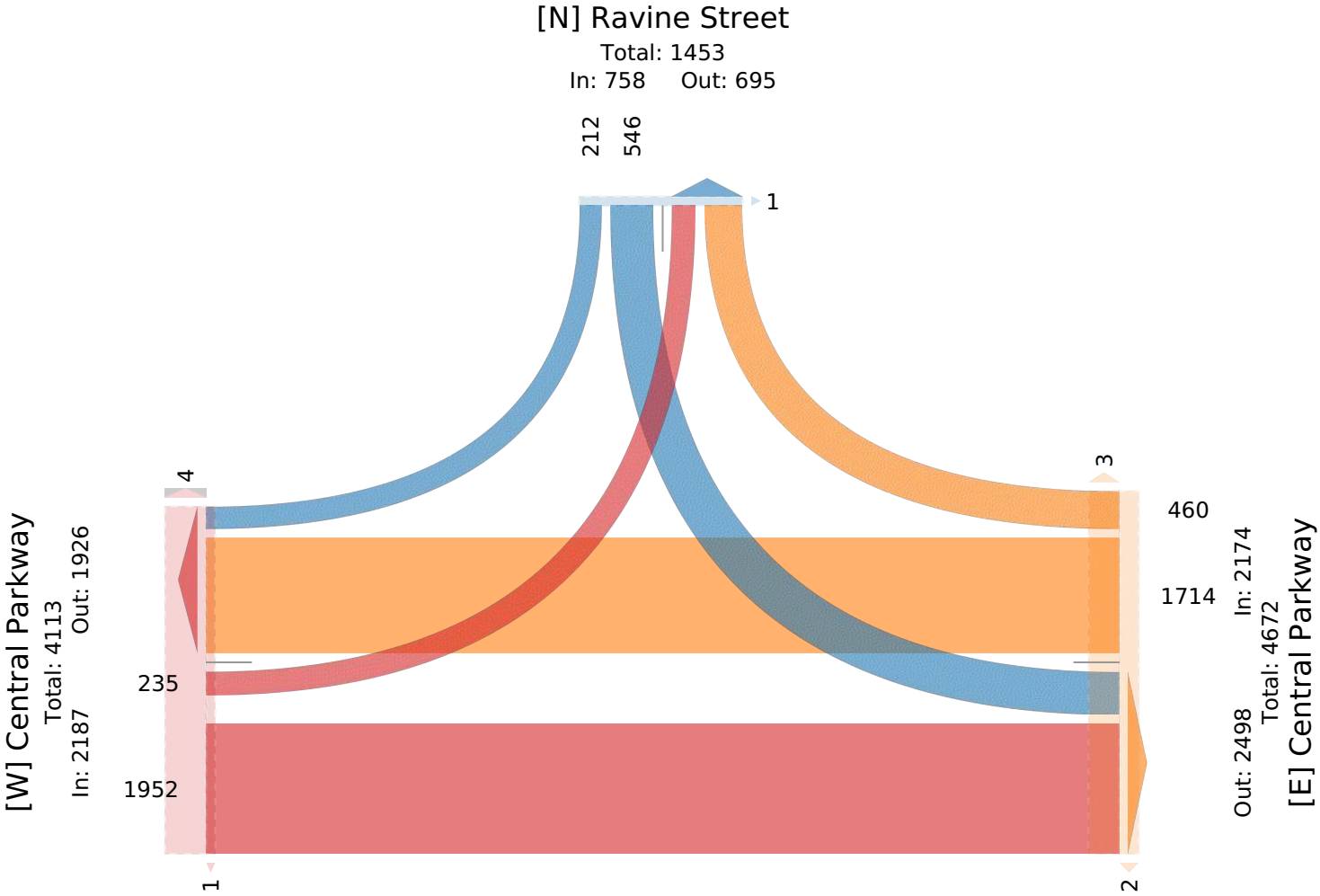
Leg Direction	Central Parkway Eastbound					Central Parkway Westbound					Ravine Street Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2021-08-17 7:30AM	9	121	0	**130**	1	41	15	0	**56**	0	37	8	0	**45**	0	**231**
7:45AM	18	141	0	**159**	0	41	10	0	**51**	0	33	10	0	**43**	0	**253**
Hourly Total	27	262	0	**289**	1	82	25	0	**107**	0	70	18	0	**88**	0	**484**
8:00AM	13	138	0	**151**	0	43	20	0	**63**	0	31	8	0	**39**	0	**253**
8:15AM	11	134	0	**145**	0	40	20	0	**60**	0	29	10	0	**39**	0	**244**
8:30AM	7	123	0	**130**	0	42	28	0	**70**	0	37	10	0	**47**	0	**247**
8:45AM	11	150	0	**161**	1	50	22	0	**72**	0	35	6	0	**41**	0	**274**
Hourly Total	42	545	0	**587**	1	175	90	0	**265**	0	132	34	0	**166**	0	**1018**
9:00AM	12	117	0	**129**	0	67	17	0	**84**	1	18	10	0	**28**	0	**241**
9:15AM	8	79	0	**87**	0	44	19	0	**63**	0	13	6	0	**19**	0	**169**
Hourly Total	20	196	0	**216**	0	111	36	0	**147**	1	31	16	0	**47**	0	**410**
4:00PM	15	102	0	**117**	2	173	40	0	**213**	0	37	28	0	**65**	0	**395**
4:15PM	18	140	0	**158**	0	202	33	0	**235**	0	41	15	0	**56**	0	**449**
4:30PM	20	122	0	**142**	1	159	34	0	**193**	1	47	14	0	**61**	1	**396**
4:45PM	14	113	0	**127**	0	165	32	0	**197**	0	36	14	0	**50**	0	**374**
Hourly Total	67	477	0	**544**	3	699	139	0	**838**	1	161	71	0	**232**	1	**1614**
5:00PM	17	110	0	**127**	0	195	43	0	**238**	2	40	15	0	**55**	0	**420**
5:15PM	13	121	0	**134**	0	182	44	0	**226**	1	39	20	0	**59**	0	**419**
5:30PM	31	129	0	**160**	0	162	41	0	**203**	0	39	20	0	**59**	0	**422**
5:45PM	18	112	0	**130**	0	108	42	0	**150**	0	34	18	0	**52**	0	**332**
Hourly Total	79	472	0	**551**	0	647	170	0	**817**	3	152	73	0	**225**	0	**1593**
Total	235	1952	0	**2187**	5	1714	460	0	**2174**	5	546	212	0	**758**	1	**5119**
% Approach	10.7%	89.3%	0%	**-**	-	78.8%	21.2%	0%	**-**	-	72.0%	28.0%	0%	**-**	-	**-**
% Total	4.6%	38.1%	0%	**42.7%**	-	33.5%	9.0%	0%	**42.5%**	-	10.7%	4.1%	0%	**14.8%**	-	**-**
Lights	230	1887	0	**2117**	-	1638	450	0	**2088**	-	535	210	0	**745**	-	4950
% Lights	97.9%	96.7%	0%	**96.8%**	-	95.6%	97.8%	0%	**96.0%**	-	98.0%	99.1%	0%	**98.3%**	-	96.7%
Articulated Trucks	0	3	0	**3**	-	5	0	0	**5**	-	1	0	0	**1**	-	9
% Articulated Trucks	0%	0.2%	0%	**0.1%**	-	0.3%	0%	0%	**0.2%**	-	0.2%	0%	0%	**0.1%**	-	0.2%
Buses and Single-Unit Trucks	5	54	0	**59**	-	65	9	0	**74**	-	10	2	0	**12**	-	145
% Buses and Single-Unit Trucks	2.1%	2.8%	0%	**2.7%**	-	3.8%	2.0%	0%	**3.4%**	-	1.8%	0.9%	0%	**1.6%**	-	2.8%
Bicycles on Road	0	8	0	**8**	-	6	1	0	**7**	-	0	0	0	**0**	-	15
% Bicycles on Road	0%	0.4%	0%	**0.4%**	-	0.4%	0.2%	0%	**0.3%**	-	0%	0%	0%	**0%**	-	0.3%
Pedestrians	-	-	-	-	4	-	-	-	-	4	-	-	-	-	0	
% Pedestrians	-	-	-	-	80.0%	-	-	-	-	80.0%	-	-	-	-	0%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	20.0%	-	-	-	-	20.0%	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Central Parkway and Ravine Street - TMC

Tue Aug 17, 2021
Full Length (7:30 AM-9:30 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865636, Location: 39.120634, -84.526256

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US



Central Parkway and Ravine Street - TMC

Tue Aug 17, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865636, Location: 39.120634, -84.526256

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US

Leg Direction	Central Parkway Eastbound					Central Parkway Westbound					Ravine Street Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2021-08-17 8:00AM	13	138	0	**151**	0	43	20	0	**63**	0	31	8	0	**39**	0	**253**
8:15AM	11	134	0	**145**	0	40	20	0	**60**	0	29	10	0	**39**	0	**244**
8:30AM	7	123	0	**130**	0	42	28	0	**70**	0	37	10	0	**47**	0	**247**
8:45AM	11	150	0	**161**	1	50	22	0	**72**	0	35	6	0	**41**	0	**274**
Total	42	545	0	**587**	1	175	90	0	**265**	0	132	34	0	**166**	0	**1018**
% Approach	7.2%	92.8%	0%	**-**	-	66.0%	34.0%	0%	**-**	-	79.5%	20.5%	0%	**-**	-	**-**
% Total	4.1%	53.5%	0%	**57.7%**	-	17.2%	8.8%	0%	**26.0%**	-	13.0%	3.3%	0%	**16.3%**	-	**-**
PHF	0.808	0.918	-	**0.921**	-	0.870	0.804	-	**0.917**	-	0.892	0.850	-	**0.883**	-	0.934
Lights	41	523	0	**564**	-	158	86	0	**244**	-	130	34	0	**164**	-	972
% Lights	97.6%	96.0%	0%	**96.1%**	-	90.3%	95.6%	0%	**92.1%**	-	98.5%	100%	0%	**98.8%**	-	95.5%
Articulated Trucks	0	0	0	**0**	-	1	0	0	**1**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0.6%	0%	0%	**0.4%**	-	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	1	17	0	**18**	-	15	4	0	**19**	-	2	0	0	**2**	-	39
% Buses and Single-Unit Trucks	2.4%	3.1%	0%	**3.1%**	-	8.6%	4.4%	0%	**7.2%**	-	1.5%	0%	0%	**1.2%**	-	3.8%
Bicycles on Road	0	5	0	**5**	-	1	0	0	**1**	-	0	0	0	**0**	-	6
% Bicycles on Road	0%	0.9%	0%	**0.9%**	-	0.6%	0%	0%	**0.4%**	-	0%	0%	0%	**0%**	-	0.6%
Pedestrians	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Central Parkway and Ravine Street - TMC

Tue Aug 17, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865636, Location: 39.120634, -84.526256

Provided by: Carpenter Marty (CM)
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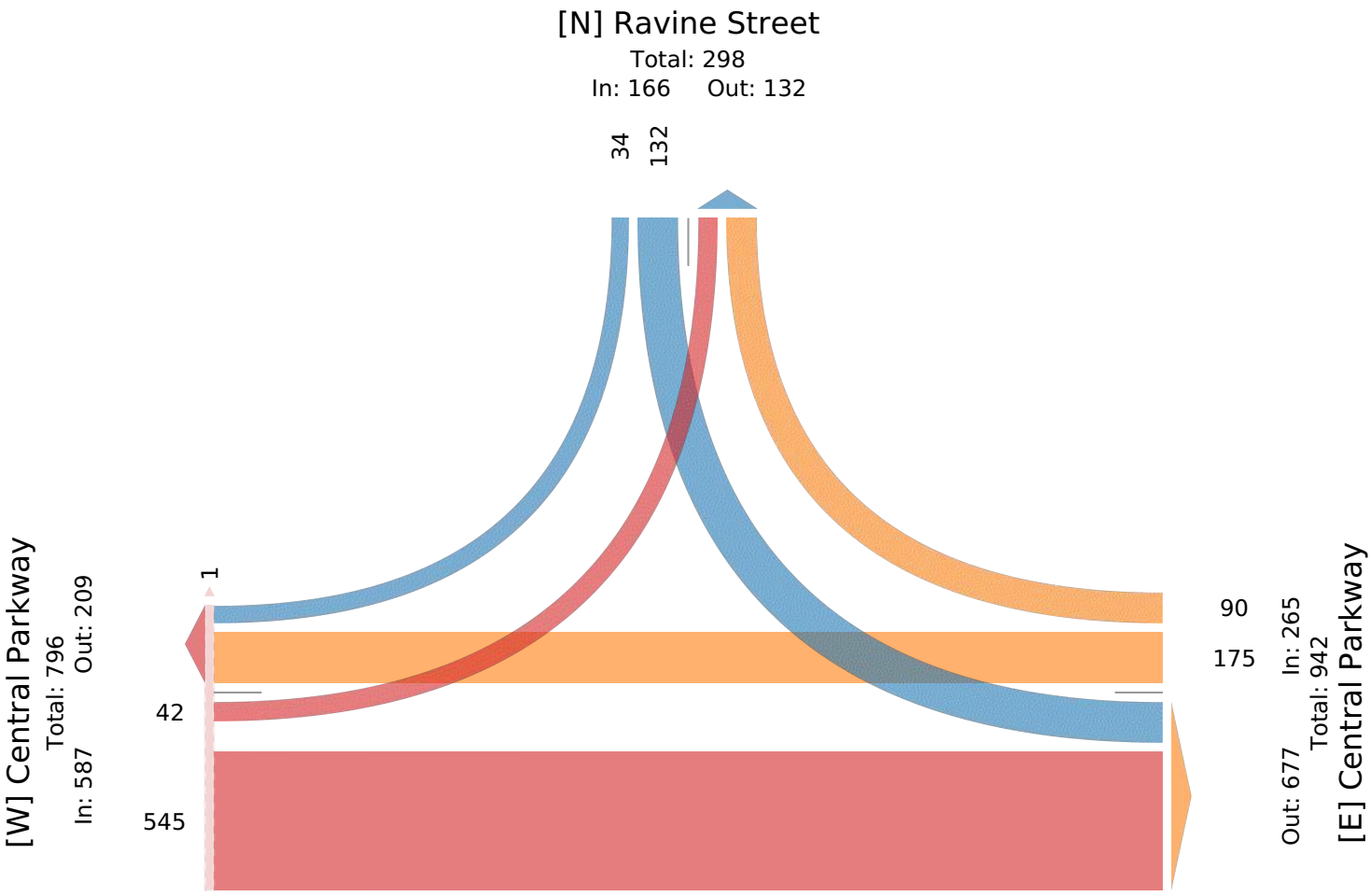


Central Parkway and Ravine Street - TMC

Tue Aug 17, 2021
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865636, Location: 39.120634, -84.526256

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US

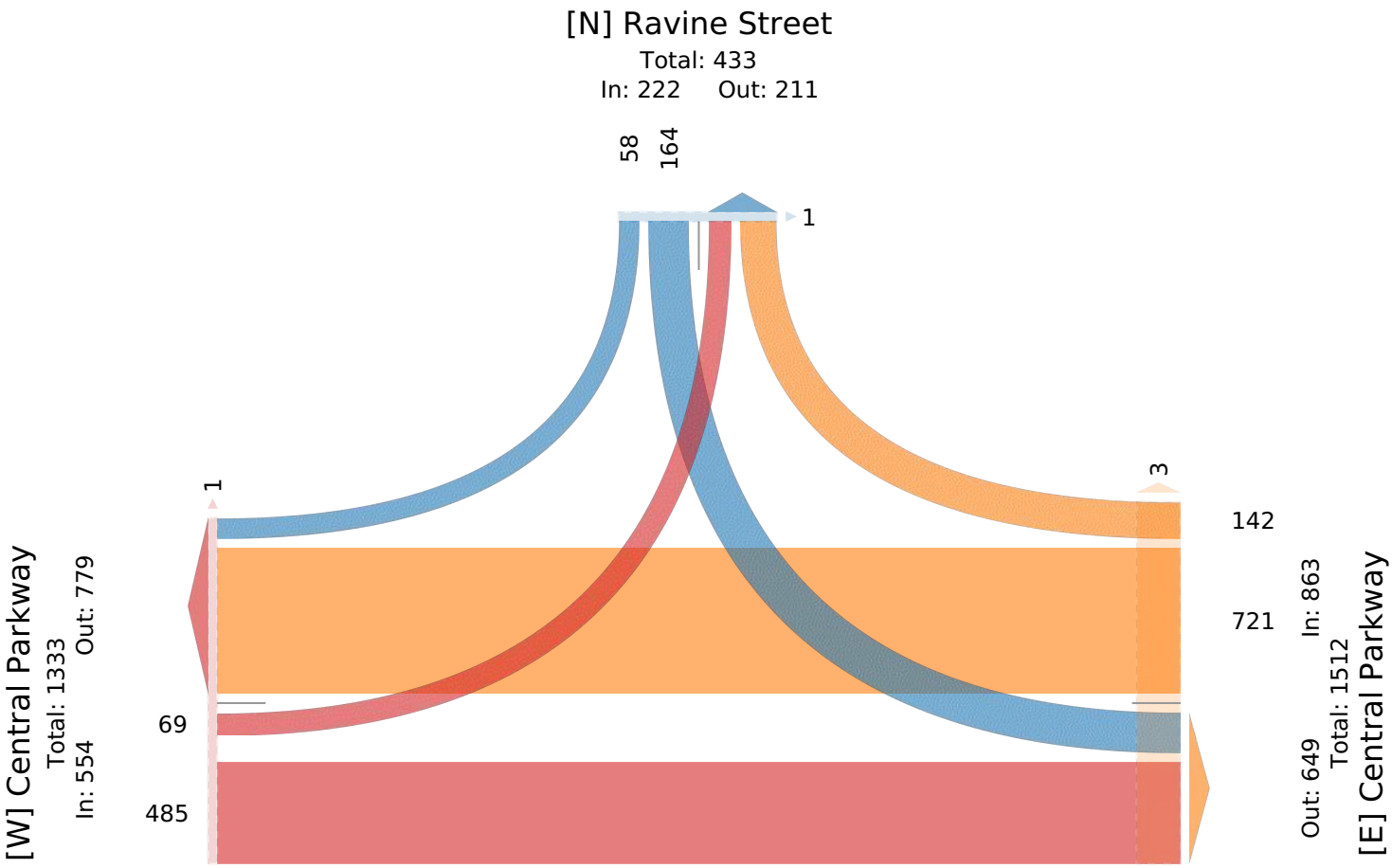
Leg Direction	Central Parkway Eastbound					Central Parkway Westbound					Ravine Street Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2021-08-17 4:15PM	18	140	0	**158**	0	202	33	0	**235**	0	41	15	0	**56**	0	**449**
4:30PM	20	122	0	**142**	1	159	34	0	**193**	1	47	14	0	**61**	1	**396**
4:45PM	14	113	0	**127**	0	165	32	0	**197**	0	36	14	0	**50**	0	**374**
5:00PM	17	110	0	**127**	0	195	43	0	**238**	2	40	15	0	**55**	0	**420**
Total	69	485	0	**554**	1	721	142	0	**863**	3	164	58	0	**222**	1	**1639**
% Approach	12.5%	87.5%	0%	**-**	-	83.5%	16.5%	0%	**-**	-	73.9%	26.1%	0%	**-**	-	**-**
% Total	4.2%	29.6%	0%	**33.8%**	-	44.0%	8.7%	0%	**52.7%**	-	10.0%	3.5%	0%	**13.5%**	-	**-**
PHF	0.863	0.864	-	**0.875**	-	0.890	0.820	-	**0.911**	-	0.872	0.967	-	**0.910**	-	0.912
Lights	68	465	0	**533**	-	703	141	0	**844**	-	162	58	0	**220**	-	1597
% Lights	98.6%	95.9%	0%	**96.2%**	-	97.5%	99.3%	0%	**97.8%**	-	98.8%	100%	0%	**99.1%**	-	97.4%
Articulated Trucks	0	1	0	**1**	-	0	0	0	**0**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0.2%	0%	**0.2%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	1	18	0	**19**	-	16	0	0	**16**	-	2	0	0	**2**	-	37
% Buses and Single-Unit Trucks	1.4%	3.7%	0%	**3.4%**	-	2.2%	0%	0%	**1.9%**	-	1.2%	0%	0%	**0.9%**	-	2.3%
Bicycles on Road	0	1	0	**1**	-	2	1	0	**3**	-	0	0	0	**0**	-	4
% Bicycles on Road	0%	0.2%	0%	**0.2%**	-	0.3%	0.7%	0%	**0.3%**	-	0%	0%	0%	**0%**	-	0.2%
Pedestrians	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	
% Pedestrians	-	-	-	-	0%	-	-	-	-	66.7%	-	-	-	-	0%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	100%	-	-	-	-	33.3%	-	-	-	-	100%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Central Parkway and Ravine Street - TMC

Tue Aug 17, 2021
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865636, Location: 39.120634, -84.526256

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US



W McMicken Avenue and Ravine Street - TMC

Tue Aug 17, 2021
Full Length (7:30 AM-9:30 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865637, Location: 39.121408, -84.526186

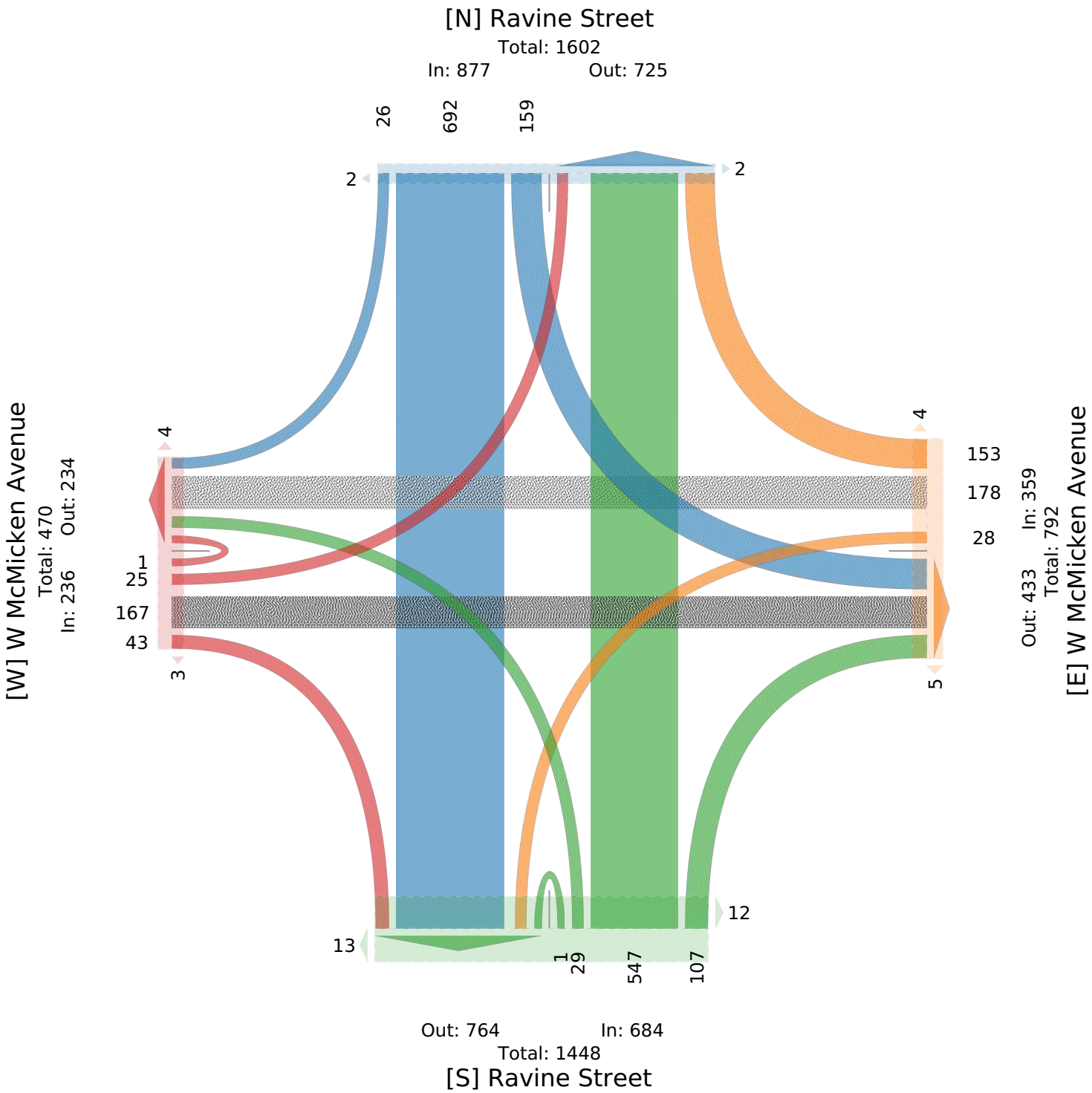
Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US

Leg	W McMicken Avenue						W McMicken Avenue						Ravine Street						Ravine Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-08-17 7:30AM	0	12	0	0	**12**	1	0	6	12	0	**18**	0	1	18	4	0	**23**	0	3	43	2	0	**48**	0	**101**
7:45AM	1	9	5	0	**15**	0	0	5	1	0	**6**	0	0	10	17	0	**27**	0	8	41	0	0	**49**	0	**97**
Hourly Total	1	21	5	0	**27**	1	0	11	13	0	**24**	0	1	28	21	0	**50**	0	11	84	2	0	**97**	0	**198**
8:00AM	0	7	2	0	**9**	1	1	9	8	0	**18**	0	2	27	3	0	**32**	1	6	34	0	0	**40**	0	**99**
8:15AM	1	7	1	0	**9**	0	0	4	4	0	**8**	0	2	23	7	0	**32**	1	7	40	3	0	**50**	0	**99**
8:30AM	3	8	1	0	**12**	1	2	13	6	0	**21**	2	2	26	6	0	**34**	3	5	45	1	0	**51**	0	**118**
8:45AM	1	14	3	0	**18**	1	0	9	3	0	**12**	2	3	22	7	0	**32**	0	6	36	2	0	**44**	0	**106**
Hourly Total	5	36	7	0	**48**	3	3	35	21	0	**59**	4	9	98	23	0	**130**	5	24	155	6	0	**185**	0	**422**
9:00AM	1	10	2	0	**13**	0	0	8	5	0	**13**	1	0	22	8	0	**30**	3	5	27	0	0	**32**	0	**88**
9:15AM	3	8	2	0	**13**	0	0	2	2	0	**4**	0	2	21	3	0	**26**	1	3	17	0	0	**20**	0	**63**
Hourly Total	4	18	4	0	**26**	0	0	10	7	0	**17**	1	2	43	11	0	**56**	4	8	44	0	0	**52**	0	**151**
4:00PM	1	14	4	0	**19**	2	5	19	18	0	**42**	0	3	47	7	0	**57**	1	9	63	3	0	**75**	0	**193**
4:15PM	1	8	4	0	**13**	0	2	17	16	0	**35**	2	3	36	7	1	**47**	0	20	43	3	0	**66**	0	**161**
4:30PM	2	10	5	0	**17**	0	7	15	12	0	**34**	0	1	47	6	0	**54**	3	17	53	3	0	**73**	1	**178**
4:45PM	0	22	2	0	**24**	0	1	10	15	0	**26**	0	2	36	3	0	**41**	2	6	43	0	0	**49**	0	**140**
Hourly Total	4	54	15	0	**73**	2	15	61	61	0	**137**	2	9	166	23	1	**199**	6	52	202	9	0	**263**	1	**672**
5:00PM	3	8	3	1	**15**	0	5	17	15	0	**37**	0	3	51	8	0	**62**	1	11	52	1	0	**64**	1	**178**
5:15PM	5	7	4	0	**16**	0	3	20	9	0	**32**	1	0	53	7	0	**60**	3	23	50	2	0	**75**	0	**183**
5:30PM	1	14	4	0	**19**	0	1	11	16	0	**28**	0	2	63	6	0	**71**	4	13	55	2	0	**70**	0	**188**
5:45PM	2	9	1	0	**12**	1	1	13	11	0	**25**	1	3	45	8	0	**56**	2	17	50	4	0	**71**	2	**164**
Hourly Total	11	38	12	1	**62**	1	10	61	51	0	**122**	2	8	212	29	0	**249**	10	64	207	9	0	**280**	3	**713**
Total	25	167	43	1	**236**	7	28	178	153	0	**359**	9	29	547	107	1	**684**	25	159	692	26	0	**877**	4	**2156**
% Approach	10.6%	70.8%	18.2%	0.4%	**-**	-	7.8%	49.6%	42.6%	0%	**-**	-	4.2%	80.0%	15.6%	0.1%	**-**	-	18.1%	78.9%	3.0%	0%	**-**	-	**-**
% Total	1.2%	7.7%	2.0%	0%	**10.9%**	-	1.3%	8.3%	7.1%	0%	**16.7%**	-	1.3%	25.4%	5.0%	0%	**31.7%**	-	7.4%	32.1%	1.2%	0%	**40.7%**	-	**-**
Lights	25	144	42	1	**212**	-	27	157	150	0	**334**	-	29	535	105	1	**670**	-	156	679	26	0	**861**	-	2077
% Lights	100%	86.2%	97.7%	100%	**89.8%**	-	96.4%	88.2%	98.0%	0%	**93.0%**	-	100%	97.8%	98.1%	100%	**98.0%**	-	98.1%	98.1%	100%	0%	**98.2%**	-	96.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	2	0	0	**2**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0.3%	0%	0%	**0.2%**	-	0.1%
Buses and Single-Unit Trucks	0	21	0	0	**21**	-	1	21	1	0	**23**	-	0	11	2	0	**13**	-	3	11	0	0	**14**	-	71
% Buses and Single-Unit Trucks	0%	12.6%	0%	0%	**8.9%**	-	3.6%	11.8%	0.7%	0%	**6.4%**	-	0%	2.0%	1.9%	0%	**1.9%**	-	1.9%	1.6%	0%	0%	**1.6%**	-	3.3%
Bicycles on Road	0	2	1	0	**3**	-	0	0	2	0	**2**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	6
% Bicycles on Road	0%	1.2%	2.3%	0%	**1.3%**	-	0%	0%	1.3%	0%	**0.6%**	-	0%	0.2%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	7	-	-	-	-	-	24	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	77.8%	-	-	-	-	-	96.0%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	22.2%	-	-	-	-	-	4.0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

W McMicken Avenue and Ravine Street - TMC
Tue Aug 17, 2021
Full Length (7:30 AM-9:30 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865637, Location: 39.121408, -84.526186

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US



W McMicken Avenue and Ravine Street - TMC

Tue Aug 17, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865637, Location: 39.121408, -84.526186

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US

Leg	W McMicken Avenue						W McMicken Avenue						Ravine Street						Ravine Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-08-17 8:00AM	0	7	2	0	**9**	1	1	9	8	0	**18**	0	2	27	3	0	**32**	1	6	34	0	0	**40**	0	**99**
8:15AM	1	7	1	0	**9**	0	0	4	4	0	**8**	0	2	23	7	0	**32**	1	7	40	3	0	**50**	0	**99**
8:30AM	3	8	1	0	**12**	1	2	13	6	0	**21**	2	2	26	6	0	**34**	3	5	45	1	0	**51**	0	**118**
8:45AM	1	14	3	0	**18**	1	0	9	3	0	**12**	2	3	22	7	0	**32**	0	6	36	2	0	**44**	0	**106**
Total	5	36	7	0	**48**	3	3	35	21	0	**59**	4	9	98	23	0	**130**	5	24	155	6	0	**185**	0	**422**
% Approach	10.4%	75.0%	14.6%	0%	**-**	-	5.1%	59.3%	35.6%	0%	**-**	-	6.9%	75.4%	17.7%	0%	**-**	-	13.0%	83.8%	3.2%	0%	**-**	-	-
% Total	1.2%	8.5%	1.7%	0%	**11.4%**	-	0.7%	8.3%	5.0%	0%	**14.0%**	-	2.1%	23.2%	5.5%	0%	**30.8%**	-	5.7%	36.7%	1.4%	0%	**43.8%**	-	-
PHF	0.417	0.643	0.583	-	**0.667**	-	0.375	0.673	0.656	-	**0.702**	-	0.750	0.933	0.821	-	**0.949**	-	0.857	0.861	0.500	-	**0.907**	-	0.892
Lights	5	31	7	0	**43**	-	3	28	21	0	**52**	-	9	94	22	0	**125**	-	23	153	6	0	**182**	-	402
% Lights	100%	86.1%	100%	0%	**89.6%**	-	100%	80.0%	100%	0%	**88.1%**	-	100%	95.9%	95.7%	0%	**96.2%**	-	95.8%	98.7%	100%	0%	**98.4%**	-	95.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	5	0	0	**5**	-	0	7	0	0	**7**	-	0	3	1	0	**4**	-	1	2	0	0	**3**	-	19
% Buses and Single-Unit Trucks	0%	13.9%	0%	0%	**10.4%**	-	0%	20.0%	0%	0%	**11.9%**	-	0%	3.1%	4.3%	0%	**3.1%**	-	4.2%	1.3%	0%	0%	**1.6%**	-	4.5%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	1.0%	0%	0%	**0.8%**	-	0%	0%	0%	0%	**0%**	-	0.2%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	75.0%	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	25.0%	-	-	-	-	-	0%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

W McMicken Avenue and Ravine Street - TMC
Tue Aug 17, 2021
AM Peak (8 AM - 9 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865637, Location: 39.121408, -84.526186

Provided by: Carpenter Marty (CM) Transportation Inc.
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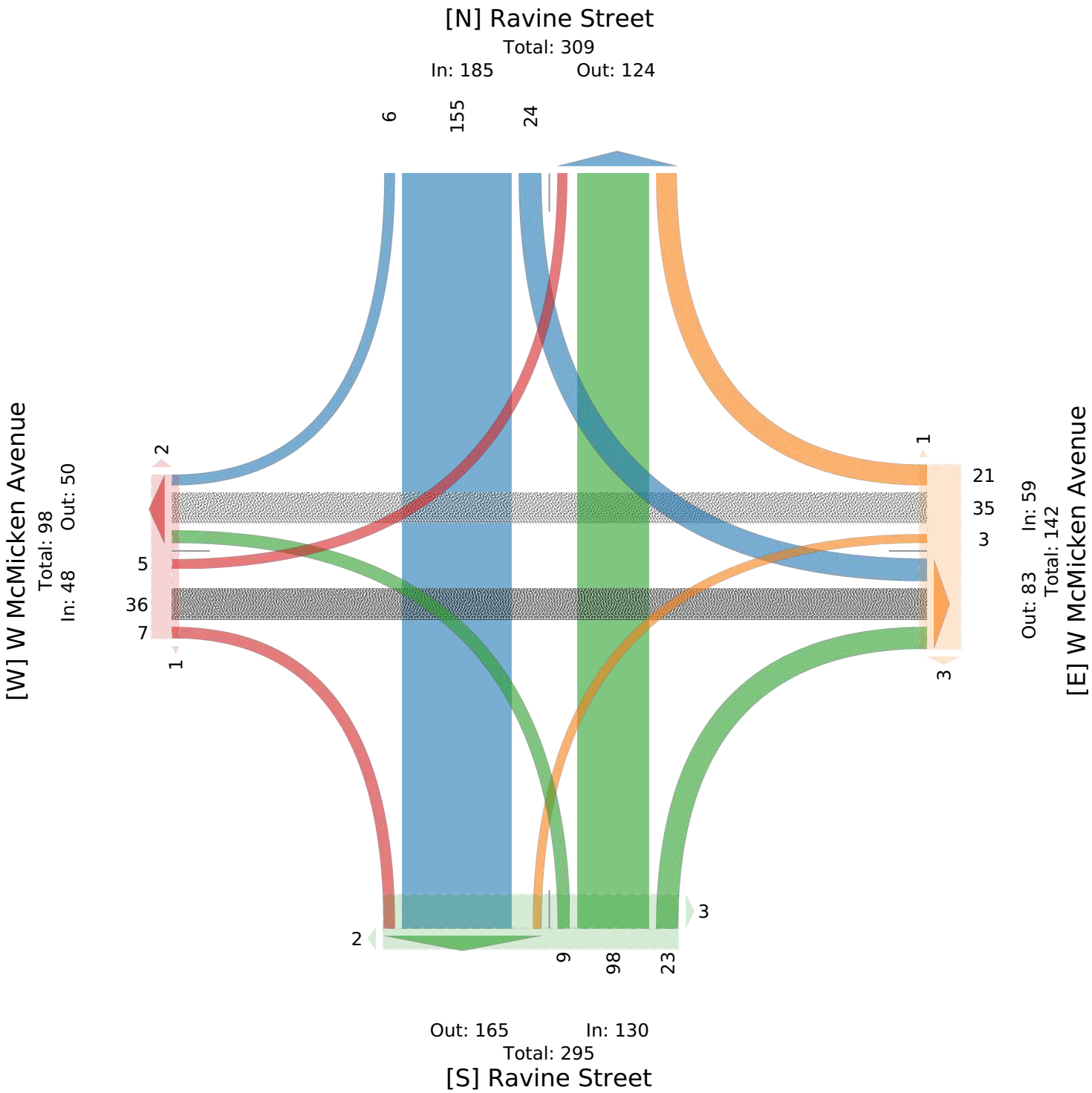

W McMicken Avenue and Ravine Street - TMC

Tue Aug 17, 2021
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865637, Location: 39.121408, -84.526186

Provided by: Carpenter Marty (CM)
Transportation Inc.
6612 Singletree Drive,
Columbus, OH, 43229, US

Leg	W McMicken Avenue						W McMicken Avenue						Ravine Street						Ravine Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2021-08-17 5:00PM	3	8	3	1	**15**	0	5	17	15	0	**37**	0	3	51	8	0	**62**	1	11	52	1	0	**64**	1	**178**
5:15PM	5	7	4	0	**16**	0	3	20	9	0	**32**	1	0	53	7	0	**60**	3	23	50	2	0	**75**	0	**183**
5:30PM	1	14	4	0	**19**	0	1	11	16	0	**28**	0	2	63	6	0	**71**	4	13	55	2	0	**70**	0	**188**
5:45PM	2	9	1	0	**12**	1	1	13	11	0	**25**	1	3	45	8	0	**56**	2	17	50	4	0	**71**	2	**164**
Total	11	38	12	1	**62**	1	10	61	51	0	**122**	2	8	212	29	0	**249**	10	64	207	9	0	**280**	3	**713**
% Approach	17.7%	61.3%	19.4%	1.6%	**-**	-	8.2%	50.0%	41.8%	0%	**-**	-	3.2%	85.1%	11.6%	0%	**-**	-	22.9%	73.9%	3.2%	0%	**-**	-	-
% Total	1.5%	5.3%	1.7%	0.1%	**8.7%**	-	1.4%	8.6%	7.2%	0%	**17.1%**	-	1.1%	29.7%	4.1%	0%	**34.9%**	-	9.0%	29.0%	1.3%	0%	**39.3%**	-	-
PHF	0.550	0.692	0.750	0.250	**0.833**	-	0.500	0.763	0.797	-	**0.824**	-	0.667	0.841	0.906	-	**0.877**	-	0.696	0.941	0.563	-	**0.933**	-	0.951
Lights	11	31	12	1	**55**	-	10	56	51	0	**117**	-	8	212	28	0	**248**	-	64	204	9	0	**277**	-	697
% Lights	100%	81.6%	100%	100%	**88.7%**	-	100%	91.8%	100%	0%	**95.9%**	-	100%	100%	96.6%	0%	**99.6%**	-	100%	98.6%	100%	0%	**98.9%**	-	97.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	5	0	0	**5**	-	0	5	0	0	**5**	-	0	0	1	0	**1**	-	0	3	0	0	**3**	-	14
% Buses and Single-Unit Trucks	0%	13.2%	0%	0%	**8.1%**	-	0%	8.2%	0%	0%	**4.1%**	-	0%	0%	3.4%	0%	**0.4%**	-	0%	1.4%	0%	0%	**1.1%**	-	2.0%
Bicycles on Road	0	2	0	0	**2**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	2
% Bicycles on Road	0%	5.3%	0%	0%	**3.2%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	10	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

W McMicken Avenue and Ravine Street - TMC
Tue Aug 17, 2021
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 865637, Location: 39.121408, -84.526186

Provided by: Carpenter Marty (CM)
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6612 Singletree Drive,
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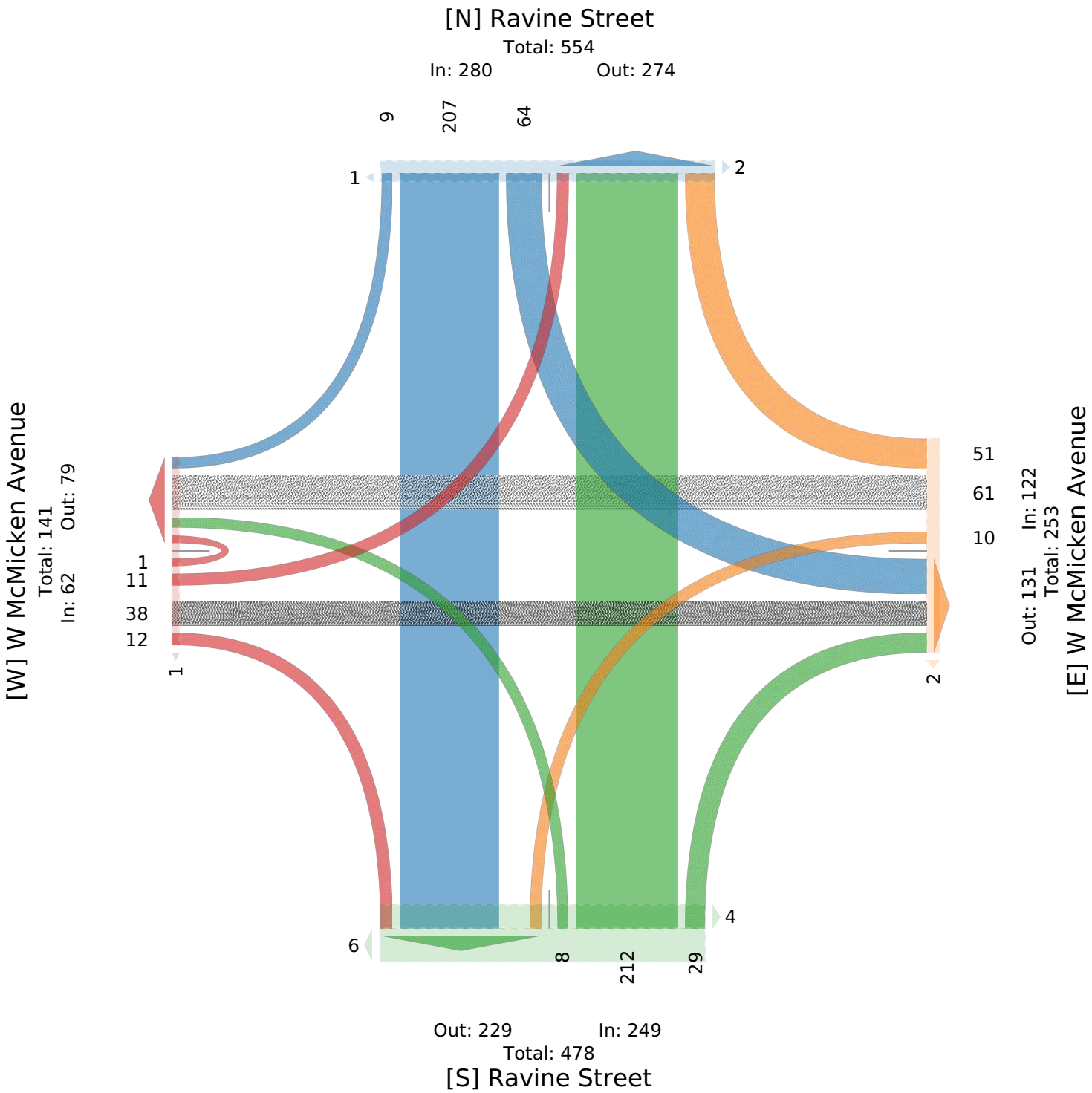


Appendix B

Volume Calculations

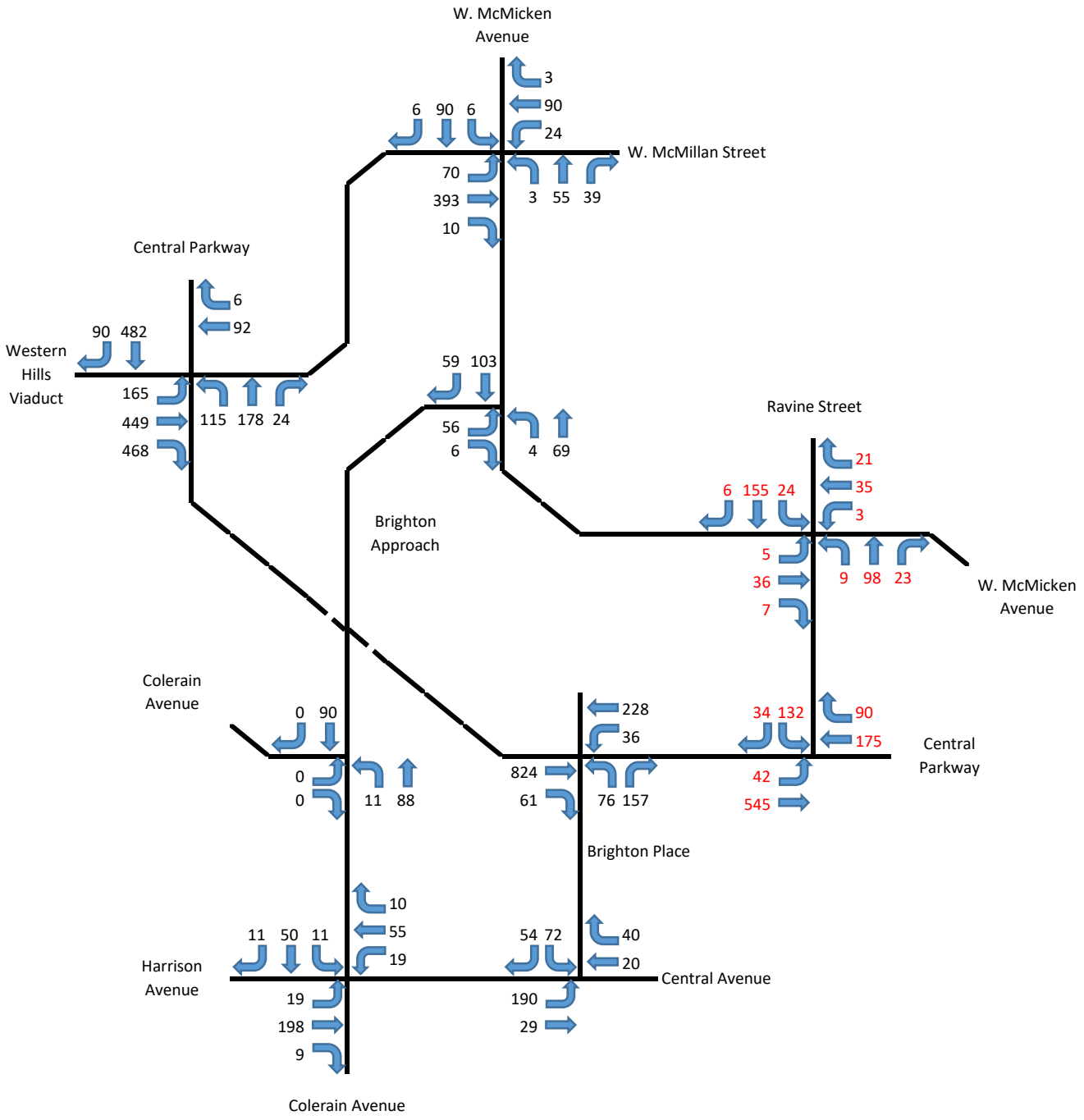
CARPENTER MARTY transportation

Appendix B

Brighton Approach Study
Traffic Volume Calculations

	Year	Period	Scenario	Plate
CARPENTER MARTY transportation		AM	Weekday StreetLight Data (8:00 9:00, Typical Weekday)	

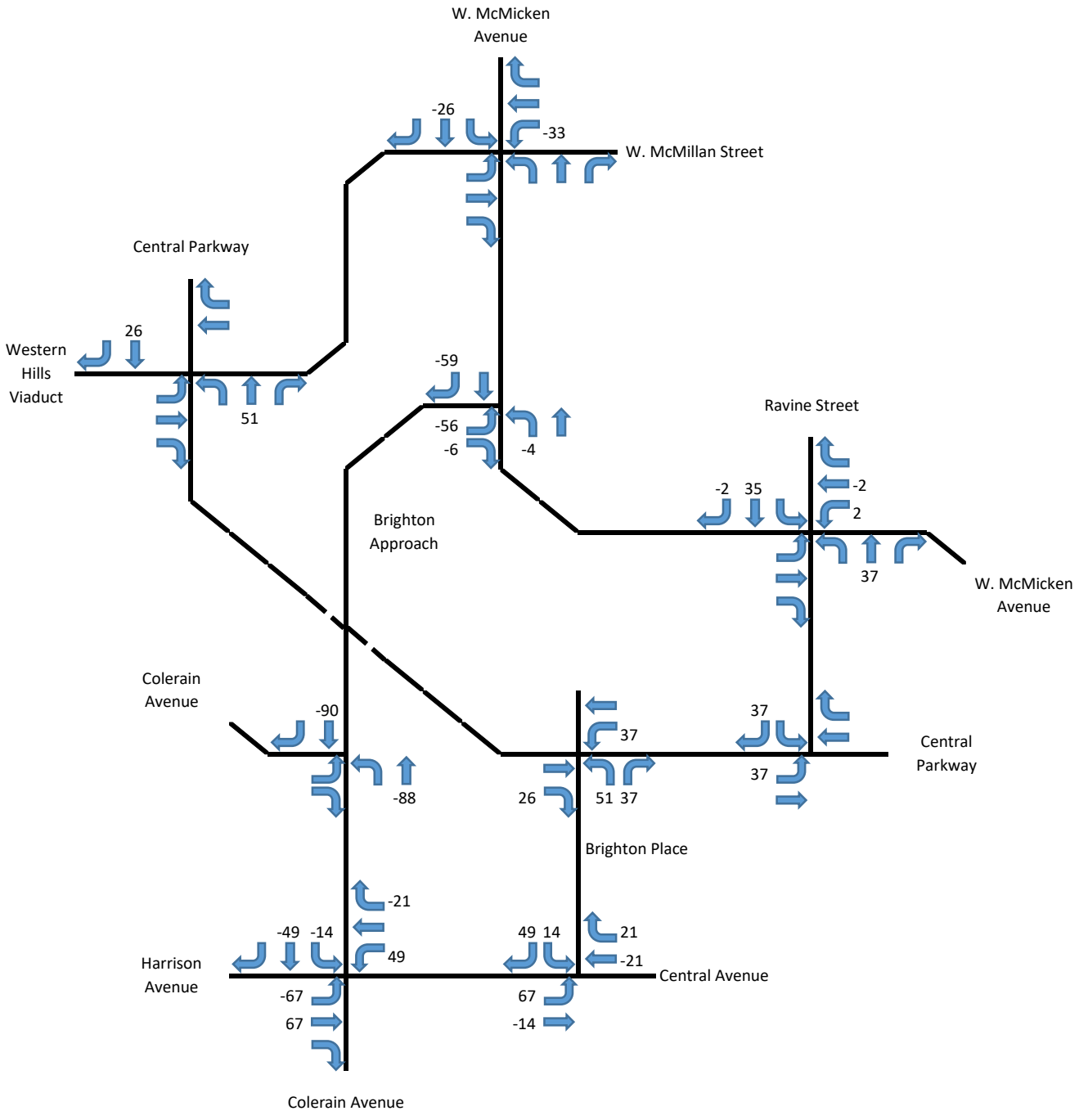
All turning movement count data was taken from StreetLight with the exception of the intersections of Ravine Street with W. McMicken Avenue and Central Parkway. Peak hours were determined based on StreetLight data. Collected intersection counts utilized StreetLight peak hours for analysis purposes.



Brighton Approach Study
Traffic Volume Calculations

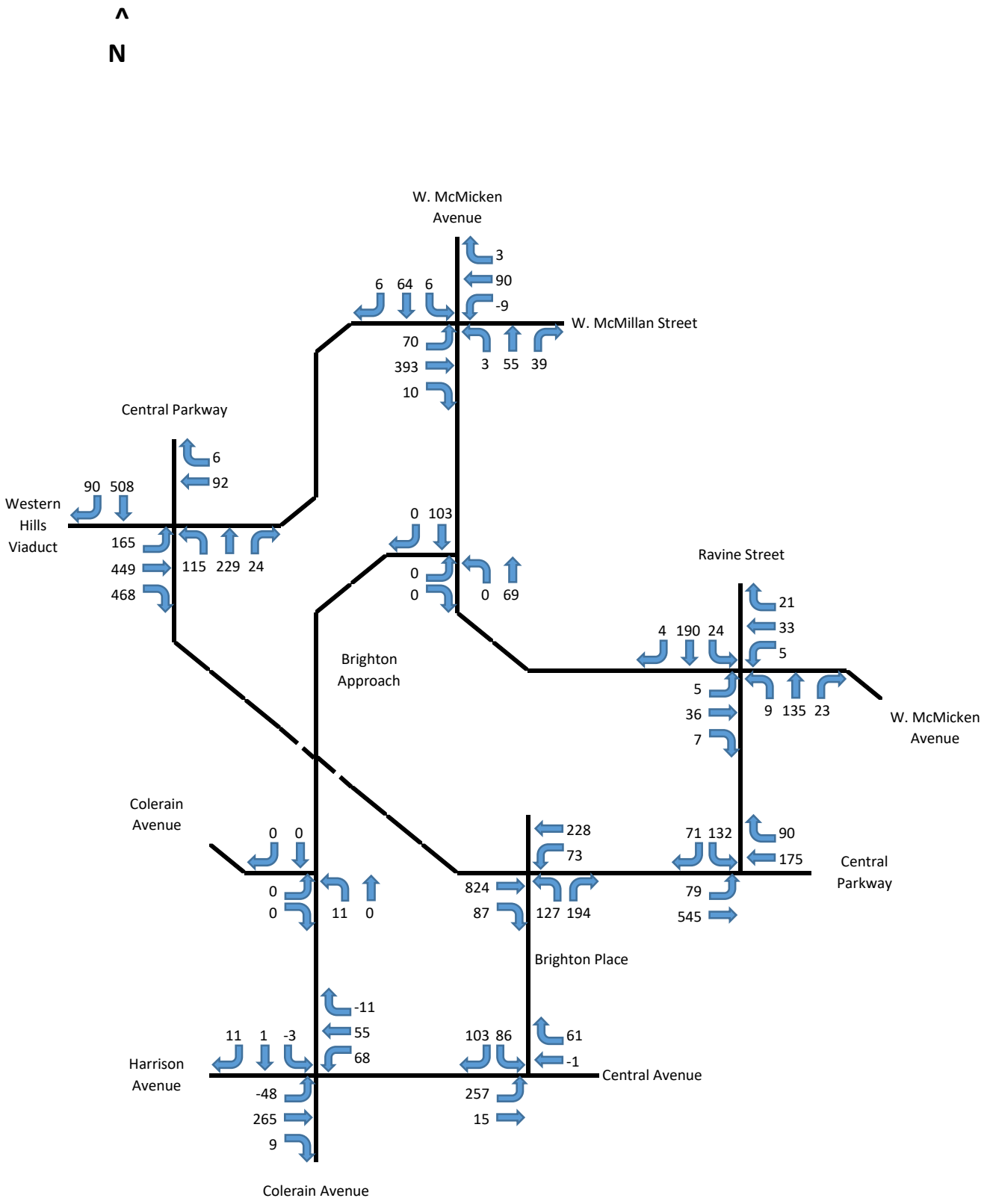
Year	Period	Scenario	Plate
	AM	Adjustment to Weekday StreetLight Data Using Top Routes (8:00-9:00, Typical Weekday)	

StreetLight Top Routes Data			
From North		To North	
From Central Parkway	44.7%	To Central Parkway	58.5%
From W. McMillan Avenue	55.3%	To W. McMillan Avenue	41.5%
From South		To South	
From Central Avenue	23.8%	To Central Avenue	22.0%
From Harrison Avenue (South)	76.2%	To Colerain Avenue (South)	78.0%



Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		AM	Adjusted Data	

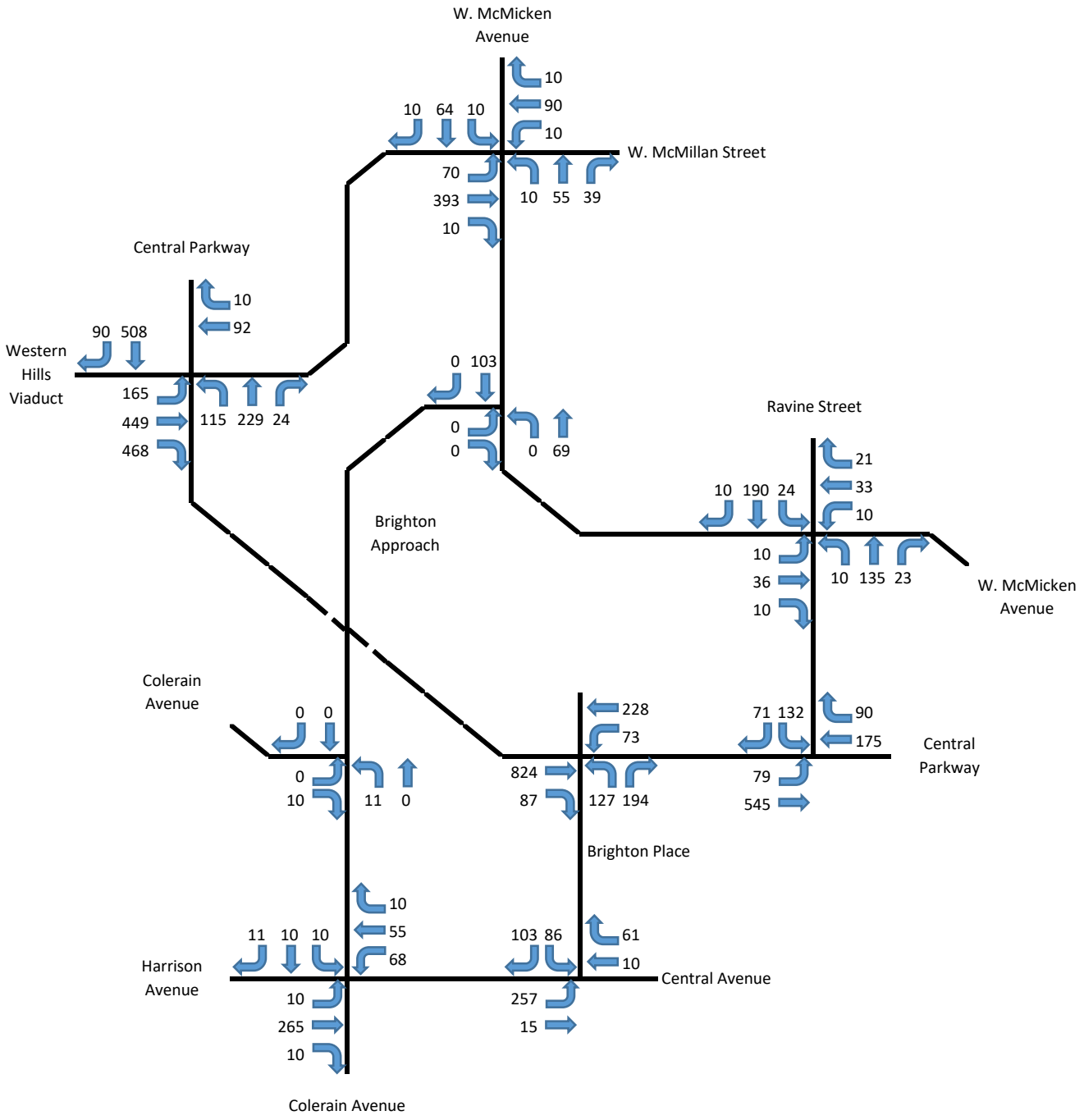


Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		AM	Adjusted Data - Rounded	

^
N

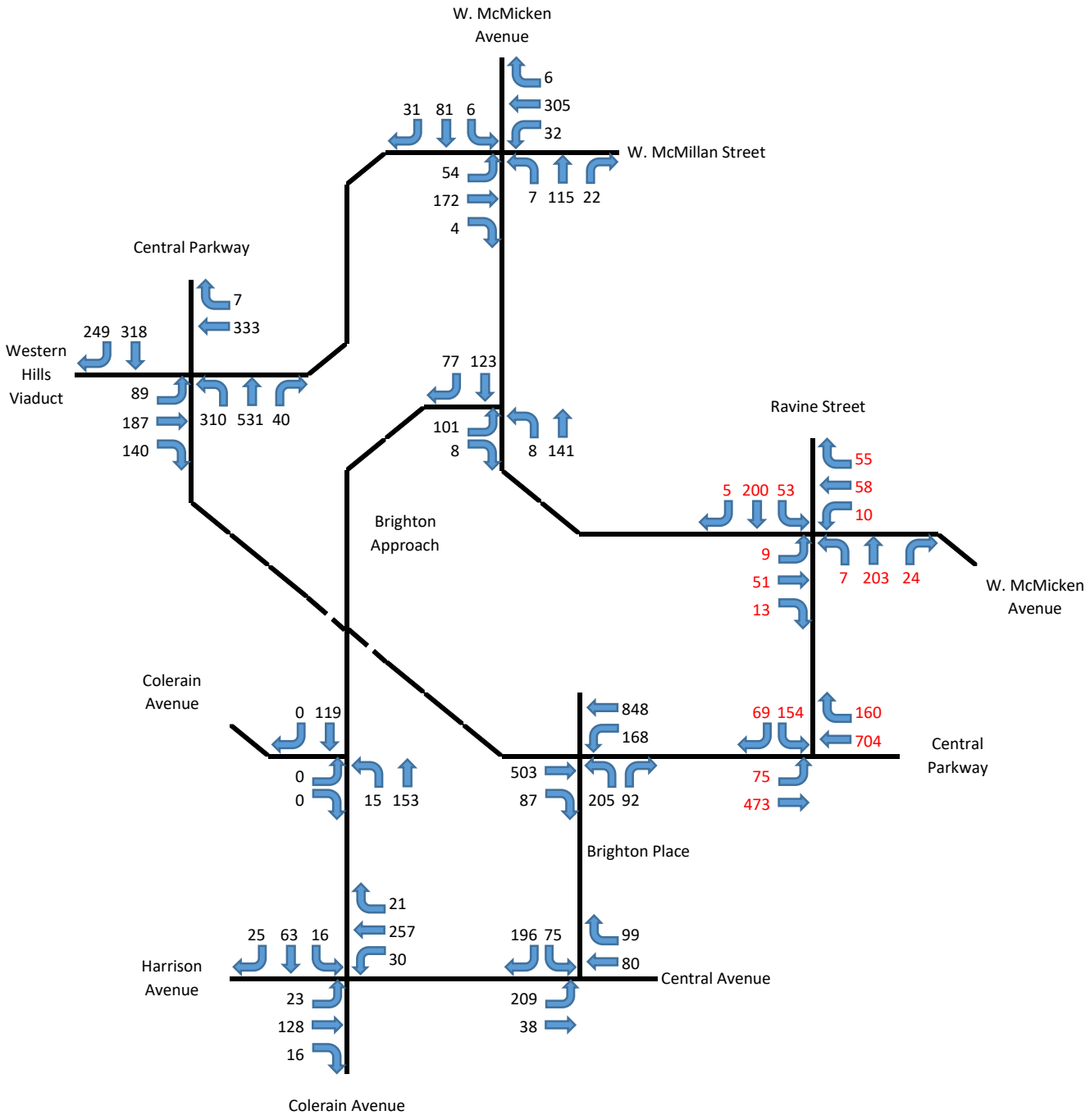
*All negative values or values less than 10 were assumed to be 10 to produce conservative results.



Brighton Approach Study
Traffic Volume Calculations

	Year	Period	Scenario	Plate
CARPENTER MARTY transportation		PM	Weekday StreetLight Data (4:45-5:45, Typical Weekday)	

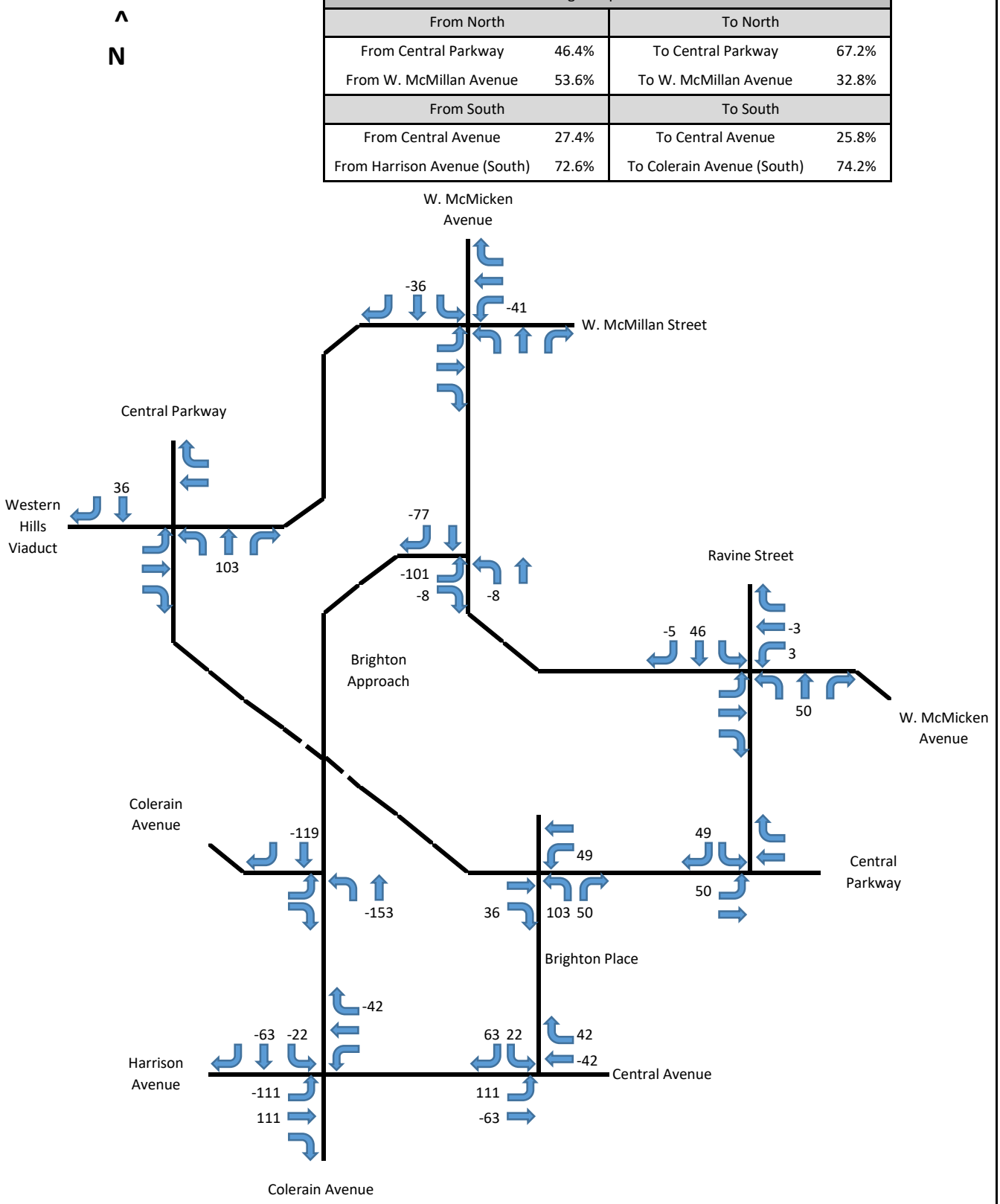
All turning movement count data was taken from StreetLight with the exception of the intersections of Ravine Street with W. McMicken Avenue and Central Parkway. Peak hours were determined based on StreetLight data. Collected intersection counts utilized StreetLight peak hours for analysis purposes.



Brighton Approach Study
Traffic Volume Calculations

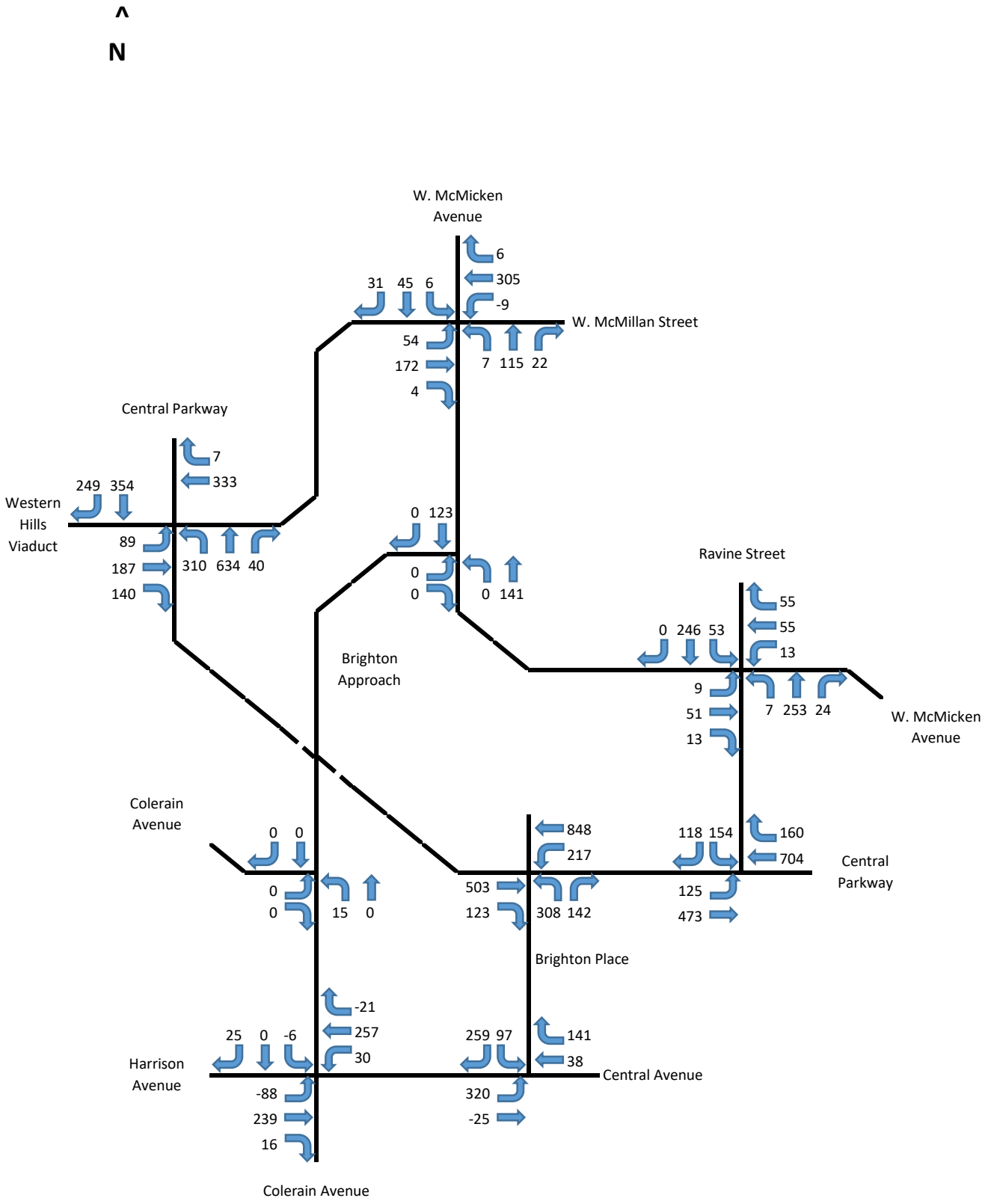
Year	Period	Scenario	Plate
	PM	Adjustment to Weekday StreetLight Data Using Top Routes (5:00-6:00, Typical Weekday)	

StreetLight Top Routes Data			
From North		To North	
From Central Parkway	46.4%	To Central Parkway	67.2%
From W. McMillan Avenue	53.6%	To W. McMillan Avenue	32.8%
From South		To South	
From Central Avenue	27.4%	To Central Avenue	25.8%
From Harrison Avenue (South)	72.6%	To Colerain Avenue (South)	74.2%



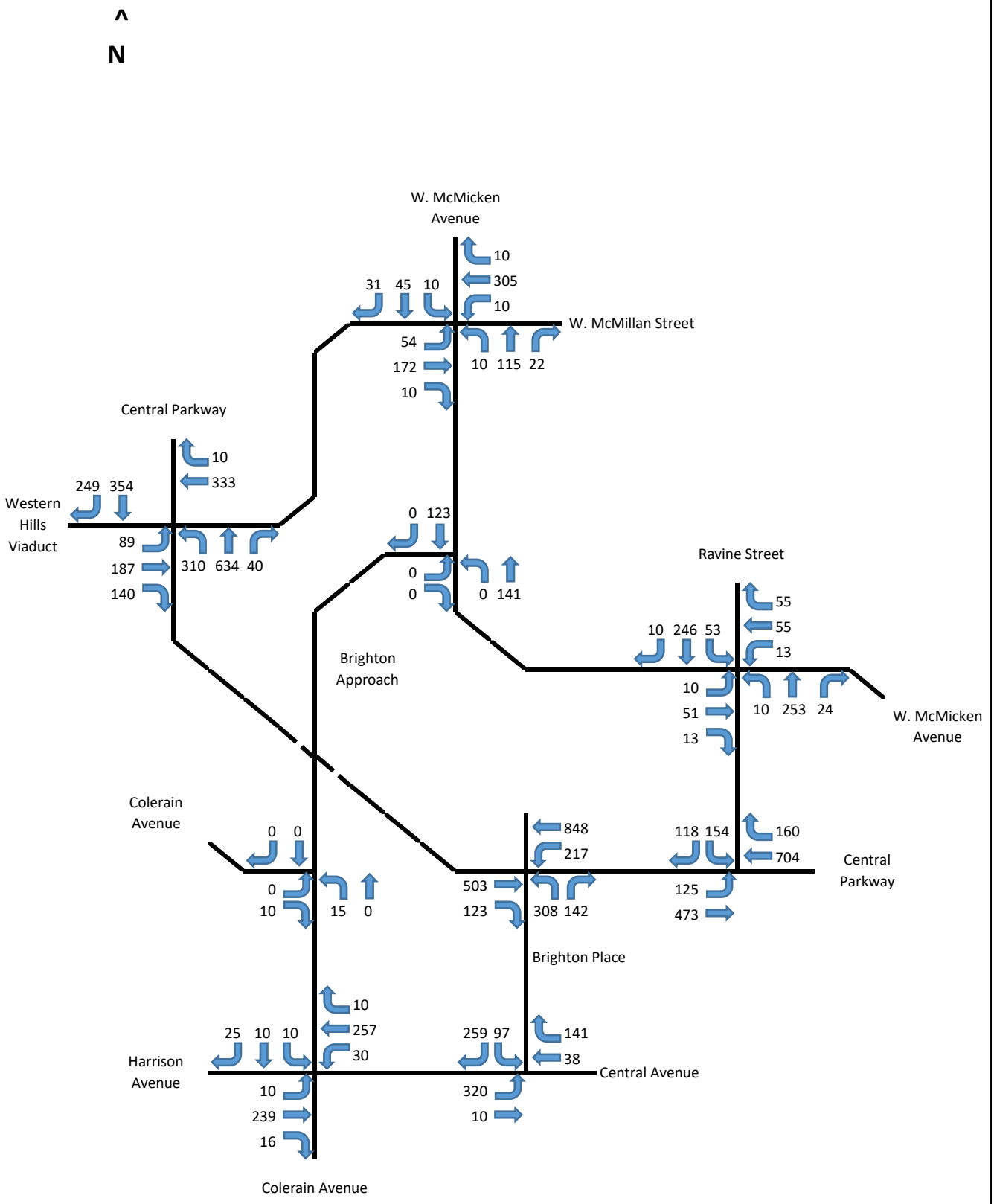
Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Adjusted Data	



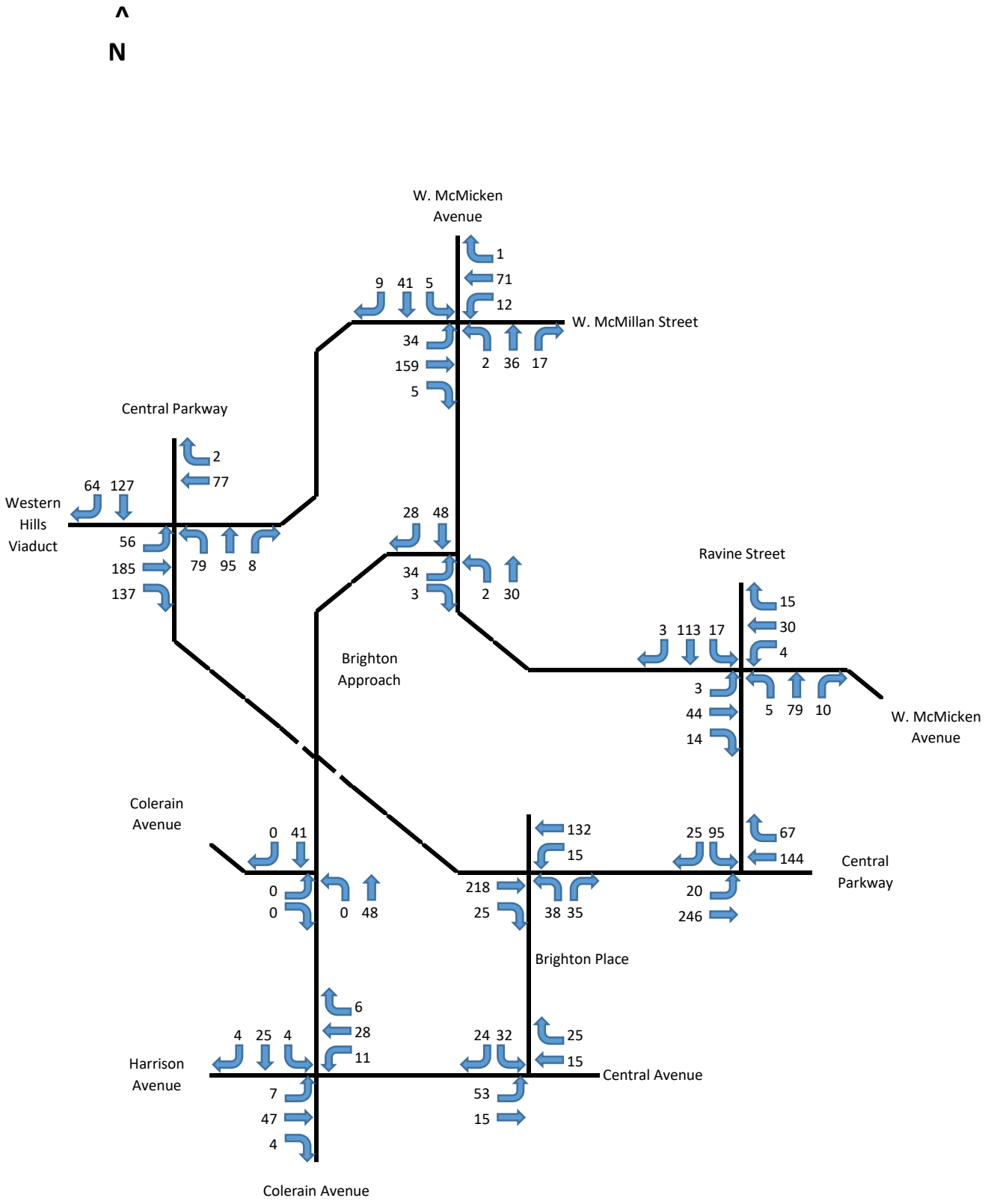
Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Adjusted Data - Rounded	



Brighton Approach Study
Traffic Volume Calculations

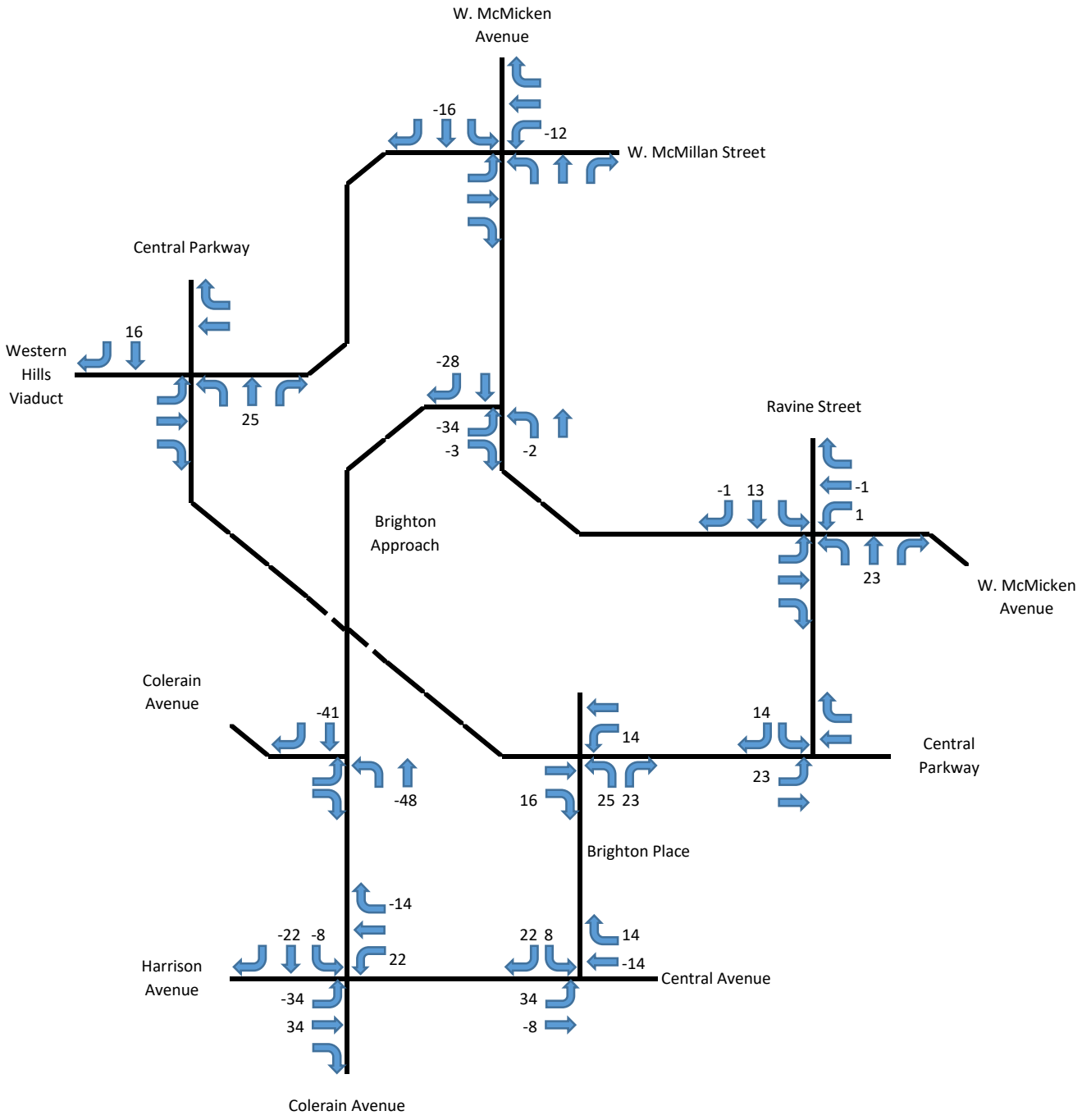
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		AM	Weekend StreetLight Data (9:00-10:00, Typical Weekend)	



Brighton Approach Study
Traffic Volume Calculations

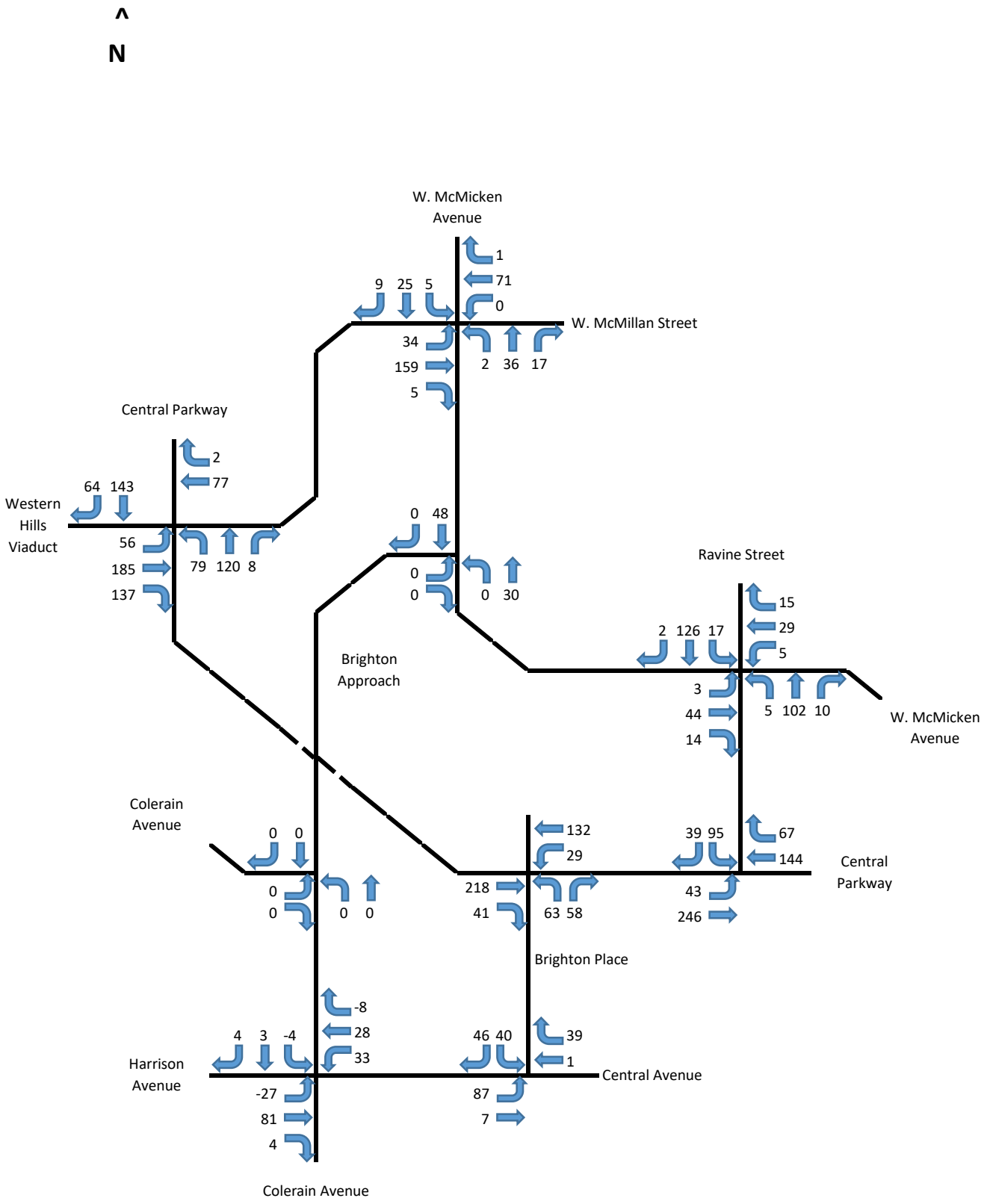
Year	Period	Scenario	Plate
	AM	Adjustment to Weekend StreetLight Data Using Top Routes (9:00-10:00, Typical Weekend)	

StreetLight Top Routes Data			
From North		To North	
From Central Parkway	55.9%	To Central Parkway	52.2%
From W. McMillan Avenue	44.1%	To W. McMillan Avenue	47.8%
From South		To South	
From Central Avenue	29.3%	To Central Avenue	27.5%
From Colerain Avenue (South)	70.7%	To Colerain Avenue (South)	72.5%



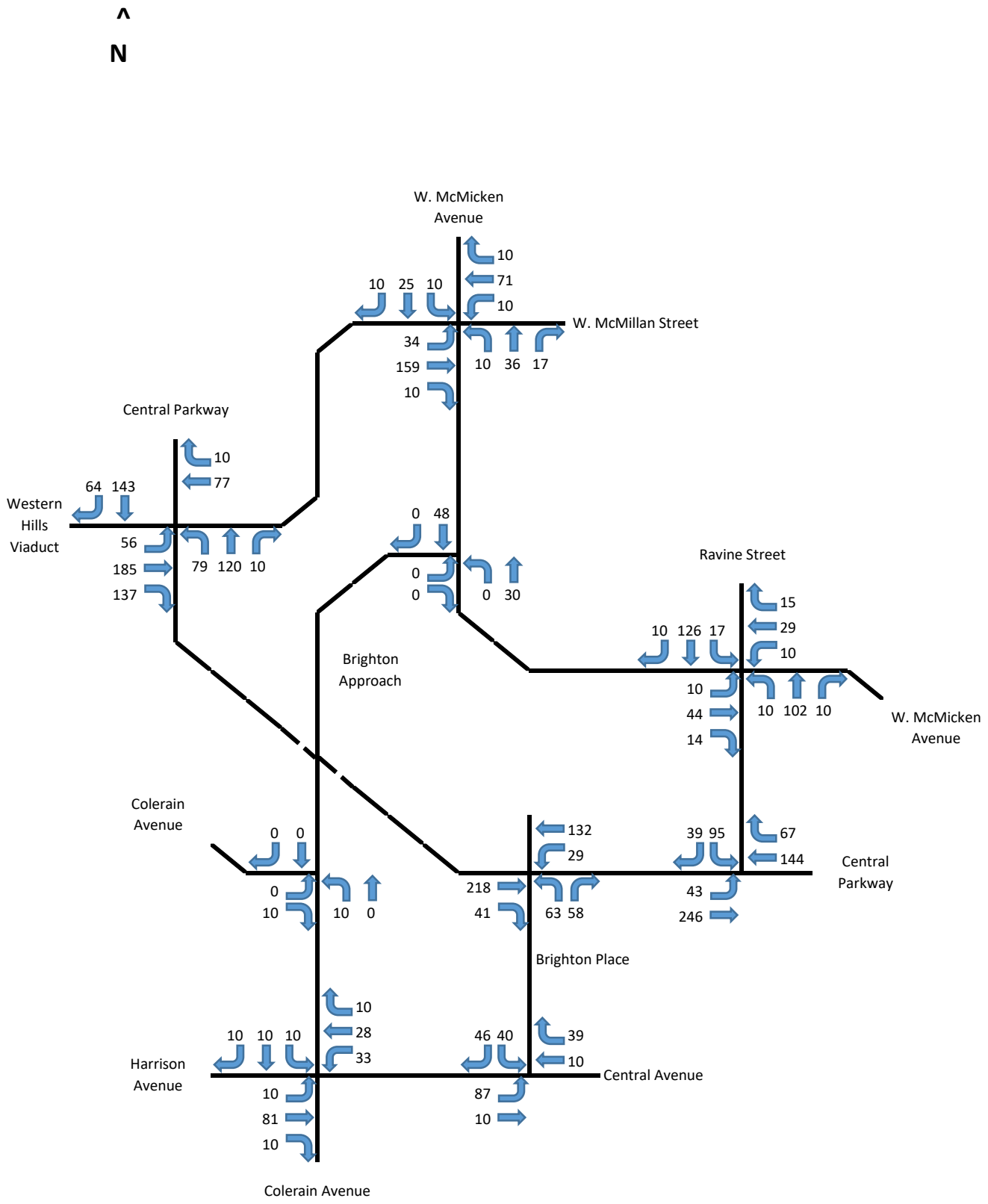
Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		AM	Adjusted Data	



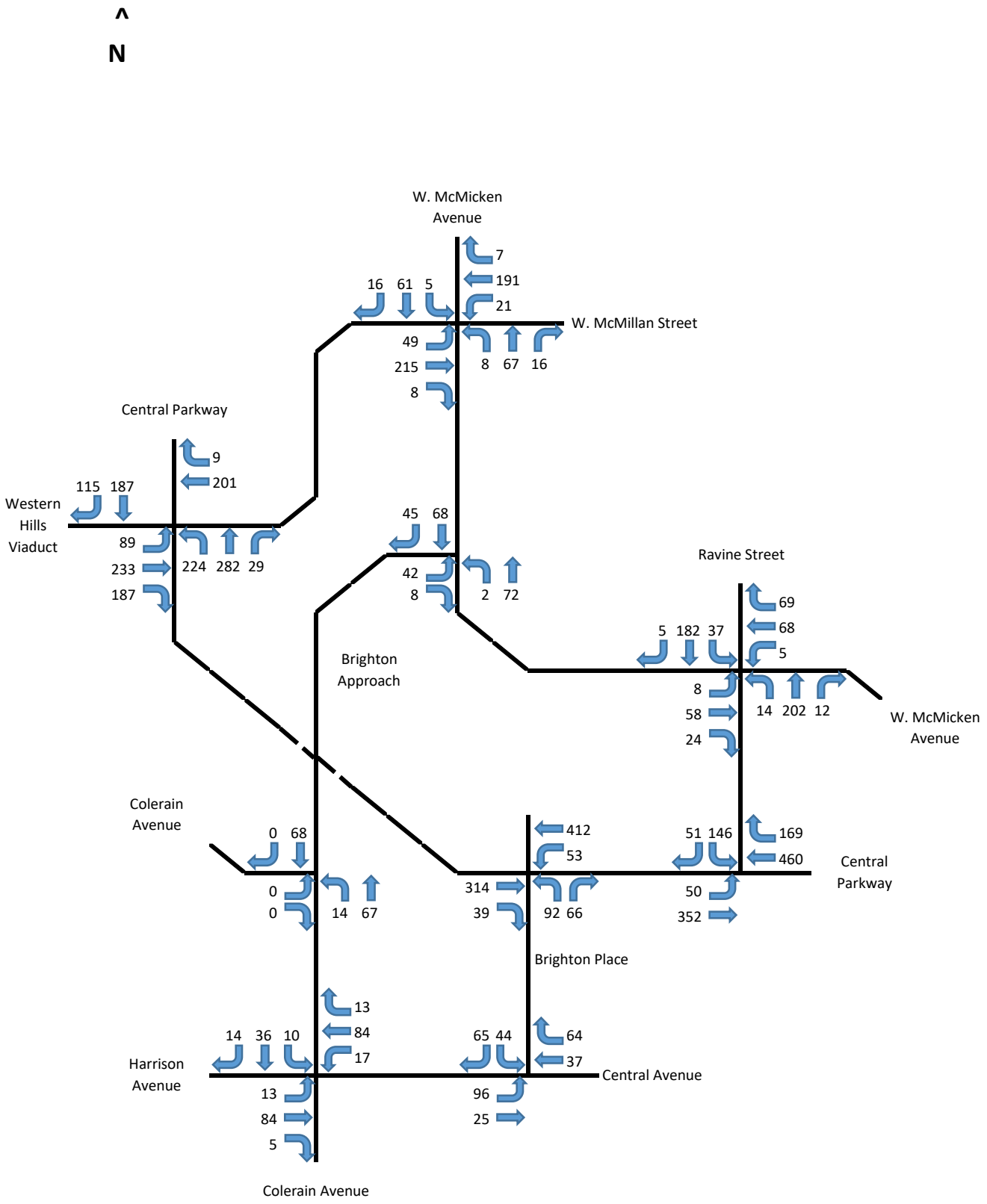
Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		AM	Adjusted Data - Rounded	



Brighton Approach Study
Traffic Volume Calculations

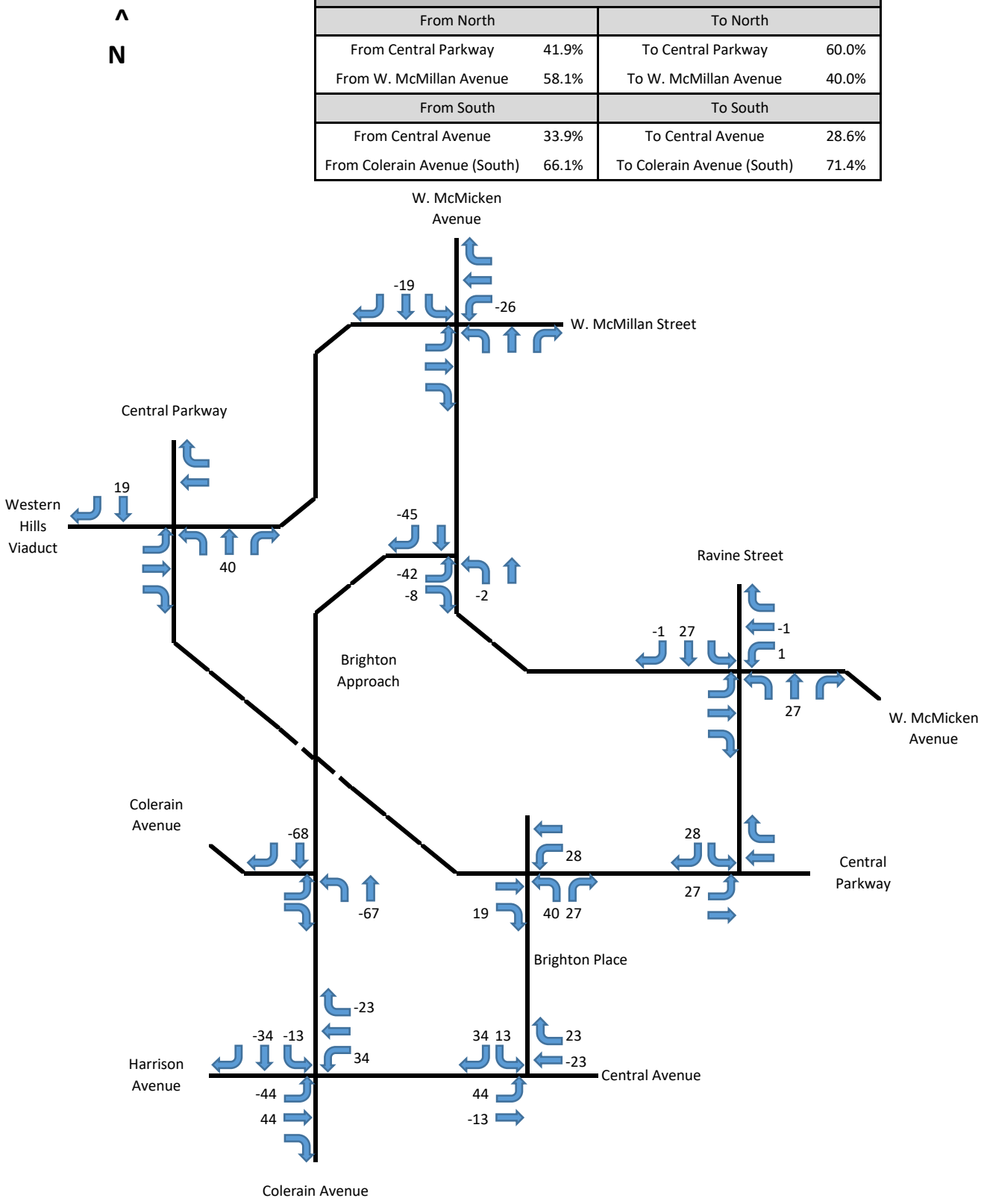
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Weekend StreetLight Data (4:15-5:15, Typical Weekend)	



Brighton Approach Study
Traffic Volume Calculations

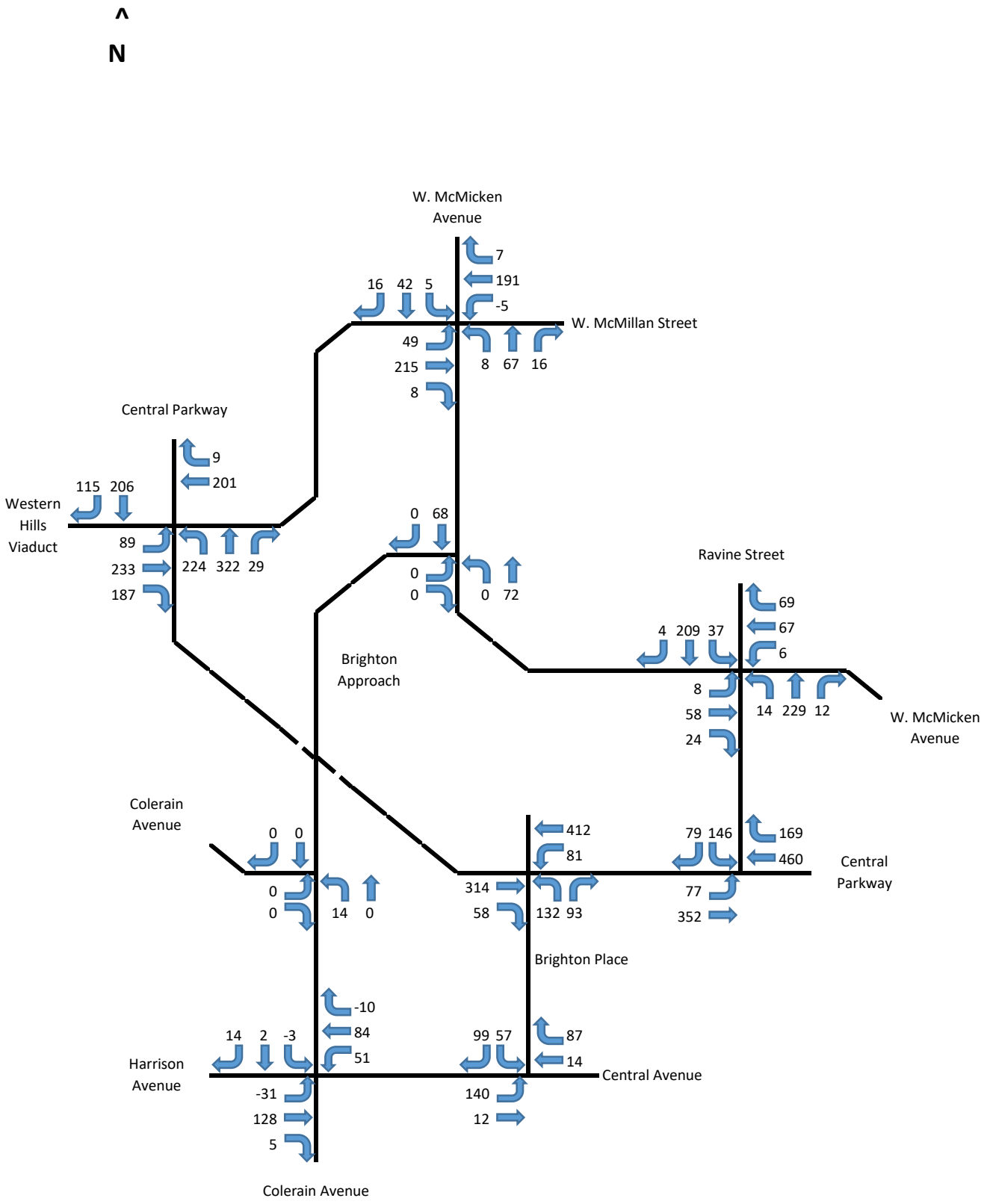
Year	Period	Scenario	Plate
	PM	Adjustment to Weekend StreetLight Data Using Top Routes (4:00-5:00, Typical Weekend)	

StreetLight Top Routes Data			
From North		To North	
From Central Parkway	41.9%	To Central Parkway	60.0%
From W. McMillan Avenue	58.1%	To W. McMillan Avenue	40.0%
From South		To South	
From Central Avenue	33.9%	To Central Avenue	28.6%
From Colerain Avenue (South)	66.1%	To Colerain Avenue (South)	71.4%



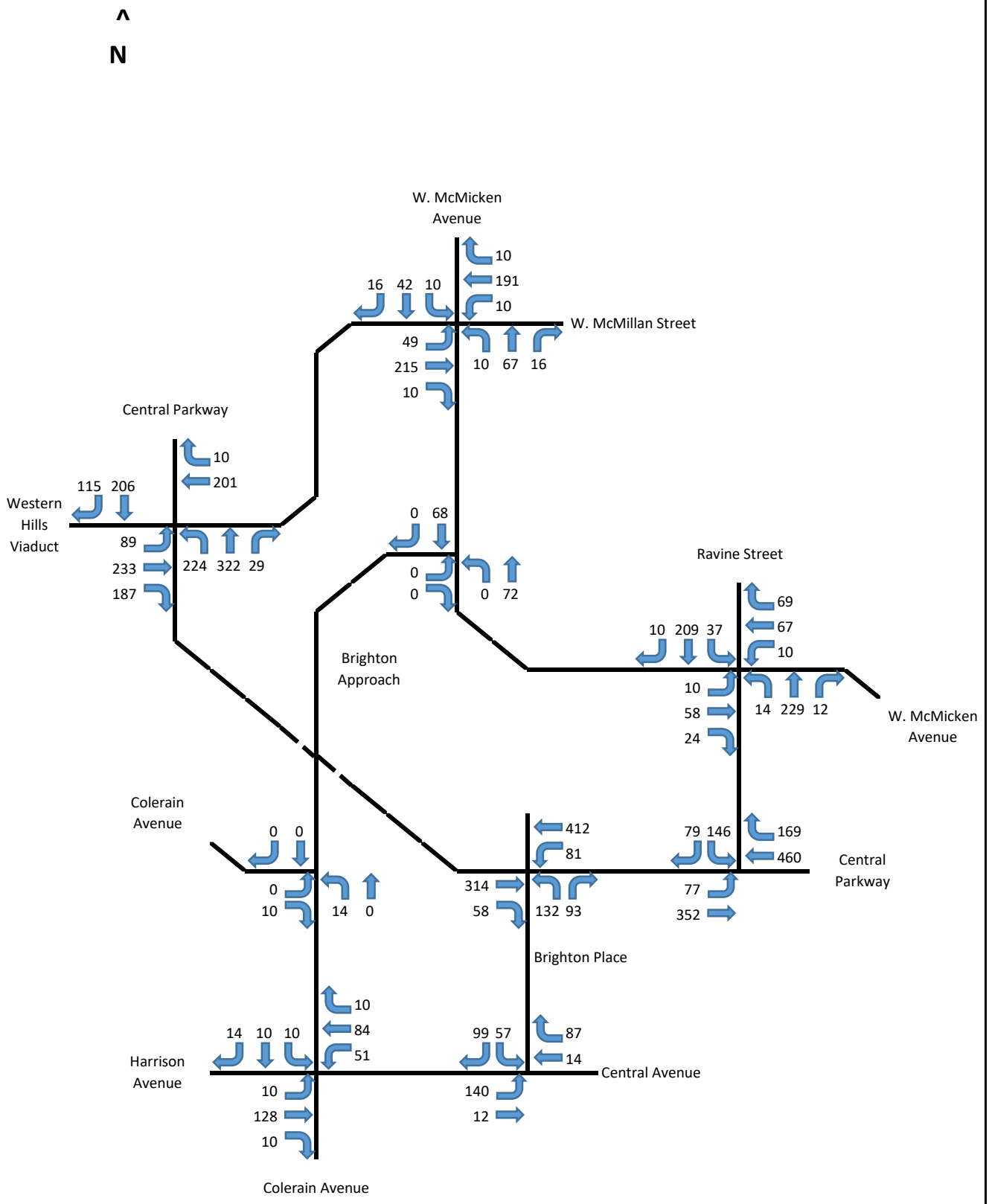
Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Adjusted Data	



Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Adjusted Data - Rounded	



Appendix C

Capacity Analysis

CARPENTER MARTY transportation

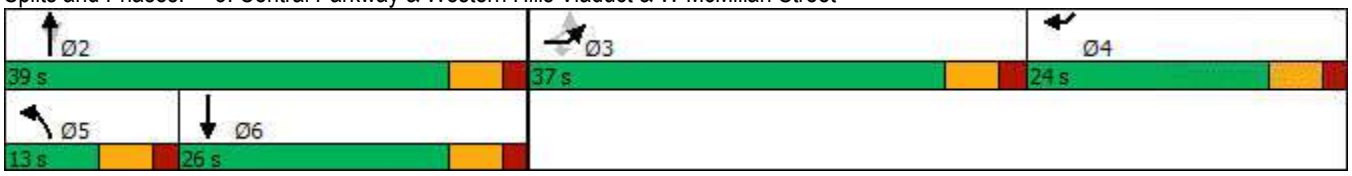
Appendix C

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	165	449	468	115	178	24	0	482	90	0	92	6
Future Volume (vph)	165	449	468	115	178	24	0	482	90	0	92	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.978	0.850			0.850		0.976			0.850	
Flt Protected		0.959		0.950								
Satd. Flow (prot)	0	3389	1441	3433	3539	1583	0	3454	0	0	2787	0
Flt Permitted		0.548		0.950								
Satd. Flow (perm)	0	1937	1441	3433	3539	1583	0	3454	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		164	392			98		19			164	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	488	509	125	193	26	0	524	98	0	100	7
Shared Lane Traffic (%)			23%									
Lane Group Flow (vph)	0	784	392	125	193	26	0	622	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	37.0	37.0	37.0	13.0	39.0	39.0		26.0			24.0	
Total Split (%)	37.0%	37.0%	37.0%	13.0%	39.0%	39.0%		26.0%			24.0%	
Maximum Green (s)	31.0	31.0	31.0	7.0	33.0	33.0		20.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		31.2	31.2	7.0	33.2	33.2		20.1			10.1	
Actuated g/C Ratio		0.35	0.35	0.08	0.37	0.37		0.23			0.11	
v/c Ratio		1.00	0.52	0.46	0.15	0.04		0.78			0.23	
Control Delay		56.9	5.2	46.3	19.9	0.1		40.2			3.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		56.9	5.2	46.3	19.9	0.1		40.2			3.0	
LOS		E	A	D	B	A		D			A	
Approach Delay		39.6			28.0			40.2		3.0		
Approach LOS		D			C			D		A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 88.8			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 36.3		Intersection LOS: D	
Intersection Capacity Utilization 59.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	198	9	19	55	10	0	0	0	11	50	11
Future Vol, veh/h	19	198	9	19	55	10	0	0	0	11	50	11
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	215	10	21	60	11	0	0	0	12	54	12

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	71	0	0	225	0	0			370	375	66
Stage 1	-	-	-	-	-	-			108	108	-
Stage 2	-	-	-	-	-	-			262	267	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	1529	-	-	1344	-	-			630	556	998
Stage 1	-	-	-	-	-	-			916	806	-
Stage 2	-	-	-	-	-	-			782	688	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	1529	-	-	1344	-	-			610	0	998
Mov Cap-2 Maneuver	-	-	-	-	-	-			610	0	-
Stage 1	-	-	-	-	-	-			901	0	-
Stage 2	-	-	-	-	-	-			769	0	-

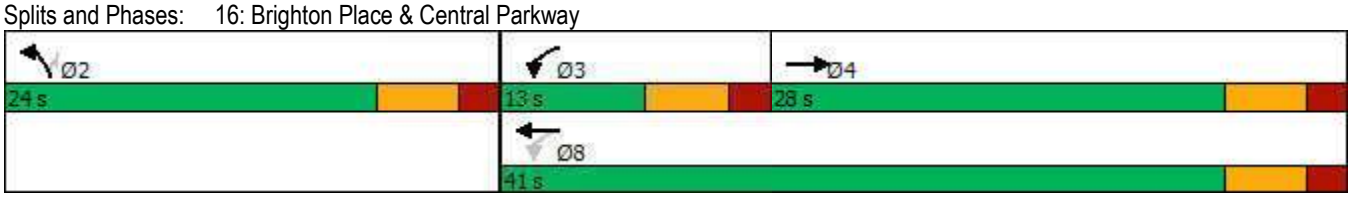
Approach	EB	WB	SB
HCM Control Delay, s	0.6	1.7	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1529	-	-	1344	-	-	757
HCM Lane V/C Ratio	0.014	-	-	0.015	-	-	0.103
HCM Control Delay (s)	7.4	0	-	7.7	0	-	10.3
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.3

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	24	13	28	41
Maximum Split (%)	36.9%	20.0%	43.1%	63.1%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	24	37	24
End Time (s)	24	37	0	0
Yield/Force Off (s)	18	31	59	59
Yield/Force Off 170(s)	7	31	48	59
Local Start Time (s)	0	24	37	24
Local Yield (s)	18	31	59	59
Local Yield 170(s)	7	31	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	824	61	36	228	76	157
Future Volume (veh/h)	824	61	36	228	76	157
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	896	66	39	248	83	171
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1066	79	351	1860	509	453
Arrive On Green	0.32	0.32	0.11	0.52	0.29	0.29
Sat Flow, veh/h	3449	247	1781	3647	1781	1585
Grp Volume(v), veh/h	474	488	39	248	83	171
Grp Sat Flow(s),veh/h/ln	1777	1826	1781	1777	1781	1585
Q Serve(g_s), s	15.6	15.6	0.8	2.3	2.2	5.4
Cycle Q Clear(g_c), s	15.6	15.6	0.8	2.3	2.2	5.4
Prop In Lane		0.14	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	564	580	351	1860	509	453
V/C Ratio(X)	0.84	0.84	0.11	0.13	0.16	0.38
Avail Cap(c_a), veh/h	621	638	353	1976	509	453
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	1.00
Uniform Delay (d), s/veh	20.0	20.0	12.0	7.7	16.8	18.0
Incr Delay (d2), s/veh	9.4	9.1	0.1	0.0	0.7	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	7.3	0.3	0.7	1.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.4	29.1	12.2	7.7	17.5	20.4
LnGrp LOS	C	C	B	A	B	C
Approach Vol, veh/h	962			287	254	
Approach Delay, s/veh	29.2			8.3	19.4	
Approach LOS	C			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		24.0	13.0	26.0		39.0
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		18.0	7.0	22.0		35.0
Max Q Clear Time (g_c+I1), s		7.4	2.8	17.6		4.3
Green Ext Time (p_c), s		0.6	0.0	2.3		1.6

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	545	175	90	132	34
Future Vol, veh/h	42	545	175	90	132	34
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	592	190	98	143	37

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	288	0	-	0	627	144
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	388	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1271	-	-	-	416	877
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1271	-	-	-	394	877
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1271	-	-	-	394	877
HCM Lane V/C Ratio	0.036	-	-	-	0.364	0.042
HCM Control Delay (s)	7.9	0.2	-	-	19.3	9.3
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	190	29	20	40	72	54
Future Volume (Veh/h)	190	29	20	40	72	54
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	207	32	22	43	78	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	167	156	215	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167	156	215	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	71	95	97	96	95	
cM capacity (veh/h)	719	701	650	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	207	32	65	78	59
Volume Left	207	0	0	78	0
Volume Right	0	0	43	0	59
cSH	719	701	1640	1623	1700
Volume to Capacity	0.29	0.05	0.04	0.05	0.03
Queue Length 95th (ft)	30	4	3	4	0
Control Delay (s)	12.0	10.4	9.2	7.3	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.8		9.2	4.2	
Approach LOS	B		A		

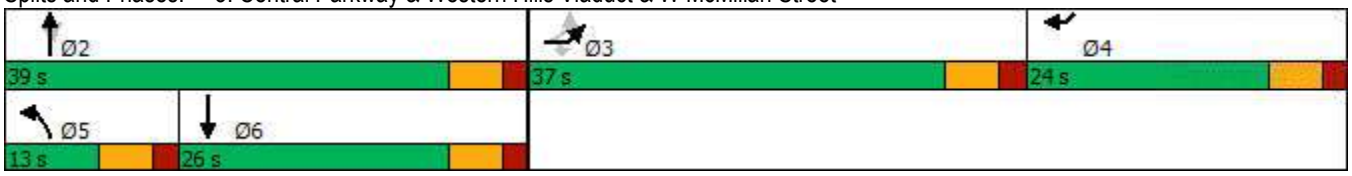
Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	165	449	468	115	229	24	0	508	90	0	92	10
Future Volume (vph)	165	449	468	115	229	24	0	508	90	0	92	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.978	0.850			0.850		0.977			0.850	
Flt Protected		0.959		0.950								
Satd. Flow (prot)	0	3389	1441	3433	3539	1583	0	3458	0	0	2787	0
Flt Permitted		0.548		0.950								
Satd. Flow (perm)	0	1937	1441	3433	3539	1583	0	3458	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		164	392			98		18			164	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	488	509	125	249	26	0	552	98	0	100	11
Shared Lane Traffic (%)			23%									
Lane Group Flow (vph)	0	784	392	125	249	26	0	650	0	0	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	37.0	37.0	37.0	13.0	39.0	39.0		26.0			24.0	
Total Split (%)	37.0%	37.0%	37.0%	13.0%	39.0%	39.0%		26.0%			24.0%	
Maximum Green (s)	31.0	31.0	31.0	7.0	33.0	33.0		20.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		31.2	31.2	7.0	33.2	33.2		20.1			10.1	
Actuated g/C Ratio		0.35	0.35	0.08	0.37	0.37		0.23			0.11	
v/c Ratio		1.00	0.52	0.46	0.19	0.04		0.82			0.24	
Control Delay		56.9	5.2	46.3	20.2	0.1		42.3			3.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		56.9	5.2	46.3	20.2	0.1		42.3			3.3	
LOS		E	A	D	C	A		D			A	
Approach Delay		39.6			27.1			42.3		3.3		
Approach LOS		D			C			D		A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 88.8			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 36.5		Intersection LOS: D	
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	265	10	65	55	10	0	0	0	10	10	11
Future Vol, veh/h	10	265	10	65	55	10	0	0	0	10	10	11
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	288	11	71	60	11	0	0	0	11	11	12

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	71	0	0	299	0	0	524	529	66
Stage 1	-	-	-	-	-	-	208	208	-
Stage 2	-	-	-	-	-	-	316	321	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1529	-	-	1262	-	-	514	455	998
Stage 1	-	-	-	-	-	-	827	730	-
Stage 2	-	-	-	-	-	-	739	652	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1529	-	-	1262	-	-	480	0	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	480	0	-
Stage 1	-	-	-	-	-	-	820	0	-
Stage 2	-	-	-	-	-	-	695	0	-

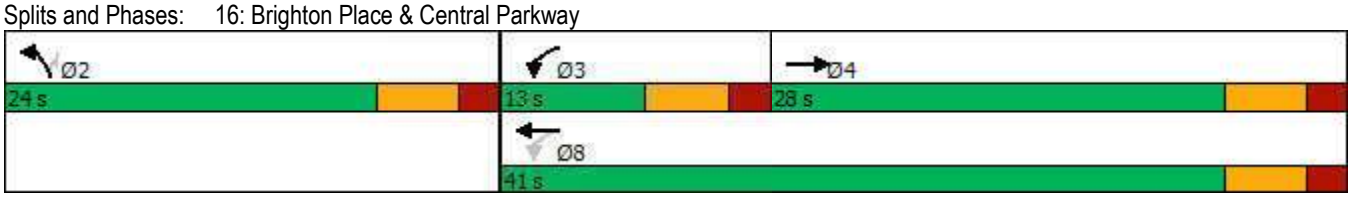
Approach	EB	WB	SB
HCM Control Delay, s	0.3	4	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1529	-	-	1262	-	-	659
HCM Lane V/C Ratio	0.007	-	-	0.056	-	-	0.051
HCM Control Delay (s)	7.4	0	-	8	0	-	10.8
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.2

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	24	13	28	41
Maximum Split (%)	36.9%	20.0%	43.1%	63.1%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	24	37	24
End Time (s)	24	37	0	0
Yield/Force Off (s)	18	31	59	59
Yield/Force Off 170(s)	7	31	48	59
Local Start Time (s)	0	24	37	24
Local Yield (s)	18	31	59	59
Local Yield 170(s)	7	31	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	824	87	73	228	127	194
Future Volume (veh/h)	824	87	73	228	127	194
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	896	95	79	248	138	211
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1044	111	345	1872	506	450
Arrive On Green	0.32	0.32	0.11	0.53	0.28	0.28
Sat Flow, veh/h	3335	344	1781	3647	1781	1585
Grp Volume(v), veh/h	491	500	79	248	138	211
Grp Sat Flow(s),veh/h/ln	1777	1808	1781	1777	1781	1585
Q Serve(g_s), s	16.4	16.4	1.6	2.3	3.8	7.0
Cycle Q Clear(g_c), s	16.4	16.4	1.6	2.3	3.8	7.0
Prop In Lane		0.19	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	572	582	345	1872	506	450
V/C Ratio(X)	0.86	0.86	0.23	0.13	0.27	0.47
Avail Cap(c_a), veh/h	617	628	346	1962	506	450
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	1.00
Uniform Delay (d), s/veh	20.1	20.1	12.6	7.6	17.6	18.7
Incr Delay (d2), s/veh	11.1	10.9	0.3	0.0	1.3	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	7.9	0.6	0.7	1.7	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.2	31.0	13.0	7.7	18.9	22.2
LnGrp LOS	C	C	B	A	B	C
Approach Vol, veh/h	991			327	349	
Approach Delay, s/veh	31.1			8.9	20.9	
Approach LOS	C			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		24.0	13.0	26.4		39.4
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		18.0	7.0	22.0		35.0
Max Q Clear Time (g_c+I1), s		9.0	3.6	18.4		4.3
Green Ext Time (p_c), s		0.8	0.0	2.0		1.6

Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	79	545	175	90	132	71
Future Vol, veh/h	79	545	175	90	132	71
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	86	592	190	98	143	77

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	288	0	-	0	707	144
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1271	-	-	-	370	877
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1271	-	-	-	333	877
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1271	-	-	-	333	877
HCM Lane V/C Ratio	0.068	-	-	-	0.431	0.088
HCM Control Delay (s)	8	0.3	-	-	23.7	9.5
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	-	-	-	2.1	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	257	15	10	61	86	103
Future Volume (Veh/h)	257	15	10	61	86	103
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	279	16	11	66	93	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	192	186	298	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	186	298	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	59	98	98	94	94	
cM capacity (veh/h)	680	668	579	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	279	16	77	93	112
Volume Left	279	0	0	93	0
Volume Right	0	0	66	0	112
cSH	680	668	1266	1623	1700
Volume to Capacity	0.41	0.02	0.06	0.06	0.07
Queue Length 95th (ft)	50	2	5	5	0
Control Delay (s)	13.9	10.5	8.9	7.4	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	13.7		8.9	3.3	
Approach LOS	B		A		

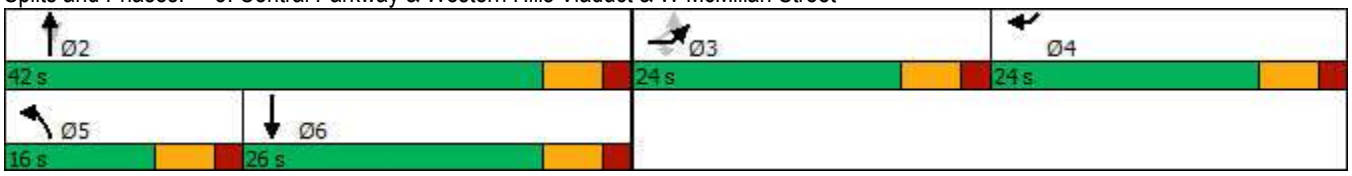
Intersection Summary			
Average Delay	9.4		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	89	187	140	310	531	40	0	318	249	0	333	7
Future Volume (vph)	89	187	140	310	531	40	0	318	249	0	333	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.993	0.850			0.850		0.934			0.850	
Flt Protected		0.955		0.950								
Satd. Flow (prot)	0	3427	1441	3433	3539	1583	0	3306	0	0	2787	0
Flt Permitted		0.637		0.950								
Satd. Flow (perm)	0	2286	1441	3433	3539	1583	0	3306	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		182	182			109		202			182	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	203	152	337	577	43	0	346	271	0	362	8
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	0	315	137	337	577	43	0	617	0	0	370	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	24.0	24.0	24.0	16.0	42.0	42.0		26.0			24.0	
Total Split (%)	26.7%	26.7%	26.7%	17.8%	46.7%	46.7%		28.9%			26.7%	
Maximum Green (s)	18.0	18.0	18.0	10.0	36.0	36.0		20.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		12.0	12.0	10.0	36.2	36.2		20.1			11.9	
Actuated g/C Ratio		0.15	0.15	0.13	0.46	0.46		0.26			0.15	
v/c Ratio		0.62	0.37	0.77	0.35	0.05		0.62			0.64	
Control Delay		19.2	5.0	47.1	15.1	0.1		20.7			21.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		19.2	5.0	47.1	15.1	0.1		20.7			21.1	
LOS		B	A	D	B	A		C			C	
Approach Delay		14.9			25.7			20.7		21.1		
Approach LOS		B			C			C		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 21.7		Intersection LOS: C	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	23	128	16	30	257	21	0	0	0	16	63	25
Future Vol, veh/h	23	128	16	30	257	21	0	0	0	16	63	25
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	139	17	33	279	23	0	0	0	17	68	27

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	302	0	0	156	0	0	555	563	291
Stage 1	-	-	-	-	-	-	357	357	-
Stage 2	-	-	-	-	-	-	198	206	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1259	-	-	1424	-	-	493	435	748
Stage 1	-	-	-	-	-	-	708	628	-
Stage 2	-	-	-	-	-	-	835	731	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1259	-	-	1424	-	-	469	0	748
Mov Cap-2 Maneuver	-	-	-	-	-	-	469	0	-
Stage 1	-	-	-	-	-	-	692	0	-
Stage 2	-	-	-	-	-	-	812	0	-

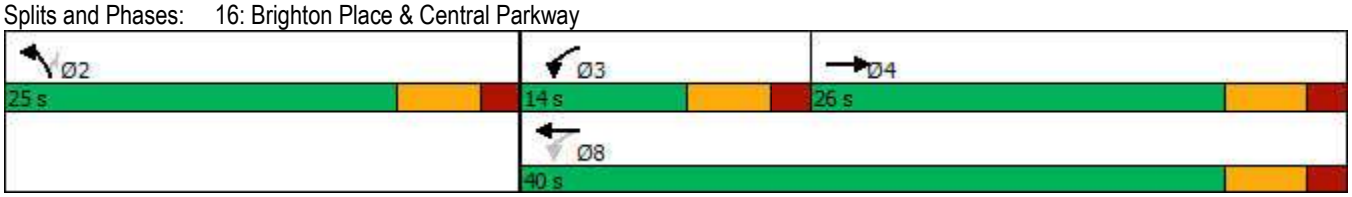
Approach	EB	WB	SB
HCM Control Delay, s	1.1	0.7	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1259	-	-	1424	-	-	607
HCM Lane V/C Ratio	0.02	-	-	0.023	-	-	0.186
HCM Control Delay (s)	7.9	0	-	7.6	0	-	12.3
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.7

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	25	14	26	40
Maximum Split (%)	38.5%	21.5%	40.0%	61.5%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	25	39	25
End Time (s)	25	39	0	0
Yield/Force Off (s)	19	33	59	59
Yield/Force Off 170(s)	8	33	48	59
Local Start Time (s)	0	25	39	25
Local Yield (s)	19	33	59	59
Local Yield 170(s)	8	33	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	503	87	168	848	205	92
Future Volume (veh/h)	503	87	168	848	205	92
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	547	95	183	922	223	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	946	164	434	1832	529	471
Arrive On Green	0.31	0.31	0.11	0.52	0.30	0.30
Sat Flow, veh/h	3122	524	1781	3647	1781	1585
Grp Volume(v), veh/h	320	322	183	922	223	100
Grp Sat Flow(s),veh/h/ln	1777	1776	1781	1777	1781	1585
Q Serve(g_s), s	9.7	9.7	4.0	10.9	6.4	3.0
Cycle Q Clear(g_c), s	9.7	9.7	4.0	10.9	6.4	3.0
Prop In Lane		0.30	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	555	555	434	1832	529	471
V/C Ratio(X)	0.58	0.58	0.42	0.50	0.42	0.21
Avail Cap(c_a), veh/h	555	555	461	1888	529	471
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	1.00
Uniform Delay (d), s/veh	18.4	18.5	12.1	10.1	18.1	16.9
Incr Delay (d2), s/veh	1.5	1.5	0.7	0.2	2.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.8	1.4	3.5	2.9	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	20.0	12.7	10.4	20.5	17.9
LnGrp LOS	B	B	B	B	C	B
Approach Vol, veh/h	642			1105	323	
Approach Delay, s/veh	20.0			10.7	19.7	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	25.0	13.0	26.0	39.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	19.0	8.0	20.0	34.0
Max Q Clear Time (g_c+I1), s	8.4	6.0	11.7	12.9
Green Ext Time (p_c), s	0.8	0.1	2.4	6.5

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	22.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	75	473	704	160	154	69
Future Vol, veh/h	75	473	704	160	154	69
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	514	765	174	167	75

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	939	0	-	0	1273	470
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	726	-	-	-	~ 159	540
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	726	-	-	-	~ 134	540
Mov Cap-2 Maneuver	-	-	-	-	~ 134	-
Stage 1	-	-	-	-	318	-
Stage 2	-	-	-	-	630	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	157.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	726	-	-	-	134	540
HCM Lane V/C Ratio	0.112	-	-	-	1.249	0.139
HCM Control Delay (s)	10.6	0.6	-	-	223	12.7
HCM Lane LOS	B	A	-	-	F	B
HCM 95th %tile Q(veh)	0.4	-	-	-	10.3	0.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	209	38	80	99	75	196
Future Volume (Veh/h)	209	38	80	99	75	196
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	227	41	87	108	82	213
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	208	164	377	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	164	377	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	60	94	83	90	95	
cM capacity (veh/h)	568	692	527	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	227	41	195	82	213
Volume Left	227	0	0	82	0
Volume Right	0	0	108	0	213
cSH	568	692	1180	1623	1700
Volume to Capacity	0.40	0.06	0.17	0.05	0.13
Queue Length 95th (ft)	48	5	15	4	0
Control Delay (s)	15.5	10.5	10.7	7.3	0.0
Lane LOS	C	B	B	A	
Approach Delay (s)	14.7		10.7	2.0	
Approach LOS	B		B		

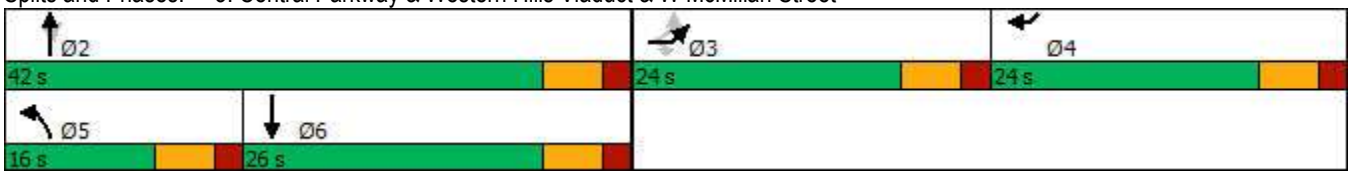
Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	89	187	140	310	634	40	0	354	249	0	333	10
Future Volume (vph)	89	187	140	310	634	40	0	354	249	0	333	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.993	0.850			0.850		0.938			0.850	
Flt Protected		0.955		0.950								
Satd. Flow (prot)	0	3427	1441	3433	3539	1583	0	3320	0	0	2787	0
Flt Permitted		0.637		0.950								
Satd. Flow (perm)	0	2286	1441	3433	3539	1583	0	3320	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		182	182			109		181			182	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	203	152	337	689	43	0	385	271	0	362	11
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	0	315	137	337	689	43	0	656	0	0	373	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	24.0	24.0	24.0	16.0	42.0	42.0		26.0			24.0	
Total Split (%)	26.7%	26.7%	26.7%	17.8%	46.7%	46.7%		28.9%			26.7%	
Maximum Green (s)	18.0	18.0	18.0	10.0	36.0	36.0		20.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		12.0	12.0	10.0	36.2	36.2		20.1			12.0	
Actuated g/C Ratio		0.15	0.15	0.13	0.46	0.46		0.26			0.15	
v/c Ratio		0.62	0.37	0.77	0.42	0.05		0.67			0.64	
Control Delay		19.2	5.0	47.2	15.9	0.1		23.1			21.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		19.2	5.0	47.2	15.9	0.1		23.1			21.2	
LOS		B	A	D	B	A		C			C	
Approach Delay		14.9			25.2			23.1		21.2		
Approach LOS		B			C			C		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 78.3			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 22.2		Intersection LOS: C	
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



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	239	16	30	257	10	0	0	0	10	10	25
Future Vol, veh/h	10	239	16	30	257	10	0	0	0	10	10	25
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	260	17	33	279	11	0	0	0	11	11	27

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	290	0	0	277	0	0	642	650	285
Stage 1	-	-	-	-	-	-	351	351	-
Stage 2	-	-	-	-	-	-	291	299	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1272	-	-	1286	-	-	438	388	754
Stage 1	-	-	-	-	-	-	713	632	-
Stage 2	-	-	-	-	-	-	759	666	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1272	-	-	1286	-	-	420	0	754
Mov Cap-2 Maneuver	-	-	-	-	-	-	420	0	-
Stage 1	-	-	-	-	-	-	706	0	-
Stage 2	-	-	-	-	-	-	735	0	-

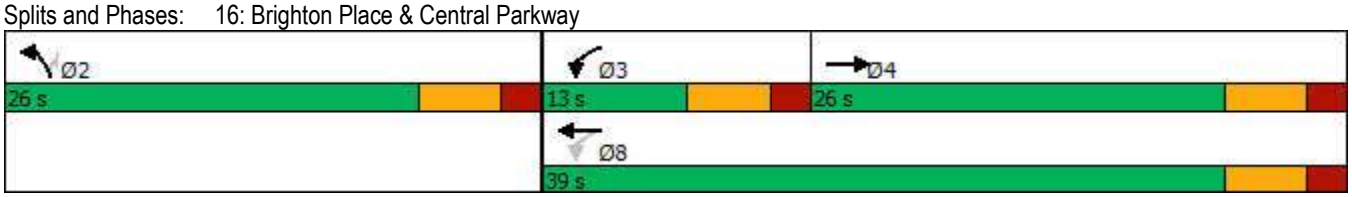
Approach	EB	WB	SB
HCM Control Delay, s	0.3	0.8	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1272	-	-	1286	-	-	614
HCM Lane V/C Ratio	0.009	-	-	0.025	-	-	0.08
HCM Control Delay (s)	7.9	0	-	7.9	0	-	11.4
HCM Lane LOS	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.3

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	26	13	26	39
Maximum Split (%)	40.0%	20.0%	40.0%	60.0%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	39	26
End Time (s)	26	39	0	0
Yield/Force Off (s)	20	33	59	59
Yield/Force Off 170(s)	9	33	48	59
Local Start Time (s)	0	26	39	26
Local Yield (s)	20	33	59	59
Local Yield 170(s)	9	33	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	503	123	217	848	308	142
Future Volume (veh/h)	503	123	217	848	308	142
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	547	134	236	922	335	154
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	871	213	410	1804	548	488
Arrive On Green	0.31	0.31	0.11	0.51	0.31	0.31
Sat Flow, veh/h	2925	691	1781	3647	1781	1585
Grp Volume(v), veh/h	342	339	236	922	335	154
Grp Sat Flow(s),veh/h/ln	1777	1746	1781	1777	1781	1585
Q Serve(g_s), s	10.7	10.8	5.5	11.2	10.4	4.8
Cycle Q Clear(g_c), s	10.7	10.8	5.5	11.2	10.4	4.8
Prop In Lane		0.40	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	547	537	410	1804	548	488
V/C Ratio(X)	0.63	0.63	0.58	0.51	0.61	0.32
Avail Cap(c_a), veh/h	547	537	410	1804	548	488
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	1.00
Uniform Delay (d), s/veh	19.3	19.3	13.3	10.6	19.2	17.3
Incr Delay (d2), s/veh	2.3	2.4	2.0	0.2	5.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.3	2.1	3.6	4.8	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.6	21.7	15.3	10.9	24.2	18.9
LnGrp LOS	C	C	B	B	C	B
Approach Vol, veh/h	681			1158	489	
Approach Delay, s/veh	21.6			11.8	22.5	
Approach LOS	C			B	C	

Timer - Assigned Phs	2	3	4	8
Phs Duration (G+Y+Rc), s	26.0	13.0	26.0	39.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	7.0	20.0	33.0
Max Q Clear Time (g_c+I1), s	12.4	7.5	12.8	13.2
Green Ext Time (p_c), s	1.1	0.0	2.4	6.3

Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	39

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	125	473	704	160	154	118
Future Vol, veh/h	125	473	704	160	154	118
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	514	765	174	167	128

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	939	0	-	0	1381	470
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	529	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	726	-	-	-	~ 135	540
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	555	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	726	-	-	-	~ 100	540
Mov Cap-2 Maneuver	-	-	-	-	~ 100	-
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	555	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	241.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	726	-	-	-	100	540
HCM Lane V/C Ratio	0.187	-	-	-	1.674	0.238
HCM Control Delay (s)	11.1	1	-	-	$ 416.5	13.7
HCM Lane LOS	B	A	-	-	F	B
HCM 95th %tile Q(veh)	0.7	-	-	-	13.2	0.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	320	10	38	141	97	259
Future Volume (Veh/h)	320	10	38	141	97	259
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	348	11	41	153	105	282
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	230	210	492	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	230	210	492	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	37	98	91	86	94	
cM capacity (veh/h)	550	643	447	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	348	11	194	105	282
Volume Left	348	0	0	105	0
Volume Right	0	0	153	0	282
cSH	550	643	1376	1623	1700
Volume to Capacity	0.63	0.02	0.14	0.06	0.17
Queue Length 95th (ft)	110	1	12	5	0
Control Delay (s)	22.1	10.7	9.9	7.4	0.0
Lane LOS	C	B	A	A	
Approach Delay (s)	21.8		9.9	2.0	
Approach LOS	C		A		

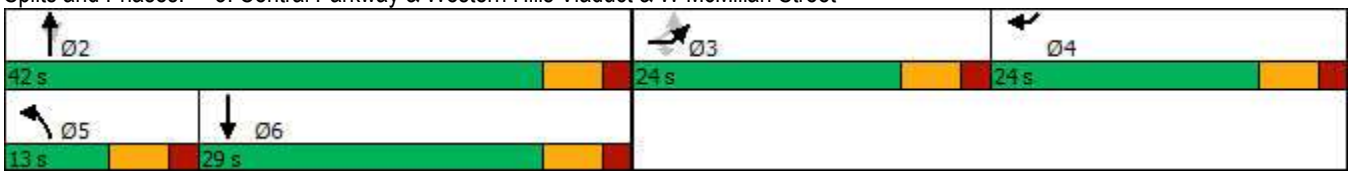
Intersection Summary				
Average Delay	11.2			
Intersection Capacity Utilization	36.4%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	56	185	137	79	95	8	0	127	64	0	77	2
Future Volume (vph)	56	185	137	79	95	8	0	127	64	0	77	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.992	0.850			0.850		0.950			0.850	
Flt Protected		0.955		0.950								
Satd. Flow (prot)	0	3423	1441	3433	3539	1583	0	3362	0	0	2787	0
Flt Permitted		0.616		0.950								
Satd. Flow (perm)	0	2208	1441	3433	3539	1583	0	3362	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		182	182			109		70			182	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	201	149	86	103	9	0	138	70	0	84	2
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	0	277	134	86	103	9	0	208	0	0	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	24.0	24.0	24.0	13.0	42.0	42.0		29.0			24.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	46.7%	46.7%		32.2%			26.7%	
Maximum Green (s)	18.0	18.0	18.0	7.0	36.0	36.0		23.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		11.2	11.2	7.1	36.4	36.4		26.5			10.1	
Actuated g/C Ratio		0.16	0.16	0.10	0.51	0.51		0.37			0.14	
v/c Ratio		0.56	0.35	0.26	0.06	0.01		0.16			0.16	
Control Delay		15.7	4.8	34.4	11.1	0.0		13.4			0.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		15.7	4.8	34.4	11.1	0.0		13.4			0.6	
LOS		B	A	C	B	A		B			A	
Approach Delay		12.2			20.7			13.4		0.6		
Approach LOS		B			C			B		A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 45.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	7	47	4	11	28	6	0	0	0	4	25	4
Future Vol, veh/h	7	47	4	11	28	6	0	0	0	4	25	4
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	51	4	12	30	7	0	0	0	4	27	4

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	37	0	0	55	0	0			127	129	34
Stage 1	-	-	-	-	-	-			58	58	-
Stage 2	-	-	-	-	-	-			69	71	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	1574	-	-	1550	-	-			868	762	1039
Stage 1	-	-	-	-	-	-			965	847	-
Stage 2	-	-	-	-	-	-			954	836	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	1574	-	-	1550	-	-			857	0	1039
Mov Cap-2 Maneuver	-	-	-	-	-	-			857	0	-
Stage 1	-	-	-	-	-	-			960	0	-
Stage 2	-	-	-	-	-	-			946	0	-

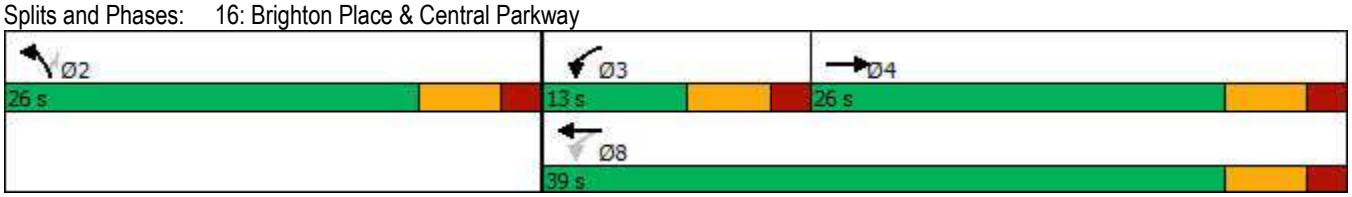
Approach	EB	WB	SB
HCM Control Delay, s	0.9	1.8	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1574	-	-	1550	-	-	939
HCM Lane V/C Ratio	0.005	-	-	0.008	-	-	0.038
HCM Control Delay (s)	7.3	0	-	7.3	0	-	9
HCM Lane LOS	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	26	13	26	39
Maximum Split (%)	40.0%	20.0%	40.0%	60.0%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	39	26
End Time (s)	26	39	0	0
Yield/Force Off (s)	20	33	59	59
Yield/Force Off 170(s)	9	33	48	59
Local Start Time (s)	0	26	39	26
Local Yield (s)	20	33	59	59
Local Yield 170(s)	9	33	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	218	25	15	132	38	35
Future Volume (veh/h)	218	25	15	132	38	35
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	237	27	16	143	41	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	996	112	577	1793	552	491
Arrive On Green	0.31	0.31	0.10	0.50	0.31	0.31
Sat Flow, veh/h	3312	363	1781	3647	1781	1585
Grp Volume(v), veh/h	130	134	16	143	41	38
Grp Sat Flow(s),veh/h/ln	1777	1805	1781	1777	1781	1585
Q Serve(g_s), s	3.5	3.6	0.3	1.3	1.1	1.1
Cycle Q Clear(g_c), s	3.5	3.6	0.3	1.3	1.1	1.1
Prop In Lane		0.20	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	550	559	577	1793	552	491
V/C Ratio(X)	0.24	0.24	0.03	0.08	0.07	0.08
Avail Cap(c_a), veh/h	550	559	588	1816	552	491
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	1.00
Uniform Delay (d), s/veh	16.6	16.6	10.4	8.3	15.8	15.8
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.4	0.1	0.4	0.4	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.8	16.9	10.4	8.3	16.0	16.1
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	264			159	79	
Approach Delay, s/veh	16.8			8.5	16.0	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	12.6	26.0		38.6
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		20.0	7.0	20.0		33.0
Max Q Clear Time (g_c+I1), s		3.1	2.3	5.6		3.3
Green Ext Time (p_c), s		0.2	0.0	1.2		0.8

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	246	144	67	95	25
Future Vol, veh/h	20	246	144	67	95	25
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	267	157	73	103	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	230	0	-	0	372	115
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1335	-	-	-	602	916
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	835	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1335	-	-	-	591	916
Mov Cap-2 Maneuver	-	-	-	-	591	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1335	-	-	-	591	916
HCM Lane V/C Ratio	0.016	-	-	-	0.175	0.03
HCM Control Delay (s)	7.7	0.1	-	-	12.4	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	53	15	15	25	32	24
Future Volume (Veh/h)	53	15	15	25	32	24
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	16	16	27	35	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	78	70	96	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	70	96	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	93	98	98	98	98	
cM capacity (veh/h)	860	803	777	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	58	16	43	35	26
Volume Left	58	0	0	35	0
Volume Right	0	0	27	0	26
cSH	860	803	1728	1623	1700
Volume to Capacity	0.07	0.02	0.02	0.02	0.02
Queue Length 95th (ft)	5	2	2	2	0
Control Delay (s)	9.5	9.6	8.9	7.3	0.0
Lane LOS	A	A	A	A	
Approach Delay (s)	9.5		8.9	4.2	
Approach LOS	A		A		

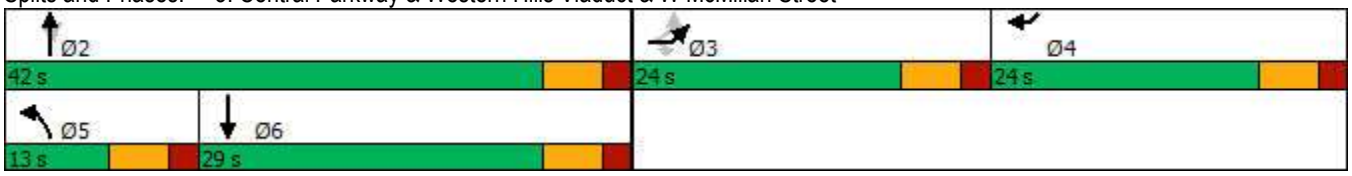
Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	56	185	137	79	120	10	0	143	64	0	77	10
Future Volume (vph)	56	185	137	79	120	10	0	143	64	0	77	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.992	0.850			0.850		0.953			0.850	
Flt Protected		0.955		0.950								
Satd. Flow (prot)	0	3423	1441	3433	3539	1583	0	3373	0	0	2787	0
Flt Permitted		0.616		0.950								
Satd. Flow (perm)	0	2208	1441	3433	3539	1583	0	3373	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		182	182			109		70			182	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	201	149	86	130	11	0	155	70	0	84	11
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	0	277	134	86	130	11	0	225	0	0	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	24.0	24.0	24.0	13.0	42.0	42.0		29.0			24.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	46.7%	46.7%		32.2%			26.7%	
Maximum Green (s)	18.0	18.0	18.0	7.0	36.0	36.0		23.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		11.2	11.2	7.1	36.4	36.4		26.5			10.1	
Actuated g/C Ratio		0.16	0.16	0.10	0.51	0.51		0.37			0.14	
v/c Ratio		0.56	0.35	0.26	0.07	0.01		0.18			0.17	
Control Delay		15.7	4.8	34.4	11.0	0.0		13.8			0.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		15.7	4.8	34.4	11.0	0.0		13.8			0.7	
LOS		B	A	C	B	A		B			A	
Approach Delay		12.2			19.3			13.8		0.7		
Approach LOS		B			B			B		A		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 72			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 45.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



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	10	81	10	33	28	10	0	0	0	10	10	10
Future Vol, veh/h	10	81	10	33	28	10	0	0	0	10	10	10
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	88	11	36	30	11	0	0	0	11	11	11

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	41	0	0	99	0	0			224	229	36
Stage 1	-	-	-	-	-	-			108	108	-
Stage 2	-	-	-	-	-	-			116	121	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1494	-	-			764	671	1037
Stage 1	-	-	-	-	-	-			916	806	-
Stage 2	-	-	-	-	-	-			909	796	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	1568	-	-	1494	-	-			740	0	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-			740	0	-
Stage 1	-	-	-	-	-	-			910	0	-
Stage 2	-	-	-	-	-	-			886	0	-

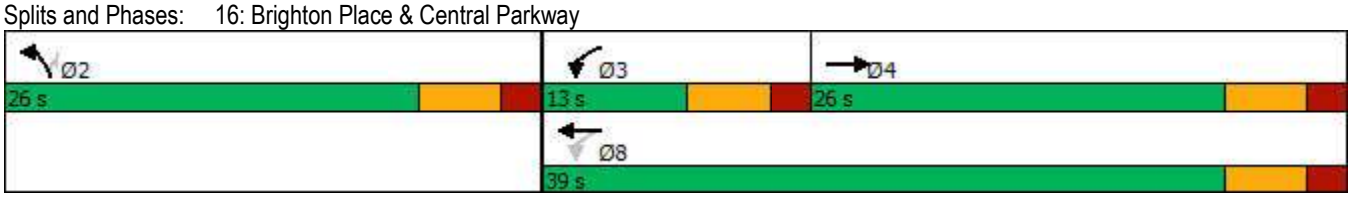
Approach	EB	WB	SB
HCM Control Delay, s	0.7	3.5	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1568	-	-	1494	-	-	864
HCM Lane V/C Ratio	0.007	-	-	0.024	-	-	0.038
HCM Control Delay (s)	7.3	0	-	7.5	0	-	9.3
HCM Lane LOS	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.1

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	26	13	26	39
Maximum Split (%)	40.0%	20.0%	40.0%	60.0%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	39	26
End Time (s)	26	39	0	0
Yield/Force Off (s)	20	33	59	59
Yield/Force Off 170(s)	9	33	48	59
Local Start Time (s)	0	26	39	26
Local Yield (s)	20	33	59	59
Local Yield 170(s)	9	33	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	218	41	29	132	63	58
Future Volume (veh/h)	218	41	29	132	63	58
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	237	45	32	143	68	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	923	173	568	1796	551	490
Arrive On Green	0.31	0.31	0.10	0.51	0.31	0.31
Sat Flow, veh/h	3082	558	1781	3647	1781	1585
Grp Volume(v), veh/h	139	143	32	143	68	63
Grp Sat Flow(s),veh/h/ln	1777	1770	1781	1777	1781	1585
Q Serve(g_s), s	3.8	3.9	0.7	1.3	1.8	1.8
Cycle Q Clear(g_c), s	3.8	3.9	0.7	1.3	1.8	1.8
Prop In Lane		0.32	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	549	547	568	1796	551	490
V/C Ratio(X)	0.25	0.26	0.06	0.08	0.12	0.13
Avail Cap(c_a), veh/h	549	547	577	1813	551	490
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	1.00
Uniform Delay (d), s/veh	16.8	16.8	10.5	8.2	16.0	16.1
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.5	0.2	0.4	0.8	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	17.0	10.5	8.3	16.5	16.6
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	282			175	131	
Approach Delay, s/veh	17.0			8.7	16.6	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	12.7	26.0		38.7
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		20.0	7.0	20.0		33.0
Max Q Clear Time (g_c+I1), s		3.8	2.7	5.9		3.3
Green Ext Time (p_c), s		0.3	0.0	1.3		0.8

Intersection Summary	
HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	246	144	67	95	39
Future Vol, veh/h	43	246	144	67	95	39
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	267	157	73	103	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	230	0	-	0	422	115
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	228	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1335	-	-	-	560	916
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1335	-	-	-	537	916
Mov Cap-2 Maneuver	-	-	-	-	537	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1335	-	-	-	537	916
HCM Lane V/C Ratio	0.035	-	-	-	0.192	0.046
HCM Control Delay (s)	7.8	0.1	-	-	13.3	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	87	10	10	39	40	46
Future Volume (Veh/h)	87	10	10	39	40	46
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	11	11	42	43	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	92	86	136	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92	86	136	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	89	99	99	96	97	
cM capacity (veh/h)	831	783	735	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	95	11	53	43	50
Volume Left	95	0	0	43	0
Volume Right	0	0	42	0	50
cSH	831	783	1369	1623	1700
Volume to Capacity	0.11	0.01	0.04	0.03	0.03
Queue Length 95th (ft)	10	1	3	2	0
Control Delay (s)	9.9	9.7	8.8	7.3	0.0
Lane LOS	A	A	A	A	
Approach Delay (s)	9.9		8.8	3.4	
Approach LOS	A		A		

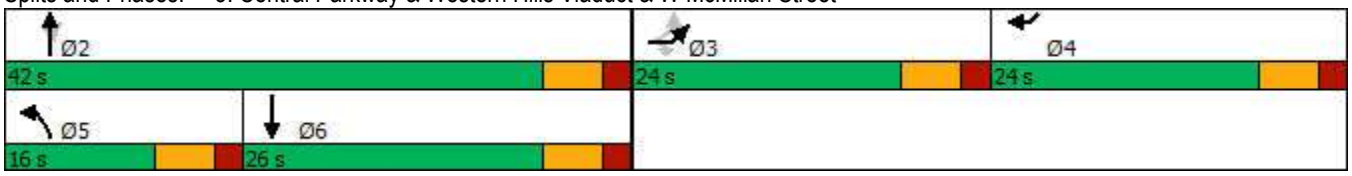
Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	89	233	187	224	282	29	0	187	115	0	201	9
Future Volume (vph)	89	233	187	224	282	29	0	187	115	0	201	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.992	0.850			0.850		0.943			0.850	
Flt Protected		0.955		0.950								
Satd. Flow (prot)	0	3423	1441	3433	3539	1583	0	3337	0	0	2787	0
Flt Permitted		0.613		0.950								
Satd. Flow (perm)	0	2197	1441	3433	3539	1583	0	3337	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		182	183			109		125			182	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	253	203	243	307	32	0	203	125	0	218	10
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	0	370	183	243	307	32	0	328	0	0	228	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	24.0	24.0	24.0	16.0	42.0	42.0		26.0			24.0	
Total Split (%)	26.7%	26.7%	26.7%	17.8%	46.7%	46.7%		28.9%			26.7%	
Maximum Green (s)	18.0	18.0	18.0	10.0	36.0	36.0		20.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		13.1	13.1	9.5	36.1	36.1		20.6			10.1	
Actuated g/C Ratio		0.17	0.17	0.12	0.47	0.47		0.27			0.13	
v/c Ratio		0.71	0.46	0.58	0.19	0.04		0.33			0.44	
Control Delay		22.9	8.7	38.6	13.0	0.1		15.7			11.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		22.9	8.7	38.6	13.0	0.1		15.7			11.8	
LOS		C	A	D	B	A		B			B	
Approach Delay		18.2			23.0			15.7		11.8		
Approach LOS		B			C			B		B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 77.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	84	5	17	84	13	0	0	0	10	36	14
Future Vol, veh/h	13	84	5	17	84	13	0	0	0	10	36	14
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	91	5	18	91	14	0	0	0	11	39	15

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	105	0	0	96	0	0			256	258	98
Stage 1	-	-	-	-	-	-			134	134	-
Stage 2	-	-	-	-	-	-			122	124	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	1486	-	-	1498	-	-			733	646	958
Stage 1	-	-	-	-	-	-			892	785	-
Stage 2	-	-	-	-	-	-			903	793	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	1486	-	-	1498	-	-			716	0	958
Mov Cap-2 Maneuver	-	-	-	-	-	-			716	0	-
Stage 1	-	-	-	-	-	-			883	0	-
Stage 2	-	-	-	-	-	-			891	0	-

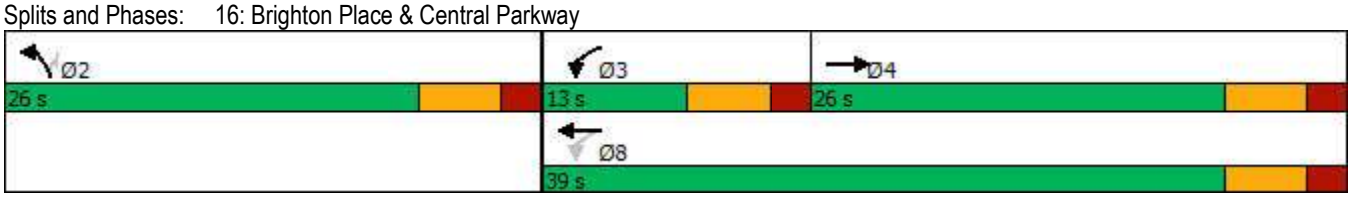
Approach	EB	WB	SB
HCM Control Delay, s	0.9	1.1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1486	-	-	1498	-	-	840
HCM Lane V/C Ratio	0.01	-	-	0.012	-	-	0.078
HCM Control Delay (s)	7.4	0	-	7.4	0	-	9.6
HCM Lane LOS	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.3

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	26	13	26	39
Maximum Split (%)	40.0%	20.0%	40.0%	60.0%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	39	26
End Time (s)	26	39	0	0
Yield/Force Off (s)	20	33	59	59
Yield/Force Off 170(s)	9	33	48	59
Local Start Time (s)	0	26	39	26
Local Yield (s)	20	33	59	59
Local Yield 170(s)	9	33	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	314	39	53	412	92	66
Future Volume (veh/h)	314	39	53	412	92	66
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	341	42	58	448	100	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	981	120	527	1804	548	488
Arrive On Green	0.31	0.31	0.11	0.51	0.31	0.31
Sat Flow, veh/h	3281	390	1781	3647	1781	1585
Grp Volume(v), veh/h	189	194	58	448	100	72
Grp Sat Flow(s),veh/h/ln	1777	1800	1781	1777	1781	1585
Q Serve(g_s), s	5.4	5.4	1.2	4.6	2.7	2.1
Cycle Q Clear(g_c), s	5.4	5.4	1.2	4.6	2.7	2.1
Prop In Lane		0.22	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	547	554	527	1804	548	488
V/C Ratio(X)	0.35	0.35	0.11	0.25	0.18	0.15
Avail Cap(c_a), veh/h	547	554	527	1804	548	488
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	1.00
Uniform Delay (d), s/veh	17.4	17.5	10.8	9.0	16.5	16.3
Incr Delay (d2), s/veh	0.4	0.4	0.1	0.1	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.1	0.4	1.5	1.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	17.8	10.8	9.1	17.2	17.0
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	383			506	172	
Approach Delay, s/veh	17.8			9.3	17.1	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	13.0	26.0		39.0
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		20.0	7.0	20.0		33.0
Max Q Clear Time (g_c+I1), s		4.7	3.2	7.4		6.6
Green Ext Time (p_c), s		0.4	0.0	1.7		3.0

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	352	460	169	146	51
Future Vol, veh/h	50	352	460	169	146	51
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	383	500	184	159	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	684	0	-	0	892	342
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	300	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	905	-	-	-	281	654
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	260	654
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	725	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	31.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	905	-	-	-	260	654
HCM Lane V/C Ratio	0.06	-	-	-	0.61	0.085
HCM Control Delay (s)	9.2	0.3	-	-	38.4	11
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	0.2	-	-	-	3.6	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	96	25	37	64	44	65
Future Volume (Veh/h)	96	25	37	64	44	65
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	104	27	40	70	48	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	116	96	167	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	96	167	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	86	96	94	94	97	
cM capacity (veh/h)	753	771	704	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	104	27	110	48	71
Volume Left	104	0	0	48	0
Volume Right	0	0	70	0	71
cSH	753	771	1705	1623	1700
Volume to Capacity	0.14	0.04	0.06	0.03	0.04
Queue Length 95th (ft)	12	3	5	2	0
Control Delay (s)	10.5	9.8	9.2	7.3	0.0
Lane LOS	B	A	A	A	
Approach Delay (s)	10.4		9.2	2.9	
Approach LOS	B		A		

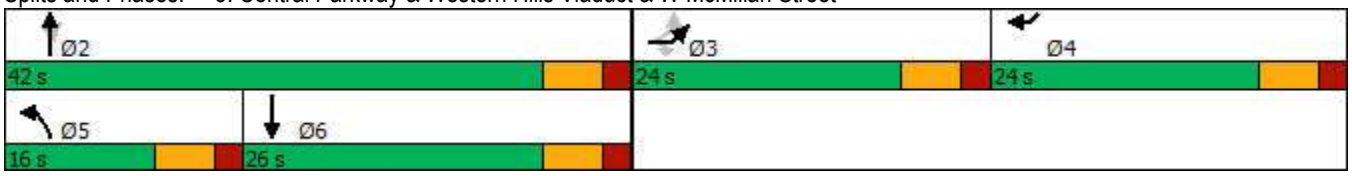
Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Traffic Volume (vph)	89	233	187	224	322	29	0	206	115	0	201	10
Future Volume (vph)	89	233	187	224	322	29	0	206	115	0	201	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	120	200		25	0		0	0	0	
Storage Lanes		2	1	2		1	0		0	0	2	
Taper Length (ft)		25		25			25			25		
Lane Util. Factor	0.95	0.97	0.91	0.97	0.95	1.00	1.00	0.95	0.95	1.00	0.88	1.00
Frt		0.992	0.850			0.850		0.946			0.850	
Flt Protected		0.955		0.950								
Satd. Flow (prot)	0	3423	1441	3433	3539	1583	0	3348	0	0	2787	0
Flt Permitted		0.613		0.950								
Satd. Flow (perm)	0	2197	1441	3433	3539	1583	0	3348	0	0	2787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		182	183			109		109			182	
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		2154			481			1171		722		
Travel Time (s)		49.0			10.9			26.6		16.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	253	203	243	350	32	0	224	125	0	218	11
Shared Lane Traffic (%)			10%									
Lane Group Flow (vph)	0	370	183	243	350	32	0	349	0	0	229	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	Right
Median Width(ft)		24			24			24		0		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1	1	1	2	1		2			1	
Detector Template	Left	Left	Right	Left	Thru	Right		Thru			Right	
Leading Detector (ft)	20	20	20	20	100	20		100			20	
Trailing Detector (ft)	0	0	0	0	0	0		0			0	
Detector 1 Position(ft)	0	0	0	0	0	0		0			0	
Detector 1 Size(ft)	20	20	20	20	6	20		6			20	
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	
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	Perm	Prot	Perm	Prot	NA	Perm		NA			Prot	
Protected Phases		3		5	2			6			4	
Permitted Phases	3		3			2						

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Detector Phase	3	3	3	5	2	2		6			4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	20.0	20.0		20.0			10.0	
Minimum Split (s)	24.0	24.0	24.0	13.0	26.0	26.0		26.0			24.0	
Total Split (s)	24.0	24.0	24.0	16.0	42.0	42.0		26.0			24.0	
Total Split (%)	26.7%	26.7%	26.7%	17.8%	46.7%	46.7%		28.9%			26.7%	
Maximum Green (s)	18.0	18.0	18.0	10.0	36.0	36.0		20.0			18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0		6.0			6.0	
Lead/Lag	Lead	Lead	Lead	Lead				Lag			Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Recall Mode	None	None	None	None	Max	Max		Max			None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)		13.1	13.1	9.5	36.1	36.1		20.6			10.2	
Actuated g/C Ratio		0.17	0.17	0.12	0.47	0.47		0.27			0.13	
v/c Ratio		0.71	0.46	0.58	0.21	0.04		0.36			0.44	
Control Delay		22.9	8.8	38.6	13.2	0.1		17.5			11.8	
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay		22.9	8.8	38.6	13.2	0.1		17.5			11.8	
LOS		C	A	D	B	A		B			B	
Approach Delay		18.2			22.4			17.5		11.8		
Approach LOS		B			C			B		B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 77.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Central Parkway & Western Hills Viaduct & W McMillan Street



Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	10	128	10	51	84	10	0	0	0	10	10	14
Future Vol, veh/h	10	128	10	51	84	10	0	0	0	10	10	14
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, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	139	11	55	91	11	0	0	0	11	11	15

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	102	0	0	150	0	0			374	379	97
Stage 1	-	-	-	-	-	-			207	207	-
Stage 2	-	-	-	-	-	-			167	172	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	1490	-	-	1431	-	-			627	553	959
Stage 1	-	-	-	-	-	-			828	731	-
Stage 2	-	-	-	-	-	-			863	756	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	1490	-	-	1431	-	-			596	0	959
Mov Cap-2 Maneuver	-	-	-	-	-	-			596	0	-
Stage 1	-	-	-	-	-	-			821	0	-
Stage 2	-	-	-	-	-	-			828	0	-

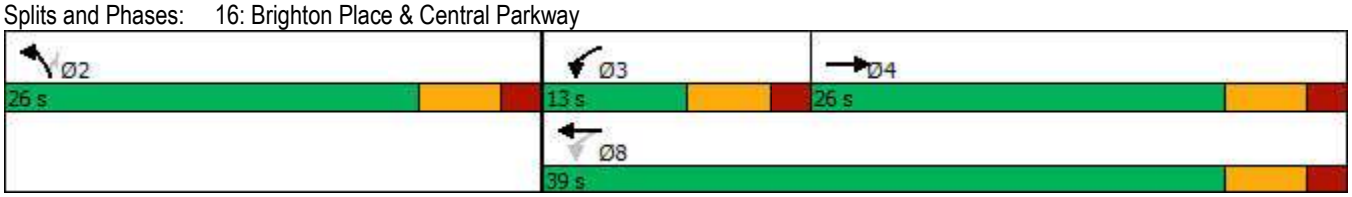
Approach	EB	WB	SB
HCM Control Delay, s	0.5	2.7	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1490	-	-	1431	-	-	765
HCM Lane V/C Ratio	0.007	-	-	0.039	-	-	0.048
HCM Control Delay (s)	7.4	0	-	7.6	0	-	9.9
HCM Lane LOS	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0.2

Phase Number	2	3	4	8
Movement	NBL	WBL	EBT	WBTL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize		Yes	Yes	
Recall Mode	Max	None	None	None
Maximum Split (s)	26	13	26	39
Maximum Split (%)	40.0%	20.0%	40.0%	60.0%
Minimum Split (s)	24	13	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	7	7	20	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7		7	
Flash Dont Walk (s)	11		11	
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	39	26
End Time (s)	26	39	0	0
Yield/Force Off (s)	20	33	59	59
Yield/Force Off 170(s)	9	33	48	59
Local Start Time (s)	0	26	39	26
Local Yield (s)	20	33	59	59
Local Yield 170(s)	9	33	48	59

Intersection Summary	
Cycle Length	65
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 16: Brighton Place & Central Parkway



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	314	58	81	412	132	93
Future Volume (veh/h)	314	58	81	412	132	93
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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	341	63	88	448	143	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	923	169	516	1804	548	488
Arrive On Green	0.31	0.31	0.11	0.51	0.31	0.31
Sat Flow, veh/h	3094	548	1781	3647	1781	1585
Grp Volume(v), veh/h	200	204	88	448	143	101
Grp Sat Flow(s),veh/h/ln	1777	1772	1781	1777	1781	1585
Q Serve(g_s), s	5.7	5.8	1.9	4.6	3.9	3.1
Cycle Q Clear(g_c), s	5.7	5.8	1.9	4.6	3.9	3.1
Prop In Lane		0.31	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	547	545	516	1804	548	488
V/C Ratio(X)	0.37	0.37	0.17	0.25	0.26	0.21
Avail Cap(c_a), veh/h	547	545	516	1804	548	488
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	1.00
Uniform Delay (d), s/veh	17.6	17.6	11.0	9.0	16.9	16.6
Incr Delay (d2), s/veh	0.4	0.4	0.2	0.1	1.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	2.2	0.7	1.5	1.7	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	18.0	11.2	9.1	18.1	17.6
LnGrp LOS	B	B	B	A	B	B
Approach Vol, veh/h	404			536	244	
Approach Delay, s/veh	18.0			9.4	17.9	
Approach LOS	B			A	B	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		26.0	13.0	26.0		39.0
Change Period (Y+Rc), s		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		20.0	7.0	20.0		33.0
Max Q Clear Time (g_c+I1), s		5.9	3.9	7.8		6.6
Green Ext Time (p_c), s		0.6	0.0	1.8		3.0

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	77	352	460	169	146	79
Future Vol, veh/h	77	352	460	169	146	79
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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	383	500	184	159	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	684	0	-	0	952	342
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	360	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	905	-	-	-	257	654
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	677	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	905	-	-	-	227	654
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	37.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	905	-	-	-	227	654
HCM Lane V/C Ratio	0.092	-	-	-	0.699	0.131
HCM Control Delay (s)	9.4	0.4	-	-	51	11.3
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.3	-	-	-	4.5	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	140	12	14	87	57	99
Future Volume (Veh/h)	140	12	14	87	57	99
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	13	15	95	62	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				2		
Median type					None	
Median storage veh)						
Upstream signal (ft)					126	
pX, platoon unblocked						
vC, conflicting volume	132	124	232	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	132	124	232	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	79	98	98	91	96	
cM capacity (veh/h)	732	737	643	1085	1623	

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	152	13	110	62	108
Volume Left	152	0	0	62	0
Volume Right	0	0	95	0	108
cSH	732	737	1256	1623	1700
Volume to Capacity	0.21	0.02	0.09	0.04	0.06
Queue Length 95th (ft)	19	1	7	3	0
Control Delay (s)	11.2	10.0	8.9	7.3	0.0
Lane LOS	B	A	A	A	
Approach Delay (s)	11.1		8.9	2.7	
Approach LOS	B		A		

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D

Pedestrian Traffic Distributions

CARPENTER MARTY transportation

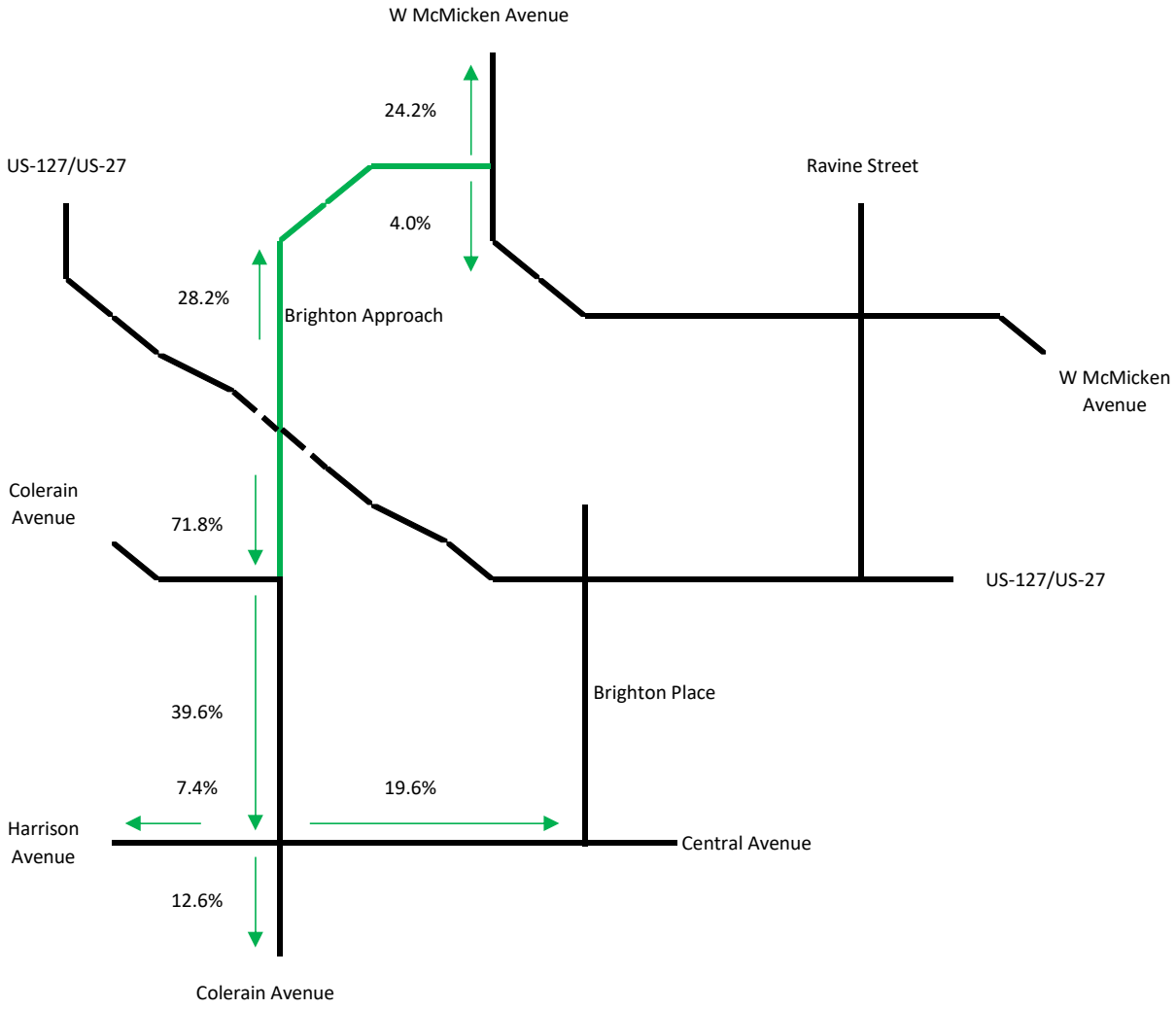
Appendix D

Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
			Pedestrian Destinations From Brighton Approach Bridge	

^
N

*Distributions calcuated based on StreetLight Origin-Destination data. Data referenced all days (Monday-Sunday) and all hours (12AM-12AM).



Brighton Approach Study
Traffic Volume Calculations

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
			Pedestrian Origins To Brighton Approach Bridge	

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N

*Distributions calcuated based on StreetLight Origin-Destination data. Data referenced all days (Monday-Sunday) and all hours (12AM-12AM).

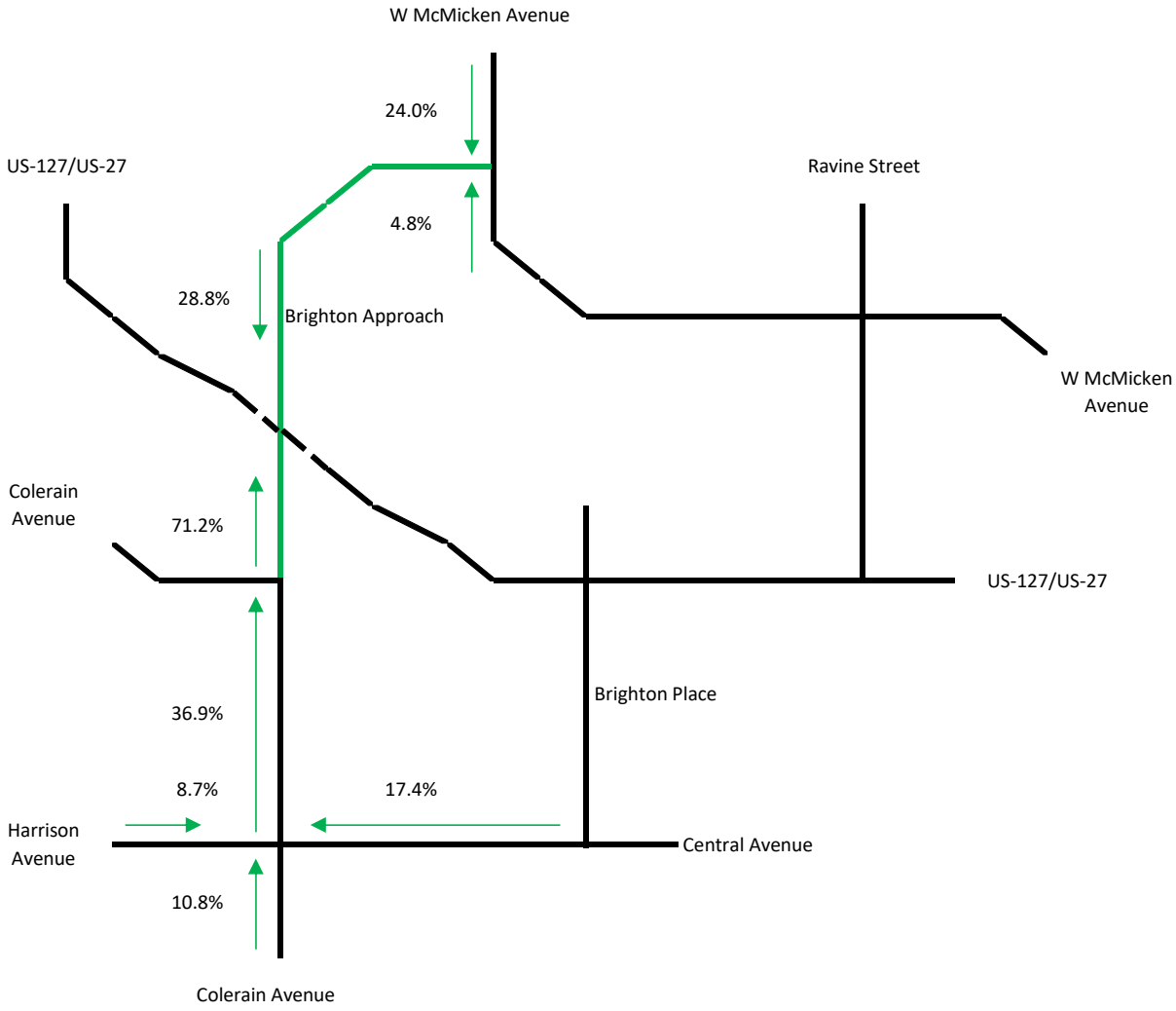


Exhibit G

city of CINCINNATI
TRANSPORTATION & ENGINEERING

January 11, 2022

Subject: Response to Comments, Alternative Selected
Re: Brighton Approach Bridge Public Meeting (HAM-US27-3.58, PID: 104788)

Dear Interested Party,

The City of Cincinnati Department of Transportation & Engineering (DOTE), in coordination with the Ohio Department of Transportation (ODOT), conducted a virtual public meeting on October 20, 2021, to present four alternatives or options to improve the Brighton Approach Bridge. The alternatives include:

- Alternative 1: No Build/No Improvements - Continue routine maintenance only
- Alternative 2: Replace with new bridge for both vehicles and pedestrians
- Alternative 3: Replace with new bridge for pedestrians only
- Alternative 4: Remove existing bridge and build new ADA pathway on nearby hillside

The project team received feedback from area residents, community groups and individual stakeholders both during the public meeting and our follow up outreach efforts during the subsequent comment period. Most of the feedback was in the form of responses to an online survey, direct comments made during the public meeting, and letters of support from community councils and other community organizations. Other feedback included a few emails and phone calls from interested individuals.

When we compiled and reviewed all of the feedback, the concern that stood out the most was losing the connection between neighborhoods that the bridge provides. There was a desire to keep that connection for both vehicles and pedestrians in order to promote safety, foster future development, and honor the historic and aesthetic significance of the bridge to the area. Other notable feedback expressed support for removing the bridge coupled with questions or concerns about the nature of the pedestrian-only alternatives (Alternatives 3 and 4).

We received letters of support in favor of Alternative 2 from the CUF Neighborhood Association and the West End Neighborhood Development Corporation, while the West End Community Council passed a motion at their November 16, 2021 meeting in support of Alternative 2. In addition, the West McMicken Improvement Association submitted a letter stating a preference for a full renovation of the existing bridge for both vehicles and pedestrians, but also expressed support for Alternative 2 as a second choice if renovating the existing bridge isn't feasible.

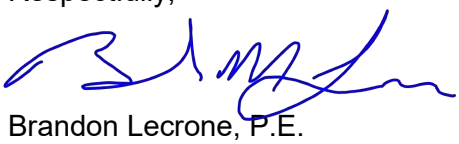
We have included a summary of common questions, comments, concerns and our responses in the attached table. You may also read more about the project and view a recording of our public meeting on the project website at www.cincinnati-oh.gov/brighton.

After considering all the comments from the general public and other stakeholders, we will be moving forward with Alternative 2 (replacing the bridge with a new bridge for both vehicles and pedestrians) as the preferred alternative. In December, DOTE was awarded an additional State grant which, together with the previously secured Federal grant, will fund up to 80% of the construction costs. The remaining 20% will be paid for with previously committed City capital funds. Design work is scheduled to begin in February, with construction beginning in late 2023 or early 2024.

We sincerely appreciate your interest and involvement in the project thus far. An opportunity for continued involvement is available via the Consulting Party process, which will allow those interested in the effects the project will have on the historic bridge to provide input on mitigating those effects and honoring the historic nature of the bridge. More information about this opportunity can be found by visiting the project website, www.cincinnati-oh.gov/brighton, and scrolling down to “Historic Preservation – Consulting Party Process”, or by contacting me directly (see contact information below).

Finally, please direct any comments regarding the selection of the preferred alternative to me by phone at (513) 352-2366, or by email at brandon.lecrone@cincinnati-oh.gov no later than February 14, 2022.

Respectfully,



Brandon Lecrone, P.E.
Project Manager, City of Cincinnati

Brighton Approach Bridge Project
HAM-US27-3.58, PID: 104788
Public Comments and Responses

Topic	Comment/Concern (Summarized)	Project Team Response
I-75	I remember a proposed interchange at the Western Hills Viaduct and I-75 having a direct connection onto Central Parkway. Our neighborhood is concerned about this increasing speed and traffic from vehicles exiting the interstate.	The connection of that interchange to Central Parkway is no longer under consideration. ODOT is still in the planning stages of designing the new interchange at Western Hills Viaduct.
	Will the Brighton Bridge be impacted by the proposed Western Hills Viaduct replacement? If so, how?	We do not anticipate that the Western Hills Viaduct project will impact the Brighton bridge either physically or in the timing of construction. The City of Cincinnati project managers for the Brighton Approach Bridge and the Western Hills Viaduct projects coordinate regularly, so there should not be any issues with the two projects impacting one another.
Central Parkway, Traffic Calming	I would like to see some traffic calming measures on Central Parkway in the project area since there are regular run-off-the-road crashes due to high speeds and the curve in Central Parkway at the bridge.	The City regularly evaluates locations for safety improvements based on available crash data and has recently installed a high-friction surface on the parkway at this location to help reduce those types of crashes.
Project Impacts, Bus Routes/Transit	I don't really use the bridge, but I do walk on Central Parkway to catch the bus. Will the project impact Central Parkway or the bus routes?	There may be some temporary road closures on Central Parkway from time to time during the project that might affect Metro bus service. If there are, they would be relatively short duration (up to a few days at a time) and would be done during off-peak hours or on the weekend, if possible. The Brighton Approach Bridge itself is not currently used for any fixed route services. There is a weight restriction that limits Metro buses from using the bridge.
	Has SORTA weighed in on a preference?	We have coordinated with multiple representatives at SORTA concerning the project and the potential impact on services with replacing or removing the bridge. Because of the poor condition of the bridge, there is a weight restriction that restricts Metro buses from using the bridge. Prior to the weight restriction being enforced, SORTA did use the bridge as a route to the Queensgate garage from Hughes High School in the mornings. SORTA does not currently utilize the Brighton Approach bridge for fixed route service or any routes to/from the storage garages. Although SORTA has not offered a preference for any alternative, there will not be any permanent impacts to service or significant

		concerns with the selection of Alternative 2 as the preferred alternative moving forward.
Right-of-way	Will residents or businesses next to the project area must move?	No, we do not anticipate the need to purchase any private properties or homes for the project. Some small temporary or permanent easements may be required.
Construction	Can the work be done in the summer when school is out?	While a lot of the work will be done in the summer, the amount of time needed to complete the project would be about 1 year, so some work will need to be done during the school year.
Funding	I am aware of a TIF district in CUF that extends to the project area. Would a portion of the fund balance be eligible to apply to the funding gap of the bridge project?	CUF has other projects that much of their current balance is intended for, but we are keeping it in mind as a possibility if we're not able to secure funding from other sources (subject to support by CUF). We've also recently applied for a state grant through the Ohio Public Works Commission (OPWC) to hopefully close any funding gaps to proceed with the construction of Alternative 2.

	Can you explain why Alternative 1 was rated “poor” in terms of cost while Alternative 2 and 3 were rated “fair”?	After further discussions amongst the project team about the initial alternatives matrix, it was decided that a new approach was needed to be clearer about the differences between the alternatives and the various associated impacts. The new table is more descriptive of the pros and cons of each alternative, rather than giving them a rating from “poor” to “good”. Please visit the website to view the updated alternatives comparison: www.cincinnati-oh.gov/brighton-approach-bridge. Our consideration of cost includes both the initial cost to construct the project, as well as the maintenance and repair costs over the life of the bridge (life-cycle costs). Alternative 1 was rated poor because delaying the project results in additional maintenance on the existing bridge, increases the likelihood of the need for expensive emergency repairs, and increases the cost to remove or replace the bridge in the future due to inflation. While Alternative 2 does have a high initial construction cost, the new bridge would have lower life-cycle costs because of the updated construction and full replacement of all degraded bridge parts. Alternative 3 has a slightly lower initial construction cost than Alternative 2. Alternative 3 would also have a lower life-cycle construction cost because the bridge is smaller (only for pedestrians) which would require less materials, less major wear and tear, and less maintenance.
	Can you please clarify "design impacts" to help understand why Alternative 1 is rated "Poor" in this area?	After further discussions about the initial alternatives matrix amongst the project team, it was decided that a new approach was needed to be clearer about the differences between the alternatives and the various associated impacts. The new table is more descriptive of the pros and cons of each alternative, rather than giving them a rating from “poor” to “good”. Please visit the website to view the updated alternatives comparison: www.cincinnati-oh.gov/brighton-approach-bridge. The category “design impacts” refers to how well a particular alternative addresses various design criteria. For example, the bridge is currently posted for a reduced weight limit and the vertical clearance above Central Parkway is too low. Alternative 1 does not improve these two things, so it was rated as poor in the initial alternatives matrix. Other criteria considered under design impacts included compliance with the Americans with Disabilities Act, roadway geometry, horizontal clearance between Central Parkway and the bridge supports.

Ped. access below bridge	I bike and walk under the bridge and drive and walk over the bridge. From a safety standpoint it can be scary sometimes.	The project team agrees. Pedestrians on the south side of Central Parkway are forced to meander between the bridge support columns in the hidden, unlighted, area under the bridge. This area attracts encampments and is often littered with trash. The sidewalk on the north side is very narrow and is also often littered with trash. Part of the purpose of this project is to fix this problem and make pedestrian and bicycle movement below the bridge easier and safer. Alternative 2 will construct the supports on both sides further away from Central Parkway to allow a larger width sidewalk and some "buffer" space for the bike lanes below the bridge. Itwill also eliminate the open area around the south support columnsthat collects trash and attracts encampments.
	Sidewalks below the bridge are not wheelchair accessible (due to pier column configuration) causing pedestrians, wheelchairs, strollers to use the roadway.	The project team is very aware of this issue. The existing bridge support columns on the south side effectively block the sidewalk along Central Parkway. The north sidewalk narrows to less than 2 feet wide and tends to accumulate blowing trash and debris. These conditions make passage for pedestrians difficult, unsafe and, for those in wheelchairs, practically impossible. Part of the purpose of this project is to fix this problem and make pedestrian movement below the bridge easier, safer, and ADA accessible. Alternative 2 will construct the southern support further away from Central Parkway to allow a larger width sidewalk below the bridge. The northern bridge support will also be reconstructed further away from Central Parkwayto allow for a wider width sidewalk that is ADA accessible.
Bicycle on Central Parkway	I would love to connect the Central Parkway bike lane to the business district and the Riverfront, which would give you extended miles of biking and bridges to get to Kentucky.	The City is continually evaluating and prioritizing locations to add connections and close gaps in the bicycle transportation network system wide, including between Central Parkway, the Central Business District, and the riverfront.
	Is there any interest by the City for a 5-to-3 road diet on Central Parkway to slow vehicle traffic and reduce the crossing distance for a potential option 4 build?	The City is not currently studying such a project, but may do so in the future.

Rehabilitation	Successful rehabilitation projects have happened for the Brighton Approach bridge in the past. Why can't the bridge be rehabilitated again?	A Feasibility Study completed in 2016 included detailed bridge inspections, concrete core samples, and testing which revealed a level of deterioration that would require a much more extensive rehabilitation than initially expected. ODOT and the City have agreed that the condition of the concrete is too poor and that the needed repairs are unlikely to be successful. An additional study completed in 2017 evaluated seven alternatives to either remove the bridge, replace portions of it, or replace it entirely. This study indicated that replacing portions of the bridge would have long term repair and maintenance costs that are 2 to 3 times higher than for a new bridge and would not address many of the additional project needs (Pedestrian and bicycle safety/access, bridge weight limits, height limits, bridge supports, etc.). Based on this information, the rehabilitation and partial replacement options were determined not to be feasible.
Removing the Bridge	Removing the bridge entirely will help link together the efforts to beautify and calm Central Parkway and Linn St. by enabling an extension of the beautification efforts.	Removing the bridge without replacing it would indeed create additional open space that could be used for beautification or other improvements.
	By removing vehicular access on the bridge, wouldn't nearby intersections become more congested? The bridge offers an important alternative to the main thoroughfares.	According to traffic counts taken in May 2021 the bridge currently has an average daily vehicular traffic volume of approximately 750 vehicles (over a 24 hour period), which is small compared to other surrounding roads (the average daily traffic on Central Parkway in 2019 was 14,880 vehicles, the average daily traffic on West McMicken Avenue in 2019 was 4,627 vehicles). Therefore, the removal of the Brighton Approach bridge would not shift a significant number of vehicles to nearby roads and intersections. However, with the selection of Alternative 2, the vehicular connection from West McMicken Avenue to Central Avenue will remain. No cars will be displaced to the surrounding intersections.
	If the bridge is removed and not replaced, what would happen to the extra space created between Central Parkway and Colerain?	The space created by the removal of the bridge could be used for additional sidewalk beautification efforts, a memorial site for the historic bridge, or something else that the community would like to see there. However, with the selection of Alternative 2 as the preferred alternative moving forward, there will be no extra space created between Central Parkway and Colerain.

	I'm concerned that eliminating the bridge will eliminate a connection for emergency response and reduce response times.	We have coordinated specifically with local fire/EMS and police to gather feedback from them on how the removal of the bridge may impact their ability to perform their services. The Cincinnati Fire Department and Cincinnati Police Department responded that they don't use the bridge when responding to calls, therefore the removal of the bridge would not impact response times. However, with the selection of Alternative 2, the vehicular connection from West McMicken Avenue to Central Avenue will remain and the bridge will be available as an option for our local emergency services to use.
	Removing the bridge could make businesses on Colerain more visible and open greenspace there for stormwater management which would make their view a lot nicer.	Removing the bridge would indeed remove the physical and visual barrier between Central Parkway and Central Avenue, although we are not currently aware of any stormwater management needs that would benefit from the additional space.
	The bridge is a vital physical connection to Central Parkway. Removing it would severely disconnect the surrounding neighborhood.	The project team understands this is an important issue with the removal of the bridge. Due to the amount of public feedback we received that had similar concerns, we have selected alternative 2 as the preferred alternative moving forward which will preserve the physical connection to Central Parkway.

	The Brighton Approach bridge also serves as a visual connection to the overall design of this part of town with historic art deco elements being repeated in other infrastructure in the project area. Removing it will weaken the historic look and “feel” of the area.	With the selection of Alternative 2 as the preferred alternative, the City and our design consultant will continue to seek input from interested stakeholders regarding feasible ways to honor the historic nature and appearance of the existing bridge in the design of the new bridge and/or in other ways. Due to the historic nature of the bridge, the City is following a formal process mandated by Federal law by working with the Ohio Department of Transportation (ODOT) and State Historic Preservation Office (SHPO) to consider the effects of the project on the historic bridge whereby Consulting Parties will have the opportunity to provide input on the project and efforts to mitigate the removal of the bridge. If you would like to become a Consulting Party to help incorporate historic preservation values into the project planning, please visit our webpage (cincinnati-oh.gov/brighton-approach-bridge) and navigate to the “Historic Preservation – Consulting Party Process” tab.
Alternative 2 (Replace with new bridge for vehicles and pedestrians)	Option 2 seems like a viable option, however I’m concerned about this alternative allowing large trucks to travel on the parkway. Allowing trucks on the parkway would further disconnect Clifton from the West End by creating more of a "highway" and making Central Parkway a more dangerous place for pedestrian traffic. More trucks also mean more noise, and more damage to the roads, resulting in more maintenance cost.	Trucks are currently prohibited from travelling on Central Parkway except to make deliveries to properties whose only entrance is on the parkway. This restriction is based on the classification as a parkway and not related to the low clearance under the Brighton Bridge. Increasing the clearance under the bridge will not remove the truck restriction.
	Alternative 2 will improve safety, assist in fostering continued urban development, and connect neighborhoods for years to come.	The project team agrees and has selected Alternative 2 as the preferred alternative moving forward.

	Would alternative 2's design simplify the Colerain/Harrison/Central Avenue/Brighton Approach intersection to make it less confusing or prone to abuse by negligent drivers?	The project team will consider possible improvements that could be incorporated into the bridge project, but significant changes or improvements to this intersection are beyond the scope of this project.
	If you build a new bridge, will you reduce trash accumulation?	Yes, the new bridge will get rid of the open area that's underneath the south support columns. This will remove the feeling of an enclosure that will hopefully prohibit people from staying there and leaving trash and debris behind. Similarly, the new support on the north side would be moved away from the roadway to allow for a full width sidewalk to pass through. This will eliminate the small crevice where trash collects.
Alt 4	I think alternative 4 is the best option, by both increasing access and being fiscally responsible. I also think it will be a great way to allow for a people-first redesign of Central Parkway.	Alternative 4 is beneficial in many ways, however it still had a mid to high cost and loss of vehicular connection from West McMicken Avenue to Central Avenue. Due to the amount of public feedback we received that had concerns about the loss of the bridge's vehicular use, we have selected Alternative 2 as the preferred alternative moving forward which will preserve the physical connection over Central Parkway.
	Will there be additional improvements for the stairs next to the Mockbee? Lighting, flowers, new trash cans, etc.? The art climb at the corner of Gilbert Avenue and Eden Park Drive could be used as inspiration.	Improvements to the stairs as part of Alternative 4 may have been considered depending on available funding. However, Alternative 2 was selected as the preferred alternative moving forward.
	The Brighton Place Steps are in desperate need of repair. Will the project include work to improve and replace the steps? Or will it just add the ADA accessible path?	Alternative 4 may have included repairs to the existing steps. However, Alternative 2 was selected as the preferred alternative moving forward.
	How steep would the ramps or pathway be on the hillside? It looks like it would be hard for someone in a wheelchair to use.	The ramps in Alternative 4 would be specifically designed to comply with ADA guidelines. The slopes would be relatively flat (maximum 8% slope) and would have a flat landing spot every 30 feet. If Alternative 4 was selected moving forward, the team would have optimized the design to make the slopes as flat as possible, however, Alternative 2 was selected as the preferred alternative moving forward.
Public Involvement	One recommendation would be to partner with the various community centers (CHL Impact Center, SHNH, YMCA, etc.) and CRC facilities to place feedback options at those facilities.	Thank you for your suggestion. Prior to the public meeting, flyers were posted at many such locations as well as various nearby businesses, bus stops, parks, and on the bridge itself. We are always looking for ways to improve our public engagement and will look to increase our partnerships with community organizations in this way going forward.

	I watched the public presentation the city gave and have also seen the notices posted on the bridge itself. The City has done a very good job of keeping the general public in the loop concerning the Brighton Approach.	We're glad to hear that you've seen the project notices and have felt in-the-loop on project updates and details. We will continue to post updates to the project webpage (cincinnati-oh.gov/brighton-approach-bridge). If you would like to be added to our email distribution list to receive updates, please send an email to ursula.miller@cincinnati-oh.gov.
National Register	I think the bridge should be on the National Historic register.	Currently, the bridge is eligible for listing on the National Historic Register. Nominations for the bridge to be officially listed on the National register can be submitted to the Ohio State Historic Preservation Office (SHPO) from property owners, historical societies, preservation organizations, governmental agencies, and other individuals or groups. It is ultimately up to SHPO and Ohio's National Register Review Board to then submit the bridge for recommendation to the National Park Service.
	You mentioned that the bridge is eligible for the National Register, but the process has not been completed. If completed, would this allow additional funding sources, grants, etc.?	That is correct. The bridge was previously evaluated by the Ohio Department of Transportation to determine its eligibility. The bridge is eligible for listing on the National Register, but it is not formally listed. There are some funding sources that specifically address historic bridges and preservation; however, those funds are limited in what types of projects can use them and would not apply to this project. We will continue to look at funding sources for potential use in commemorating the old bridge or other mitigation and minimization efforts for impacts to the historic bridge now that Alternative 2 has been selected as the preferred alternative.
Bridge Usage	750 vehicles a day traveling on the bridge does not seem to warrant spending millions of dollars on a replacement (especially when pedestrian safety is chronically underfunded and a huge priority). The bridge also isn't very useful for a car since you can continue down the street to use another intersection. There's also already so many roads in that one spot.	The bridge does not have a high volume of daily vehicular traffic, however, due to the amount of public feedback we received that had concerns about the loss of the bridge's vehicular use and physical and visual connection between neighborhoods, we have selected Alternative 2 as the preferred alternative moving forward which will preserve the vehicular use of the bridge.
Other	Is this the last remaining bridge that formerly crossed the canal?	In a sense, yes, although the current Brighton Approach bridge technically never crossed the canal. There was an earlier streetcar bridge and a pedestrian bridge that were demolished around 1921 to accommodate the construction of the subway and Central Parkway, and the current bridge was built to replace it around 1926.

	Can the bridge remain as-is and just be used for pedestrian and bicycle traffic?	Unfortunately, due to its poor condition, if the bridge is left as-is it would continue to deteriorate and without significant maintenance and repairs would eventually become a safety concern. The bridge has deteriorated to a point where the needed repairs would likely not be successful or would be cost-prohibitive in the long term. There are also secondary project needs (such as increasing the vertical clearance below the bridge, pedestrian and bicycle access below the bridge, and more) that would not be met if the bridge is left as-is.
	Are City Planners working on the project? Are you considering possible future modes of transportation and trends in transportation technologies, like autonomous electric vehicles, when planning your projects?	We do have Transportation Planners involved in the project. Unfortunately, we currently do not have resources within the Department of Transportation & Engineering for considering possible future transportation technologies such as autonomous vehicles when planning our transportation projects.
	Cars always speed along the curve of McMicken. Reconfiguring the Brighton Approach as it intersects McMicken Avenue could help solve this problem. Could that be part of the solution?	Unfortunately, the scope of the project limits us to improvements only to the bridge itself based on the grant funds that have been obtained. In addition, meaningful improvements at the McMicken & Brighton intersection would likely require the demolition of existing buildings which would not be desired.