

West Chester Pike at Paoli Pike

Multimodal Traffic and Circulation Study



MARCH 2018



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Executive Summary

At the request of Chester County, the Delaware Valley Regional Planning Commission (DVRPC) conducted a study to assess alternatives that would calm traffic approaching and leaving the business districts of West Chester Borough and West Goshen Township from West Chester Pike (PA Route 3) and Paoli Pike. The study area encompasses the predominantly commercial neighborhoods of West Goshen Township and the Borough of West Chester bounded by Paoli Pike/Gay Street/Chestnut Street in the north, Market Street/West Chester Pike in the south, US 202 in the east, and New Street in the west. This report is intended to provide decision makers with the tools necessary to make informed decisions regarding the development of the area's multimodal transportation network.

The primary objective of this study is to identify ways to improve pedestrian and bicycle travel through infrastructure enhancements. Pedestrian activity is best accommodated through a connected sidewalk network, attractive streetscapes, and reduced vehicular traffic speeds. Improving infrastructure to accommodate active transportation in the study area will support a walkable, livable, and vibrant community.

In an effort to reduce speeding and accommodate all modes of travel, several roadway reconfiguration scenarios were evaluated, including road diets and the installation of bicycle lanes. Calming traffic through the implementation of a road diet reduces speeding and makes it possible to construct protected bicycle lanes. Existing and alternative operational scenarios were evaluated for 19 signalized intersections. Specifically, the study evaluates conditions and outlines recommendations for the following locations:

- Matlack Street and Chestnut Street;
- Gay Street from Matlack Street to High Street;
- Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street;
- Market Street from Franklin Street to Prospect Avenue;
- West Chester Pike (PA Route 3) from Prospect Avenue to Westtown Road; and
- Market Street from Darlington Street to Church Street.

The results of the analysis demonstrate that the proposed improvements could increase safety while only minimally affecting vehicular traffic circulation. This multimodal approach to roadway reconfiguration would support the continued economic growth of West Goshen Township and the Borough of West Chester. The recommendations would not only enhance the streetscape but also make the area more conducive to multimodal travel.

CHAPTER 1:

Background

Purpose and Need

The intent of this study is to identify and quantitatively evaluate recommended circulation and capacity changes to two major east-west arterials in West Goshen Township and the Borough of West Chester in Chester County: Paoli Pike/Gay Street and Market Street/West Chester Pike (PA Route 3). The study assessed the impacts of the recommendations on mobility, safety, and congestion.

Study Area

The study area broadly encompasses the area of West Goshen Township and the Borough of West Chester bounded by Paoli Pike/Gay Street/Chestnut Street in the north, Market Street/West Chester Pike in the south, US 202 in the east, and New Street in the west (**Figure 1**).

Figure 1: Study Area



Scenarios

The roadway reconfiguration scenarios summarized below were tested as part of this study.

1. Matlack Street and Chestnut Street Road Realignment

This concept involves reconfiguring the left-turn lanes on Matlack Street at the intersection with Chestnut Street. Capacity would be reduced from two left-turn lanes to one left-turn lane, and the transition would be better defined with pavement markings through the transition zone.

2. Gay Street from Matlack Street to High Street Lane Elimination

This concept eliminates the left lane on Gay Street from Matlack Street to High Street. This stretch of Gay Street is the heart of the West Chester Central Business District (CBD), and the additional space could be used for outdoor amenities.

3. Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street Road Diet

This road diet involves the removal of a travel lane along Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street. A bicycle lane would be installed in the vacated travel lane.

4. Market Street from Franklin Street to Prospect Avenue Bicycle Lane

This concept provides for a bicycle lane within the right shoulder of Market Street. The narrower visual profile would help reduce speeding, which is currently encouraged by the wide cartway.

5. West Chester Pike from Prospect Avenue to Westtown Road Lane Elimination

This concept eliminates one travel lane on West Chester Pike (PA Route 3) in the westbound direction from Prospect Avenue to Westtown Road. Currently, the capacity of Gay Street decreases from four to two travel lanes in the westbound direction at the Worthington Street intersection. By reducing the number of travel lanes entering onto Gay Street from West Chester Pike (PA Route 3), this alternative encourages a smoother transition on Gay Street from three to two lanes.

6. Market Street from Darlington Street to Church Street Lane Elimination

This concept eliminates the right lane on West Market Street from New Street to Church Street. The vacated travel lane would be used to accommodate enhanced pedestrian infrastructure.

All but one signalized intersection have existing stable and predictable traffic operations (Level of Service [LOS] A, B, or C). The intersection of Market Street and High Street has an existing intersection LOS that is predictable but approaching unstable operations (D). For all but one intersection, the proposed scenario intersection LOS remained the same as the existing LOS for the AM and PM peak hours. The recommendations outlined in this study could increase safety while maintaining existing LOS, thereby having a minor impact on vehicular circulation.

Transportation Network

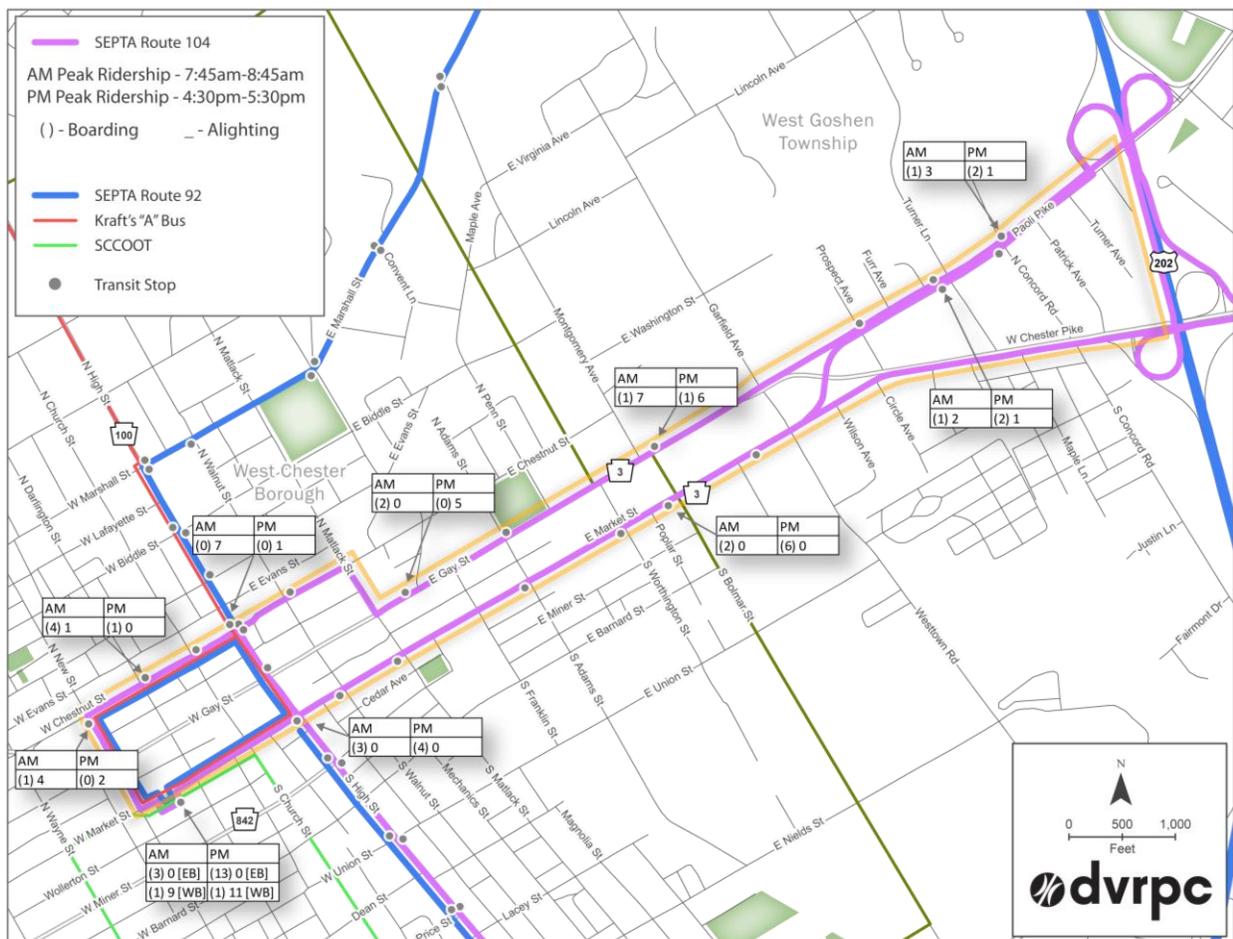
Highway Network

Paoli Pike and West Chester Pike (PA Route 3) act as conduits from US 202 to the West Goshen Township commercial district and the West Chester Borough CBD. Traffic flow is largely unimpeded, resulting in westbound traffic entering Gay Street at high speeds from both routes. Gay Street runs parallel to Market Street, which connects to eastbound West Chester Pike (PA Route 3) and Paoli Pike. Gay Street is one-way westbound, and Market Street is one-way eastbound.

Transit Service Analysis

The area is served by several bus routes: Krapf's Route A, the Transportation Management Association of Chester County's (TMACC's) SCCOOT, and two Southeastern Pennsylvania Transportation Authority (SEPTA) bus routes. SEPTA Route 92 provides service to Exton and Paoli from the corridor, while SEPTA Route 104 serves the area between West Chester University and the 69th Street Transportation Center. All public transit routes through the study area are shown in **Figure 2**. AM and PM peak boardings and alightings are displayed only for SEPTA Route 104. SEPTA Route 104 is the only bus route that travels on Paoli Pike/Gay Street and West Chester Pike (PA Route 3)/Market Street for the entire extent of the study area.

Figure 2: Transit Ridership (2014)



Bicycle Network

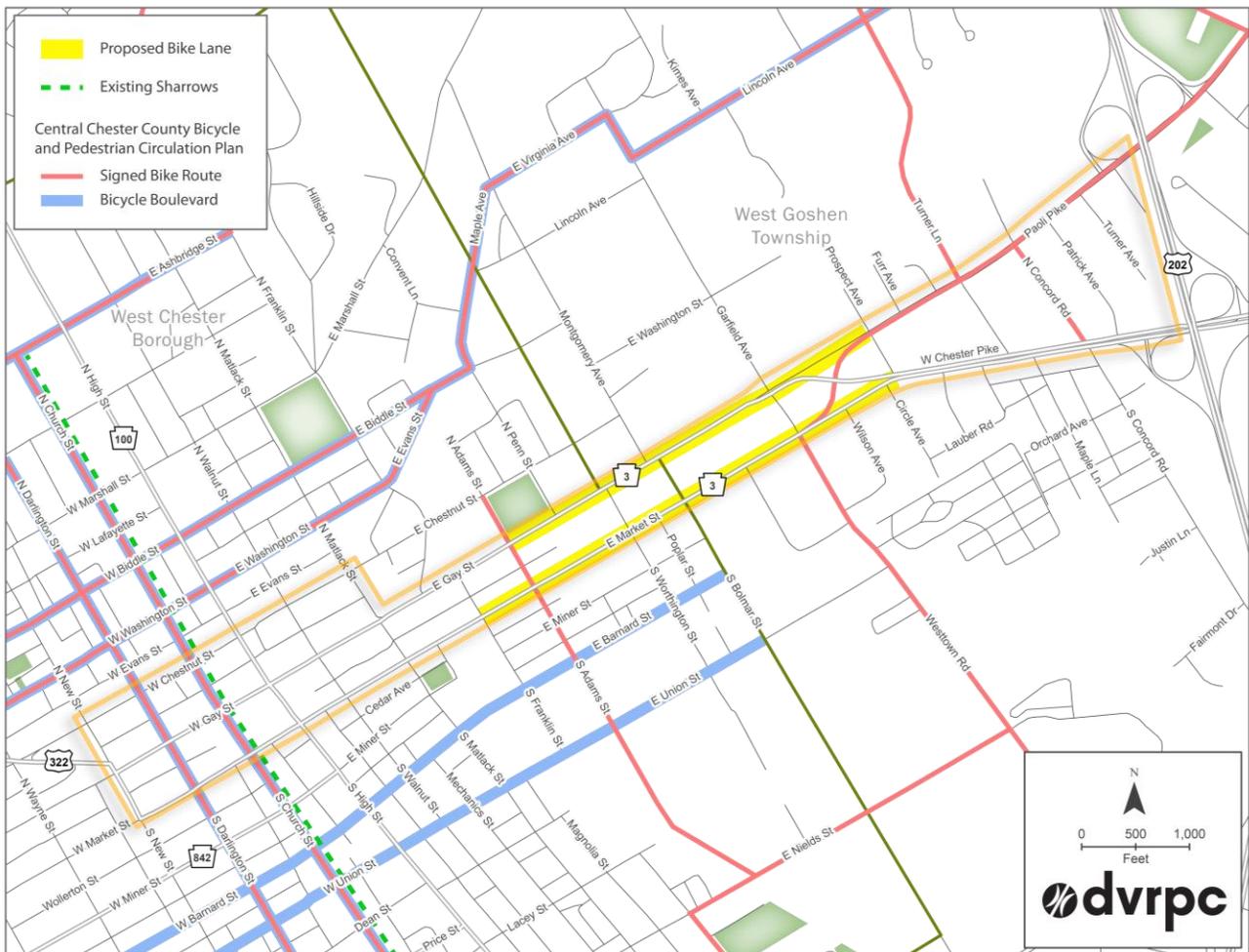
The *Central Chester County Bicycle and Pedestrian Circulation Plan* identifies several bicycle routes in the study area. Darlington, Church, and Adams streets are proposed signed bicycle routes that connect directly to Gay and Market streets. The plan also recommends that Westtown Road and Paoli Pike be signed bicycle routes with bicycle lanes or shared roadway facilities.

This traffic study supports the implementation of bicycle lanes on Gay Street from Prospect Avenue to Adams Street, and Market Street from Prospect Avenue to Franklin Street (**Figure 3**). A more detailed discussion of this recommendation can be found in the *Proposed Improvements* section of this report.

Pedestrian Network

The sidewalks are in good condition in the more densely developed parts of the study area. However, there are sections of Gay Street, especially east of Garfield Avenue and west of Montgomery Avenue, where sidewalks are incomplete or missing. In addition, pedestrian amenities, such as curb ramps and crosswalks, are infrequent. A lack of access controls, such as clearly defined ingress and egress to parking lots, often compromises pedestrian safety.

Figure 3: Proposed Bicycle Improvements



Safety–Crash Analysis

Crash events and crash severity were evaluated for the five-year period between 2011 and 2015. This crash analysis focused on crashes that occurred between New Street and the West Chester Bypass on the two principal arterials in the study area: Market Street and Gay Street. The total number of crashes between 2011 and 2015 was 300 for the 3.22 miles of roadway assessed. Five crashes resulted in a major injury, and one crash resulted in a fatality. Eighty percent of the crashes occurred under dry road conditions, and 68 percent of crashes occurred during the daytime. **Table 1** below shows the total number of crashes for each assessment year.

Table 1: Total Crashes by Year (2011–2015)

Year	Total Crashes
2011	50
2012	61
2013	62
2014	62
2015	65
Total	300

In order to analyze the crash data more effectively, the study area was divided into 7 subsections based on roadway geometry and land use context. These are summarized in **Table 2** on page 8. “Angle” crashes were the most common in the study area. An angle crash involves drivers traveling at angular directions to one another pre-crash, and it results in a T-bone style crash. For example, an angle crash can occur if, before impact, one driver is traveling westbound and another is traveling northbound.

Most angle crashes in the study area occurred on Gay Street between Westtown Street and Montgomery Avenue. This segment of Gay Street has four lanes, and it provides direct access to 12 distinct businesses. There are 8 driveways on the north side of this segment, and 6 driveways on the south side. While Gay Street is one-way in the westbound direction, the number of lanes and numerous curb cuts result in more conflict points. This segment also had the highest crash density of the 7 subsections; an average of 49 crashes-per-mile occurred per year at this location.

The segment of Market Street in the West Chester CBD had the second-highest crash density, an average of 23 annual crashes-per-mile per year. Crashes were concentrated at the four-way intersections, which allow more turning movements. Though Market Street is one-way at this location, four-way intersections have more conflict points than T-intersections or roundabouts.

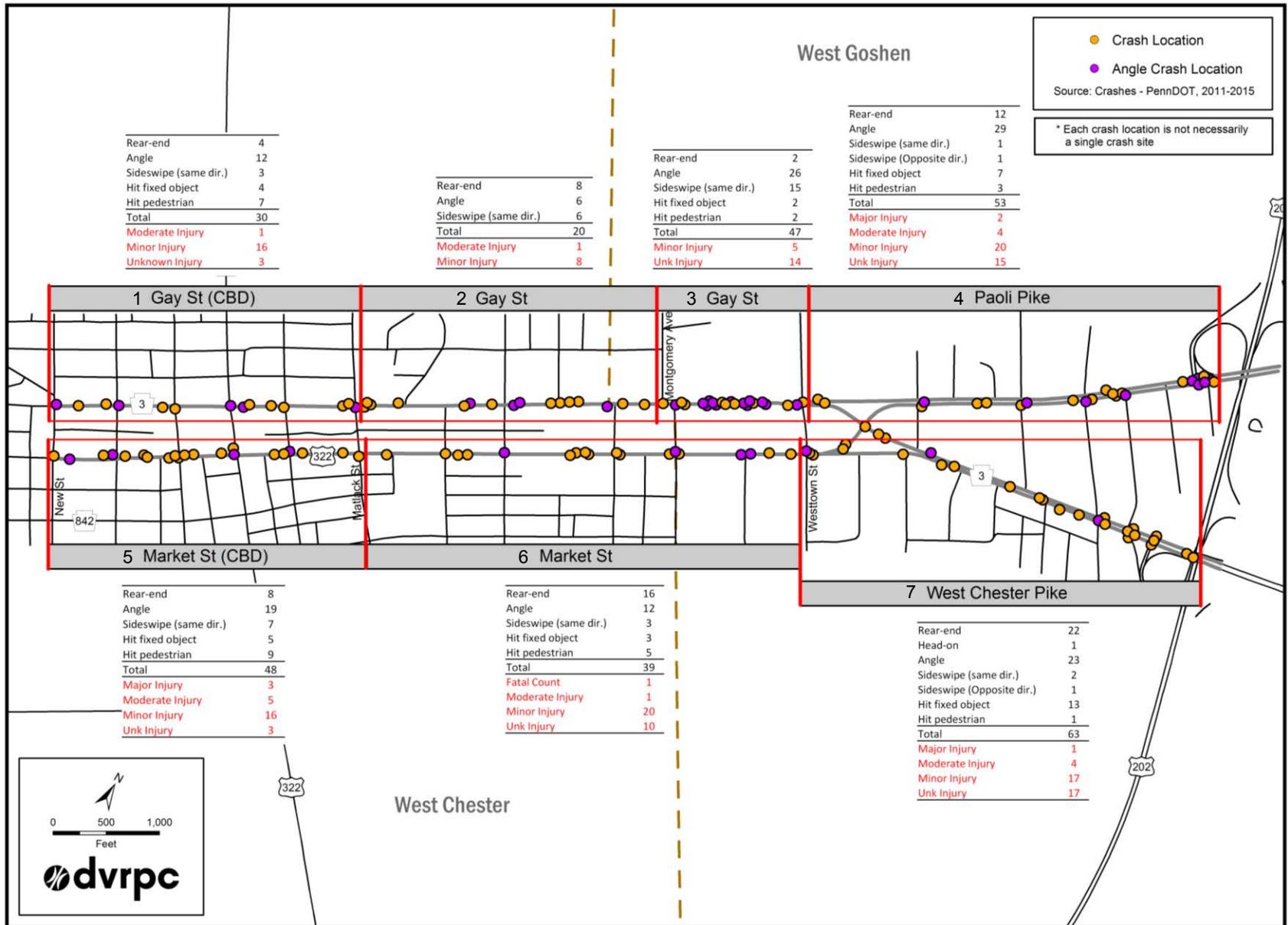
The segment of West Chester Pike between the US 202 ramps and Westtown Road had the third-highest crash density with an average of 22 annual crashes-per-mile. Most of these crash events occurred at the US 202 South on-ramps. “Rear-end” crashes were very common here as well. A rear-end crash is a crash in which vehicles traveling in the same direction, on the same road, collide. Crashes along the segment of Paoli Pike between US 202 and Westtown Road were concentrated at the US 202 South on- and off-ramps.

The crash data for all subsections are summarized in **Figure 4** on page 9. Crash event summaries are shown in black, and they are categorized by type. Crash severity summaries are shown in red, and they are categorized by injury.

Table 2: Crash Data Analysis Subsections

Label Number	Description	Context	Crash Density (annual)	Predominant Collision Types
1	Gay Street (CBD)	Higher density area. Two-lane roadway with on-street parking. Travel only in the westbound direction. 2 driveways.	14 crashes-per-mile	1) Angle 2) Hit Pedestrian
2	Gay Street from Matlack Street to Montgomery Avenue	Lower density area with larger scale commercial uses and off-street parking. Two-lane roadway. Travel only in the westbound direction. 24 driveways.	10 crashes-per-mile	1) Rear-end 2) Angle; Sideswipe (same direction)
3	Gay Street from Montgomery Avenue to Westtown Road	Transition from residential to commercial land uses. Four-lane roadway segment with numerous curb-cuts. 14 driveways.	49 crashes-per-mile	1) Angle 2) Sideswipe (same direction)
4	Paoli Pike From Westtown Road to US 202	Transition from a four-lane two-directional highway to a westbound-only. Provides connection from expressway to West Goshen Township and West Chester Borough businesses. 11 driveways.	18 crashes-per-mile	1) Angle 2) Rear-end
5	Market Street (CBD)	Higher density area. Three-lane roadway with a turning lane at each intersection and on-street parking. Travel only in the eastbound direction. 5 driveways.	23 crashes-per-mile	1) Angle 2) Hit Pedestrian
6	Market Street from Matlack Street to Westtown Road	Lower density area with larger scale commercial uses and off-street parking. Two-lane roadway. Travel only in the eastbound direction. 37 driveways.	13 crashes-per-mile	1) Rear-end 2) Angle
7	West Chester Pike from Westtown Road to US 202	Transition from two lanes in the eastbound direction to a four-lane, two-directional highway. Provides connection from residential neighborhoods to the expressway. 17 driveways.	22 crashes-per-mile	1) Angle 2) Rear-end

Figure 4: Crashes Along Market Street and Gay Street (2011–2015)



Improvement Analysis

Modeling Background

For this traffic analysis, manual turning movement counts (MTMC) were taken at 20 intersections in the study area in April 2016. The two principal arterials previously mentioned and the local streets that intersect them were included in the modeled network. The focus of the study was to evaluate conditions at the key signalized intersections across the different scenarios. After examining the MTMC, the network peak hours were determined to be 7:30 to 8:30 in the AM and 4:30 to 5:30 in the PM. Performance data was collected for these two peak periods for all scenarios.

Synchro® microsimulation software was used to analyze the proposed roadway configurations to determine the feasibility of these improvements. The microsimulation exercise quantified the performance of the critical intersections in the existing and proposed scenarios. A background growth rate of 1.0145 was applied to 2016 volumes in order to determine forecasted volumes for 2025, which were used to analyze performance for the proposed scenarios.

Performance Measures

Delay—Delay is the average amount of time (in seconds) that it takes a vehicle to pass through an intersection, beyond what would be experienced in a free-flow condition. The value given is the average for all vehicles completing the movement.

Level of Service (LOS)—LOS is the letter grade assigned to various degrees of delay. An LOS of “A” corresponds with free-flowing, or near free-flowing, conditions, while an “F” score corresponds with a breakdown in traffic flow (**Table 3**).

Table 3: LOS Criteria for Signalized Intersections

LOS ($v/c \leq 1.0$)	Control Delay (seconds per vehicle)	Qualitative Description of Traffic Operations
A B C	≤ 10 > 10 - 20 > 20 - 35	Stable and Predictable
D	> 35 - 55	Predictable, but Approaching Unstable
E F	> 55 - 80 > 80	Unstable and Unpredictable

Sources: *Highway Capacity Manual, 2010; DVRPC, 2017*

Approach LOS and delay, and intersection LOS and delay, for existing conditions were calculated for the AM and PM peaks. Moreover, similar performance measures were calculated for each intersection, assuming the implementation of the recommended improvements. A detailed summary can be found in Appendix A. **Figure 5** displays the locations of the intersections that were analyzed. In general, most intersections perform at a high level—LOS A or B—before and after the simulated implementation of recommended improvements.

Proposed Improvements

1. Matlack Street and Chestnut Street Road Realignment

Issues:

Currently, Matlack Street approaching Chestnut Street has three travel lanes: two left-turn lanes, and one through/right-turn lane (**Figure 6**). Traffic making a left turn on Chestnut Street often scrambles for positioning as the capacity drops from two lanes on Matlack Street to one lane on Chestnut Street.

Recommendations:

This concept would reconfigure the left-turn lanes on Matlack Street and include line extensions through the intersection to better define the left-turn from Matlack Street onto Chestnut Street. This concept was modeled to see if the proposed alignment would be seamless and minimize congestion.

The intersection of Matlack and Chestnut streets currently performs at LOS A in the AM peak and LOS B in the PM peak. If capacity on Matlack Street were reduced from two to one left-turn lane (**Figure 6**), the intersection would perform at LOS B in both the AM and PM peaks (**Table 4**).

Figure 6: Proposed Road Diet on Matlack Street



Sources: Google, 2017; DVRPC, 2017

Table 4: Chestnut Street and Matlack Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	10.0	A	10.8	B
PM	11.2	B	12.9	B

Source: DVRPC, 2017

2. Gay Street from Matlack Street to High Street Lane Elimination

Issues:

Currently, this segment of Gay Street is one-way westbound with two travel lanes and on-street parking on both sides of the street. There are many small businesses along this segment of Gay Street. Restaurants are concentrated on the south side of the street. As a result, any improvements must consider downtown deliveries.

Recommendations:

The primary recommendation for this segment is to implement a road diet by eliminating the left-most travel lane on Gay Street from Matlack Street to High Street. This would provide opportunities for streetscape improvements and amenities for outdoor activities (**Figure 7**). By maintaining existing on-street parking spaces, this street can continue to accommodate delivery truck and customer parking. Parking restrictions could be enforced to allow truck-only parking during morning delivery times.

Under existing conditions, the intersection of Gay Street and Matlack Street performs at LOS B in both the AM and PM peaks. With the proposed lane elimination, the performance of the intersection would remain at LOS B considering 2025 forecasted volumes (**Table 5**). Similarly, the performance of the intersection of Gay and High streets is currently LOS C in both the AM and PM peaks and would remain so in the future scenario (**Table 6**).

Table 5: Gay Street and Matlack Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	10.9	B	12.0	B
PM	14.8	B	18.8	B

Source: DVRPC, 2017

Table 6: Gay Street and High Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	21.9	C	22.7	C
PM	25.5	C	26.1	C

Source: DVRPC, 2017

Figure 7: Proposed Streetscape: Gay Street Between Matlack Street and High Street



Sources: Google, 2017; DVRPC, 2017

3. Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street Road Diet

Issues:

This is a straight segment of roadway that connects US 202 to West Chester Borough. It approaches the borough at a slight decline, which further incites speeding. In addition, the merging of West Chester Pike (PA Route 3) and Paoli Pike often results in high-speed weaving.

Recommendations:

It is recommended that a road diet be implemented through the removal of the right-most travel lane on westbound Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street. A bicycle lane would be installed in this vacated travel lane. The bicycle lane would complement the proposed bicycle lane in the right shoulder on eastbound West Chester Pike (PA Route 3). As shown in **Table 7** and **Table 8**, LOS at the two major intersections between Prospect Avenue and N. Adams Street on Paoli Pike/Gay Street would remain stable. Both recommendations are shown in **Figure 8** on Page 17.

- Between Prospect Avenue and Garfield Avenue there are two travel lanes, which would be reduced to one travel lane.
- Between Garfield Avenue and Montgomery Avenue there are four traveling lanes, which would be reduced to two travel lanes.
- Between Montgomery Avenue and Worthington Street, there are three travel lanes, which would be reduced to two lanes.
- From Worthington Street to Adams Street the proposed bicycle lane would use the right shoulder (**Figure 8**).
- West of Adams Street, bicycles would share the roadway with other vehicles.

Table 7: Gay Street and Bolmar Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	8.0	A	8.5	A
PM	7.5	A	8.1	A

Source: DVRPC, 2017

Table 8: Gay Street and Adams Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	13.6	B	13.5	B
PM	15.8	B	15.7	B

Source: DVRPC, 2017

Figure 8: Proposed Improvements on Gay Street and Market Street Between Prospect Avenue and Franklin Street



4. Market Street from Franklin Street to Prospect Avenue Bicycle Lane

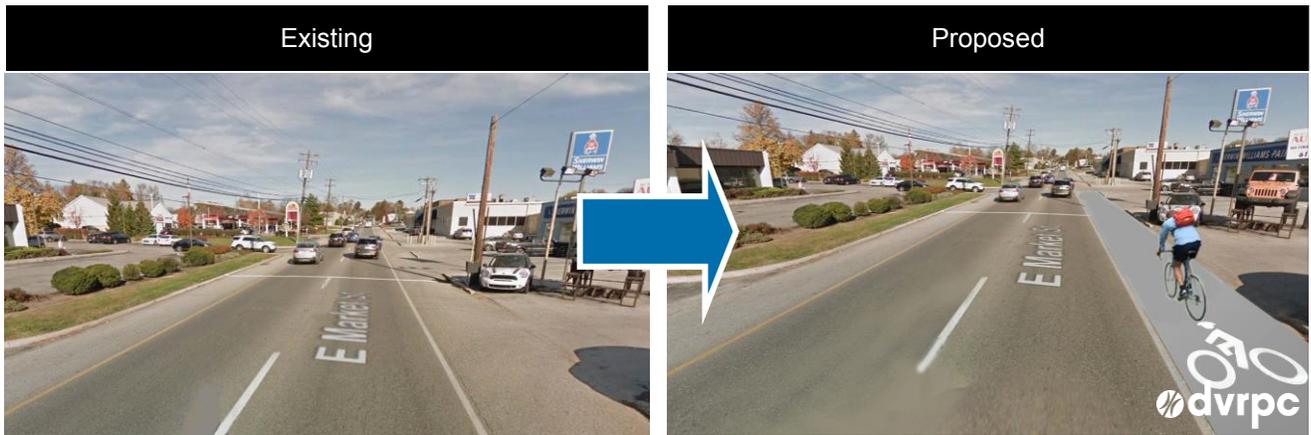
Issues:

There are shoulders on both sides of Market Street for most of the extent of this corridor. Vehicles are inclined to speed because of the wide cartway.

Recommendations:

By installing a bicycle lane within the right shoulder, the visual profile will discourage speeding (**Figure 9**). Given 2025 traffic volume projections, the overall LOS for all intersections within this specific segment of Market Street would remain the same in the AM and PM peaks with the implementation of the proposed recommendations (**Tables 9–12**).

Figure 9: Proposed Bicycle Lane on Market Street from Franklin Street to Prospect Avenue



Sources: Google, 2016; DVRPC, 2017

Table 9: Market Street and Adams Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	17.8	B	18.1	B
PM	16.3	B	16.7	B

Source: DVRPC, 2017

Table 10: Market Street and Worthington Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	12.9	B	13.0	B
PM	16.9	B	16.9	B

Source: DVRPC, 2017

Table 11: Market Street and Bolmar Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	13.6	B	14.1	B
PM	18.6	B	19.4	B

Source: DVRPC 2017

Table 12: Market Street and Westtown Road Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	10.8	B	12.9	B
PM	20.9	C	21.6	C

Source: DVRPC 2017

5. West Chester Pike from Prospect Avenue to Westtown Road Lane Elimination

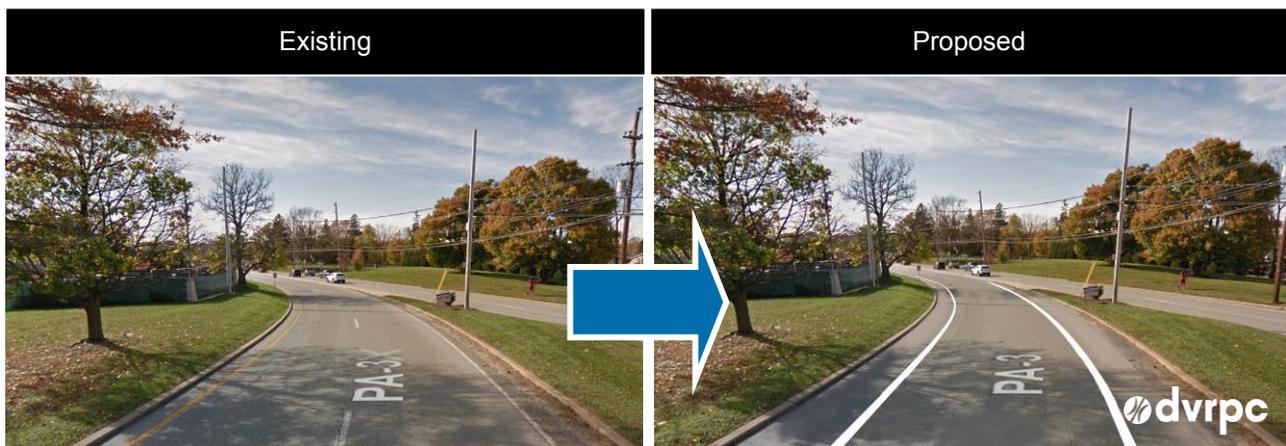
Issues:

This section of West Chester Pike (PA Route 3) has two westbound travel lanes. This road merges into Paoli Pike/Gay Street just west of Westtown Road.

Recommendations:

The elimination of one travel lane and widening of the shoulders here would create a more seamless transition to Gay Street, the capacity of which eventually drops to two travel lanes (**Figure 8** and **Figure 10**). The impacts on intersection LOS at the Market Street and Westtown Road intersection are shown in **Table 12** above; there would be no significant increase in delay.

Figure 10: Lane Removal on Westbound West Chester Pike (PA Route 3) onto Gay Street



Sources: Google, 2016; DVRPC, 2017

6. Market Street from Darlington Street to Church Street Lane Elimination

Issues:

Currently, Market Street has two through lanes and one through/left-turn lane approaching Darlington Street. There is heavy pedestrian traffic between the Chester County Justice Center located on the northwestern corner of this intersection and the parking garage across the street (on the south side of Market Street). Roadway capacity temporarily increases at this intersection; Market Street has two through lanes and one right-turn lane between Darlington Street and Church Street. The capacity drops back to two lanes at the Market Street and Church Street intersection.

Recommendations:

In this proposed scenario, the right lane on Market Street between Darlington and Church streets would be eliminated. Therefore, the cartway width would be reduced from three lanes to two lanes. The newly available space could accommodate better pedestrian infrastructure, as well as streetscape elements (**Figure 11**). The intersection of Market Street and Darlington Street performs at LOS B in the AM and PM peaks for the existing and future scenarios. The intersection of Market Street and Church Street performs at LOS B in the AM peak for existing and proposed scenarios and LOS C in the PM peak for existing and proposed scenarios (**Table 13** and **Table 14**).

Table 13: Market Street and Darlington Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	11.0	B	12.8	B
PM	12.3	B	13.6	B

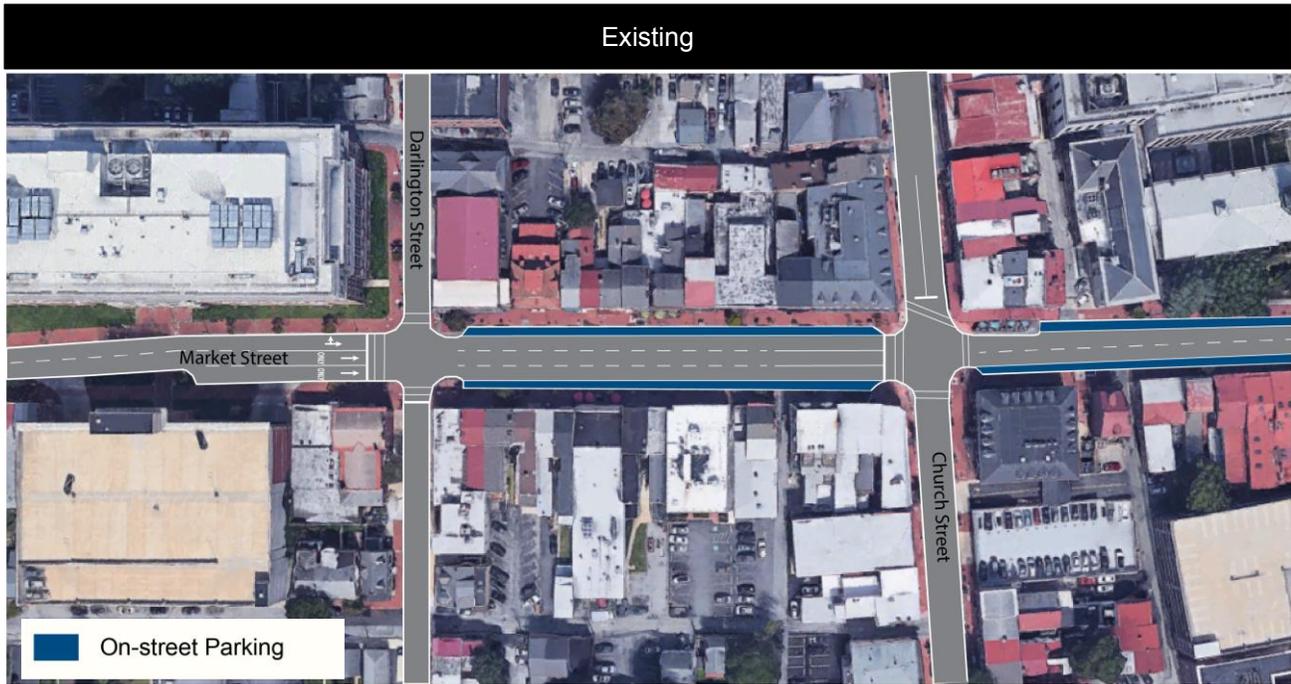
Source: DVRPC, 2017

Table 14: Market Street and Church Street Intersection LOS

	Existing		Proposed	
	Delay [s/veh]	LOS	Delay [s/veh]	LOS
AM	16.3	B	17.3	B
PM	21.0	C	21.9	C

Source: DVRPC, 2017

Figure 11: Proposed Improvements on Market Street Between Darlington Street and Church Street



Sources: Google, 2017; DVRPC, 2017

Summary and Conclusions

The recommendations outlined in this report would improve multimodal connections between West Goshen Township and the Borough of West Chester. The proposed road diets not only calm traffic but also allow for a more efficient traffic flow. The recommendations prioritize pedestrian and bicycle facilities and amenities. The proposed installation of bicycle lanes on Gay Street and Market Street eliminates crucial gaps in the area’s bicycle network. Furthermore, sidewalk extensions reduce pedestrian crossing distances and promote the Borough of West Chester’s vibrant downtown district and West Goshen Township’s growing commercial area.

Currently, most of the intersections in the study area operate at stable and predictable levels (LOS A, B, or C). The only exception is the intersection of Market Street and High Street which operates at LOS D, which is predictable but approaching unstable operations. If the recommended traffic-calming measures were to be implemented, the LOS would remain the same for all but one of the intersections evaluated. For example, the Market Street and Darlington Street intersection that operates at LOS B in the AM and PM peak hours will continue to operate at LOS B in the future. The only intersection for which LOS is affected by the recommended improvements is the intersection of Matlack Street and Chestnut Street, which would experience a decrease in the LOS from LOS A to LOS B during the AM and PM peaks. Nevertheless, traffic operations at this intersection remain stable and predictable. The suggested improvements and their impacts on overall LOS are summarized below.

Proposed Improvements and Resulting LOS

1. Matlack Street and Chestnut Street Road Realignment

This concept involves reconfiguring the left-turn lanes on Matlack Street at the intersection with Chestnut Street. Capacity would be reduced from two left-turn lanes to one left-turn lane, and the transition would be better defined with pavement markings through the transition zone.

Matlack Street and Chestnut Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	A	B
PM	B	B

2. Gay Street from Matlack Street to High Street Lane Elimination

This concept eliminates the left lane on Gay Street from Matlack Street to High Street. This stretch of Gay Street is the heart of the West Chester CBD, and the additional space could be used for outdoor amenities.

Gay Street and Matlack Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	B	B

Gay Street and High Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	C	C
PM	C	C

3. Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street Road Diet

This road diet involves the removal of a travel lane along Paoli Pike/Gay Street from Prospect Avenue to N. Adams Street. A bicycle lane would be installed in the vacated travel lane.

Gay Street and Bolmar Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	A	A
PM	A	A

Gay Street and Adams Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	B	B

4. Market Street from Franklin Street to Prospect Avenue Bicycle Lane

This concept provides for a bicycle lane within the right shoulder of Market Street. The narrower visual profile would help reduce speeding, which is currently encouraged by the wide cartway.

Market Street and Adams Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	B	B

Market Street and Worthington Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	B	B

Market Street and Bolmar Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	B	B

Market Street and Westtown Road Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	C	C

5. West Chester Pike from Prospect Avenue to Westtown Road Lane Elimination

This concept eliminates one travel lane on West Chester Pike (PA Route 3) in the westbound direction from Prospect Avenue to Westtown Road. Currently, the capacity of Gay Street decreases from four to two travel lanes in the westbound direction at the Worthington Street intersection. By reducing the number of travel lanes entering onto Gay Street from West Chester Pike (PA Route 3), this alternative encourages a smoother transition on Gay Street from three to two lanes.

Market Street and Westtown Road Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	C	C

6. Market Street from Darlington Street to Church Street Lane Elimination

This concept eliminates the right lane on West Market Street from New Street to Church Street. The vacated travel lane would be used to accommodate enhanced pedestrian infrastructure.

Market Street and Darlington Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	B	B

Market Street and Church Street Intersection LOS

	Existing	Proposed
	LOS	LOS
AM	B	B
PM	C	C

This study demonstrates that the proposed improvements could increase safety while only minimally affecting future vehicular traffic circulation. Most roadway improvements identified would be within the existing cartway and would not require land acquisition. With the exception of the road diet on Gay Street from Matlack Street to High Street, the recommendations involve restriping and can thus be implemented as part of resurfacing projects. As a result, the improvements are at the low-cost end of the spectrum and would be implementable in the short to medium term. The multimodal approach to roadway reconfiguration presented in this report highlights ways to enhance connections between, and support the continued growth of, West Goshen Township and the Borough of West Chester.



Appendix A

Appendix A: Intersection Level of Service

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Intersection Level Of Service
Intersection: **Market Street & New Street**

AM Existing

Name	Market Street	New Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	15.6	30.9
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	26.2	
Intersection LOS	C	

AM Proposed

Name	Market Street	New Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	15.7	31.6
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	26.8	
Intersection LOS	C	

PM Existing

Name	Market Street	New Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	13.5	23.6
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	20.8	
Intersection LOS	C	

PM Proposed

Name	Market Street	New Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	13.5	23.8
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	21.0	
Intersection LOS	C	

AM Existing

Name	Market Street	Darlington Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	11.8	7.5
Approach LOS	B	A
d_I, Intersection Delay [s/veh]	11.0	
Intersection LOS	B	

AM Proposed

Name	Market Street	Darlington Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	14.0	7.6
Approach LOS	B	A
d_I, Intersection Delay [s/veh]	12.8	
Intersection LOS	B	

PM Existing

Name	Market Street	Darlington Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	12.6	11.2
Approach LOS	B	B
d_I, Intersection Delay [s/veh]	12.3	
Intersection LOS	B	

PM Proposed

Name	Market Street	Darlington Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	14.4	11.4
Approach LOS	B	B
d_I, Intersection Delay [s/veh]	13.6	
Intersection LOS	B	

AM Existing

Name	Market Street	Church Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	12.9	37.9
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	16.3	
Intersection LOS	B	

AM Proposed

Name	Market Street	Church Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	14.1	37.9
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	17.3	
Intersection LOS	B	

PM Existing

Name	Market Street	Church Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	15.8	36.8
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	21.0	
Intersection LOS	C	

PM Proposed

Name	Market Street	Church Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	17.0	36.8
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	21.9	
Intersection LOS	C	

AM Existing

Name	Market Street	High Street	High Street
Approach	Eastbound	Southeast-bound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	32.9	33.7	65.8
Approach LOS	C	C	E
d_I, Intersection Delay [s/veh]	42.4		
Intersection LOS	D		

AM Proposed

Name	Market Street	High Street	High Street
Approach	Eastbound	Southeast-bound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	33.1	34.6	68.3
Approach LOS	C	C	E
d_I, Intersection Delay [s/veh]	43.5		
Intersection LOS	D		

PM Existing

Name	Market Street	High Street	High Street
Approach	Eastbound	Southeast-bound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	30.8	31.2	67.3
Approach LOS	C	C	E
d_I, Intersection Delay [s/veh]	41.6		
Intersection LOS	D		

PM Proposed

Name	Market Street	High Street	High Street
Approach	Eastbound	Southeast-bound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	29.4	32.3	70.5
Approach LOS	C	C	E
d_I, Intersection Delay [s/veh]	42.3		
Intersection LOS	D		

AM Existing

Name	Market Street	Walnut Street	Walnut Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	9.5	17.9	30.2
Approach LOS	A	B	C
d_I, Intersection Delay [s/veh]	12.5		
Intersection LOS	B		

AM Proposed

Name	Market Street	Walnut Street	Walnut Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	9.8	18.4	30.3
Approach LOS	A	B	C
d_I, Intersection Delay [s/veh]	12.7		
Intersection LOS	B		

PM Existing

Name	Market Street	Walnut Street	Walnut Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	10.8	14.3	36.7
Approach LOS	B	B	D
d_I, Intersection Delay [s/veh]	16.1		
Intersection LOS	B		

PM Proposed

Name	Market Street	Walnut Street	Walnut Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	12.3	14.3	37.4
Approach LOS	B	B	D
d_I, Intersection Delay [s/veh]	17.1		
Intersection LOS	B		

AM Existing

Name	Market Street	Matlack Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	7.5	22.0
Approach LOS	A	C
d_I, Intersection Delay [s/veh]	8.5	
Intersection LOS	A	

AM Proposed

Name	Market Street	Matlack Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	7.6	22.2
Approach LOS	A	C
d_I, Intersection Delay [s/veh]	8.6	
Intersection LOS	A	

PM Existing

Name	Market Street	Matlack Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	10.8	23.9
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	13.1	
Intersection LOS	B	

PM Proposed

Name	Market Street	Matlack Street
Approach	Eastbound	Southbound
Lane Configuration		
d_A, Approach Delay [s/veh]	11.7	24.8
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	14.0	
Intersection LOS	B	

AM Existing

Name	Market Street	Adams Street	Adams Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	11.6	15.1	45.3
Approach LOS	B	B	D
d_I, Intersection Delay [s/veh]	17.8		
Intersection LOS	B		

AM Proposed

Name	Market Street	Adams Street	Adams Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	11.9	15.4	45.2
Approach LOS	B	B	D
d_I, Intersection Delay [s/veh]	18.1		
Intersection LOS	B		

PM Existing

Name	Market Street	Adams Street	Adams Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	9.9	13.1	40.2
Approach LOS	A	B	D
d_I, Intersection Delay [s/veh]	16.3		
Intersection LOS	B		

PM Proposed

Name	Market Street	Adams Street	Adams Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	10.4	13.4	40.1
Approach LOS	B	B	D
d_I, Intersection Delay [s/veh]	16.7		
Intersection LOS	B		

AM Existing

Name	Market Street	Worthingtown Street	Worthingtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	7.3	35.3	43.6
Approach LOS	A	D	D
d_I, Intersection Delay [s/veh]	12.9		
Intersection LOS	B		

AM Proposed

Name	Market Street	Worthingtown Street	Worthingtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	7.5	35.3	43.4
Approach LOS	A	D	D
d_I, Intersection Delay [s/veh]	13.0		
Intersection LOS	B		

PM Existing

Name	Market Street	Worthingtown Street	Worthingtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	6.4	35.4	54.1
Approach LOS	A	D	D
d_I, Intersection Delay [s/veh]	16.9		
Intersection LOS	B		

PM Proposed

Name	Market Street	Worthingtown Street	Worthingtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	6.4	35.3	54.2
Approach LOS	A	D	D
d_I, Intersection Delay [s/veh]	16.9		
Intersection LOS	B		

AM Existing

Name	Market Street	Bolmar Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	9.9	39.9
Approach LOS	A	D
d_I, Intersection Delay [s/veh]	13.6	
Intersection LOS	B	

AM Proposed

Name	Market Street	Bolmar Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	10.2	40.5
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	14.1	
Intersection LOS	B	

PM Existing

Name	Market Street	Bolmar Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	11.6	52.9
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	18.6	
Intersection LOS	B	

PM Proposed

Name	Market Street	Bolmar Street
Approach	Eastbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	12.2	54.9
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	19.4	
Intersection LOS	B	

AM Existing

Name	Market Street	Westtown Street	Westtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	5.8	36.2	28.1
Approach LOS	A	D	C
d_I, Intersection Delay [s/veh]	10.8		
Intersection LOS	B		

AM Proposed

Name	Market Street	Westtown Street	Westtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	8.3	36.3	27.9
Approach LOS	A	D	C
d_I, Intersection Delay [s/veh]	12.9		
Intersection LOS	B		

PM Existing

Name	Market Street	Westtown Street	Westtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	11.1	46.8	39.7
Approach LOS	B	D	D
d_I, Intersection Delay [s/veh]	20.9		
Intersection LOS	C		

PM Proposed

Name	Market Street	Westtown Street	Westtown Street
Approach	Eastbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	11.9	47.6	39.6
Approach LOS	B	D	D
d_I, Intersection Delay [s/veh]	21.6		
Intersection LOS	C		

AM Existing

Name	Gay Street	High Street	High Street
Approach	Westbound	Southbound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	27.0	16.6	22.2
Approach LOS	C	B	C
d_I, Intersection Delay [s/veh]	21.9		
Intersection LOS	C		

AM Proposed

Name	Gay Street	High Street	High Street
Approach	Westbound	Southbound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	28.7	17.0	22.4
Approach LOS	C	B	C
d_I, Intersection Delay [s/veh]	22.7		
Intersection LOS	C		

PM Existing

Name	Gay Street	High Street	High Street
Approach	Westbound	Southbound	Northwest-bound
Lane Configuration			
d_A, Approach Delay [s/veh]	33.0	14.4	25.9
Approach LOS	C	B	C
d_I, Intersection Delay [s/veh]	25.5		
Intersection LOS	C		

PM Proposed

Name	Gay Street	High Street	High Street
Approach	West bound	Southbound	Northwest bound
Lane Configuration			
d_A, Approach Delay [s/veh]	36.6	15.7	21.9
Approach LOS	D	B	C
d_I, Intersection Delay [s/veh]	26.1		
Intersection LOS	C		

AM Existing

Name	Gay Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	0.9	42.8	13.0
Approach LOS	A	D	B
d_I, Intersection Delay [s/veh]	8.3		
Intersection LOS	A		

AM Proposed

Name	Gay Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	2.1	43.1	12.8
Approach LOS	A	D	B
d_I, Intersection Delay [s/veh]	9.2		
Intersection LOS	A		

PM Existing

Name	Gay Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	5.0	33.8	29.7
Approach LOS	A	C	C
d_I, Intersection Delay [s/veh]	14.1		
Intersection LOS	B		

PM Proposed

Name	Gay Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	8.3	33.7	29.8
Approach LOS	A	C	C
d_I, Intersection Delay [s/veh]	16.3		
Intersection LOS	B		

AM Existing

Name	Gay Street	Matlack Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	10.7	33.1
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	10.9	
Intersection LOS	B	

AM Proposed

Name	Gay Street	Matlack Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	11.8	33.8
Approach LOS	B	C
d_I, Intersection Delay [s/veh]	12.0	
Intersection LOS	B	

PM Existing

Name	Gay Street	Matlack Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	14.1	37.2
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	14.8	
Intersection LOS	B	

PM Proposed

Name	Gay Street	Matlack Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	18.2	37.4
Approach LOS	B	D
d_I, Intersection Delay [s/veh]	18.8	
Intersection LOS	B	

AM Existing

Name	Gay Street	Adams Street	Adams Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	7.7	31.8	39.0
Approach LOS	A	C	D
d_I, Intersection Delay [s/veh]	13.6		
Intersection LOS	B		

AM Proposed

Name	Gay Street	Adams Street	Adams Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	7.5	31.8	39.2
Approach LOS	A	C	D
d_I, Intersection Delay [s/veh]	13.5		
Intersection LOS	B		

PM Existing

Name	Gay Street	Adams Street	Adams Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	12.0	38.4	37.7
Approach LOS	B	D	D
d_I, Intersection Delay [s/veh]	15.8		
Intersection LOS	B		

PM Proposed

Name	Gay Street	Adams Street	Adams Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	12.0	39.1	37.8
Approach LOS	B	D	D
d_I, Intersection Delay [s/veh]	15.7		
Intersection LOS	B		

AM Existing

Name	Gay Street	Bolmar Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	3.9	33.2
Approach LOS	A	C
d_I, Intersection Delay [s/veh]	8.0	
Intersection LOS	A	

AM Proposed

Name	Gay Street	Bolmar Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	4.5	33.2
Approach LOS	A	C
d_I, Intersection Delay [s/veh]	8.5	
Intersection LOS	A	

PM Existing

Name	Gay Street	Bolmar Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	4.1	30.6
Approach LOS	A	C
d_I, Intersection Delay [s/veh]	7.5	
Intersection LOS	A	

PM Proposed

Name	Gay Street	Bolmar Street
Approach	Westbound	Northbound
Lane Configuration		
d_A, Approach Delay [s/veh]	4.9	30.7
Approach LOS	A	C
d_I, Intersection Delay [s/veh]	8.1	
Intersection LOS	A	

AM Existing

Name	Paoli Pike	Paoli Pike	Turner Lane	Turner Lane
Approach	Eastbound	Westbound	Northbound	Southbound
Lane Configuration				
d_A, Approach Delay [s/veh]	7.9	9.6	25.6	23.7
Approach LOS	A	A	C	C
d_I, Intersection Delay [s/veh]	10.7			
Intersection LOS	B			

AM Proposed

Name	Paoli Pike	Paoli Pike	Turner Lane	Turner Lane
Approach	Eastbound	Westbound	Northbound	Southbound
Lane Configuration				
d_A, Approach Delay [s/veh]	8.0	9.7	25.5	23.6
Approach LOS	A	A	C	C
d_I, Intersection Delay [s/veh]	10.8			
Intersection LOS	B			

PM Existing

Name	Paoli Pike	Paoli Pike	Turner Lane	Turner Lane
Approach	Eastbound	Westbound	Northbound	Southbound
Lane Configuration				
d_A, Approach Delay [s/veh]	11.1	14.4	15.7	30.5
Approach LOS	B	B	B	C
d_I, Intersection Delay [s/veh]	17.0			
Intersection LOS	B			

PM Proposed

Name	Paoli Pike	Paoli Pike	Turner Lane	Turner Lane
Approach	Eastbound	Westbound	Northbound	Southbound
Lane Configuration				
d_A, Approach Delay [s/veh]	11.2	14.6	15.7	30.7
Approach LOS	B	B	B	C
d_I, Intersection Delay [s/veh]	17.1			
Intersection LOS	B			

AM Existing

Name	Concord Road	Concord Road	Paoli Pike	Paoli Pike
Approach	Southeast-bound	Northwest-bound	Northeast-bound	Southwest-bound
Lane Configuration				
d_A, Approach Delay [s/veh]	36.8	37.9	8.3	16.9
Approach LOS	D	D	A	B
d_I, Intersection Delay [s/veh]	16.3			
Intersection LOS	B			

AM Proposed

Name	Concord Road	Concord Road	Paoli Pike	Paoli Pike
Approach	Southeast-bound	Northwest-bound	Northeast-bound	Southwest-bound
Lane Configuration				
d_A, Approach Delay [s/veh]	36.8	38.0	8.3	17.0
Approach LOS	D	D	A	B
d_I, Intersection Delay [s/veh]	16.4			
Intersection LOS	B			

PM Existing

Name	Concord Road	Concord Road	Paoli Pike	Paoli Pike
Approach	Southeast-bound	Northwest-bound	Northeast-bound	Southwest-bound
Lane Configuration				
d_A, Approach Delay [s/veh]	42.5	42.8	13.5	24.1
Approach LOS	D	D	B	C
d_I, Intersection Delay [s/veh]	24.6			
Intersection LOS	C			

PM Proposed

Name	Concord Road	Concord Road	Paoli Pike	Paoli Pike
Approach	Southeast-bound	Northwest-bound	Northeast-bound	Southwest-bound
Lane Configuration				
d_A, Approach Delay [s/veh]	42.7	42.9	13.6	24.4
Approach LOS	D	D	B	C
d_I, Intersection Delay [s/veh]	24.8			
Intersection LOS	C			

AM Existing

Name	Chestnut Street	High Street	High Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	14.4	29.1	37.2
Approach LOS	B	C	D
d_I, Intersection Delay [s/veh]	27.7		
Intersection LOS	C		

AM Proposed

Name	Chestnut Street	High Street	High Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	14.2	29.3	37.3
Approach LOS	B	C	D
d_I, Intersection Delay [s/veh]	27.8		
Intersection LOS	C		

PM Existing

Name	Chestnut Street	High Street	High Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	18.0	28.1	34.7
Approach LOS	B	C	C
d_I, Intersection Delay [s/veh]	25.3		
Intersection LOS	C		

PM Proposed

Name	Chestnut Street	High Street	High Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	19.3	40.9	25.5
Approach LOS	B	D	C
d_I, Intersection Delay [s/veh]	27.3		
Intersection LOS	C		

AM Existing

Name	Chestnut Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	2.0	46.5	37.7
Approach LOS	A	D	D
d_I, Intersection Delay [s/veh]	15.9		
Intersection LOS	B		

AM Proposed

Name	Chestnut Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	2.1	46.7	37.7
Approach LOS	A	D	D
d_I, Intersection Delay [s/veh]	16.0		
Intersection LOS	B		

PM Existing

Name	Chestnut Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	4.4	50.7	27.7
Approach LOS	A	D	C
d_I, Intersection Delay [s/veh]	17.2		
Intersection LOS	B		

PM Proposed

Name	Chestnut Street	Walnut Street	Walnut Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	5.3	50.8	27.5
Approach LOS	A	D	C
d_I, Intersection Delay [s/veh]	17.8		
Intersection LOS	B		

AM Existing

Name	Chestnut Street	Matlack Street	Matlack Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	38.4	2.1	35.7
Approach LOS	D	A	D
d_I, Intersection Delay [s/veh]	10.0		
Intersection LOS	A		

AM Proposed

Name	Chestnut Street	Matlack Street	Matlack Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	38.5	3.1	35.7
Approach LOS	D	A	D
d_I, Intersection Delay [s/veh]	10.8		
Intersection LOS	B		

PM Existing

Name	Chestnut Street	Matlack Street	Matlack Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	39.5	2.5	35.8
Approach LOS	D	A	D
d_I, Intersection Delay [s/veh]	11.2		
Intersection LOS	B		

PM Proposed

Name	Chestnut Street	Matlack Street	Matlack Street
Approach	Westbound	Northbound	Southbound
Lane Configuration			
d_A, Approach Delay [s/veh]	39.5	4.7	35.8
Approach LOS	D	A	D
d_I, Intersection Delay [s/veh]	12.9		
Intersection LOS	B		

West Chester Pike at Paoli Pike

Multimodal Traffic and Circulation Study

Publication Number: 17066

Date Published: March 2018

Geographic Area Covered:

Borough of West Chester, West Goshen Township, Chester County

Key Words:

Road Diet, Bicycle Lane, Roadway Realignment, Levels of Service, Lane Configuration

Abstract:

This study identified and quantitatively evaluated recommended circulation and capacity changes to two major east-west arterials in West Goshen Township and the Borough of West Chester in Chester County: Paoli Pike/Gay Street and Market Street/West Chester Pike (PA Route 3). The study assessed the impacts of the recommendations on mobility, safety, and congestion. Several scenarios were examined, including road diets on sections of Gay Street and Market Street. In most scenarios, vacated lanes were replaced by bicycle or pedestrian facilities. In addition, the operational feasibility of reconfiguring the transition area from Matlack Street to Chestnut Street was explored.

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