

Draft Memorandum

Date: March 7, 2025
To: Natalie Noyes, David J. Powers & Associates
From: Sam Tabibnia and Henry Helmuth, Fehr & Peers
Subject: Alameda Aquatic Center Project – Transportation Impact Analysis

OK20-0355.03

Fehr & Peers conducted a transportation assessment for the proposed development, an aquatic center including a one-story multi-purpose building, one 30-meter competition swimming pool, one activity pool, and spectator seating. This memorandum summarizes the Project description, trip generation, vehicle miles traveled (VMT) screening, traffic operations at intersections in the Project vicinity, and access and circulation around the Project vicinity.

Based on our analysis:

1. The Project would generate approximately 710 daily, 23 AM, and 66 PM peak hour automobile trips on a typical non-summer weekday, approximately 1,670 daily, 383 AM, and 149 PM peak hour automobile trips on a typical summer weekday, and approximately 840 daily automobile trips on a typical weekend day with no special events.
2. The Project is considered a local-serving use and is therefore presumed to have a less-than-significant impact on vehicle miles traveled (VMT).
3. The Project site plan dated February 14, 2025 meets the City of Alameda's requirements for total number of automobile parking spaces, and short-term bicycle parking. However, it may not meet the City's requirements for compact spaces, ADA accessible spaces, EV parking spaces, or long-term bicycle parking. It is recommended to review the final site plan to ensure that these City requirements are met.



4. The Project would not substantially affect intersection level of service (LOS) at three nearby intersections (Atlantic Avenue/Wilma Chan Way, Atlantic Avenue/Bartlett Drive, and Atlantic Avenue/Challenger Drive)
5. Several on and off-site modifications are recommended to improve the multi-modal access and circulation for the Project. These recommendations are listed at the end of the memorandum and include provision of a left-turn lane on westbound Atlantic Avenue at the Project driveway, improving the midblock crosswalk across Atlantic Avenue, explicitly prohibiting parking and stopping along Atlantic Avenue, and designating the west curb along the Project frontage for passenger loading.

The remainder of this memorandum provides detail on our analysis assumptions, methodology, and findings.

1. Project Description

The Project would be located at 1100 Atlantic Avenue, along the south side of Atlantic Avenue east of Wilma Chan Way. The Cross Alameda Trail would form the south boundary of the site. The Project is anticipated to serve as the primary aquatic sport center for the City of Alameda and would be used for practices, swim meets, and public uses. The Project site is part of the Jean Sweeney Open Space Park and is currently vacant. **Figure 1** shows the Project site plan.

The Project would provide 72 vehicular parking spaces in a surface parking lot on the east side of the Project. Parking would be accessed via one driveway on Atlantic Avenue, about 300 feet east of Bartlett Drive. The Project parking lot would provide a secondary access point through a drive aisle connecting to the adjacent parking lot for the College of Alameda Science Annex just east of the Project.

The Project would provide two long-term bicycle parking spaces in two lockers located on the south end of the Project site with adequate space to accommodate parking for 10 additional bikes for a total of 12 long-term bicycle parking spaces. Short-term bicycle parking would consist of bike racks accommodating 100 bicycles, provided just east of the main facility entrance and adjacent to the parking lot. Atlantic Avenue on the north side of the Project and the Cross Alameda Trail on the south side of the Project would provide pedestrian and bicycle connections for the Project.

The Project would provide a variety of programming throughout the year. **Attachment A** provides details on planned programming at the proposed aquatic center by time of year and day of week as estimated by the City of Alameda staff, and presents the estimated number of visitors



and staff and hours of operations by activity. The Project would be open seven days per week from 5:30 AM to 9:00 PM with most activities occurring from 2:00 PM to 9:00 PM on weekdays and 9:00 AM to 4:00 PM on weekends. The aquatic center would also host summer camp activities on weekdays from 8:00 AM to 7:30 PM, and special events, such as swim meets and water polo tournaments, throughout the year.

Table 1 summarizes the hours of activity and number of staff and visitors for weekdays and weekends under typical operations. During non-summer months, the Project is estimated to have about 275 visitors on a typical weekday, about 315 visitors on a typical weekend day, and three full-time and about five to ten part-time staff on both weekdays and weekends. During summer months, the Project would host summer camp activities on weekdays which would result in about 620 visitors and 20 to 30 part-time staff in addition to the three full-time staff.

The Project would also accommodate several special events. These events, which primarily consist of swim meets and water polo tournaments, would generally occur on weekends and can have up to 800 visitors throughout the event.

Table 1: Project Operation Characteristics

Season	Typical Weekday			Typical Weekend		
	Hours of Operations	Visitors	Staff	Hours of Operations	Visitors	Staff
Non-Summer						
Main Activities	5:30 AM to 9:00 PM with most activities from 2:00 PM to 9:00 PM	275	3 full-time and 5-10 part-time	5:30 AM to 9:00 PM with most activities from 8:00 AM to 4:00 PM	315	3 full-time and 5-10 part-time
Summer						
Main Activities	5:30 AM to 9:00 PM with most activities from 8:00 AM to 7:00 PM	320	3 full-time and 5-10 part-time	5:30 AM to 9:00 PM with most activities from 8:00 AM to 4:00 PM	315	3 full-time and 5-10 part-time
Summer Camps	8:00 AM to 7:30 PM with most camps occurring from 9:00 AM to 4:00 PM	300	15-20 part-time	None	0	0
Total		620	3 full-time and 20-30 part-time		315	3 full-time and 5-10 part-time

Source: Data provided by City of Alameda and summarized by Fehr & Peers, 2025. See **Attachment A** for details.



2. VMT Evaluation

The effects of the Project on VMT is evaluated based on the guidance provided by the State’s Office of Planning and Research (OPR) in their *Technical Advisory on Evaluating Transportation Impacts in CEQA*. The OPR guidance recommends using an efficiency metric (such as VMT per person) than an absolute numeric threshold (such as total VMT) because an efficiency metric speaks to how efficiently the people at a given location travel. A project that contributes to a more efficient use of the transportation system would reduce the VMT per person.

According to the OPR guidance, screening criteria can be used to identify projects that can be expected to cause a less-than-significant impact without conducting a detailed analysis. Local-serving uses can be presumed to have a less-than-significant impact on VMT absent substantial evidence to the contrary. Local serving uses, such as grocery stores, local schools, and community centers, can be considered to have a less-than-significant impact on VMT because they would draw most of their users, customers, and/or visitors from a relatively small geographical area. The Project is the relocation and expansion of an existing aquatic center that primarily serves the City of Alameda residents. Most of the trips generated by the Project under typical conditions are expected to be local Alameda residents. In addition, the Project site is easily accessible by non-automobile modes. Class II bicycle lanes on Atlantic Avenue and the Class I Cross Alameda Trail provide non-motorized access adjacent to the site, and Webster Street, about 0.2 miles walking distance west of the Project site, provides high-frequency transit service.

Considering the Project use and availability of non-automobile modes, the Project can be considered a local-serving use and presumed to have a less-than-significant impact on VMT.

3. Trip Generation, Distribution, and Assignment

Trip Generation

Trip generation is the process of estimating the number of vehicles that would likely access the Project site. Fehr & Peers estimated the Project trip generation based on the anticipated programming at the site, including attendance and staffing estimates for various activities on typical weekdays and weekends, which are summarized in Table 1 with more detail in Attachment A.

Table 2 summarizes the daily trip generation for a weekday and a weekend, as well as weekday morning and evening peak commute hours for typical non-summer and summer months. In



addition to the visitor and staffing assumptions by time of day summarized in Table 1 and Attachment A, the trip generation is based on the following assumptions:

- Each adult visitor and staff would generate two trips, consisting of one trip to and one trip from the Project site.
- For main activities involving kids, 50% would be dropped off and picked up. These kids would generate four trips per day each, as their parents/guardians would drive to and from the site for both the drop-off and the pick-up. The other 50% would have parents park and wait. These kids would generate two trips per day, consisting of one trip to and one trip from the Project site.
- For all-day summer camps, all kids would be dropped off and picked up, generating four trips per day each.
- For 1.5-hour-long or shorter summer camps, parents/guardians would wait while kids would be at camp. These kids would generate two trips per day, consisting of one trip to and one trip from the Project site.
- For main activities, about 90% of visitors and staff would drive to the site with an average automobile occupancy of 1.1 persons per vehicle.
- For summer camps, about 95% of visitors and staff would drive to the site with an average automobile occupancy for kids of 1.5 persons per vehicle, and for staff of 1.1 persons per vehicle.
- All trip generation is increased by 10% to account for other trips such as deliveries, additional visitors, midday staff trips, and ridesourcing trips (Uber, Lyft, Taxi).

During non-summer periods, the Project is estimated to generate about 710 vehicle trips on a typical weekday, with about 23 trips during the weekday AM peak hour, and 66 trips during the weekday PM peak hour.

During the summer months, the Project would generate about 1,670 daily trips with about 383 trips during the weekday AM peak hour and 149 trips during the weekday PM peak hour. The Project would generate about 840 trips on typical weekend days during both summer and non-summer months.



Table 2: Project Automobile Traffic Generation Summary

Season	Typical Weekday							Typical Weekend
	Daily	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Non-Summer								
Main Activities	710	15	8	23	33	33	66	840
Typical Operations – Non-Summer	710	15	8	23	33	33	66	840
Summer								
Main Activities	880	39	39	78	61	60	121	840
Summer Camps	790	186	119	305	0	28	28	0
Typical Operations – Summer	1,670	225	158	383	61	88	149	840

Notes:

Trip generation based on the following assumptions:

- Number of visitors and staffing levels per day and time of day as provided by the City of Alameda in December 2024 (and presented in Attachment A)
- Main Activities: Drive mode share of 90%, auto occupancy of 1.1 person per car for kid activities, 50% are dropped off and picked up and 50% park and wait during the activity.
- Summer Camps: drive mode share of 95%, auto occupancy of 1.5 person per car. For all-day camps, four vehicle trips generated per kid: all kids are dropped off and picked up, and each drop-off and pick-up generates two trips (one inbound and one outbound). For shorter summer camps, parents/guardians would wait while kids at camp, generating two trips per day.
- Includes a 10% increase to account for other trips such as deliveries, rideshares, etc.

Source: Fehr & Peers, 2025.

Special Event Trip Generation

The Project anticipates accommodating a variety of special events throughout the year. The largest anticipated events would have up to 800 visitors and are expected a few times a year. These events, which generally consist of swim meets and water polo tournaments, would generally occur on weekends from 9:00 AM to 7:00 PM. Most of the 800 visitors would arrive throughout the day and not remain at the site throughout the day. Although the Project could provide seating for up to 500 spectators, the Project does not anticipate having more than 150 visitors at once throughout most special events. No other activities are anticipated at the aquatic center at the same time as the special events.

Attendees for these events are assumed to have about 100% driving mode share with two people per car. The trip generation for special events is increased by 15% to account for other trips, such



as deliveries and ridesourcing trips. Based on these assumptions, a capacity event with 800 attendees and 20 staff would generate about 940 vehicle trips. Considering the low frequency of these events, the traffic operations analysis presented in the next section does not consider the trips generated by the special events.

Trip Distribution and Assignment

The trip distribution and assignment process is used to estimate how trips generated by the Project would be distributed across the roadway network. Based on existing travel patterns and locations of complimentary land uses, we determined directions of approach to and departure from the Project site. **Figure 2** and **Figure 3** show the resulting peak hour trip distribution and Project trip assignment for non-summer and summer months, respectively.

The following study intersections were selected in consultation with the City of Alameda staff because they are either adjacent to the site or are most likely to be affected by the Project:

1. Atlantic Avenue/Wilma Chan Way
2. Atlantic Avenue/Bartlett Drive
3. Atlantic Avenue/Challenger Drive
4. Atlantic Avenue/Project Driveway

4. Traffic Operations Analysis

Although transportation analysis under CEQA no longer recognizes vehicle delay as an environmental impact, intersection level of service (LOS) was evaluated to help identify potential transportation system improvements that could be implemented as part of the Project. LOS is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at the intersection. It ranges from LOS A, with no congestion and little delay, to LOS F, with excessive congestion and delays.

For this study, traffic operations during typical weekday AM and PM peak commute hours at the study intersections were evaluated under the following scenarios:

- **Existing Conditions:** Represents existing traffic volumes based on data collected in November 2024, as shown in **Figure 4. Attachment B** provides the detailed count data. This scenario also accounts for the current signal timing parameters at the signalized study intersections including the recently implemented timings at the Atlantic Avenue/Wilma Chan Way intersection which was completed as part of the Cross Alameda Trail Project to better accommodate pedestrians and bikes between the separated two-way



bicycle lanes and the sidewalk on the south side of Atlantic Avenue west of Wilma Chan Way with the walking and biking paths through the Jean Sweeney Open Space Park on the west side of Wilma Chan Way.

- **Background No Project Conditions:** Represents Existing Conditions plus traffic generated by proposed or approved but not completed major developments and transportation network changes in the Project vicinity, which consist of the following:
 - 200 Wind River Way (120,000 square feet of research and development)
 - 1501 Buena Vista Avenue (10 townhomes)
 - 2015 Grand Street (90 townhomes plus five accessory dwelling units). This development project would also include the completion of Clement Avenue through the site (between Grand and Hibbard Streets).

Figure 5 shows the traffic volumes and the intersection configurations at the study intersections under this scenario.

- **Background Plus Project Conditions (Non-Summer):** Represents Background No Project Conditions plus traffic generated by the Project during the non-summer months, as shown in **Figure 6**.
- **Background Plus Project Conditions (Summer):** Represents Background No Project Conditions plus traffic generated by the Project during the summer months, as shown in **Figure 7**.

Based on the traffic volumes and the intersection configurations and signal timings under each scenario, Fehr & Peers calculated the vehicle delay and associated LOS at the study intersections using the *Highway Capacity Manual* 6th Edition methodologies as incorporated in the Synchro 12 software. Under all evaluated scenarios, the study intersections, including the Project Driveway on Atlantic Avenue, would operate at LOS D or better during both the AM and PM peak hours, as summarized in **Table 3. Attachment C** provides detailed LOS calculation sheets.



Table 3: Intersection Level of Service Summary

Intersection	Traffic Control	Peak Hour	Existing Conditions		Background No Project Conditions		Background Plus Project Conditions (Non-Summer)		Background Plus Project Conditions (Summer)	
			Delay (sec) ¹	LOS	Delay (sec) ¹	LOS	Delay (sec) ¹	LOS	Delay (sec) ¹	LOS
1. Atlantic Avenue/ Wilma Chan Way	Signal	AM	35	C	38	D	38	D	43	D
		PM	34	C	37	D	37	D	38	D
2. Atlantic Avenue/ Bartlett Drive	Side-Street Stop	AM	<1 (10)	B	<1 (11)	B	<1 (11)	B	<1 (12)	B
		PM	<1 (11)	B	1 (12)	B	<1 (12)	B	<1 (12)	B
3. Atlantic Avenue/ Challenger Drive	Signal	AM	27	C	28	C	28	C	30	C
		PM	30	C	34	C	34	C	34	C
4. Atlantic Avenue/ Project Driveway ²	Side-Street Stop	AM	-	-	-	-	<1 (11)	B	4 (16)	C
		PM	-	-	-	-	<1 (11)	B	2 (12)	B

Notes:

1. Average intersection delay and LOS are calculated using the HCM 6th edition. Average intersection delay is presented in seconds for all intersections. The worst approach delay is presented in parentheses for side street stop-controlled intersections.
2. Intersection does not exist under Existing or Background No Project Conditions.

Source: Fehr & Peers, 2025.

5. Site Access and Circulation Analysis

An evaluation of access and circulation for all travel modes based on the site plan dated February 14, 2025, and provided in **Figure 1** is summarized below.

Automobile Access and Circulation

Automobile access would be provided via one main driveway on the south side of Atlantic Avenue, offset about 60 feet east of an existing driveway for the Marina Village Research Park, which is on the north side of Atlantic Avenue. The Project driveway would be 20 feet wide and provide direct access to a 72-space surface parking lot. The driveway would accommodate all turns into and out of the Project. A second driveway on the east side of the parking lot would connect the proposed parking lot and the existing parking lot for the College of Alameda Science Annex.

The driveway on Atlantic Avenue would provide a clear line-of-sight between a motorist 10 feet back from the sidewalk exiting the driveway and pedestrians on the sidewalk 10 feet away on



either side. Additionally, according to the Caltrans *Highway Design Manual*, the stopping sight distance for Atlantic Avenue (with a 25-mph posted speed limit) is 150 feet. The Project Driveway meets this sight distance for both motor vehicles and bicycles in both directions of Atlantic Avenue.

The Project driveway on Atlantic Avenue would connect to two two-way drive aisles generally parallel to Atlantic Avenue, which would accommodate 72 parking spaces generally along both sides of the two drive aisles. All parking spaces would be perpendicular to the 24-foot-wide two-way drive aisles, which would meet the dimensional requirement in the *City of Alameda Municipal Code* (Section 30-7.8), such that passenger vehicles would be able to maneuver into and out of all parking spaces.

Currently, Atlantic Avenue provides a painted median (two double yellow lines) east of the Marina Village Research Park driveway. To better accommodate left-turns from westbound Atlantic Avenue into the Project site, consider implementing the following (shown in **Figure 8**):

Recommendation 1: Stripe a 100-foot westbound left-turn lane with a 60-foot taper along Atlantic Avenue at the Project driveway.

The Project driveway would also provide access to an approximately 100-foot passenger loading area on the west side of the parking lot and adjacent to the Project entry plaza. Thus, passengers can be dropped off or picked up without crossing any vehicles.

Recommendation 2: Along the west side of the parking lot, Install R25(C) (CA) "Passenger Loading Only" signs and paint the curb white to discourage parking.

Automobile Parking

The Project parking lot would provide 72 parking spaces, consisting of four ADA accessible spaces and 68 non-accessible spaces. The Project would also provide three electric vehicle charging parking spaces including one ADA accessible space. Automobile parking requirements and the estimated parking demand for the Project are discussed below.

Automobile Parking Requirements

The *City of Alameda Municipal Code* (Section 30-7.3) requires off-street automobile parking, as summarized in **Table 4**. The City has no minimum parking requirement and has a maximum parking requirement of three spaces per 1,000 square feet of floor area for commercial recreation land uses. The Project is approximately 33,700 square feet, considering the building floor area,



enclosed outdoor area, and pools. This square footage corresponds to a maximum of 101 spaces per *Code*. The Project would provide 72 parking spaces, which is below the maximum and therefore meets *Code* requirements.

Table 4: Automobile Parking Requirements

Land Use	Size (SF) ¹	Required Off-Street Parking Supply		Parking Supply	Within Range?
		Minimum	Maximum ²		
Commercial Recreation	33,700	0	101	72	Yes

Notes:

1. SF = Square Feet
2. Per [City of Alameda Municipal Code 30-7.3](#) – Off-Street Vehicle Parking Regulations, Table A: Allowable Maximum Off-Street Parking Requirements, Commercial Recreation: up to three spaces are allowed per 1,000 SF.

Fehr & Peers, 2025.

The *Code* (Section 30-7.8) also requires that no more than 50% of parking spaces be compact (7.5 feet by 15 feet) and at least 50% of spaces be regular (8.5 feet by 18 feet). The 68 non-accessible spaces in the surface lot would be 8.5 feet by 16 feet. Although the parking space widths would meet the minimum width dimension for regular spaces, the parking space lengths would not meet the minimum length dimensions.

Recommendation 3: Review the final site plan to ensure at least 50% of all parking spaces provided are “regular” spaces (8.5 feet by 18 feet) per *Code* requirements.

Plug-in Electric Vehicle (EV) Charging Infrastructure

The *City of Alameda Municipal Code* (Section 30-7.5) requires that the Project provide EV-ready spaces with a mix of Level 1 and Level 2 charging capacities. For commercial recreation uses, the *Code* requires a minimum of 10% of parking spaces to be equipped with an installed EV Charging Station, corresponding to seven EV spaces required for the 72 spaces for the Project. As summarized in **Table 5**, the Project would provide 3 EV spaces, which would not meet *Code* requirements.

Recommendation 4: Review the final site plan to ensure that at least 10% of all parking spaces are equipped with an installed EV charging Station per *Code* requirements.



Table 5: Electric Vehicle Charging and Accessible Parking Requirements

Parking Type	Size	Required	Provided	Meets Code Requirements?
EV Charging Requirements				
EV Spaces	72 parking spaces (provided by Project)	7 spaces ¹	3 spaces	No
ADA-Accessible Parking Spaces				
Passenger Vehicle Accessible	101 parking spaces (City Code maximum)	5 spaces ²	4 spaces	No
Van Accessible		1 space ³	1 space	Yes

Notes:

1. Per *City of Alameda Municipal Code* Section 30-7.5 – Off-Street Electric Vehicle (EV) Charging Requirements, Nonresidential (including commercial recreation), 10% of spaces shall be equipped with an Electric Vehicle Charging Station.
2. Per *City of Alameda Municipal Code* Section 30-7.3 – Off-Street Parking for Persons with Disabilities, accessible parking should be provided in accordance with California Building Code (CBC) requirements and be calculated based on the maximum number of parking spaces set forth for vehicles (101 for the Project). Per *California Building Code* (CBC) Section 11b-208.2, five total accessible parking spaces should be provided for between 101 to 150 total vehicular parking spaces.
3. Per CBC Section 1109A.8.6, one in every eight accessible spaces, but not less than one, shall be van accessible.

Fehr & Peers, 2025.

ADA Accessible Parking

The *City of Alameda Municipal Code* (Section 30-7.4) requires that Projects adhere to the *California Building Code* (Sections CBC 11B-208.2 and 1109.8.6) accessible parking requirements based on the maximum parking requirements (as calculated per Section 30-7.3). As shown in Table 4, the maximum parking for the Project site would be 101 spaces, compared to the 72 spaces provided by the Project. As summarized in **Table 5**, a parking lot with between 101 and 150 spaces requires at least five ADA accessible parking spaces. In addition, at least one of every eight accessible spaces (but not less than one) must be van accessible, which corresponds to one van accessible space required for the Project. The Project would provide four total accessible spaces, with 2 van accessible spaces, which would not meet the ADA accessible parking requirements.¹

Recommendation 5: Review the final site plan to ensure that the Project meets the minimum ADA accessible parking requirements.

¹ Although the Project would not meet the ADA accessible parking requirement for the maximum parking allowed at the Project, the 4 ADA accessible parking spaces would exceed the 3 spaces required for a 72-space parking lot.



Estimated Parking Demand – Typical Operations

The Project parking demand is estimated based on the anticipated programming at the site and using the same transportation characteristics and similar assumptions used to estimate the trip generation discussed earlier in this memorandum.

Figure 9 shows the parking demand by time of day on a typical weekday during non-summer months. Most weekday activities are expected from 2:00 PM to 6:00 PM. The 72-space parking lot would generally accommodate the estimated demand through most of the day, except between 2:30 and 3:30 PM, when the estimated parking demand would exceed the parking lot capacity. The parking demand is estimated to peak at around 3:00 PM, when about 83 parking spaces (corresponding to 116% occupancy) would be occupied. Vehicles not able to park at the Project parking lot are expected to use the adjacent College of Alameda Science Annex parking lot, which can be directly accessed through the Project parking lot. It is estimated that up to 11 vehicles may park in the College of Alameda Science Annex parking lot on a typical non-summer weekday.

Figure 9 - Parking Demand by Hour on a Typical Non-Summer Weekday

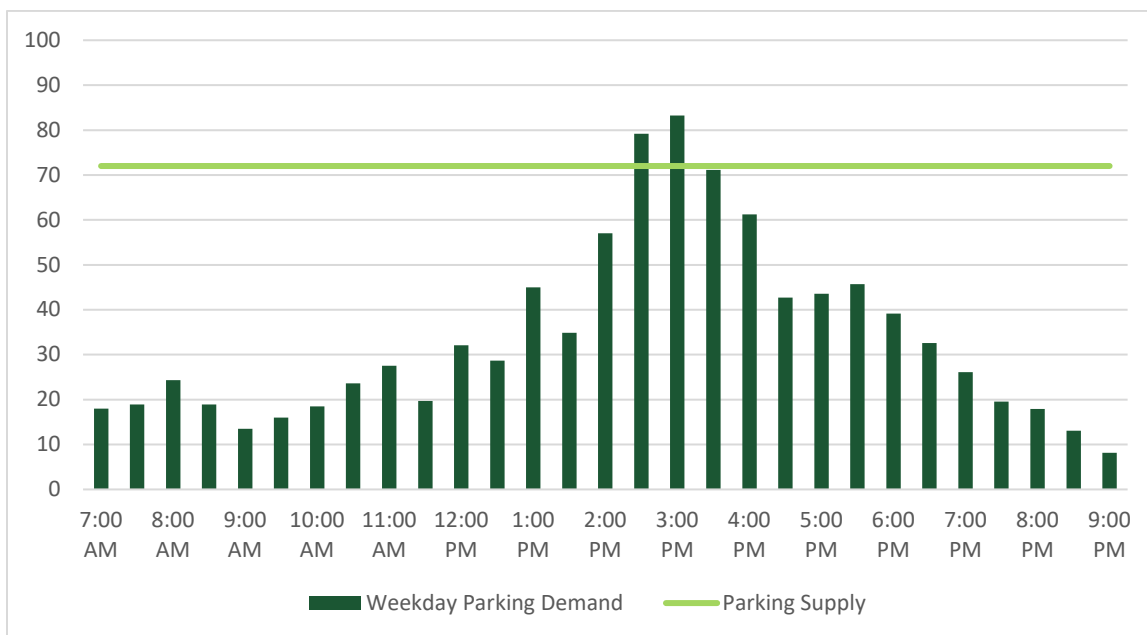


Figure 10 shows the parking demand by time of day on a typical summer weekday. Summer weekdays are expected to have more activities than non-summer weekdays, with most activities expected from 8:00 AM to 7:00 PM. The parking lot would continue to generally accommodate the estimated demand through most of the day. However, the parking demand is expected to exceed the parking lot capacity for several hours at various times of the day on a typical summer



weekday. The summer weekday parking demand is estimated to peak at around 1:00 PM, when about 90 parking spaces (corresponding to about 125% occupancy) would be occupied. It is estimated that up to 18 vehicles that cannot park in the Project parking lot on a typical summer weekday may park in the College of Alameda Science Annex parking lot.

Figure 10 - Parking Demand by Hour on a Typical Summer Weekday

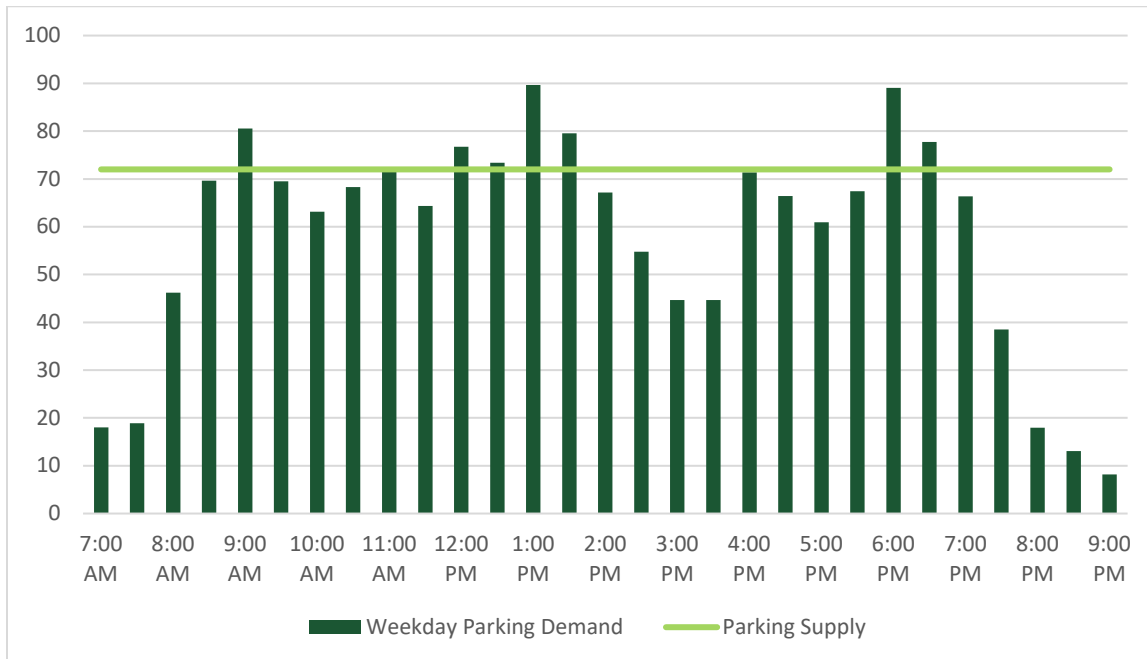
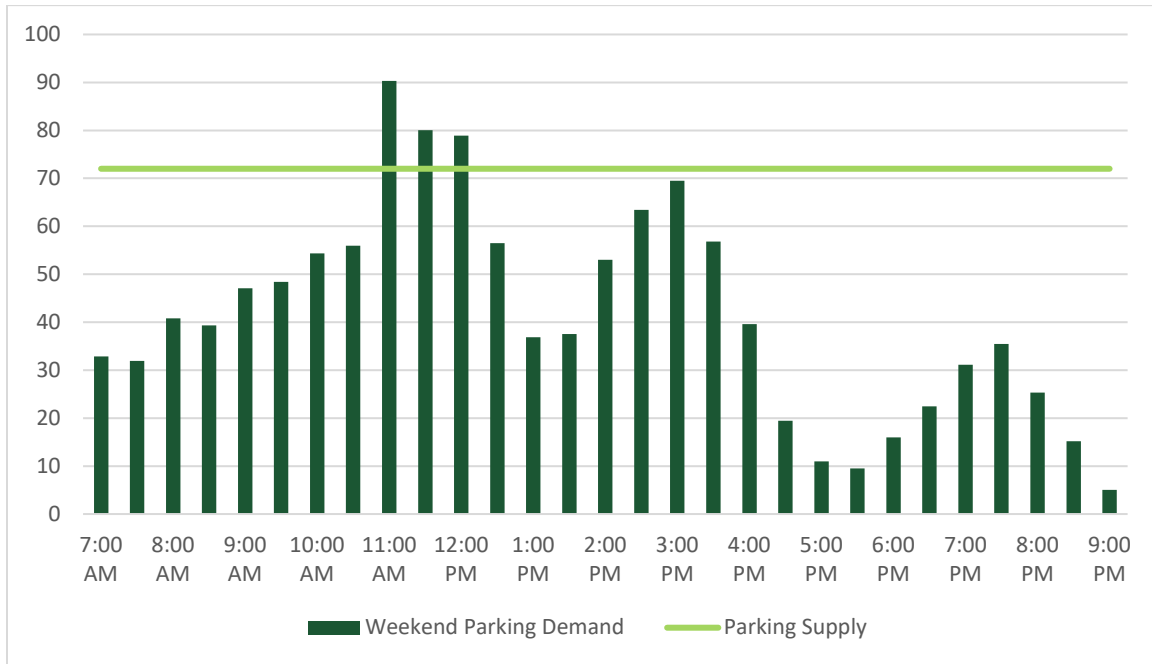


Figure 11 shows the parking demand by time of day on a typical weekend, assuming no special events. Weekends, regardless of season, are generally expected to have more activities than non-summer weekdays but less than summer weekdays. Most weekend activities are expected from 8:00 AM to 4:00 PM. Similar to weekdays, the parking lot would continue to generally accommodate the estimated parking demand through most of the weekend day. However, the parking demand is expected to exceed the parking lot capacity between 11:00 AM and 1:00 PM. Parking demand is estimated to peak at around 11:00 AM, when about 90 parking spaces (corresponding to 125% occupancy) would be occupied. It is estimated that up to 18 vehicles that cannot park in the Project parking lot on a typical weekend may park in the College of Alameda Science Annex parking lot.



Figure 11 - Parking Demand by Hour on a Typical Weekend



Estimated Parking Demand – Special Events

The Project anticipates a variety of special events that would occur infrequently and mostly on weekends. It is expected that no regular activities would be programmed when these large events, such as swim meets and water polo tournaments, are scheduled. The largest events would occur a few times a year and would have up to 800 attendees who would mostly arrive and leave throughout the day. Although the Project can accommodate up to 500 spectators, it does not anticipate exceeding 150 visitors at once for most events.

The parking demand for special events is estimated using the same assumptions as the trip generation presented earlier in this memorandum (100% driving mode share and two attendees per vehicle). The proposed 72 parking spaces would accommodate approximately 150 visitors at once, which is the typical maximum expected. For events that anticipate exceeding 150 visitors at once, including the Project capacity of 500 spectators, the Project would use the adjacent College of Alameda Science Annex parking lot.

Recommendation 6: Monitor parking demand at the Project site and consider one or more of the following if parking demand exceeds capacity during regular operations and/or special events:



- Encourage visitors and staff to use non-automobile modes to travel to and from the site through communicating information about transportation options, such as including information on transportation options on the Project website, in regular communications, on promotional material for special events, and postings at the main entrance.
- Encourage site staff to park in the College of Alameda Science Annex parking lot or other lots during peak demand times
- Limit most parking spaces to 2-hours to ensure availability for visitors
- Ensure that the College of Alameda Science Annex parking lot and/or other parking lots in the Project vicinity can accommodate the Project parking demand overflow

Bicycle Access and Bicycle Parking

Bicycle Facilities

The following bicycle facilities are currently provided in the Project vicinity:

- Bike lanes in both directions on Atlantic Avenue between Wilma Chan Way and Sherman Street
- Bike lanes in both directions on Challenger Drive between Atlantic Avenue and Marina Village Parkway
- Bike path directly south of the Project through the Jean Sweeney Open Space Park between the Atlantic Avenue/Wilma Chan Way intersection and the Atlantic Avenue/Sherman Street intersection (part of the Cross Alameda Trail, which is an approximately 4-mile low-stress bicycling and walking corridor that will extend between east and west sides of the Alameda island at buildout).
- Shared-use path on the east side of Wilma Chan Way extending between Atlantic Avenue in the south and Mariner Square Drive in the north and connecting to the Posey Tube path.

The Bikeway Vision network in *City of Alameda Active Transportation Plan* (December 2022) includes the following in the Project vicinity:

- Convert the existing bike lanes on Atlantic Avenue to buffered bike lanes.
- Convert the existing bike lanes on Challenger Drive to separated bike lanes.



- Complete north-south shared-use paths through the Jean Sweeney Open Space Park connecting the Cross Alameda Trail to nearby streets including Challenger Drive to the east of the Project site and to Eighth Street just south of the Project site.

The Project does not propose any modifications to the existing or proposed bicycle facilities. Considering the Project location on Atlantic Avenue and that Atlantic Avenue does not provide on-street parking, it is possible that the bike lanes may be used for passenger loading.

Recommendation 7: Install R26(S) (CA) “No Stopping Anytime” signs and paint red curb on both sides of Atlantic Avenue along Project frontage to prohibit vehicles from using the existing Class II bicycle facilities for pickups and drop-offs.

Bicycle Parking Requirements

The *City of Alameda Municipal Code (Section 30-7.6)* requires development projects to provide long- and short-term on-site bicycle parking, as summarized in **Table 6**. Long-term bicycle parking includes lockers or secured enclosures, and short-term bicycle parking includes bicycle racks.

Table 6: Bicycle Parking Requirements

Land Use	Size	Long-Term Bicycle Parking Spaces per SF	Short-Term Bicycle Parking Spaces per Unit
Commercial Recreation	33,700 SF	1 per 10,000 SF ²	1 per 2,000 SF ²
Minimum Required Bicycle Parking		3	17
Proposed Parking Spaces		2	100
<i>Minimum Requirement Met?</i>		<i>No</i>	<i>Yes</i>

Notes:

1. SF = Square Foot
2. Per *City of Alameda Municipal Code* Section 30-7.6 – Off-Street Bicycle Parking Requirements, Table B, one long-term bicycle parking space is required per 10,000 of floor area and one short-term bicycle parking space is required per 2,000 square feet of floor area for commercial recreation uses.

Fehr & Peers, 2025.

The Project would provide 100 short-term spaces and two long-term spaces, with adequate space to accommodate parking for 10 additional bikes for a total of 12 long-term bicycle parking spaces. The bicycle parking would be in the main plaza east of the Project parking lot and can be accessed from both Atlantic Avenue in the north and the Cross Alameda Trail in the south.

The *Code* requires one long-term bicycle parking space per 10,000 square feet of floor area and one short-term space per 2,000 square feet of floor area. This corresponds to three long-term and



17 short-term spaces required for the Project's 33,700 square feet of total floor area. The Project would meet *Code* requirements for short-term parking and would not meet *Code* requirements for long-term parking.

Recommendation 8: Review the final site plan to ensure that at least three long-term bicycle parking spaces are provided in accordance with *Code* requirements.

Pedestrian Access and Circulation

Pedestrian access to the Project site would be provided via Atlantic Avenue and the Cross Alameda Trail on the south side of the Project. The main entrance to the Project would be served by an entry plaza which would connect to sidewalks along Atlantic Avenue, the Cross Alameda Trail, and the Project parking lot.

The Project proposes a marked crosswalk across Atlantic Avenue just west of the Project driveway and just east of the Marina Village Research Park driveway which is on the north side of the street. The crosswalk would connect to the entry plaza through a diagonal path. Similar to the Project driveway, the crosswalk would exceed the minimum stopping sight distance for drivers on both directions of Atlantic Avenue.

Per the Federal Highway Administration *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*, potential safety countermeasures for the mid-block crosswalk were considered. According to Table 1 of the *Guide*, high-visibility crosswalk markings, Rectangular Rapid-Flashing Beacons (RRFBs), and a pedestrian refuge island (i.e., median) are candidate treatments for this location based on the average daily traffic volume (estimated at about 4,600 vehicles per day), roadway speed limit (posted at 25 mph), and lane configuration. To better accommodate pedestrians crossing Atlantic Avenue, consider implementing the following (shown in **Figure 8**):

Recommendation 9: Install the following at the proposed crosswalk across Atlantic Avenue between the Marina Village Research Park and the Project Driveways:

- high-visibility crosswalk markings
- Rectangular Rapid-Flashing Beacons (RRFBs) on both sides of the crosswalk
- A raised center median between the Marina Village Research Park and the Project Driveways



Transit Access

AC Transit is the primary bus service provider in the City of Alameda. Although there are no transit stops adjacent to the Project site, AC Transit operates lines at the following transit stops in the Project vicinity:

- Both directions of Webster Street at Atlantic Avenue (approximately 0.2 miles, walking distance, west of the Project site):
 - Line 20: 30-minute headways on weekdays and weekends.
 - Line 51A: 15-minute headways on weekdays and weekends.
 - Line 96: 30-minute headways on weekdays and weekends.
 - Line 851: 60-minute headways every day from approximately 12:00 AM to 5:00 AM.
 - Line O: 30-minute headways on weekdays and weekends.
 - Line W: 30-minute headways on weekdays from approximately 4:30 PM to 7:00 PM.
- Atlantic Avenue/Challenger Drive (approximately 0.2 miles, walking distance, east of the Project site):
 - Line 19: 60-minute headways on weekdays and weekends

the Project would not modify access between the Project site and these bus stops.

Emergency Vehicle Access

Emergency vehicles would access the Project site through the same vehicular access points on Atlantic Avenue and use the surface parking lot to access the Project site. The Project would not modify the existing roadway network, and the streets surrounding the Project site would continue to accommodate fire apparatuses. According to the *California Fire Code* (2019), fire apparatus access roads need to be no less than 20-foot-wide and shall always be unobstructed, which the Project meets. The Project parking lot would provide two access points; thus, if one access point is blocked, emergency vehicles can use the other access points to access the site.

The nearest fire station to the project site is Alameda Fire Station No. 2 at 635 Pacific Avenue, about 0.5 miles southwest of the Project. The additional traffic generated by the Project would not affect emergency vehicle response times.

6. Conclusion and Summary of Recommendations

Per site plan review, the Project would have adequate automobile, bicycle, pedestrian, and transit access and circulation. The following recommendations would improve access and circulation for the Project and ensure compliance with City of Alameda *Code*:



Recommendation 1: Stripe a 100-foot westbound left-turn lane with a 60-foot taper along Atlantic Avenue at the Project driveway.

Recommendation 2: Along the west side of the parking lot, Install R25(C) (CA) "Passenger Loading Only" signs and paint the curb white to discourage parking.

Recommendation 3: Review the final site plan to ensure at least 50% of all parking spaces provided are "regular" spaces (8.5 feet by 18 feet) per *Code* requirements.

Recommendation 4: Review the final site plan to ensure that at least 10% of all parking spaces are equipped with an installed EV charging Station per *Code* requirements.

Recommendation 5: Review the final site plan to ensure that the Project meets the minimum ADA accessible parking requirements.

Recommendation 6: Monitor parking demand at the Project site and consider one or more of the following if parking demand exceeds capacity during regular operations and/or special events:

- Encourage visitors and staff to use non-automobile modes to travel to and from the site through communicating information about transportation options, such as including information on transportation options on the Project website, in regular communications, on promotional material for special events, and postings at the main entrance.
- Encourage site staff to park in the College of Alameda Science Annex parking lot or other lots during peak demand times
- Limit most parking spaces to 2-hours to ensure availability for visitors
- Ensure that the College of Alameda Science Annex parking lot and/or other parking lots in the Project vicinity can accommodate the Project parking demand overflow

Recommendation 7: Install R26(S) (CA) "No Stopping Anytime" signs and paint red curb on both sides of Atlantic Avenue along Project frontage to prohibit vehicles from using the existing Class II bicycle facilities for pickups and drop-offs.

Recommendation 8: Review the final site plan to ensure that at least three long-term bicycle parking spaces are provided in accordance with *Code* requirements.



Recommendation 9: Install the following at the proposed crosswalk across Atlantic Avenue between the Marina Village Research Park and the Project Driveways:

- high-visibility crosswalk markings
- Rectangular Rapid-Flashing Beacons (RRFBs) on both sides of the crosswalk
- A raised center median between the Marina Village Research Park and the Project Driveways

Please contact Sam Tabibnia (stabibnia@fehrrandpeers.com or 510-835-1943) for questions or comments.

Attachments:

Figure 1 – Site Plan

Figure 2 – Project Trip Distribution and Assignment (Non-Summer)

Figure 3 – Project Trip Distribution and Assignment (Summer)

Figure 4 – Existing Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

Figure 5 – Background No Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

Figure 6 – Background Plus Project Conditions (Non-Summer) Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

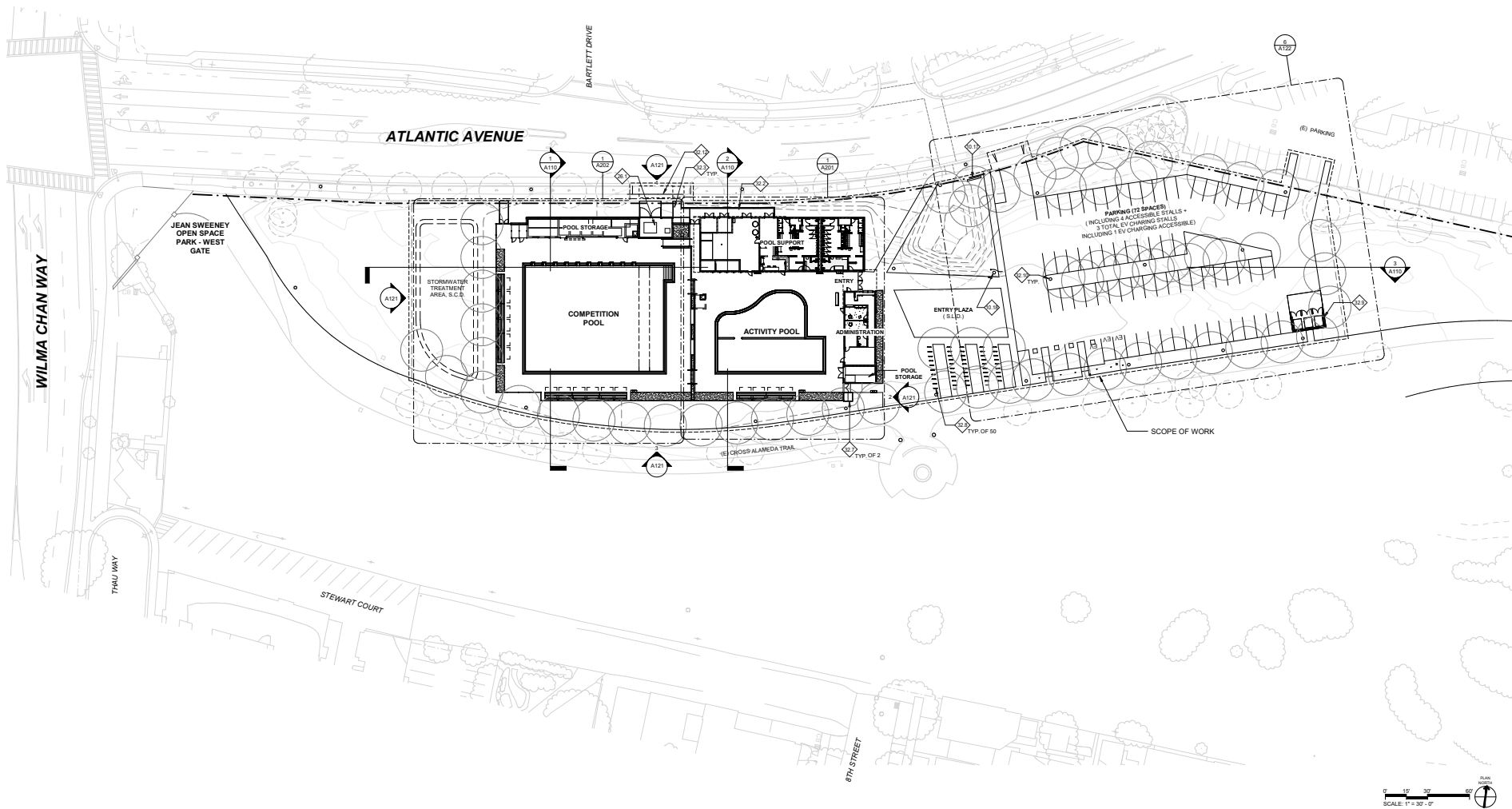
Figure 7 – Background Plus Project Conditions (Summer) Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

Figure 8 – Atlantic Avenue Conceptual Improvements

Attachment A – Planned Aquatic Center Programming

Attachment B – Intersection Volume Counts

Attachment C – LOS Calculation Sheets

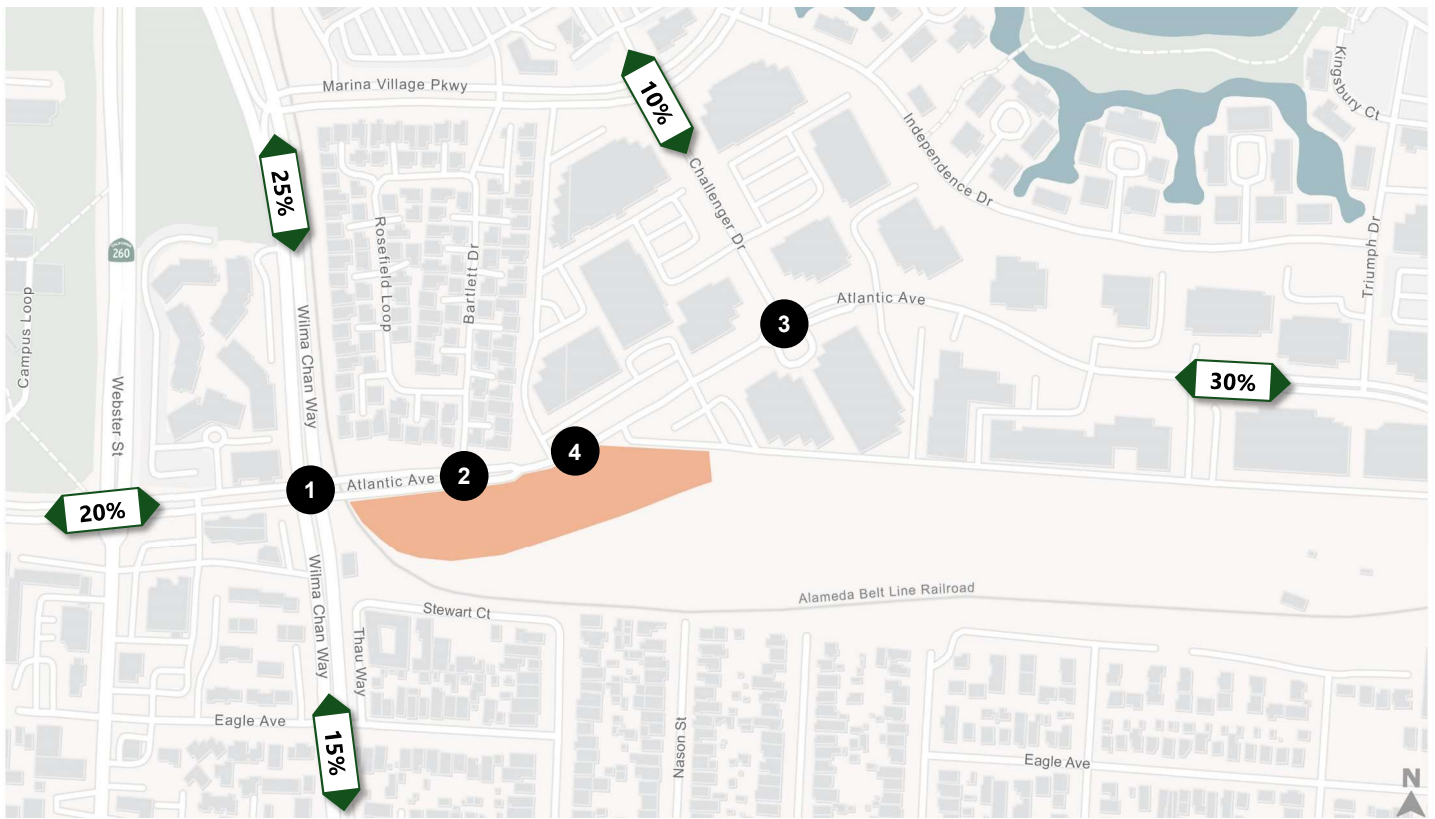


Site Plan Source: ELS Architecture + Urban Design, Feb. 14, 2025

Figure 1

Site Plan





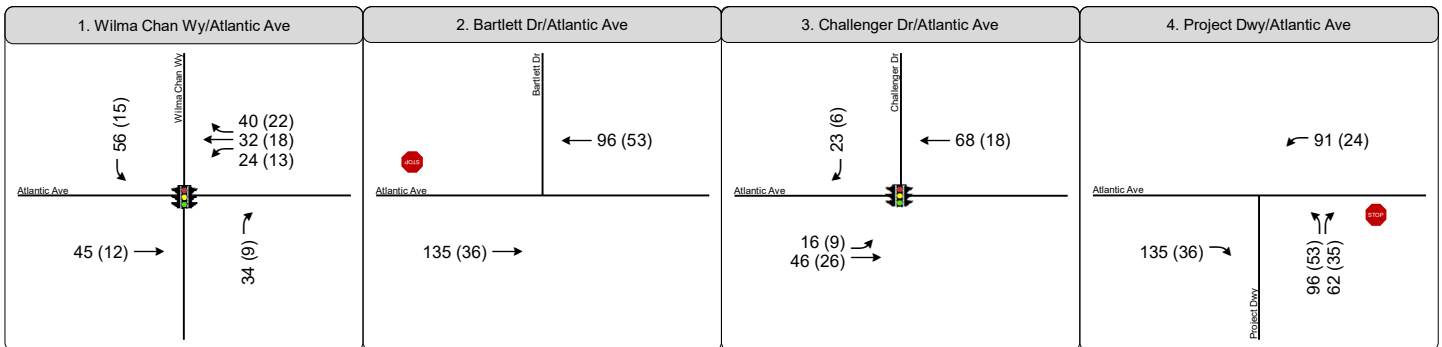
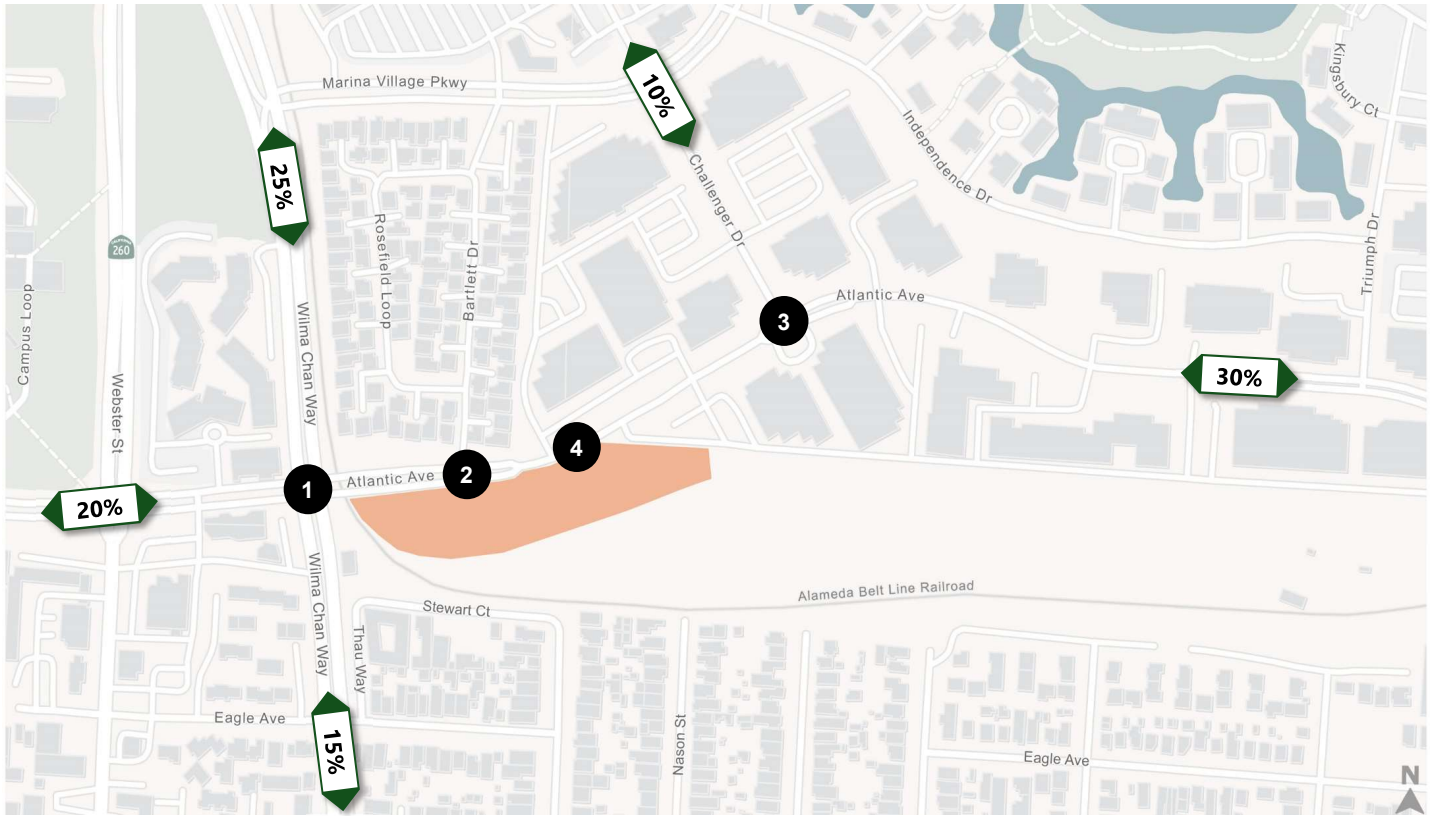
1. Wilma Chan Wy/Atlantic Ave	2. Bartlett Dr/Atlantic Ave	3. Challenger Dr/Atlantic Ave	4. Project Dwy/Atlantic Ave

LEGEND

- Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Trip Distribution
- Stop Sign
- Traffic Signal
- Project Site

Figure 2
Project Trip Distribution and Assignment (Non-Summer)



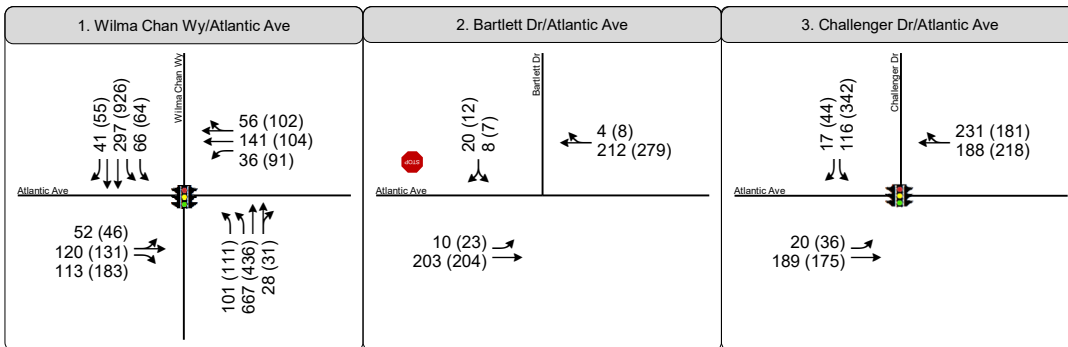


LEGEND

- Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Project Trip Distribution
- Stop Sign
- Traffic Signal
- Project Site

Figure 3
Project Trip Distribution and Assignment (Summer)





LEGEND

- Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Lane Configuration
- Stop Sign
- Traffic Signal
- Project Site

Figure 4
Existing Conditions Peak Hour Intersection Volumes,
Lane Configurations and Traffic Controls



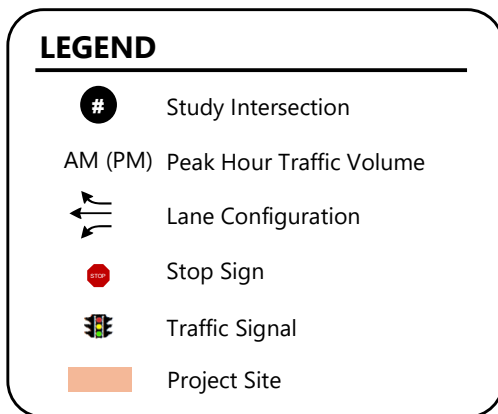
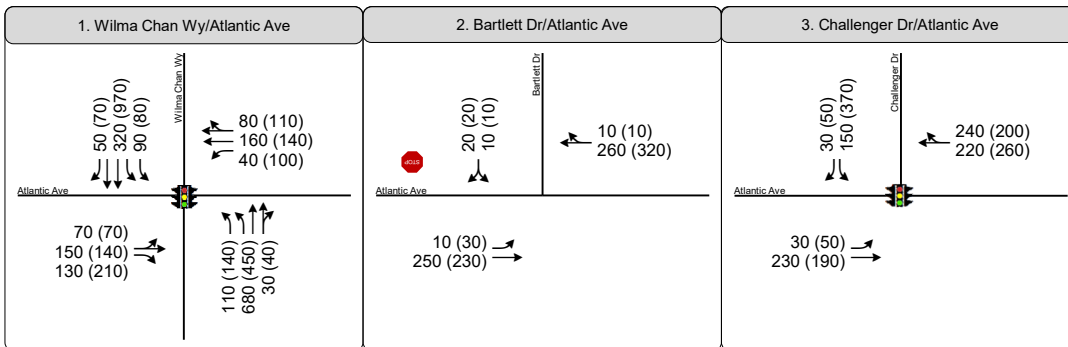
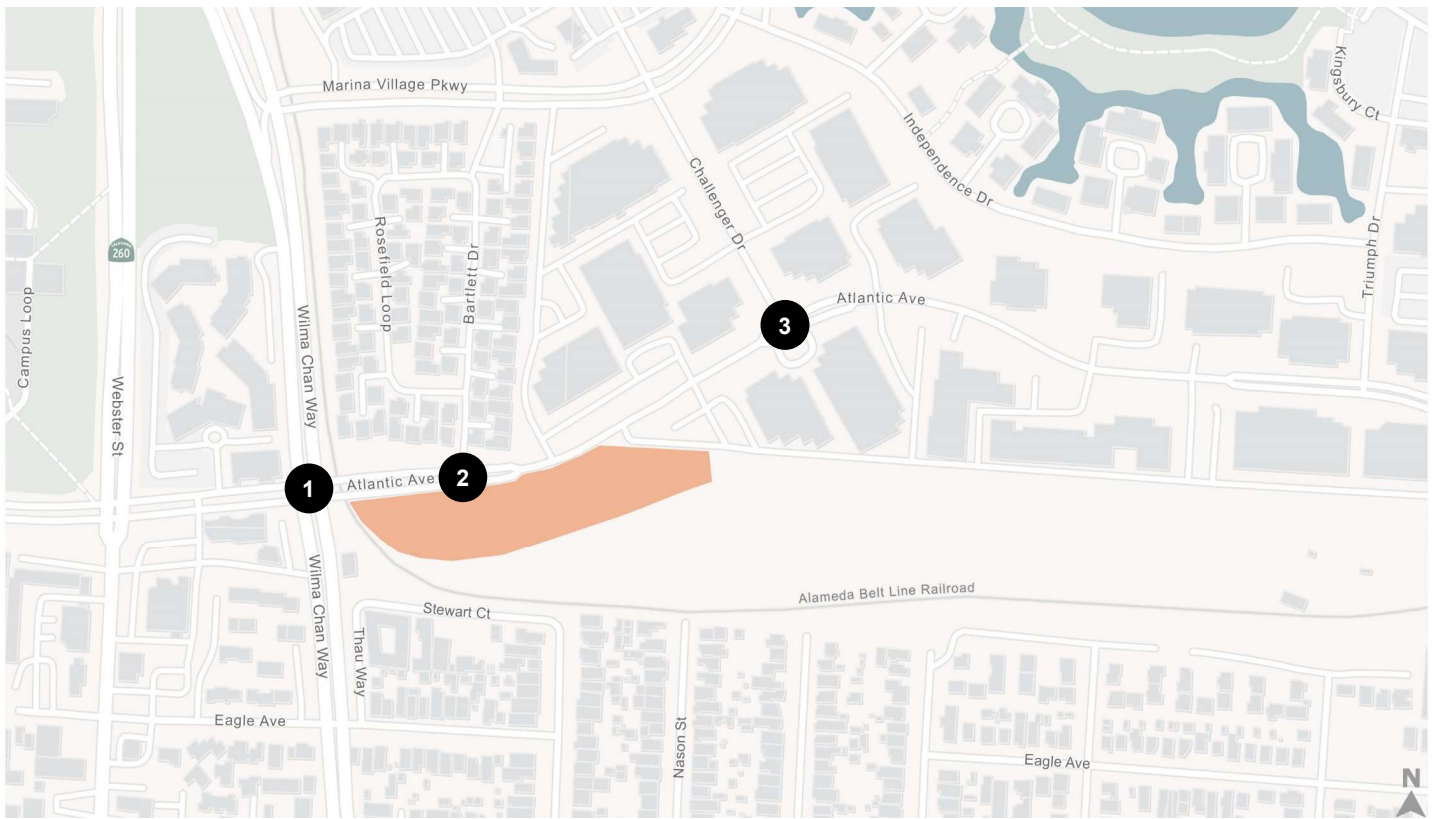


Figure 5
Background No Project Conditions Peak Hour Intersection Volumes,
Lane Configurations and Traffic Controls



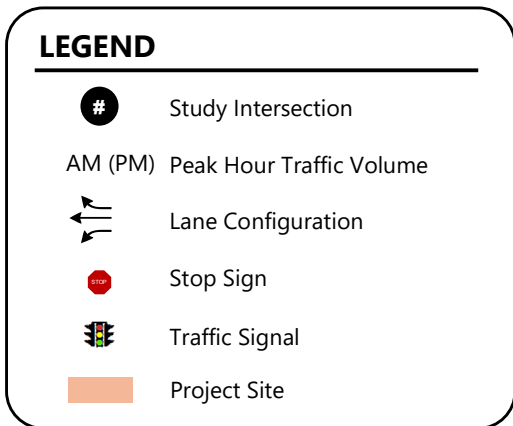
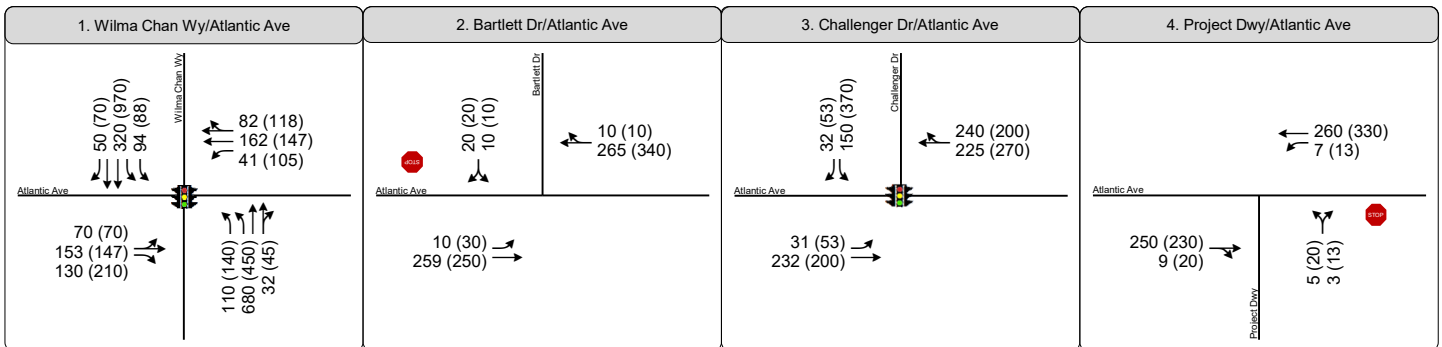
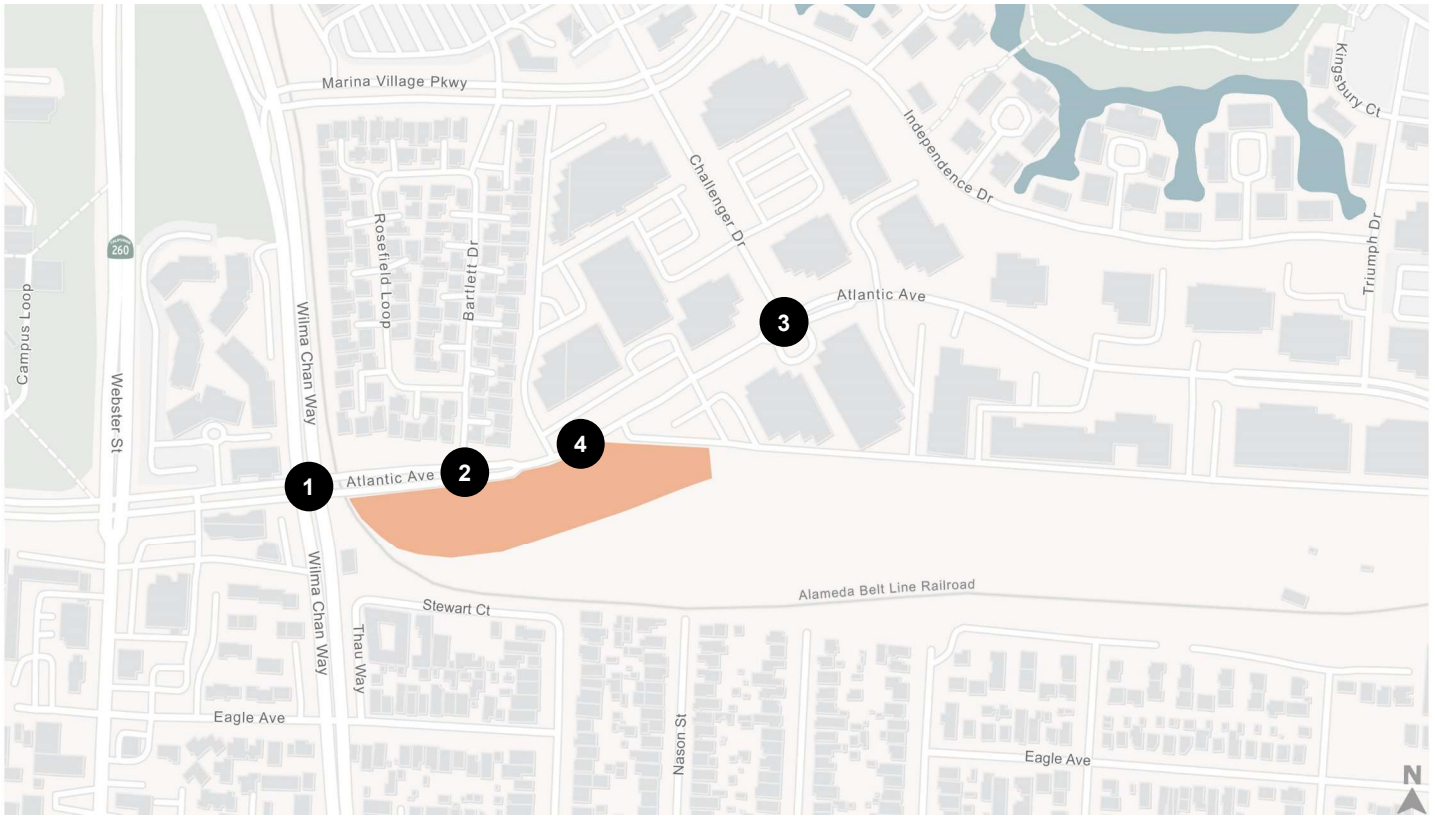
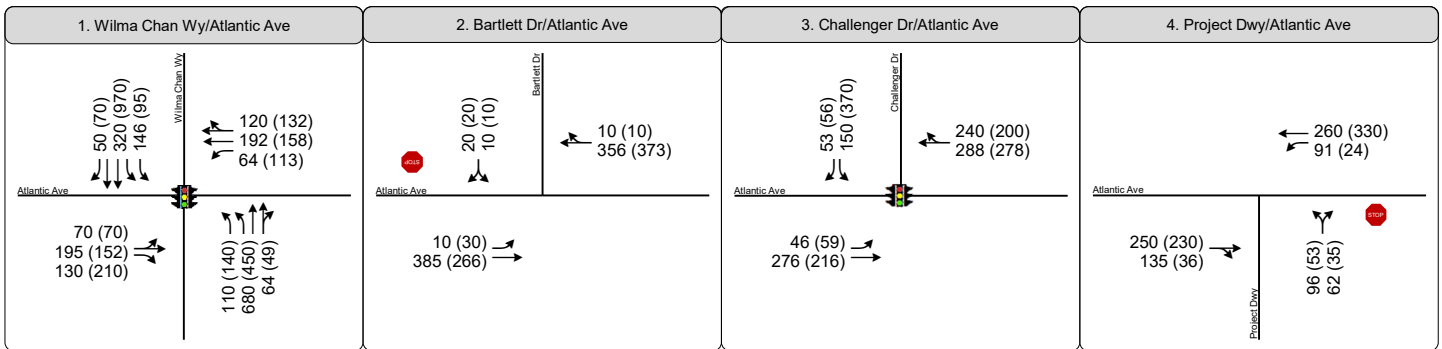
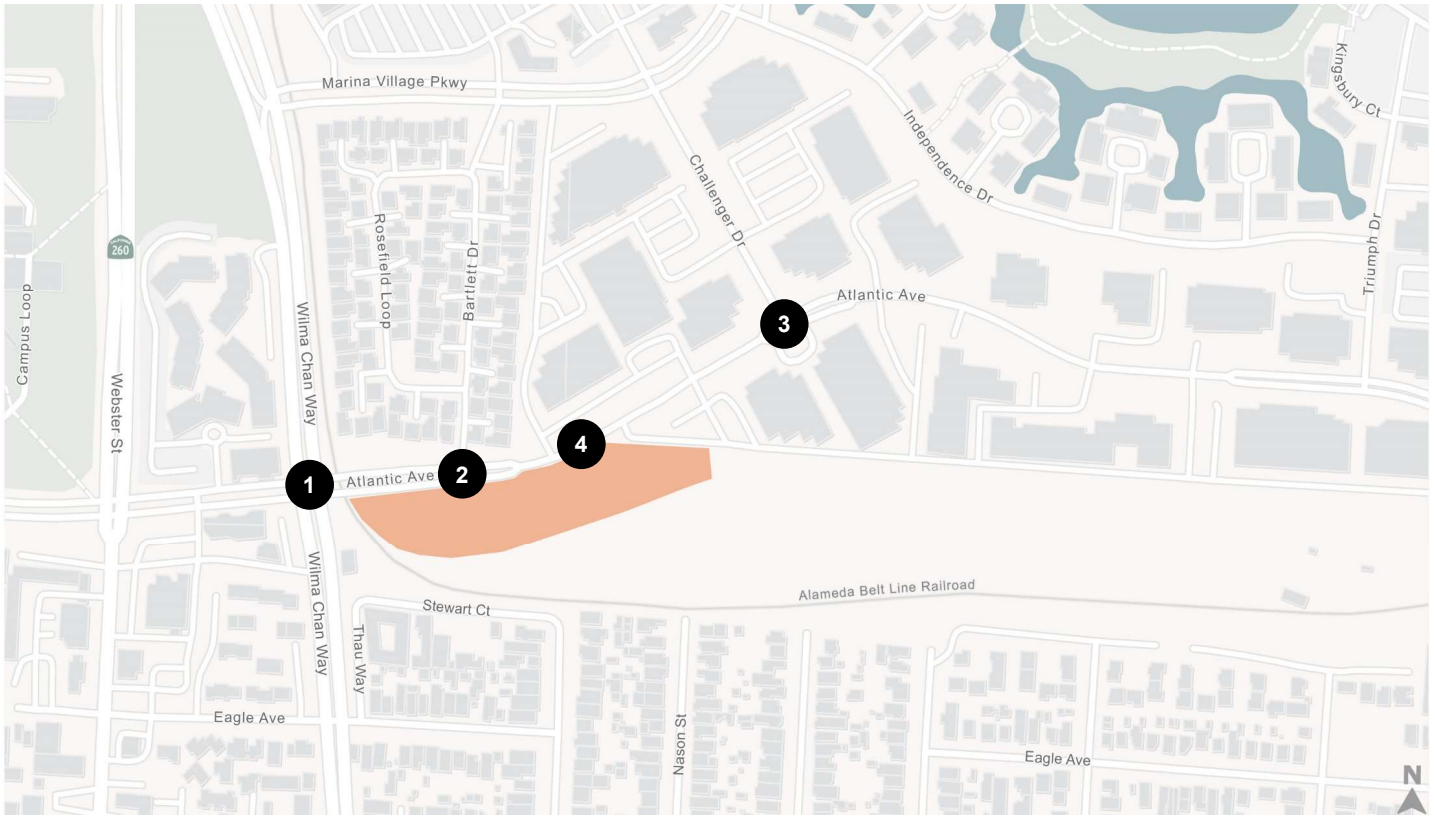


Figure 6
Background Plus Project Conditions (Non-Summer) Peak Hour Intersection Volumes,
Lane Configurations and Traffic Controls



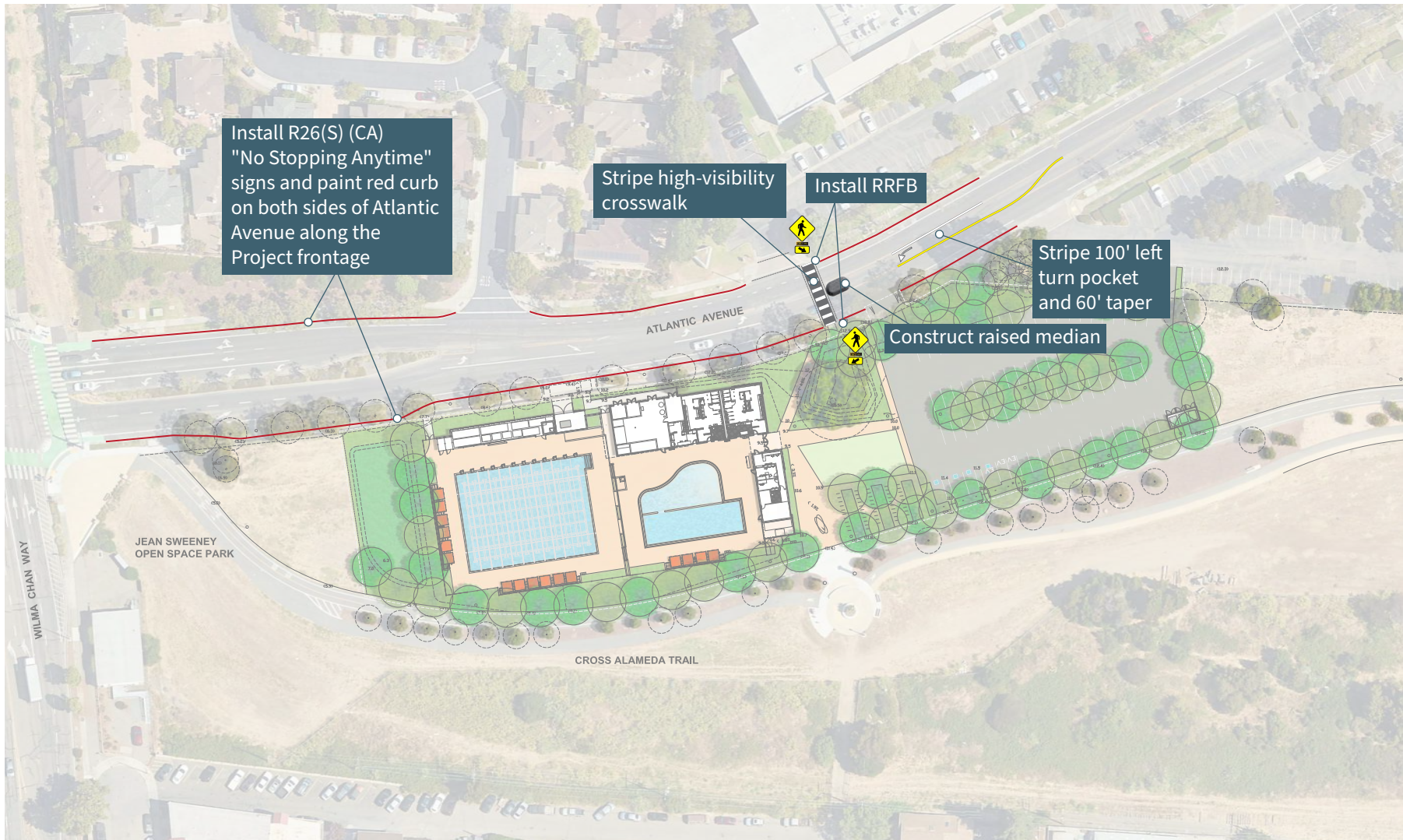


LEGEND

- Study Intersection
- AM (PM) Peak Hour Traffic Volume
- Lane Configuration
- Stop Sign
- Traffic Signal
- Project Site

Figure 7
Background Plus Project Conditions (Summer) Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls





Site Plan Source: ELS Architecture + Urban Design, Feb. 14, 2025



Figure 8

Atlantic Avenue Conceptual Improvements

Attachment A
Planned Aquatic Center Programming



Fall, Winter and Spring-Main

Pool/Room	Activites	Mon-Thur	Avg	Friday	Avg	Saturday	Avg	Sunday	Avg	# Staff	Days of Week	Times of Days
Comp and Training	Lap Swim	9:30am-12pm	30	9:30am-12pm	30	5:30-7am	25	5:30-7am	25	5	Monday-Sunday	M-F 9:30-12pm, Sat & Sun 5:30am-7am
Comp	Masters	5:30am-9:30am	35	5:30am-9:30am	35	7:00-9am	35	7:00-9am	35	5	Monday-Sunday	M-F 5:30am-9:30am, Sat & Sun 7-9am
Comp	Youth Teams	4-9pm	50	4-9pm	50	9am-11am	40	9am-11am	40	5	Monday-Sunday	M-F 4-9pm, Sat & Sun 9am-11am
Comp and Training	Swim lessons- Private	2-4pm	10	2-4pm	10	8am-4pm	20	8am-4pm	20	15	Monday-Sunday	M-F 2-4pm, Sat & Sun 8-4pm
Comp and Training	Swim Lessons- Group	2-4pm	10	2-4pm	10	8am-4pm	75	8am-4pm	75	20	Monday-Sunday	M-F 2-4pm, Sat & Sun 8-4pm
Comp	Youth - Water Polo	4-9pm	40	4-9pm	40	12-6pm	40	12-6pm	40	5	Monday-Sunday	M-F 4-9pm, Sat & Sun 12-6pm
Comp	Adult - Water Polo					11am-12pm	40	11am-12pm	40	5	Monday-Sunday	Sat & Sun 11am - 12pm
Comp	Specialty Users	2-4pm	55	2-4pm	55	6-9pm	40	6-9pm	40	5	Monday-Sunday	M-F 2-4pm, Sat & Sun 6-9pm
Comp	Masters	12-2pm	45	12-2pm	45					5	Monday-Friday	M-F 12-2pm

Fall, Winter and Spring-Camps

Pool/Room	Activites	Mon-Thur	Avg	Friday	Avg	Saturday	Avg	Sunday	Avg	# Staff	Days of Week	Times of Days
Comp, Training	Break Camp-Thanksgiving	9am-4pm	50	9am-4pm	50					10	Monday-Friday	9am-4pm
Comp, Training	Break Camp-Winter Break(DEC-JAN)	9am-4pm	50	9am-4pm	50					10	Monday-Friday	9am-4pm
Comp, Training	Break Camp-Winter Break(DEC-JAN)	9am-4pm	50	9am-4pm	50					10	Monday-Friday	9am-4pm
Comp, Training	Break Camp-Feb break	9am-4pm	50	9am-4pm	50					10	Monday-Friday	9am-4pm
Comp, Training	Break Camp-Spring Break	9am-4pm	50	9am-4pm	50					10	Monday-Friday	9am-4pm

Fall, Winter and Spring - Special Events

Pool/Room	Activites	Mon-Thur	Avg	Friday	Avg	Saturday	Avg	Sunday	Avg	# Staff	Days of Week	Times of Days
Comp, Training	Swim Meets	3-7pm	500	3-7pm	500	9am -7pm	800	9am-7pm	800	10	Monday-Sunday	M-F 3-7pm, Sat & Sun 9am-7am
Comp, Training	Water Polo Meets/Tournaments	12-7pm	200	12-7pm	200	9am-7pm	800	9am-7pm	800	5	Monday-Sunday	M-F 12-7pm, Sat & Sun 9am-7am
Comp, Training	Pumpkin Patch Pool Party					9am-6pm	125	9am-6pm	125	15	Saturday and Sunday	Sat and Sun 9am-6pm
Comp, Training	Turkey Dip - Thanksgiving Day Swim	7am-3pm	75							15	Thursday	7am-3pm
Comp, Training	North Pole Swim					12-3pm	150	12-3pm	150	15	Saturday and Sunday	Sat and Sun 12-3pm
Comp, Training	Snowman Family Pool Party					12-3pm	150	12-3pm	150	15	Saturday and Sunday	Sat and Sun 12-3pm
Comp, Training	Easter Event					9-3pm	150	9-3pm	150	15	Saturday and Sunday	Sat and Sun 9am-3pm
Comp, Training	User events					9-2pm	800			10	Saturday and Sunday	Sat and Sun 9am-2pm

Summer - Main

Pool/Room	Activites	Mon-Thur	Avg	Friday	Avg	Saturday	Avg	Sunday	Avg	# Staff	Days of Week	Times of Days
Comp, Training	Lap Swim	9:30am-12pm	30	9:30am-12pm	30	5:30-7am	25	5:30-7am	25	5	Monday-Sunday	M-F 9:30-12pm, Sat & Sun 5:30am-7am
Comp	Masters	5:30am-9:30am	35	5:30am-9:30am	35	7:00-9am	35	7:00-9am	35	5	Monday-Sunday	M-F 5:30am-9:30am, Sat & Sun 7-9am
Comp	Youth Teams	4-9pm	50	4-9pm	50	9am-11am	40	9am-11am	40	5	Monday-Sunday	M-F 4-9pm, Sat & Sun 9am-11am
Comp, Training	Swim lessons Private	8am-7pm	20			8am-4pm	20	8am-4pm	20	15	Monday-Sunday	M-F 2-4pm, Sat & Sun 8-4pm
Comp, Training	Swim Lessons- Group	8am-7pm	100			8am-4pm	100	8am-4pm	75	20	Monday-Sunday	M-F 2-4pm, Sat & Sun 8-4pm
Comp	Youth - Water Polo	4-9pm	40	4-9pm	40	12-6pm	40	12-6pm	40	5	Monday-Sunday	M-F 4-9pm, Sat & Sun 12-6pm
Comp	Adult - Water Polo					11am-12pm	40	11am-12pm	40	5	Monday-Sunday	Sat & Sun 11am - 12pm
Comp	Specialty Users					6-9pm	40	6-9pm	40	5	Monday-Sunday	M-F 2-4pm, Sat & Sun 6-9pm
Comp	Masters	12-2pm	45	12-2pm	45					5	Monday-Friday	
Comp, Training	Public Swim			1-4pm	125	4-6pm	125	4-6pm	125			F 1-4pm, Sat and sun 4-6pm

Summer -Camps

Pool/Room	Activites	Mon-Thur	Avg	Friday	Avg	Saturday	Avg	Sunday	Avg	# Staff	Days of Week	Times of Days
Comp, Training	Weekly Camps	9am-4pm	100							20	Monday-Thursday	9am-4pm
Comp, Training	Intro To swim	6-7:30pm	45							2	Monday-Thursday	6-7:30pm
Comp, Training	Triathlon Camp	8-9am	30							2	Monday-Thursday	8-9am
Comp, Training	Polo Camp	9am-4pm	45							4	Monday-Thursday	9am-4pm
Comp, Training	Dive Camp	9am-4pm	30							3	Monday-Thursday	9am-4pm
Comp, Training	Aquatic Interns	9am-4pm	50	9am-4pm	50					3	Monday-Friday	9am-4pm

Summer - Special Events

Pool/Room	Activites	Mon-Thur	Avg	Friday	Avg	Saturday	Avg	Sunday	Avg	# Staff	Days of Week	Times of Days
Comp, Training	Swim Meets					9am -7pm	800	9am-7pm	800	10	Saturday-Sunday	, Sat & Sun 9am-7am
Comp, Training	Water Polo Meets/Tournaments					9am-7pm	800	9am-7pm	800	5	Saturday-Sunday	Sat & Sun 9am-7am
Comp, Training	Dive-In Movie					6-10pm	400			20	Saturday	Saturday 6-10pm
Comp, Training	City Swim Meet			4-9	150	9am-6pm	600	9am -2pm	400	20	Friday-Sunday	Friday 4-9pm, Sat 9-6am and Sun 9-2pm
Comp, Training	July 4th Swim	1-6pm	200							20	July 4th	1-6pm

Attachment B
Intersection Volume Counts



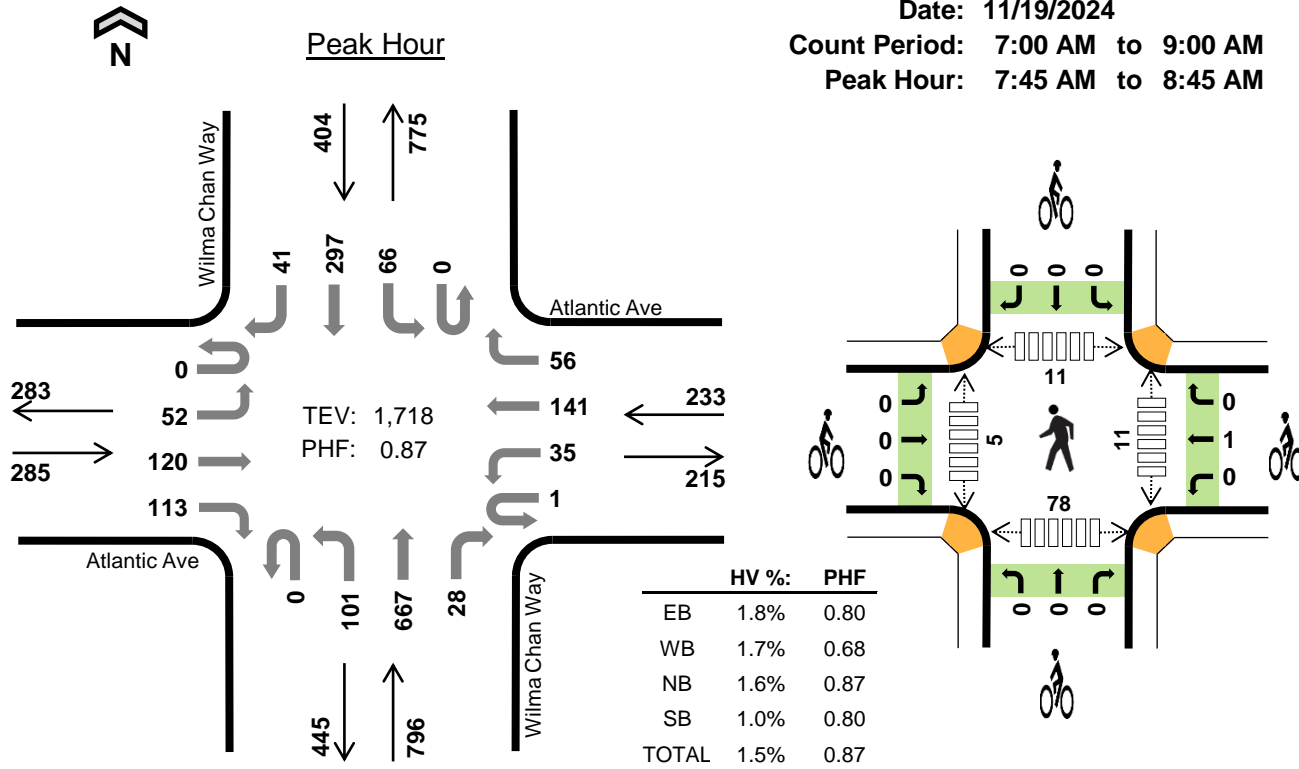
Wilma Chan Way Atlantic Ave



Date: 11/19/2024

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:45 AM to 8:45 AM



Two-Hour Count Summaries

Interval Start	Atlantic Ave				Atlantic Ave				Wilma Chan Way				Wilma Chan Way				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	8	10	11	0	6	9	15	0	10	108	0	0	5	37	4	223	0	
7:15 AM	0	7	16	9	0	5	11	7	0	10	137	4	0	7	52	3	268	0	
7:30 AM	0	5	13	9	0	3	14	13	0	12	170	5	0	20	48	7	319	0	
7:45 AM	0	10	20	13	0	6	30	15	0	15	187	7	0	14	60	11	388	1,198	
8:00 AM	0	13	21	33	1	13	54	18	0	33	146	4	0	13	64	10	423	1,398	
8:15 AM	0	13	39	34	0	6	28	16	0	27	191	11	0	20	97	9	491	1,621	
8:30 AM	0	16	40	33	0	10	29	7	0	26	143	6	0	19	76	11	416	1,718	
8:45 AM	0	14	28	22	0	7	10	10	0	8	164	13	0	20	81	8	385	1,715	
Count Total	0	86	187	164	1	56	185	101	0	141	1,246	50	0	118	515	63	2,913	0	
Peak Hour	All	0	52	120	113	1	35	141	56	0	101	667	28	0	66	297	41	1,718	0
	HV	0	1	4	0	1	2	0	1	0	4	9	0	0	0	4	0	26	0
	HV%	-	2%	3%	0%	100%	6%	0%	2%	-	4%	1%	0%	-	0%	1%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	1	2	2	8	0	0	0	0	0	1	2	1	5	9
7:15 AM	3	1	0	4	8	0	0	0	0	0	0	0	3	7	10
7:30 AM	1	3	0	0	4	0	0	0	0	0	2	1	2	8	13
7:45 AM	2	0	4	1	7	0	0	0	0	0	2	3	2	13	20
8:00 AM	1	2	4	1	8	0	1	0	0	1	5	0	2	31	38
8:15 AM	1	1	4	1	7	0	0	0	0	0	2	2	4	22	30
8:30 AM	1	1	1	1	4	0	0	0	0	0	2	0	3	12	17
8:45 AM	2	0	3	2	7	0	0	0	0	0	6	0	2	10	18
Count Total	14	9	18	12	53	0	1	0	0	1	20	8	19	108	155
Peak Hour	5	4	13	4	26	0	1	0	0	1	11	5	11	78	105

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Atlantic Ave				Atlantic Ave				Wilma Chan Way				Wilma Chan Way				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	2	0	0	0	1	0	0	0	2	0	0	0	2	0	8	0
7:15 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	4	0	8	0
7:30 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0
7:45 AM	0	0	2	0	0	0	0	0	0	2	2	0	0	0	1	0	7	27
8:00 AM	0	1	0	0	1	1	0	0	0	2	2	0	0	0	1	0	8	27
8:15 AM	0	0	1	0	0	0	0	1	0	0	4	0	0	0	1	0	7	26
8:30 AM	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0	4	26
8:45 AM	0	0	2	0	0	0	0	0	0	0	3	0	0	0	2	0	7	26
Count Total	0	2	12	0	1	2	5	1	0	4	14	0	0	0	12	0	53	0
Peak Hour	0	1	4	0	1	2	0	1	0	4	9	0	0	0	4	0	26	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Atlantic Ave			Atlantic Ave			Wilma Chan Way			Wilma Chan Way			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

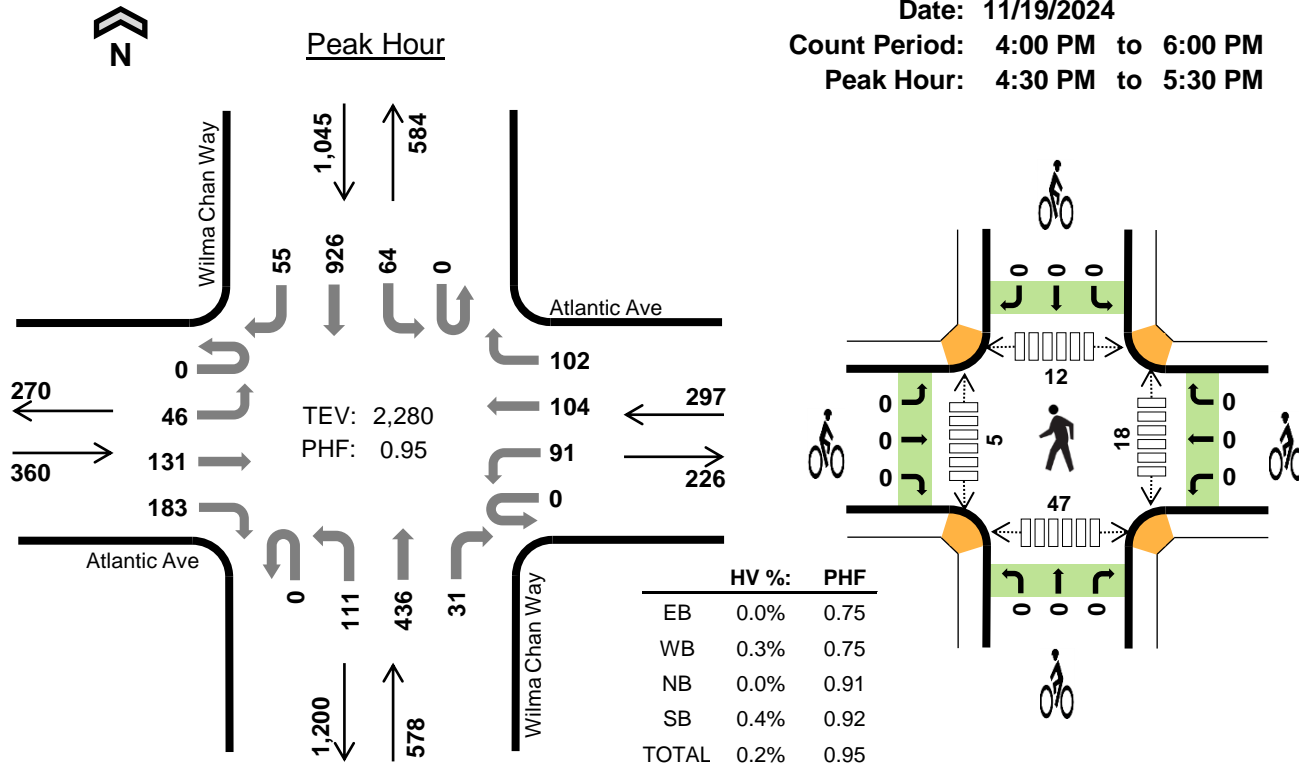
Wilma Chan Way Atlantic Ave



Date: 11/19/2024

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



Two-Hour Count Summaries

Interval Start	Atlantic Ave				Atlantic Ave				Wilma Chan Way				Wilma Chan Way				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	14	48	42	0	14	24	19	0	17	136	2	0	9	135	9	469	0	
4:15 PM	0	8	31	43	0	9	22	12	0	25	123	6	0	15	214	15	523	0	
4:30 PM	0	6	33	36	0	14	24	19	0	30	121	7	0	24	227	14	555	0	
4:45 PM	0	14	28	39	0	11	31	23	0	21	103	8	0	16	225	10	529	2,076	
5:00 PM	0	16	43	61	0	40	26	33	0	33	93	8	0	11	218	17	599	2,206	
5:15 PM	0	10	27	47	0	26	23	27	0	27	119	8	0	13	256	14	597	2,280	
5:30 PM	0	9	26	49	0	11	21	14	0	22	105	4	0	29	226	13	529	2,254	
5:45 PM	0	11	29	36	0	12	21	22	0	19	114	6	0	15	208	8	501	2,226	
Count Total	0	88	265	353	0	137	192	169	0	194	914	49	0	132	1,709	100	4,302	0	
Peak Hour	All	0	46	131	183	0	91	104	102	0	111	436	31	0	64	926	55	2,280	0
	HV	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	5	0
	HV%	-	0%	0%	0%	-	0%	1%	0%	-	0%	0%	0%	-	0%	0%	0%	0%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	1	2	0	0	0	0	0	4	0	1	18	23
4:15 PM	1	1	1	2	5	0	1	0	0	1	1	1	3	11	16
4:30 PM	0	0	0	1	1	0	0	0	0	0	5	2	6	5	18
4:45 PM	0	1	0	2	3	0	0	0	0	0	4	2	4	16	26
5:00 PM	0	0	0	1	1	0	0	0	0	0	5	0	0	14	19
5:15 PM	0	0	0	0	0	0	0	0	0	0	4	1	2	12	19
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	3	7	11
5:45 PM	1	0	0	1	2	0	0	0	0	0	1	0	2	14	17
Count Total	2	3	2	8	15	0	1	0	0	1	24	7	21	97	149
Peak Hour	0	1	0	4	5	0	0	0	0	0	18	5	12	47	82

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Atlantic Ave				Atlantic Ave				Wilma Chan Way				Wilma Chan Way				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
4:15 PM	0	0	1	0	0	1	0	0	0	1	0	0	0	0	1	1	5	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	10
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	5
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	4
Count Total	0	0	1	1	0	1	2	0	0	1	1	0	0	0	7	1	15	0
Peak Hour	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	5	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Atlantic Ave			Atlantic Ave			Wilma Chan Way			Wilma Chan Way			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

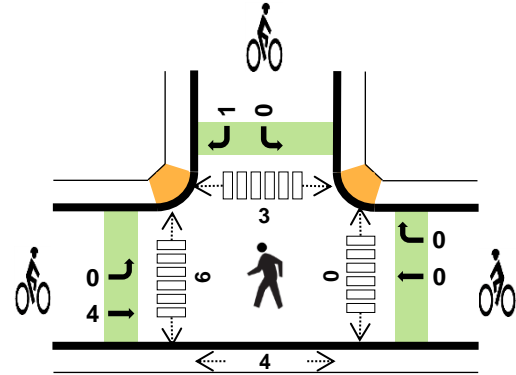
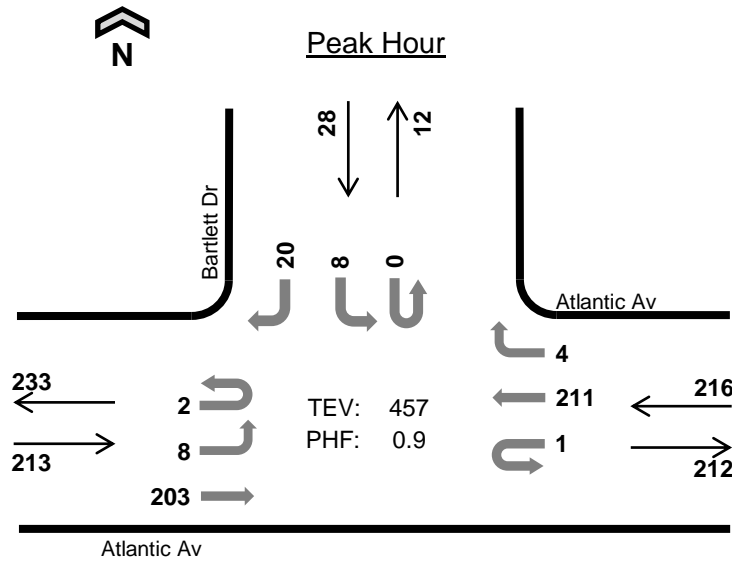
Bartlett Dr Atlantic Av



Date: 11/19/2024

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	2.3%	0.75
WB	1.9%	0.71
NB	-	-
SB	0.0%	0.78
TOTAL	2.0%	0.90

Two-Hour Count Summaries

Interval Start	Atlantic Av Eastbound				Atlantic Av Westbound				n/a Northbound				Bartlett Dr Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	2	13	0	0	0	27	0	0	0	0	0	0	0	0	2	44	0	
7:15 AM	1	1	24	0	0	0	18	0	0	0	0	0	0	1	0	3	48	0	
7:30 AM	0	2	37	0	0	0	29	1	0	0	0	0	0	1	0	1	71	0	
7:45 AM	0	0	40	0	0	0	47	1	0	0	0	0	0	2	0	7	97	260	
8:00 AM	1	3	34	0	1	0	75	0	0	0	0	0	0	2	0	7	123	339	
8:15 AM	0	4	67	0	0	0	47	1	0	0	0	0	0	4	0	4	127	418	
8:30 AM	1	1	62	0	0	0	42	2	0	0	0	0	0	0	0	2	110	457	
8:45 AM	0	6	55	0	0	0	30	0	0	0	0	0	0	1	0	1	93	453	
Count Total	3	19	332	0	1	0	315	5	0	0	0	0	0	11	0	27	713	0	
Peak Hour	All	2	8	203	0	1	0	211	4	0	0	0	0	0	8	0	20	457	0
	HV	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	9	0
	HV%	0%	0%	2%	-	0%	-	2%	0%	-	-	-	-	-	0%	-	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	2	0	0	4	0	0	0	0	0	0	0	0	1	1
7:15 AM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	3	0	0	4	0	0	0	0	0	0	0	1	0	1
7:45 AM	2	0	0	0	2	1	0	0	0	1	0	0	3	0	3
8:00 AM	0	2	0	0	2	1	0	0	1	2	0	5	0	1	6
8:15 AM	2	1	0	0	3	1	0	0	0	1	0	1	0	2	3
8:30 AM	1	1	0	0	2	1	0	0	0	1	0	0	0	1	1
8:45 AM	2	0	0	0	2	0	0	0	0	0	0	1	2	0	3
Count Total	13	9	0	0	22	4	0	0	1	5	0	7	6	5	18
Peak Hr	5	4	0	0	9	4	0	0	1	5	0	6	3	4	13

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Atlantic Av				Atlantic Av				n/a				Bartlett Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
7:30 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0
7:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13
8:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	11
8:15 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	11
8:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	9
8:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9
Count Total	0	0	13	0	0	0	9	0	0	0	0	0	0	0	0	0	22	0
Peak Hour	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	9	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Atlantic Av			Atlantic Av			n/a			Bartlett Dr			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	5	0
Peak Hour	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	5	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

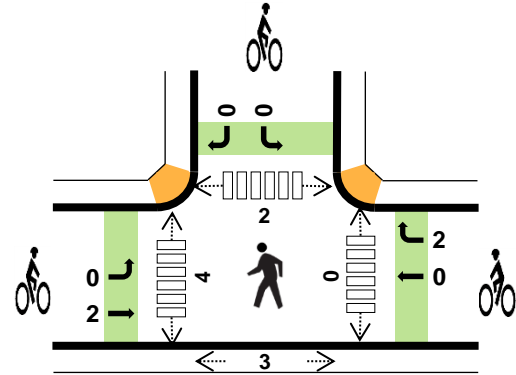
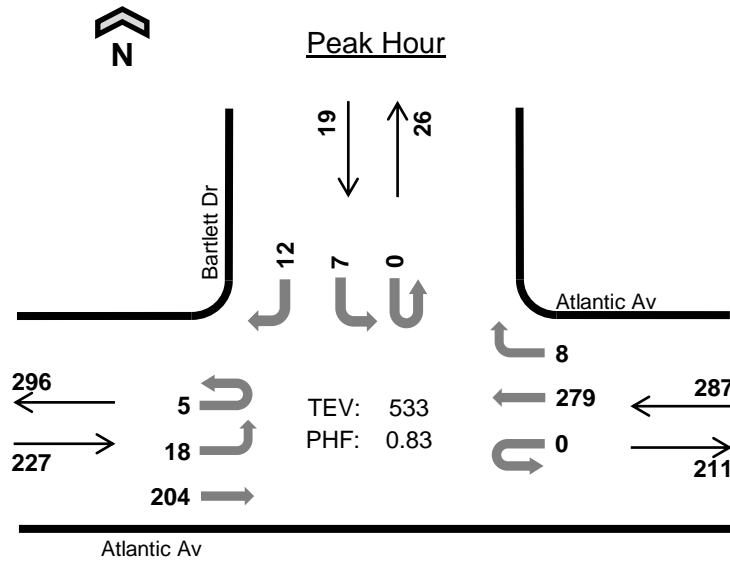
Bartlett Dr Atlantic Av



Date: 11/19/2024

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.0%	0.89
WB	0.3%	0.77
NB	-	-
SB	0.0%	0.68
TOTAL	0.2%	0.83

Two-Hour Count Summaries

Interval Start	Atlantic Av Eastbound				Atlantic Av Westbound				n/a Northbound				Bartlett Dr Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	3	56	0	0	0	53	3	0	0	0	0	0	1	0	5	121	0	
4:15 PM	2	1	50	0	0	0	38	1	0	0	0	0	0	2	0	2	96	0	
4:30 PM	1	7	56	0	0	0	58	3	0	0	0	0	0	1	0	2	128	0	
4:45 PM	1	0	51	0	0	0	64	0	0	0	0	0	0	3	0	1	120	465	
5:00 PM	3	4	55	0	0	0	90	3	0	0	0	0	0	1	0	4	160	504	
5:15 PM	0	7	42	0	0	0	67	2	0	0	0	0	0	2	0	5	125	533	
5:30 PM	1	3	52	0	0	0	46	2	0	0	0	0	0	2	0	5	111	516	
5:45 PM	2	5	43	0	0	0	47	2	0	0	0	0	0	2	0	0	101	497	
Count Total	10	30	405	0	0	0	463	16	0	0	0	0	0	14	0	24	962	0	
Peak Hour	All	5	18	204	0	0	0	279	8	0	0	0	0	0	7	0	12	533	0
	HV	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
	HV%	0%	0%	0%	-	-	-	0%	0%	-	-	-	-	-	0%	-	0%	0%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	0	3	1	0	0	4	0	1	2	0	3
4:15 PM	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2
4:30 PM	0	0	0	0	0	1	1	0	0	2	0	1	0	1	2
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2	1	3
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	1	2
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	1	3	0	0	4	5	3	0	0	8	0	6	5	3	14
Peak Hr	0	1	0	0	1	2	2	0	0	4	0	4	2	3	9

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Atlantic Av				Atlantic Av				n/a				Bartlett Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	
Peak Hour	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	

Two-Hour Count Summaries - Bikes																
Interval Start	Atlantic Av			Atlantic Av			n/a			Bartlett Dr			15-min Total	Rolling One Hour		
	Eastbound			Westbound			Northbound			Southbound						
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT				
4:00 PM	3	0	0	0	0	1	0	0	0	0	0	0	4	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	2	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6		
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3		
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	4		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Count Total	3	2	0	0	0	3	0	0	0	0	0	0	8	0		
Peak Hour	0	2	0	0	0	2	0	0	0	0	0	0	4	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

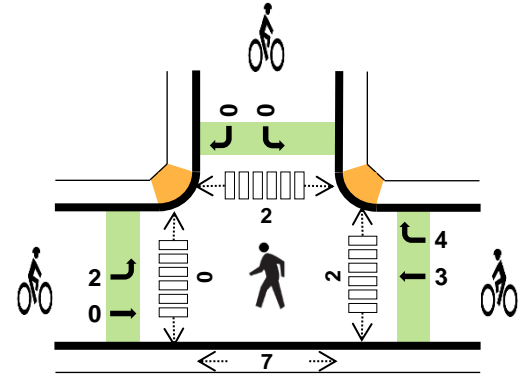
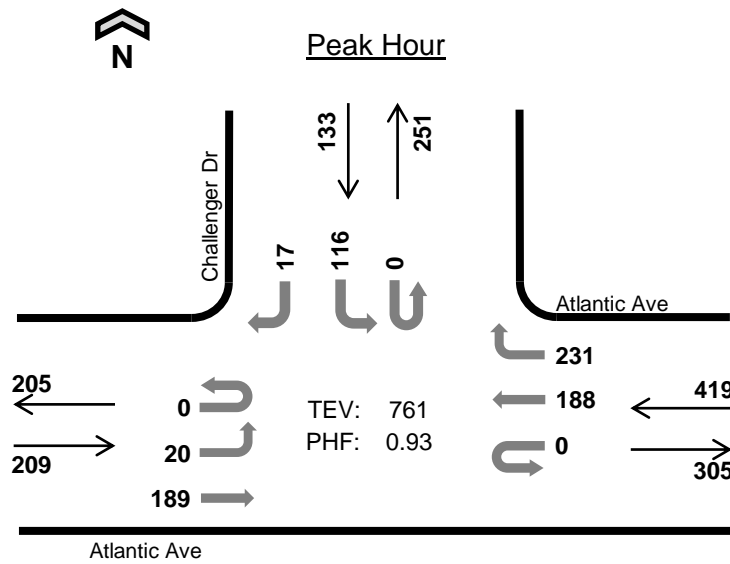
Challenger Dr Atlantic Ave



Date: 11/19/2024

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	2.9%	0.78
WB	2.1%	0.76
NB	-	-
SB	3.8%	0.85
TOTAL	2.6%	0.93

Two-Hour Count Summaries

Interval Start	Atlantic Ave Eastbound				Atlantic Ave Westbound				n/a Northbound				Challenger Dr Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
	7:00 AM	0	1	11	0	0	0	27	18	0	0	0	0	0	9	0			5
7:15 AM	0	4	20	0	0	0	16	33	0	0	0	0	0	14	0	3	90	0	
7:30 AM	0	1	33	0	0	0	32	47	0	0	0	0	0	10	0	1	124	0	
7:45 AM	0	7	31	0	0	0	46	61	0	0	0	0	0	19	0	3	167	452	
8:00 AM	0	4	34	0	0	0	73	64	0	0	0	0	0	26	0	4	205	586	
8:15 AM	0	4	63	0	0	0	50	50	0	0	0	0	0	29	0	1	197	693	
8:30 AM	0	8	49	0	0	0	39	55	0	0	0	0	0	28	0	6	185	754	
8:45 AM	0	4	43	0	0	0	26	62	0	0	0	0	0	33	0	6	174	761	
Count Total	0	33	284	0	0	0	309	390	0	0	0	0	0	168	0	29	1,213	0	
Peak Hour	All	0	20	189	0	0	0	188	231	0	0	0	0	0	116	0	17	761	0
	HV	0	2	4	0	0	0	4	5	0	0	0	0	0	3	0	2	20	0
	HV%	-	10%	2%	-	-	-	2%	2%	-	-	-	-	-	3%	-	12%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	2	0	0	4	0	0	0	0	0	1	0	2	1	4
7:15 AM	3	1	0	1	5	0	0	0	0	0	1	0	0	2	3
7:30 AM	1	2	0	1	4	0	0	0	0	0	0	0	1	0	1
7:45 AM	2	2	0	1	5	0	0	0	0	0	0	1	1	2	4
8:00 AM	1	3	0	2	6	1	1	0	0	2	1	0	0	1	2
8:15 AM	2	2	0	1	5	1	2	0	0	3	1	0	0	1	2
8:30 AM	1	3	0	1	5	0	3	0	0	3	0	0	0	2	2
8:45 AM	2	1	0	1	4	0	1	0	0	1	0	0	2	3	5
Count Total	14	16	0	8	38	2	7	0	0	9	4	1	6	12	23
Peak Hr	6	9	0	5	20	2	7	0	0	9	2	0	2	7	11

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Atlantic Ave				Atlantic Ave				n/a				Challenger Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	4	0
7:45 AM	0	1	1	0	0	0	0	2	0	0	0	0	0	1	0	0	5	18
8:00 AM	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	2	6	20
8:15 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	5	20
8:30 AM	0	0	1	0	0	0	2	1	0	0	0	0	0	1	0	0	5	21
8:45 AM	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	4	20
Count Total	0	3	11	0	0	0	8	8	0	0	0	0	0	5	0	3	38	0
Peak Hour	0	2	4	0	0	0	4	5	0	0	0	0	0	3	0	2	20	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Atlantic Ave			Atlantic Ave			n/a			Challenger Dr			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	2
8:15 AM	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	5
8:30 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3	8
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	9
Count Total	2	0	0	0	3	4	0	0	0	0	0	0	0	0	0	9	0
Peak Hour	2	0	0	0	3	4	0	0	0	0	0	0	0	0	0	9	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

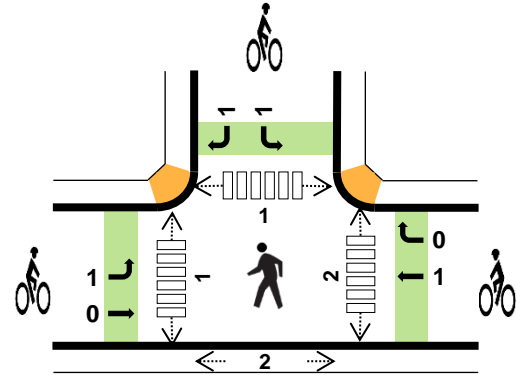
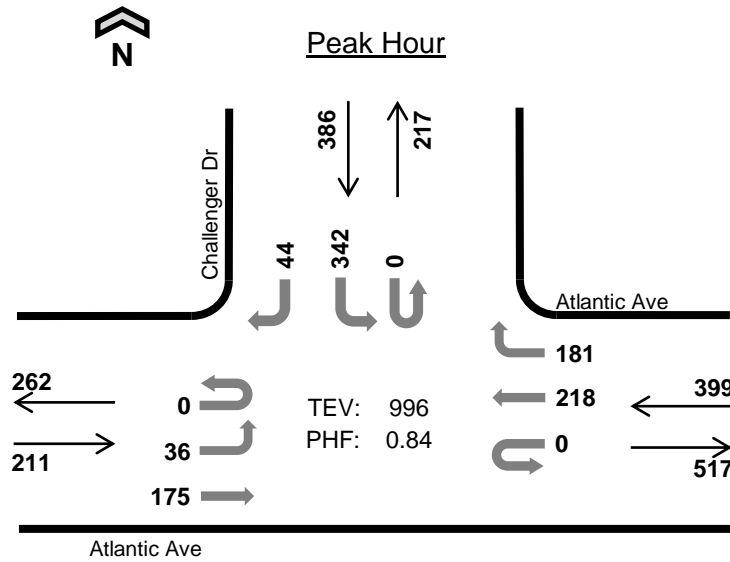
Challenger Dr Atlantic Ave



Date: 11/19/2024

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.0%	0.88
WB	0.5%	0.96
NB	-	-
SB	1.6%	0.70
TOTAL	0.8%	0.84

Two-Hour Count Summaries

Interval Start	Atlantic Ave Eastbound				Atlantic Ave Westbound				n/a Northbound				Challenger Dr Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	12	45	0	0	0	43	47	0	0	0	0	0	47	0	7	201	0	
4:15 PM	0	10	47	0	0	0	25	43	0	0	0	0	0	60	0	4	189	0	
4:30 PM	0	9	51	0	0	0	47	54	0	0	0	0	0	68	0	9	238	0	
4:45 PM	0	7	45	0	0	0	50	48	0	0	0	0	0	80	0	6	236	864	
5:00 PM	0	13	42	0	0	0	62	42	0	0	0	0	0	118	0	20	297	960	
5:15 PM	0	7	37	0	0	0	59	37	0	0	0	0	0	76	0	9	225	996	
5:30 PM	0	2	48	0	0	0	29	26	0	0	0	0	0	64	0	18	187	945	
5:45 PM	0	3	34	0	0	0	45	32	0	0	0	0	0	43	0	7	164	873	
Count Total	0	63	349	0	0	0	360	329	0	0	0	0	0	556	0	80	1,737	0	
Peak Hour	All	0	36	175	0	0	0	218	181	0	0	0	0	0	342	0	44	996	0
	HV	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	0	8	0
	HV%	-	0%	0%	-	-	-	0%	1%	-	-	-	-	-	2%	-	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	2	0	2	4	0	0	0	0	0	1	0	1	2	4
4:15 PM	1	0	0	1	2	0	1	0	0	1	0	0	0	1	1
4:30 PM	0	0	0	3	3	1	0	0	1	2	2	0	0	1	3
4:45 PM	0	1	0	0	1	0	0	0	1	1	0	0	1	0	1
5:00 PM	0	1	0	2	3	0	0	0	0	0	0	1	0	1	2
5:15 PM	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0
5:30 PM	0	0	0	2	2	0	0	0	1	1	2	0	0	0	2
5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	3	3
Count Total	1	4	0	12	17	1	2	0	3	6	5	1	2	8	16
Peak Hr	0	2	0	6	8	1	1	0	2	4	2	1	1	2	6

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Atlantic Ave				Atlantic Ave				n/a				Challenger Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	4	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	10
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	3	9
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7
Count Total	0	0	1	0	0	0	1	3	0	0	0	0	0	11	0	1	17	0
Peak Hour	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	0	8	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Atlantic Ave			Atlantic Ave			n/a			Challenger Dr			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	4	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Count Total	1	0	0	0	2	0	0	0	0	0	0	0	2	0	1	6	0	
Peak Hour	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	4	0	






















Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Attachment C
LOS Calculation Sheets



HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	120	113	36	141	56	101	667	28	66	297	41
Future Volume (veh/h)	52	120	113	36	141	56	101	667	28	66	297	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	138	130	41	162	64	116	767	32	76	341	47
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	163	313	218	305	115	244	1923	80	234	1956	870
Arrive On Green	0.13	0.13	0.13	0.12	0.12	0.12	0.07	0.55	0.55	0.07	0.55	0.55
Sat Flow, veh/h	558	1284	1585	1781	2494	938	3456	3475	145	3456	3554	1581
Grp Volume(v), veh/h	198	0	130	41	113	113	116	392	407	76	341	47
Grp Sat Flow(s),veh/h/ln	1842	0	1585	1781	1777	1655	1728	1777	1843	1728	1777	1581
Q Serve(g_s), s	14.7	0.0	10.0	2.9	8.3	9.0	4.5	17.7	17.7	2.9	6.7	1.9
Cycle Q Clear(g_c), s	14.7	0.0	10.0	2.9	8.3	9.0	4.5	17.7	17.7	2.9	6.7	1.9
Prop In Lane	0.30		1.00	1.00		0.57	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	233	0	313	218	217	202	244	983	1020	234	1956	870
V/C Ratio(X)	0.85	0.00	0.42	0.19	0.52	0.56	0.48	0.40	0.40	0.32	0.17	0.05
Avail Cap(c_a), veh/h	487	0	531	483	482	449	395	983	1020	259	1956	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	0.0	49.1	55.2	57.6	57.9	62.6	17.9	17.9	62.2	15.6	14.6
Incr Delay (d2), s/veh	4.0	0.0	0.4	0.2	0.9	1.1	0.5	1.2	1.2	0.3	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	4.1	1.3	3.8	3.9	2.0	7.7	8.0	1.3	2.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.9	0.0	49.5	55.4	58.5	59.0	63.1	19.1	19.1	62.5	15.8	14.7
LnGrp LOS	E		D	E	E	E	E	B	B	E	B	B
Approach Vol, veh/h		328			267			915			464	
Approach Delay, s/veh		58.2			58.2			24.7			23.4	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	82.5		22.3	13.9	82.1		21.7				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	16.0	30.8		38.0				
Max Q Clear Time (g_c+I1), s	4.9	19.7		16.7	6.5	8.7		11.0				
Green Ext Time (p_c), s	0.0	3.5		1.0	0.1	1.7		1.0				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			34.5									
HCM 6th LOS			C									
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
2: Atlantic Ave & Bartlett Dr

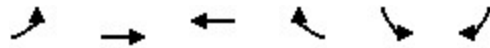
Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	
Traffic Vol, veh/h	10	203	212	4	8	20
Future Vol, veh/h	10	203	212	4	8	20
Conflicting Peds, #/hr	9	0	0	3	3	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	226	236	4	9	22

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	249	0	-	0	498 256
Stage 1	-	-	-	-	247 -
Stage 2	-	-	-	-	251 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1317	-	-	-	532 783
Stage 1	-	-	-	-	794 -
Stage 2	-	-	-	-	791 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1306	-	-	-	518 770
Mov Cap-2 Maneuver	-	-	-	-	594 -
Stage 1	-	-	-	-	781 -
Stage 2	-	-	-	-	784 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.4	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1306	-	-	-	710
HCM Lane V/C Ratio	0.009	-	-	-	0.044
HCM Control Delay (s/veh)	7.8	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.1






















HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	189	188	231	116	17
Future Volume (veh/h)	20	189	188	231	116	17
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	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	22	203	202	248	125	18
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	716	1444	228	279	167	149
Arrive On Green	0.40	0.77	0.30	0.30	0.09	0.09
Sat Flow, veh/h	1781	1870	752	923	1781	1585
Grp Volume(v), veh/h	22	203	0	450	125	18
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1674	1781	1585
Q Serve(g_s), s	0.5	1.9	0.0	17.9	4.8	0.7
Cycle Q Clear(g_c), s	0.5	1.9	0.0	17.9	4.8	0.7
Prop In Lane	1.00			0.55	1.00	1.00
Lane Grp Cap(c), veh/h	716	1444	0	507	167	149
V/C Ratio(X)	0.03	0.14	0.00	0.89	0.75	0.12
Avail Cap(c_a), veh/h	716	1444	0	598	588	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	2.0	0.0	23.3	30.9	29.1
Incr Delay (d2), s/veh	0.0	0.2	0.0	13.1	2.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.5	0.0	8.6	2.1	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.7	2.2	0.0	36.3	33.4	29.2
LnGrp LOS	B	A		D	C	C
Approach Vol, veh/h		225	450		143	
Approach Delay, s/veh		3.3	36.3		32.9	
Approach LOS		A	D		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		58.7		11.3	32.8	25.9
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.5		23.1	8.0	* 25
Max Q Clear Time (g_c+I1), s		3.9		6.8	2.5	19.9
Green Ext Time (p_c), s		1.0		0.1	0.0	1.2
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			26.6			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	131	183	91	104	102	111	436	31	64	926	55
Future Volume (veh/h)	46	131	183	91	104	102	111	436	31	64	926	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	138	193	96	109	107	117	459	33	67	975	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	181	322	225	224	194	244	1832	131	229	1921	854
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.07	0.55	0.55	0.07	0.54	0.54
Sat Flow, veh/h	477	1370	1585	1781	1777	1540	3456	3360	241	3456	3554	1581
Grp Volume(v), veh/h	186	0	193	96	109	107	117	242	250	67	975	58
Grp Sat Flow(s),veh/h/ln	1847	0	1585	1781	1777	1540	1728	1777	1824	1728	1777	1581
Q Serve(g_s), s	13.6	0.0	15.5	7.0	8.0	9.1	4.6	10.0	10.1	2.6	24.3	2.4
Cycle Q Clear(g_c), s	13.6	0.0	15.5	7.0	8.0	9.1	4.6	10.0	10.1	2.6	24.3	2.4
Prop In Lane	0.26		1.00	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	245	0	322	225	224	194	244	969	994	229	1921	854
V/C Ratio(X)	0.76	0.00	0.60	0.43	0.49	0.55	0.48	0.25	0.25	0.29	0.51	0.07
Avail Cap(c_a), veh/h	488	0	531	483	482	418	259	969	994	259	1921	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.6	0.0	50.6	56.5	56.9	57.4	62.6	16.8	16.8	62.3	20.4	15.3
Incr Delay (d2), s/veh	2.3	0.0	0.8	0.6	0.7	1.1	0.5	0.6	0.6	0.3	1.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	6.3	3.2	3.7	3.7	2.0	4.4	4.5	1.2	10.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.8	0.0	51.4	57.1	57.7	58.5	63.1	17.4	17.4	62.5	21.3	15.5
LnGrp LOS	E		D	E	E	E	E	B	B	E	C	B
Approach Vol, veh/h		379			312			609			1100	
Approach Delay, s/veh		56.1			57.8			26.2			23.5	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	81.3		23.1	13.9	80.7		22.3				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	10.5	36.3		38.0				
Max Q Clear Time (g_c+I1), s	4.6	12.1		17.5	6.6	26.3		11.1				
Green Ext Time (p_c), s	0.0	2.2		1.1	0.1	3.9		1.1				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			33.8									
HCM 6th LOS			C									
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
 2: Atlantic Ave & Bartlett Dr

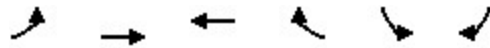
Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↖	
Traffic Vol, veh/h	23	204	279	8	7	12
Future Vol, veh/h	23	204	279	8	7	12
Conflicting Peds, #/hr	6	0	0	2	2	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	246	336	10	8	14

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	352	0	-	0	651
Stage 1	-	-	-	-	347
Stage 2	-	-	-	-	304
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1207	-	-	-	433
Stage 1	-	-	-	-	716
Stage 2	-	-	-	-	748
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1200	-	-	-	418
Mov Cap-2 Maneuver	-	-	-	-	518
Stage 1	-	-	-	-	695
Stage 2	-	-	-	-	744

Approach	EB	WB	SB
HCM Control Delay, s/v	0.8	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1200	-	-	-	611
HCM Lane V/C Ratio	0.023	-	-	-	0.037
HCM Control Delay (s/veh)	8.1	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.1

HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr
























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	175	218	181	342	44
Future Volume (veh/h)	36	175	218	181	342	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	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	43	208	260	215	407	52
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	416	1143	290	240	454	404
Arrive On Green	0.23	0.61	0.31	0.31	0.25	0.25
Sat Flow, veh/h	1781	1870	936	774	1781	1585
Grp Volume(v), veh/h	43	208	0	475	407	52
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1710	1781	1585
Q Serve(g_s), s	1.3	3.4	0.0	18.6	15.4	1.8
Cycle Q Clear(g_c), s	1.3	3.4	0.0	18.6	15.4	1.8
Prop In Lane	1.00			0.45	1.00	1.00
Lane Grp Cap(c), veh/h	416	1143	0	530	454	404
V/C Ratio(X)	0.10	0.18	0.00	0.90	0.90	0.13
Avail Cap(c_a), veh/h	416	1143	0	606	593	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	6.0	0.0	23.1	25.2	20.1
Incr Delay (d2), s/veh	0.0	0.4	0.0	14.3	11.6	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.3	0.0	9.2	7.7	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	21.1	6.3	0.0	37.4	36.8	20.1
LnGrp LOS	C	A		D	D	C
Approach Vol, veh/h		251	475		459	
Approach Delay, s/veh		8.8	37.4		34.9	
Approach LOS		A	D		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.5		22.5	21.1	26.4
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.3		23.3	8.0	* 25
Max Q Clear Time (g_c+I1), s		5.4		17.4	3.3	20.6
Green Ext Time (p_c), s		1.1		0.4	0.0	1.1
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			30.4			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	150	130	40	160	80	110	680	30	90	320	50
Future Volume (veh/h)	70	150	130	40	160	80	110	680	30	90	320	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	172	149	46	184	92	126	782	34	103	368	57
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	197	361	242	313	148	245	1760	76	242	1800	801
Arrive On Green	0.16	0.16	0.16	0.14	0.14	0.14	0.07	0.51	0.51	0.07	0.51	0.51
Sat Flow, veh/h	584	1257	1585	1781	2307	1093	3456	3468	151	3456	3554	1580
Grp Volume(v), veh/h	252	0	149	46	139	137	126	401	415	103	368	57
Grp Sat Flow(s),veh/h/ln	1841	0	1585	1781	1777	1623	1728	1777	1842	1728	1777	1580
Q Serve(g_s), s	18.7	0.0	11.2	3.2	10.3	11.1	4.9	20.1	20.1	4.0	8.0	2.6
Cycle Q Clear(g_c), s	18.7	0.0	11.2	3.2	10.3	11.1	4.9	20.1	20.1	4.0	8.0	2.6
Prop In Lane	0.32		1.00	1.00		0.67	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	289	0	361	242	241	220	245	902	935	242	1800	801
V/C Ratio(X)	0.87	0.00	0.41	0.19	0.58	0.62	0.51	0.44	0.44	0.43	0.20	0.07
Avail Cap(c_a), veh/h	487	0	531	483	482	441	395	902	935	259	1800	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	0.0	46.1	53.7	56.7	57.1	62.7	21.9	21.9	62.4	19.0	17.7
Incr Delay (d2), s/veh	5.2	0.0	0.3	0.2	1.0	1.3	0.6	1.6	1.5	0.4	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	0.0	4.5	1.5	4.7	4.7	2.2	8.9	9.2	1.8	3.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.8	0.0	46.4	53.8	57.7	58.4	63.3	23.5	23.5	62.8	19.3	17.9
LnGrp LOS	E		D	D	E	E	E	C	C	E	B	B
Approach Vol, veh/h		401			322			942			528	
Approach Delay, s/veh		56.7			57.5			28.8			27.6	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	76.0		26.5	13.9	75.9		23.6				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	16.0	30.8		38.0				
Max Q Clear Time (g_c+I1), s	6.0	22.1		20.7	6.9	10.0		13.1				
Green Ext Time (p_c), s	0.0	3.4		1.2	0.1	1.8		1.3				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				37.8								
HCM 6th LOS				D								
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
2: Atlantic Ave & Bartlett Dr

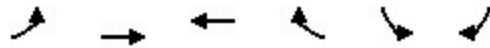
Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	250	260	10	10	20
Future Vol, veh/h	10	250	260	10	10	20
Conflicting Peds, #/hr	9	0	0	3	3	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	278	289	11	11	22

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	309	0	-	0	607 313
Stage 1	-	-	-	-	304 -
Stage 2	-	-	-	-	303 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1252	-	-	-	460 727
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	749 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1241	-	-	-	448 715
Mov Cap-2 Maneuver	-	-	-	-	541 -
Stage 1	-	-	-	-	735 -
Stage 2	-	-	-	-	742 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1241	-	-	-	646
HCM Lane V/C Ratio	0.009	-	-	-	0.052
HCM Control Delay (s/veh)	7.9	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.2






















HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	↘
Traffic Volume (veh/h)	30	230	220	240	150	30
Future Volume (veh/h)	30	230	220	240	150	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	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	32	247	237	258	161	32
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	638	1401	261	284	207	185
Arrive On Green	0.36	0.75	0.32	0.32	0.12	0.12
Sat Flow, veh/h	1781	1870	806	878	1781	1585
Grp Volume(v), veh/h	32	247	0	495	161	32
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1684	1781	1585
Q Serve(g_s), s	0.8	2.7	0.0	19.7	6.1	1.3
Cycle Q Clear(g_c), s	0.8	2.7	0.0	19.7	6.1	1.3
Prop In Lane	1.00			0.52	1.00	1.00
Lane Grp Cap(c), veh/h	638	1401	0	546	207	185
V/C Ratio(X)	0.05	0.18	0.00	0.91	0.78	0.17
Avail Cap(c_a), veh/h	638	1401	0	602	588	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	2.5	0.0	22.7	30.0	27.9
Incr Delay (d2), s/veh	0.0	0.3	0.0	16.3	2.4	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	0.0	9.8	2.7	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.7	2.8	0.0	39.0	32.4	28.0
LnGrp LOS	B	A		D	C	C
Approach Vol, veh/h		279	495		193	
Approach Delay, s/veh		4.2	39.0		31.7	
Approach LOS		A	D		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.1		12.9	29.8	27.4
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.5		23.1	8.0	* 25
Max Q Clear Time (g_c+I1), s		4.7		8.1	2.8	21.7
Green Ext Time (p_c), s		1.3		0.2	0.0	0.9
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			27.5			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	140	210	100	140	110	140	450	40	80	970	70
Future Volume (veh/h)	70	140	210	100	140	110	140	450	40	80	970	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	147	221	105	147	116	147	474	42	84	1021	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	183	350	244	266	193	246	1698	150	237	1820	810
Arrive On Green	0.15	0.15	0.15	0.14	0.14	0.14	0.07	0.51	0.51	0.07	0.51	0.51
Sat Flow, veh/h	616	1224	1585	1781	1938	1410	3456	3300	291	3456	3554	1580
Grp Volume(v), veh/h	221	0	221	105	134	129	147	254	262	84	1021	74
Grp Sat Flow(s),veh/h/ln	1840	0	1585	1781	1777	1572	1728	1777	1814	1728	1777	1580
Q Serve(g_s), s	16.3	0.0	17.7	7.6	9.8	10.8	5.8	11.4	11.4	3.2	27.5	3.4
Cycle Q Clear(g_c), s	16.3	0.0	17.7	7.6	9.8	10.8	5.8	11.4	11.4	3.2	27.5	3.4
Prop In Lane	0.33		1.00	1.00		0.90	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	275	0	350	244	243	215	246	915	934	237	1820	810
V/C Ratio(X)	0.80	0.00	0.63	0.43	0.55	0.60	0.60	0.28	0.28	0.35	0.56	0.09
Avail Cap(c_a), veh/h	486	0	532	483	482	427	259	915	934	259	1820	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	0.0	49.4	55.4	56.4	56.8	63.1	19.2	19.3	62.2	23.4	17.5
Incr Delay (d2), s/veh	2.6	0.0	0.9	0.5	0.9	1.2	2.2	0.8	0.7	0.3	1.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	7.2	3.5	4.5	4.4	2.6	5.0	5.1	1.5	12.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.1	0.0	50.3	55.9	57.3	58.0	65.3	20.0	20.0	62.6	24.6	17.7
LnGrp LOS	E		D	E	E	E	E	B	C	E	C	B
Approach Vol, veh/h		442			368			663			1179	
Approach Delay, s/veh		55.2			57.2			30.0			26.9	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	77.1		25.5	14.0	76.7		23.8				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	10.5	36.3		38.0				
Max Q Clear Time (g_c+I1), s	5.2	13.4		19.7	7.8	29.5		12.8				
Green Ext Time (p_c), s	0.0	2.3		1.3	0.1	3.2		1.3				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			36.6									
HCM 6th LOS			D									
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
 2: Atlantic Ave & Bartlett Dr

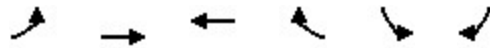
Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	30	230	320	10	10	20
Future Vol, veh/h	30	230	320	10	10	20
Conflicting Peds, #/hr	6	0	0	2	2	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	277	386	12	12	24

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	404	0	-	0	749
Stage 1	-	-	-	-	398
Stage 2	-	-	-	-	351
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1155	-	-	-	379
Stage 1	-	-	-	-	678
Stage 2	-	-	-	-	713
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1148	-	-	-	363
Mov Cap-2 Maneuver	-	-	-	-	475
Stage 1	-	-	-	-	653
Stage 2	-	-	-	-	709

Approach	EB	WB	SB
HCM Control Delay, s/v	1	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1148	-	-	-	574
HCM Lane V/C Ratio	0.031	-	-	-	0.063
HCM Control Delay (s/veh)	8.2	-	-	-	11.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2

HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr
























Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	190	260	200	370	50
Future Volume (veh/h)	50	190	260	200	370	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	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	60	226	310	238	440	60
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	326	1109	333	256	486	432
Arrive On Green	0.18	0.59	0.34	0.34	0.27	0.27
Sat Flow, veh/h	1781	1870	971	745	1781	1585
Grp Volume(v), veh/h	60	226	0	548	440	60
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1716	1781	1585
Q Serve(g_s), s	2.0	3.9	0.0	21.6	16.7	2.0
Cycle Q Clear(g_c), s	2.0	3.9	0.0	21.6	16.7	2.0
Prop In Lane	1.00			0.43	1.00	1.00
Lane Grp Cap(c), veh/h	326	1109	0	589	486	432
V/C Ratio(X)	0.18	0.20	0.00	0.93	0.91	0.14
Avail Cap(c_a), veh/h	326	1109	0	608	593	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	6.6	0.0	22.2	24.6	19.2
Incr Delay (d2), s/veh	0.1	0.4	0.0	20.7	14.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.5	0.0	11.5	8.6	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	24.3	7.0	0.0	42.9	38.7	19.3
LnGrp LOS	C	A		D	D	B
Approach Vol, veh/h		286	548		500	
Approach Delay, s/veh		10.6	42.9		36.3	
Approach LOS		B	D		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.2		23.8	17.5	28.7
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.3		23.3	8.0	* 25
Max Q Clear Time (g_c+I1), s		5.9		18.7	4.0	23.6
Green Ext Time (p_c), s		1.2		0.4	0.0	0.4
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			33.5			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	153	130	41	162	82	110	680	32	94	320	50
Future Volume (veh/h)	70	153	130	41	162	82	110	680	32	94	320	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	176	149	47	186	94	126	782	37	108	368	57
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	201	364	244	314	151	245	1740	82	243	1789	796
Arrive On Green	0.16	0.16	0.16	0.14	0.14	0.14	0.07	0.50	0.50	0.07	0.50	0.50
Sat Flow, veh/h	575	1266	1585	1781	2298	1101	3456	3453	163	3456	3554	1580
Grp Volume(v), veh/h	256	0	149	47	142	138	126	402	417	108	368	57
Grp Sat Flow(s),veh/h/ln	1842	0	1585	1781	1777	1622	1728	1777	1840	1728	1777	1580
Q Serve(g_s), s	19.0	0.0	11.2	3.3	10.5	11.3	4.9	20.3	20.3	4.2	8.0	2.6
Cycle Q Clear(g_c), s	19.0	0.0	11.2	3.3	10.5	11.3	4.9	20.3	20.3	4.2	8.0	2.6
Prop In Lane	0.31		1.00	1.00		0.68	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	293	0	364	244	243	222	245	895	927	243	1789	796
V/C Ratio(X)	0.87	0.00	0.41	0.19	0.58	0.62	0.51	0.45	0.45	0.44	0.21	0.07
Avail Cap(c_a), veh/h	487	0	531	483	482	440	395	895	927	259	1789	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	0.0	45.8	53.6	56.7	57.0	62.7	22.3	22.3	62.4	19.3	17.9
Incr Delay (d2), s/veh	5.7	0.0	0.3	0.2	1.0	1.3	0.6	1.6	1.6	0.5	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	4.5	1.5	4.8	4.8	2.2	9.1	9.4	1.9	3.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.2	0.0	46.2	53.7	57.7	58.3	63.3	23.9	23.8	62.9	19.5	18.1
LnGrp LOS	E		D	D	E	E	E	C	C	E	B	B
Approach Vol, veh/h		405			327			945			533	
Approach Delay, s/veh		56.9			57.4			29.1			28.2	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	75.6		26.8	13.9	75.5		23.8				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	16.0	30.8		38.0				
Max Q Clear Time (g_c+I1), s	6.2	22.3		21.0	6.9	10.0		13.3				
Green Ext Time (p_c), s	0.1	3.4		1.2	0.1	1.8		1.3				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			38.2									
HCM 6th LOS			D									
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
 2: Atlantic Ave & Bartlett Dr

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	
Traffic Vol, veh/h	10	259	265	10	10	20
Future Vol, veh/h	10	259	265	10	10	20
Conflicting Peds, #/hr	9	0	0	3	3	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	288	294	11	11	22

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	314	0	-	0	622 318
Stage 1	-	-	-	-	309 -
Stage 2	-	-	-	-	313 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1246	-	-	-	450 723
Stage 1	-	-	-	-	745 -
Stage 2	-	-	-	-	741 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1235	-	-	-	438 711
Mov Cap-2 Maneuver	-	-	-	-	534 -
Stage 1	-	-	-	-	732 -
Stage 2	-	-	-	-	734 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1235	-	-	-	640
HCM Lane V/C Ratio	0.009	-	-	-	0.052
HCM Control Delay (s/veh)	7.9	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.2

HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	232	225	240	150	32
Future Volume (veh/h)	31	232	225	240	150	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	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	33	249	242	258	161	34
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	634	1401	266	284	208	185
Arrive On Green	0.36	0.75	0.33	0.33	0.12	0.12
Sat Flow, veh/h	1781	1870	816	870	1781	1585
Grp Volume(v), veh/h	33	249	0	500	161	34
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1686	1781	1585
Q Serve(g_s), s	0.9	2.7	0.0	19.9	6.1	1.4
Cycle Q Clear(g_c), s	0.9	2.7	0.0	19.9	6.1	1.4
Prop In Lane	1.00			0.52	1.00	1.00
Lane Grp Cap(c), veh/h	634	1401	0	550	208	185
V/C Ratio(X)	0.05	0.18	0.00	0.91	0.78	0.18
Avail Cap(c_a), veh/h	634	1401	0	602	588	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	2.5	0.0	22.6	30.0	27.9
Incr Delay (d2), s/veh	0.0	0.3	0.0	16.7	2.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	0.0	10.0	2.7	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.8	2.8	0.0	39.3	32.4	28.1
LnGrp LOS	B	A		D	C	C
Approach Vol, veh/h		282	500		195	
Approach Delay, s/veh		4.2	39.3		31.6	
Approach LOS		A	D		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.1		12.9	29.6	27.5
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.5		23.1	8.0	* 25
Max Q Clear Time (g_c+I1), s		4.7		8.1	2.9	21.9
Green Ext Time (p_c), s		1.3		0.2	0.0	0.9
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			27.6			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 4: Project Dwy & Atlantic Ave

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↻	↻	
Traffic Vol, veh/h	250	9	7	260	5	3
Future Vol, veh/h	250	9	7	260	5	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	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	272	10	8	283	5	3






















Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	282	0	576	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1280	-	479	762
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1280	-	476	762
Mov Cap-2 Maneuver	-	-	-	-	563	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	747	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.2	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	624	-	-	1280	-
HCM Lane V/C Ratio	0.014	-	-	0.006	-
HCM Control Delay (s/veh)	10.9	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q (veh)	0	-	-	0	-

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	147	210	105	147	118	140	450	45	88	970	70
Future Volume (veh/h)	70	147	210	105	147	118	140	450	45	88	970	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	155	221	111	155	124	147	474	47	93	1021	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	187	350	251	272	201	246	1663	164	240	1805	803
Arrive On Green	0.15	0.15	0.15	0.14	0.14	0.14	0.07	0.51	0.51	0.07	0.51	0.51
Sat Flow, veh/h	595	1246	1585	1781	1924	1423	3456	3263	322	3456	3554	1580
Grp Volume(v), veh/h	229	0	221	111	142	137	147	257	264	93	1021	74
Grp Sat Flow(s),veh/h/ln	1841	0	1585	1781	1777	1570	1728	1777	1808	1728	1777	1580
Q Serve(g_s), s	16.9	0.0	17.7	8.0	10.5	11.5	5.8	11.6	11.7	3.6	27.8	3.4
Cycle Q Clear(g_c), s	16.9	0.0	17.7	8.0	10.5	11.5	5.8	11.6	11.7	3.6	27.8	3.4
Prop In Lane	0.32		1.00	1.00		0.91	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	350	251	251	222	246	905	921	240	1805	803
V/C Ratio(X)	0.83	0.00	0.63	0.44	0.57	0.62	0.60	0.28	0.29	0.39	0.57	0.09
Avail Cap(c_a), veh/h	486	0	532	483	482	426	259	905	921	259	1805	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	0.0	49.4	55.1	56.1	56.6	63.1	19.7	19.7	62.3	23.8	17.8
Incr Delay (d2), s/veh	3.0	0.0	0.9	0.6	0.9	1.3	2.2	0.8	0.8	0.4	1.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	7.2	3.7	4.8	4.7	2.6	5.1	5.3	1.6	12.1	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.8	0.0	50.2	55.6	57.1	57.9	65.3	20.5	20.5	62.7	25.1	18.0
LnGrp LOS	E		D	E	E	E	E	C	C	E	C	B
Approach Vol, veh/h		450			390			668			1188	
Approach Delay, s/veh		55.6			56.9			30.3			27.6	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	76.3		25.6	14.0	76.1		24.4				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	10.5	36.3		38.0				
Max Q Clear Time (g_c+I1), s	5.6	13.7		19.7	7.8	29.8		13.5				
Green Ext Time (p_c), s	0.0	2.3		1.3	0.1	3.1		1.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				37.2								
HCM 6th LOS				D								
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
 2: Atlantic Ave & Bartlett Dr

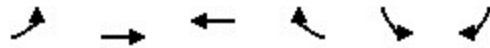
Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	
Traffic Vol, veh/h	30	250	340	10	10	20
Future Vol, veh/h	30	250	340	10	10	20
Conflicting Peds, #/hr	6	0	0	2	2	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	301	410	12	12	24

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	428	0	-	0	797 428
Stage 1	-	-	-	-	422 -
Stage 2	-	-	-	-	375 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1131	-	-	-	356 627
Stage 1	-	-	-	-	662 -
Stage 2	-	-	-	-	695 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1125	-	-	-	340 620
Mov Cap-2 Maneuver	-	-	-	-	457 -
Stage 1	-	-	-	-	637 -
Stage 2	-	-	-	-	691 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.9	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1125	-	-	-	554
HCM Lane V/C Ratio	0.032	-	-	-	0.065
HCM Control Delay (s/veh)	8.3	-	-	-	12
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2

HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	53	200	270	200	370	53
Future Volume (veh/h)	53	200	270	200	370	53
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	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	63	238	321	238	440	63
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	318	1109	343	254	486	432
Arrive On Green	0.18	0.59	0.35	0.35	0.27	0.27
Sat Flow, veh/h	1781	1870	987	732	1781	1585
Grp Volume(v), veh/h	63	238	0	559	440	63
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1719	1781	1585
Q Serve(g_s), s	2.1	4.2	0.0	22.0	16.7	2.1
Cycle Q Clear(g_c), s	2.1	4.2	0.0	22.0	16.7	2.1
Prop In Lane	1.00			0.43	1.00	1.00
Lane Grp Cap(c), veh/h	318	1109	0	597	486	432
V/C Ratio(X)	0.20	0.21	0.00	0.94	0.91	0.15
Avail Cap(c_a), veh/h	318	1109	0	609	593	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	6.6	0.0	22.1	24.6	19.3
Incr Delay (d2), s/veh	0.1	0.4	0.0	21.8	14.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	0.0	11.9	8.6	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	24.6	7.1	0.0	43.9	38.7	19.3
LnGrp LOS	C	A		D	D	B
Approach Vol, veh/h		301	559		503	
Approach Delay, s/veh		10.7	43.9		36.2	
Approach LOS		B	D		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.2		23.8	17.2	29.0
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.3		23.3	8.0	* 25
Max Q Clear Time (g_c+I1), s		6.2		18.7	4.1	24.0
Green Ext Time (p_c), s		1.2		0.4	0.0	0.3
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			33.7			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th TWSC
 4: Project Dwy & Atlantic Ave

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	230	20	13	330	20	13
Future Vol, veh/h	230	20	13	330	20	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	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	250	22	14	359	22	14






















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	272	0	648 261
Stage 1	-	-	-	-	261 -
Stage 2	-	-	-	-	387 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1291	-	435 778
Stage 1	-	-	-	-	783 -
Stage 2	-	-	-	-	686 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1291	-	430 778
Mov Cap-2 Maneuver	-	-	-	-	525 -
Stage 1	-	-	-	-	783 -
Stage 2	-	-	-	-	678 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.3	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	602	-	-	1291	-
HCM Lane V/C Ratio	0.06	-	-	0.011	-
HCM Control Delay (s/veh)	11.4	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q (veh)	0.2	-	-	0	-

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	195	130	64	192	120	110	680	64	146	320	50
Future Volume (veh/h)	70	195	130	64	192	120	110	680	64	146	320	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	224	149	74	221	138	126	782	74	168	368	57
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	251	405	281	334	198	245	1496	142	246	1623	721
Arrive On Green	0.18	0.18	0.18	0.16	0.16	0.16	0.07	0.46	0.46	0.07	0.46	0.46
Sat Flow, veh/h	486	1360	1585	1781	2115	1255	3456	3279	310	3456	3554	1580
Grp Volume(v), veh/h	304	0	149	74	184	175	126	424	432	168	368	57
Grp Sat Flow(s),veh/h/ln	1846	0	1585	1781	1777	1593	1728	1777	1812	1728	1777	1580
Q Serve(g_s), s	22.5	0.0	10.8	5.1	13.6	14.6	4.9	23.8	23.9	6.6	8.8	2.8
Cycle Q Clear(g_c), s	22.5	0.0	10.8	5.1	13.6	14.6	4.9	23.8	23.9	6.6	8.8	2.8
Prop In Lane	0.26		1.00	1.00		0.79	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	405	281	281	252	245	811	827	246	1623	721
V/C Ratio(X)	0.89	0.00	0.37	0.26	0.66	0.70	0.51	0.52	0.52	0.68	0.23	0.08
Avail Cap(c_a), veh/h	488	0	531	483	482	432	395	811	827	259	1623	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	0.0	42.8	51.8	55.4	55.8	62.7	27.2	27.2	63.5	23.1	21.4
Incr Delay (d2), s/veh	11.4	0.0	0.3	0.2	1.2	1.6	0.6	2.4	2.4	5.3	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	0.0	4.4	2.3	6.3	6.0	2.2	10.8	11.0	3.1	3.9	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.1	0.0	43.1	52.0	56.6	57.4	63.3	29.6	29.5	68.8	23.4	21.7
LnGrp LOS	E		D	D	E	E	E	C	C	E	C	C
Approach Vol, veh/h		453			433			982			593	
Approach Delay, s/veh		59.2			56.1			33.9			36.1	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	68.9		30.4	13.9	68.9		26.7				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	16.0	30.8		38.0				
Max Q Clear Time (g_c+I1), s	8.6	25.9		24.5	6.9	10.8		16.6				
Green Ext Time (p_c), s	0.0	3.1		1.3	0.1	1.8		1.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			43.0									
HCM 6th LOS			D									
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
2: Atlantic Ave & Bartlett Dr

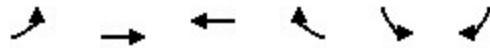
Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	10	385	356	10	10	20
Future Vol, veh/h	10	385	356	10	10	20
Conflicting Peds, #/hr	9	0	0	3	3	9
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	428	396	11	11	22

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	416	0	-	0	864 420
Stage 1	-	-	-	-	411 -
Stage 2	-	-	-	-	453 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1143	-	-	-	325 633
Stage 1	-	-	-	-	669 -
Stage 2	-	-	-	-	640 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1133	-	-	-	316 622
Mov Cap-2 Maneuver	-	-	-	-	438 -
Stage 1	-	-	-	-	656 -
Stage 2	-	-	-	-	634 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.2	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1133	-	-	-	546
HCM Lane V/C Ratio	0.01	-	-	-	0.061
HCM Control Delay (s/veh)	8.2	-	-	-	12
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.2

HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	46	276	288	240	150	53
Future Volume (veh/h)	46	276	288	240	150	53
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	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	49	297	310	258	161	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	583	1399	329	274	210	187
Arrive On Green	0.33	0.75	0.35	0.35	0.12	0.12
Sat Flow, veh/h	1781	1870	931	775	1781	1585
Grp Volume(v), veh/h	49	297	0	568	161	57
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1707	1781	1585
Q Serve(g_s), s	1.3	3.3	0.0	22.6	6.1	2.3
Cycle Q Clear(g_c), s	1.3	3.3	0.0	22.6	6.1	2.3
Prop In Lane	1.00			0.45	1.00	1.00
Lane Grp Cap(c), veh/h	583	1399	0	603	210	187
V/C Ratio(X)	0.08	0.21	0.00	0.94	0.77	0.31
Avail Cap(c_a), veh/h	583	1399	0	609	588	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	2.6	0.0	21.9	29.9	28.2
Incr Delay (d2), s/veh	0.0	0.3	0.0	22.8	2.2	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	0.5	0.9	0.0	12.3	2.7	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	16.3	3.0	0.0	44.8	32.1	28.6
LnGrp LOS	B	A		D	C	C
Approach Vol, veh/h		346	568		218	
Approach Delay, s/veh		4.9	44.8		31.2	
Approach LOS		A	D		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.0		13.0	27.6	29.4
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.5		23.1	8.0	* 25
Max Q Clear Time (g_c+I1), s		5.3		8.1	3.3	24.6
Green Ext Time (p_c), s		1.6		0.2	0.0	0.2
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			30.0			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
 4: Project Dwy & Atlantic Ave

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	250	135	91	260	96	62
Future Vol, veh/h	250	135	91	260	96	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	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	272	147	99	283	104	67






















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	419	0	827 346
Stage 1	-	-	-	-	346 -
Stage 2	-	-	-	-	481 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1140	-	341 697
Stage 1	-	-	-	-	716 -
Stage 2	-	-	-	-	622 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1140	-	311 697
Mov Cap-2 Maneuver	-	-	-	-	427 -
Stage 1	-	-	-	-	716 -
Stage 2	-	-	-	-	568 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.2	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	-	-	1140	-
HCM Lane V/C Ratio	0.341	-	-	0.087	-
HCM Control Delay (s/veh)	15.8	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q (veh)	1.5	-	-	0.3	-

HCM 6th Signalized Intersection Summary

1: Wilma Chan Wy & Atlantic Ave

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	152	210	113	158	132	140	450	49	95	970	70
Future Volume (veh/h)	70	152	210	113	158	132	140	450	49	95	970	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	160	221	119	166	139	147	474	52	100	1021	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	189	350	263	278	216	246	1621	177	242	1780	792
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.07	0.50	0.50	0.07	0.50	0.50
Sat Flow, veh/h	582	1259	1585	1781	1881	1460	3456	3227	352	3456	3554	1580
Grp Volume(v), veh/h	234	0	221	119	156	149	147	260	266	100	1021	74
Grp Sat Flow(s),veh/h/ln	1841	0	1585	1781	1777	1565	1728	1777	1802	1728	1777	1580
Q Serve(g_s), s	17.3	0.0	17.7	8.5	11.5	12.5	5.8	12.0	12.1	3.9	28.2	3.4
Cycle Q Clear(g_c), s	17.3	0.0	17.7	8.5	11.5	12.5	5.8	12.0	12.1	3.9	28.2	3.4
Prop In Lane	0.32		1.00	1.00		0.93	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	350	263	263	231	246	892	905	242	1780	792
V/C Ratio(X)	0.85	0.00	0.63	0.45	0.59	0.64	0.60	0.29	0.29	0.41	0.57	0.09
Avail Cap(c_a), veh/h	487	0	532	483	482	425	259	892	905	259	1780	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	0.0	49.3	54.5	55.7	56.2	63.1	20.3	20.3	62.4	24.5	18.3
Incr Delay (d2), s/veh	3.4	0.0	0.9	0.6	1.0	1.4	2.2	0.8	0.8	0.4	1.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	7.2	3.9	5.3	5.1	2.6	5.3	5.4	1.7	12.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.4	0.0	50.2	55.0	56.7	57.5	65.3	21.1	21.2	62.8	25.8	18.5
LnGrp LOS	E		D	E	E	E	E	C	C	E	C	B
Approach Vol, veh/h		455			424			673			1195	
Approach Delay, s/veh		55.9			56.5			30.8			28.4	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.8	75.3		25.6	14.0	75.1		25.3				
Change Period (Y+Rc), s	4.0	5.0		4.6	4.0	5.0		4.6				
Max Green Setting (Gmax), s	10.5	36.3		37.0	10.5	36.3		38.0				
Max Q Clear Time (g_c+I1), s	5.9	14.1		19.7	7.8	30.2		14.5				
Green Ext Time (p_c), s	0.0	2.3		1.3	0.1	3.0		1.5				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			37.9									
HCM 6th LOS			D									
Notes												
User approved changes to right turn type.												

HCM 6th TWSC
 2: Atlantic Ave & Bartlett Dr

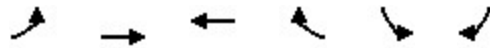
Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↖	
Traffic Vol, veh/h	30	266	373	10	10	20
Future Vol, veh/h	30	266	373	10	10	20
Conflicting Peds, #/hr	6	0	0	2	2	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	30	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	320	449	12	12	24

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	467	0	-	0	855 467
Stage 1	-	-	-	-	461 -
Stage 2	-	-	-	-	394 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1094	-	-	-	329 596
Stage 1	-	-	-	-	635 -
Stage 2	-	-	-	-	681 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1088	-	-	-	314 589
Mov Cap-2 Maneuver	-	-	-	-	435 -
Stage 1	-	-	-	-	610 -
Stage 2	-	-	-	-	677 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.9	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1088	-	-	-	527
HCM Lane V/C Ratio	0.033	-	-	-	0.069
HCM Control Delay (s/veh)	8.4	-	-	-	12.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2

HCM 6th Signalized Intersection Summary 3: Atlantic Ave & Challenger Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	59	216	278	200	370	56
Future Volume (veh/h)	59	216	278	200	370	56
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	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	70	257	331	238	440	67
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	311	1109	352	253	486	432
Arrive On Green	0.17	0.59	0.35	0.35	0.27	0.27
Sat Flow, veh/h	1781	1870	1001	720	1781	1585
Grp Volume(v), veh/h	70	257	0	569	440	67
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1721	1781	1585
Q Serve(g_s), s	2.4	4.5	0.0	22.4	16.7	2.2
Cycle Q Clear(g_c), s	2.4	4.5	0.0	22.4	16.7	2.2
Prop In Lane	1.00			0.42	1.00	1.00
Lane Grp Cap(c), veh/h	311	1109	0	604	486	432
V/C Ratio(X)	0.22	0.23	0.00	0.94	0.91	0.15
Avail Cap(c_a), veh/h	311	1109	0	610	593	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	6.7	0.0	22.0	24.6	19.3
Incr Delay (d2), s/veh	0.1	0.5	0.0	22.8	14.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.7	0.0	12.3	8.6	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	24.9	7.2	0.0	44.8	38.6	19.4
LnGrp LOS	C	A		D	D	B
Approach Vol, veh/h		327	569		507	
Approach Delay, s/veh		11.0	44.8		36.1	
Approach LOS		B	D		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		46.2		23.8	16.9	29.3
Change Period (Y+Rc), s		4.7		4.7	4.7	* 4.7
Max Green Setting (Gmax), s		37.3		23.3	8.0	* 25
Max Q Clear Time (g_c+I1), s		6.5		18.7	4.4	24.4
Green Ext Time (p_c), s		1.3		0.4	0.0	0.1
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			33.8			
HCM 6th LOS			C			
Notes						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

HCM 6th TWSC
 4: Project Dwy & Atlantic Ave

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	230	36	24	330	53	35
Future Vol, veh/h	230	36	24	330	53	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	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	250	39	26	359	58	38

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	289	0	681 270
Stage 1	-	-	-	-	270 -
Stage 2	-	-	-	-	411 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1273	-	416 769
Stage 1	-	-	-	-	775 -
Stage 2	-	-	-	-	669 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1273	-	408 769
Mov Cap-2 Maneuver	-	-	-	-	508 -
Stage 1	-	-	-	-	775 -
Stage 2	-	-	-	-	656 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.5	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	587	-	-	1273	-
HCM Lane V/C Ratio	0.163	-	-	0.02	-
HCM Control Delay (s/veh)	12.3	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q (veh)	0.6	-	-	0.1	-