

CITY OF LOS ALAMITOS

3191 Katella Avenue
Los Alamitos, CA 90720

AGENDA TRAFFIC COMMISSION REGULAR MEETING Thursday, November 12, 2015 – 7:00 P.M.

NOTICE TO THE PUBLIC

This Agenda contains a brief general description of each item to be considered. Except as provided by law, action or discussion shall not be taken on any item not appearing on the agenda. Supporting documents, including staff reports, are available for review at City Hall in the Engineering Office or on the City's website at www.cityoflosalamitos.org once the agenda has been publicly posted.

Any written materials relating to an item on this agenda submitted to the Traffic Commission after distribution of the agenda packet are available for public inspection in the Engineering Office, 3191 Katella Ave., Los Alamitos CA 90720, during normal business hours. In addition, such writings or documents will be made available for public review at the respective public meeting.

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Persons wishing to address the Traffic Commission on any item on the Traffic Commission Agenda shall sign in on the Oral Communications Sign-In Sheet which is located on the podium once the item is called by the Chairperson. At this point, you may address the Traffic Commission for up to FIVE MINUTES on that particular item.

1. CALL TO ORDER
2. ROLL CALL
Chair Mejia
Vice-Chair Biri
Commissioner Emerson
Commissioner Patz
Commissioner Seaman
Commissioner Wilhelm
3. PLEDGE OF ALLEGIANCE

4. ORAL COMMUNICATION

At this time any individual in the audience may address the Traffic Commission and speak on any item within the subject matter jurisdiction of the Commission. Please state if you wish to speak on an item on the Agenda. **Remarks are to be limited to not more than five minutes.**

5. APPROVAL OF MINUTES

A. Approve the Minutes for the Regular Meeting of September 9, 2015.

6. STAFF REPORTS

A. KATELLA AVENUE AND WALNUT STREET/WALLINGSFORD ROAD INTERSECTION OPERATION.

This report recommends modifications to the intersection of Katella Avenue and Walnut Street/Wallingsford Road in response to Rossmoor Homeowners Association concerns about the intersection's operation and school pedestrian safety, particularly during the morning peak hour.

Recommendation: Review and provide input on Staff's recommended actions. City Council action is not required for the recommended actions.

7. ITEMS FROM THE PUBLIC WORKS DEPARTMENT

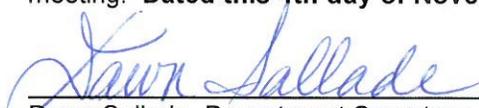
None.

8. TRAFFIC COMMISSION INITIATED BUSINESS

At this time, Commissioners may report on items not included on the agenda, but no such matter may be discussed, nor may any action be taken in which there is interest to the community, except as to provide Staff direction to report back or to place the item on a future agenda.

9. ADJOURNMENT

I hereby certify, under penalty of perjury under the laws of the State of California that the foregoing Agenda was posted at the Community Center, Museum, and City Hall not less than 72 hours prior to the meeting. **Dated this 4th day of November, 2015.**



Dawn Sallade, Department Secretary

MINUTES OF TRAFFIC COMMISSION MEETING OF THE CITY OF LOS ALAMITOS

REGULAR MEETING – SEPTEMBER 9, 2015

1. CALL TO ORDER

A Regular meeting of the Traffic Commission was called to order at 7:04 PM on September 9, 2015, in the Council Chambers, 3191 Katella Avenue, Los Alamitos, California, Chair Mejia presiding.

2. ROLL CALL

Present: Commissioners:

Chair Javier Mejia
Vice-Chair Gina Biri
Commissioner Dave Emerson
Commissioner Daniel Patz
Commissioner Jason Seaman
Commissioner James Wilhelm

Absent:

Commissioner Thomas Lindsey

Present: Staff:

Dave Hunt, City Engineer
Tom Oliver, Associate Planner
Bruce McAlpine, Police Captain
Dawn Sallade, Department Secretary

3. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Chair Mejia.

4. ORAL COMMUNICATIONS

Chair Mejia opened the meeting for Oral Communications.

Trey Sampson, Healthcare Administrator for Reagan Street Surgery Center, said he wanted to come tonight to give his thoughts on why they oppose the restricted parking. His concern is the large number of elderly patients that they have; there are several physician's offices in that area and a large majority of their patients visit their surgery center and it just doesn't seem to be enough parking space. Fortunately, the hospital is kind enough to have built a parking garage but it's actually too far from his surgery center. He said he's concerned that restricting parking further away is really going to cause a significant impact on his patients that are already coming there and trying to find parking. A lot of their patients are lower income and to have to pay additional parking fees will cause a big problem for them.

Responding to Chair Mejia's question, Mr. Sampson indicated they have on average 550 patients a month currently and with the 2-hour parking that is currently there, they literally have patients running out every two hours to try to move their cars. Some of them that move their cars, especially the older

spouses, are stuck just trying to find another spot to park and spend an hour or two just circling around waiting for the procedure to be over so they can pick up their spouse. It definitely creates a big challenge for the surgical center. After speaking with the Board of Directors there, he said the easy fix would be for them to purchase an area for parking but there is nothing available.

In response to Commissioner Emerson's questions, Mr. Sampson said 51% of the surgical center is owned by Tenant Corporation. Also, once he started working at the Center, he was briefed by the Board and the Hospital Administrator and he made it mandatory that all employees park in the hospital parking structure as well as on the street behind the shelter. The surgeons are able to park in the six parking stalls that have been designated for them on site.

Theresa Sherrin, founder of Precious Life Shelter, said she feels that the hospital is the problem; the employees don't park in their garage. She said she likes the hospital and when it was originally built by the doctors it was a great hospital and they were a part of the community; they cared about the community but Tenant Corporation doesn't care about the community and questioned why the City allowed them to put in an office building and not have to give free parking. All the little businesses around have to provide parking and questioned why the hospital didn't. She felt that the City is forcing people to shop elsewhere and go to other doctors outside the area and feels this is not helping the City of Los Alamitos.

Teresa Murphy, Executive Director of Precious Life Shelter for the last 26 years, reported that one of the things she observes regularly is it's not the patients but the "scrubs" that are coming in and out of the Reagan Surgical Center all day to move their cars. There is a serious issue on the Reagan / Pine side where people are looking for a place to park. One of the things that she did suggest to the previous administrator at the center was the possibility of having just a decal that indicates medical center staff so they will know where their staff is parking.

Grace Capanera, owner of Bella Hair Designers, said all her clients oppose the restricted parking; they're elderly and have a hard time walking and if they can parking on Pine Ave. in the restricted area, sometimes they park on the Florista side and walk through the shopping center to the salon, they will not pay for parking. Also they do not want time restricted parking; as they might be there for five hours for their appointment and the restricted parking would not work for them. Getting out of the salon and having to move your car doesn't work for them; they just won't come. If the medical center is having a problem with their nurses having to get there at 4:30 in the morning, why doesn't the hospital have a trolley to pick these people up and take them from the parking structure to the surgical center. She said actually things are ok the way they are; there really isn't that much of a problem. The people can get in and get out. She also asked Nick's Sandwiches how they will be impacted by the new Baja Sonora and they told her, "No problem". People come and people go; there's always parking but when you start restricting, that's when there's going to be a problem.

Trey Sampson indicated one of the issues that was brought up was the surgical center has parking under the surgery center which the patients should be parking there. There is actually 24 parking slots that are designated for the patients but generally there are usually 35 or so patients so it's not enough for them. Another issue was the staff is actually parking in the Reagan Street parking slots. The staff have been informed these are not designated parking for employees. If they are parking there, that is more of an issue with them managing their employees. As far as the ownership with the hospital and why can't the hospital provide parking, the hospital are silent partners for the surgery center. They are investors in the surgery center; they are not part of management. They were gracious enough to allow them access for parking in their parking garage which some of the staff are indeed parking there.

In response to Chair Mejia's question, Mr. Sampson indicated they have the top level of the garage for their employees and it is free for them.

Ernie Capanera, co-owner of Bella Hair Design, pointed out that any restricted or pay parking will naturally drive people to park in their parking lot because it's free which is not right. This will end up being an issue that the local merchants in the center will have to deal with the property owner which is not going to be easy. He said his point is the restricted and pay for parking is going to make the situation worse and instead of that, the City should be looking at the root causes. He felt that the hospital is not being accountable enough for the impact that they are creating and he thinks that some pressure should be put on them to do something more constructive.

There being no further speakers, Chair Mejia closed Oral Communications.

5. APPROVAL OF MINUTES

A. Approve the Minutes for the Regular Meeting of July 8, 2015.

Motion/Second: Patz/Seaman

Carried 6/0/0: The Traffic Commission approved the minutes of the Regular meeting of July 8, 2015.

B. Approve the Minutes for the Regular Meeting of August 12, 2015.

Motion/Second: Patz/Seaman

Carried 6/0/0: The Traffic Commission approved the minutes of the Regular meeting of August 12, 2015.

6. STAFF REPORTS

A. LIMITED PARKING – OLD TOWN EAST / MEDICAL CENTER AREA

Consideration of the establishment of Limited Parking within Old Town East Commercial Area and Medical Center.

City Engineer Dave Hunt summarized the Staff report, referring to the information therein and noted that the Staff report was written by Traffic Engineer Ruth Smith who is ill tonight.

Chair Mejia questioned that the Proposed Parking Limit Map and verified that the curb was a very pale green all the way in front of the CIF building. He felt that that should be updated/repainted. Also, there is no signage at the parking lot that was the pay lot. Also, adjacent to that, the parking that abuts it on Florista which is City right of way parking, that curb face has got painted on it "Plaza" which needs to be corrected.

Mr. Hunt said all of these issues will be corrected.

Commissioner Patz pointed out that before he could support parking restrictions, he asked if the City has talked to the hospital and the surrounding surgical centers and made it very clear to the management of the hospital specifically that unless they get their employees to park in their building, they run the risk of the City imposing parking time limits all over the area as a direct result of their employees parking on the street. Have we tried that?

Mr. Hunt indicated that City Manager Bret Plumlee and the Community Services Director Steven Mendoza met with the majority of the owners out there in the area including the hospital about the parking problem. The City has talked with them about the parking problem from day one even during construction. So, yes, they are aware of this and that's why they've had discussions about trying to get all of their employees to park in their parking structure.

Commissioner Wilhelm asked couldn't the City require, during the business license phase, all of the businesses to provide "employee only" parking areas, striped, numbered and signed, depending on the number of employees that they have? That would guarantee that their employees would park in those spaces.

Mr. Hunt explained that when a new business comes in and applies for their permits, they have to provide the appropriate parking spaces for that business. When the hospital went in, they provided enough parking for their employees and their patients to park in their six story parking structure and when they expand the hospital, their last phase, they will build another parking structure to add to that. Some of the older businesses in the area at the time they obtained their permits met their criteria at the time and since then, some of the criteria has gotten more restricted over the last few decades and who knows if they would qualify

currently but they are grandfathered in when they had their original building.

Associate Planner Tom Oliver further explained that businesses have to have the amount of parking they need for the type of business they are and they have to have a certain amount of ADA parking as well. But, the hospital being private property, the City doesn't have a lot of say over what they can do with their private property. The folks that own these businesses are in it for the money and so they mark adjustments as they need to within their own parking lot.

Commissioner Wilhelm suggested it might be a way of negotiating. Generally all the businesses are opposed to any time limitations but if the City went to them and said we want you to physically set aside marked, assigned spaces for all of your employees, if you do that, then maybe the City won't need to impose any time limitations. The whole purpose of this is to get employees to park in their business areas; get them off the streets. He said he's got a hunch that what's happening is that businesses understandably would like all of their primary parking area to be available to customers who they hope will come so they may be indicating to their employees to park anywhere they want except at the business. If businesses could be persuaded to physically create enough parking spaces for their employees, it seems to him that that would solve the entire problem. He asks if the hospital is really providing enough space in their parking structure.

Mr. Hunt indicated the City did the one day traffic study in the structure, hour by hour, and there is plenty of parking in there for their staff. It is underutilized and even if it's fully utilized, there will still be space there for them.

Associate Planner Oliver said it's also planned for the future; it's empty right now because there's more buildings to be built in the future and another parking structure as well.

Commissioner Patz asked how much enforcement is being done on the existing 2-hour parking areas.

Police Captain Bruce McAlpine indicated that the City has hired one Police Aide to work 20 hours a week. During the time that he is working, his primary purpose is not to necessarily enforce the restricted parking in this area but more so to follow the street sweeper to issue citations when appropriate there. With the potential addition to whether it's some sort of phased in approach with the parking (parking meters, additional time limits, etc.), the Police Department has plans to hire additional personnel that will be able to address any enforcement issues here. The Police

Officers will respond to issues with parking enforcement when necessary but the reality is they are out doing other things to keep the community safe as opposed to trying to enforce 2-hour parking restrictions.

Chair Mejia said he was wondering if there is a way to do a 2-week period of enhanced enforcement in those areas to get people's attention. After getting one or two tickets two weeks in a row, it's probably going to help to change behavior.

Captain McAlpine said that when this started last year at the Council's direction and the City started their Working Group that began to meet on a bi-weekly basis, they did take a look at what they had been doing for parking enforcement there. Also, at that particular time, the PD had an additional Police Aide who retired. The reality is we just don't have the affordability to bring in this particular Police Aide more than what we are already budgeted.

Mr. Hunt said the plan is that if the City goes through with this additional parking restriction, it would get another Police Aide out there to enforce it and make sure that it's followed.

In response to Commissioner Seaman's question, Mr. Hunt explained that the whole reason for this is to keep the flow of cars going so that customers can come and go and go to the businesses instead of having people parked there all day long. It's a public street and anybody can park on a public street so Staff came up with the idea of restricted parking so that the businesses could get more customers.

Commissioner Seaman said he noticed an absence of a recommendation for installing parking meters where it had been present in previous recommendations.

Mr. Hunt explained that what Staff is really talking about now is that this is the first phase on how to solve the problem. So after 3 to 6 months, Staff would go back and do another 24 hour study on where people are parking, etc. to see if we actually solved the problem by doing it with just restricted parking. If the problem was solved by just doing this, then maybe we won't need to install parking meters.

Vice-Chair Biri indicated that of the two things that they've been given, either parking meters or the restricted parking, parking meters hurt residents and businesses and the restricted time limits hurts businesses. Neither one actually addresses the issue of hospital people parking in City spaces in a way that's cohesive. She felt her recommendation to the City Council would be no to time limits for the fact that she doesn't think it solves the original issue in a win/win way. And then her alternative

recommendation would be to go back to the hospital and have them enforce their people parking in their structure because they have the space; they're just not using it which is creating undue hardship on the City, on the residents and on the businesses.

Mr. Hunt said the only issue with that is that the City cannot force hospital staff to park in their parking facility if we have public parking that is unrestricted out on City streets.

Vice-Chair Biri pointed out that it is probably in the hospital's best interest to work cohesively with the City.

Mr. Hunt said he also wanted to point out that it's not just the hospital staff; it's the medical community, hospital staff and the other businesses are having their employee's park on the streets as well so that their customers can park in the parking lots.

Commissioner Emerson felt it's only the beauty shop operators that seem to have a problem with the 3-hour time limit as some of their clients are there for 5 hours. He said what he would like to see is that the Council approves the Staff recommendation of 3-hour restricted parking and suspend it for six months to allow the landlords and tenants time to get their employees to park in off-street employee places.

Motion/Second: Mejia/Patz

Motion Failed 3/3: (Ayes: Mejia, Biri, Patz) & (Nays: Emerson, Seaman, Wilhelm): Enforce the current restrictions in Old Town East and repaint the curb faces on the City right-of-way and then the Commission reviews in three months from Council implementation.

Commissioner Emerson felt that we need a window so that employers step up in good faith as a group and get their employees to park in allocated spaces.

Motion/Second: Biri/Emerson

Unanimously Carried: The Traffic Commission approved the City enforcing the existing 2-hour parking; that the City paint and update the painting on existing curbs; that the Commission review this issue in four months; and that the Commission strongly recommends that the City Council work with Staff to develop a plan for approaching and working collaboratively with the hospital and other large business owners to alleviate their employees parking in City spaces.

7. ITEMS FROM THE PUBLIC WORKS DEPARTMENT

None.

8. TRAFFIC COMMISSION INITIATED BUSINESS

Vice-Chair Biri:

- Would like to address Commissioner Lindsey's absenteeism and asked if there was a City policy for excessive absences.

Associate Planner Tom Oliver read the policy from the Municipal Code.

Chair Mejia indicated Staff will notify the City Council.

Commissioner Emerson:

- Synchronization of Los Alamitos Blvd. turning into Seal Beach Blvd.

Commissioner Wilhelm:

- PD taken a look at the illegal left turns on Farquhar near the Blvd. up the alley?

Captain McAlpine said that the Police Department is aware that there is restricted signage there for that particular violation.

Chair Mejia:

- U.S. Bank on the corner of Ball and Bloomfield on the southwest corner, the traffic signal mast arm has been damaged.
- Right turn only arrows need to be painted on Katella & Oak.
- Congratulated Captain McAlpine on his impending retirement.

9. ADJOURNMENT

The Traffic Commission adjourned at 9:18 PM.

ATTEST:

David L. Hunt, City Engineer

City of Los Alamitos

Traffic Commission

Agenda Report
Staff Report

November 12, 2015
Item No: 6A

To: Chairman and Members of the Traffic Commission

From: Ruth Smith, Traffic Engineer

Subject: Katella Avenue and Walnut Street/Wallingsford Road Intersection Operation.

Summary: This report recommends modifications to the intersection of Katella Avenue and Walnut Street/Wallingsford Road in response to Rossmoor Homeowners Association concerns about the intersection's operation and school pedestrian safety, particularly during the morning peak hour.

Recommendation: Review and provide input on Staffs' recommended actions. City Council action is not required for the recommended actions.

Background:

The City of Los Alamitos received a request from Mr. Ralph Vartabedian in July, 2015 regarding the operation and functioning of the intersection of Katella Avenue and Walnut Street/Wallingsford Road. Mr. Vartabedian is a resident of the Rossmoor community and is on the Rossmoor Homeowners Association (RHA) board and is their Traffic Committee chair. Wallingsford Road provides Rossmoor's only direct access to Katella Avenue. In an email dated July 14, 2015 (see Attachment 1), Mr. Vartabedian provided a detailed discussion of RHA's concerns about the intersection, particularly during the morning peak hour, involving pedestrians and traffic related to the nearby schools. We informed him that we would observe the traffic patterns after school started again in September and bring our findings to the City's Traffic Commission.

In early August, Mr. Vartabedian also brought the RHA's concerns to the attention of Orange County Supervisor Michelle Steel (see Attachment 2). Supervisor Steel's staff suggested that he reach out to the City's Traffic Engineer and to the County's Traffic Engineer.

Mr. Vartabedian presented the RHA's concerns to the City's Traffic Commission on August 12, 2015, during the Public Comments period. Afterwards, he met with the City's Traffic Engineer to further discuss his concerns and presented sketches of

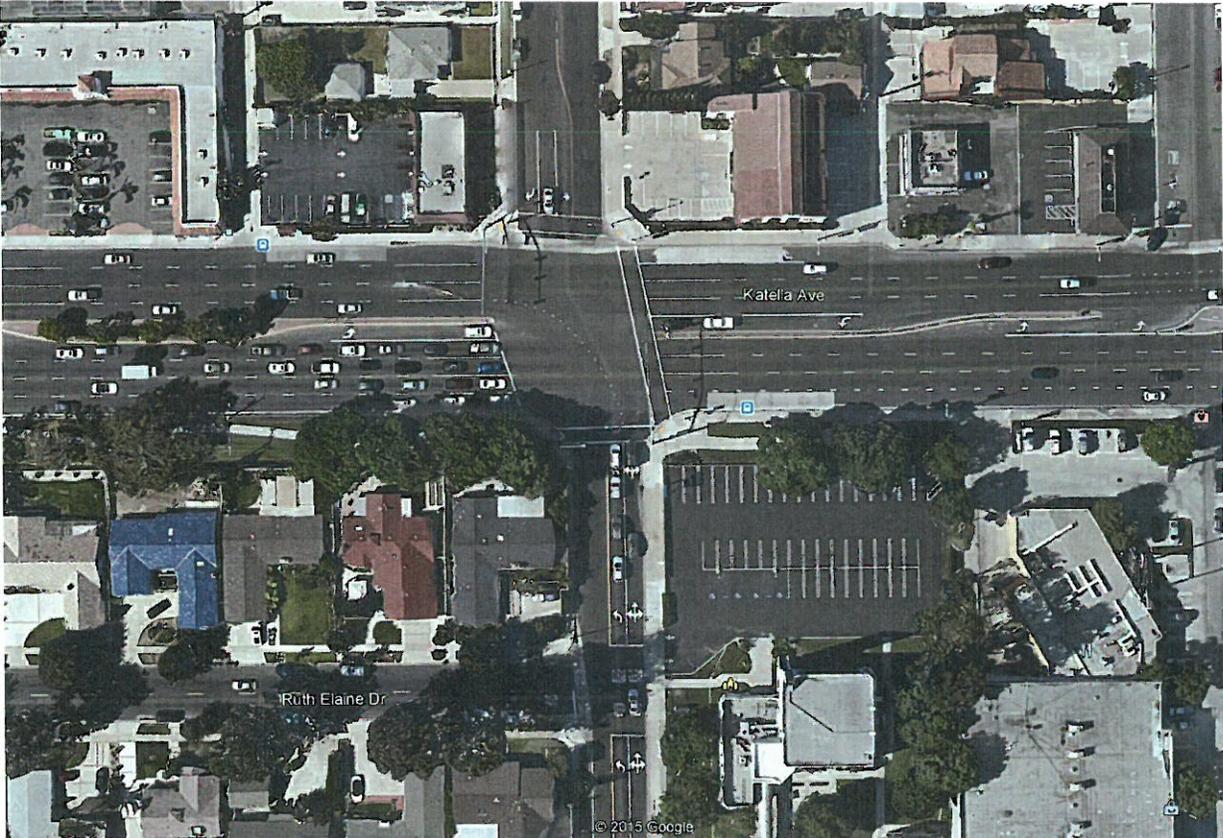
possible modifications to the intersection. On September 30, 2015, Mr. Vartabedian presented two Proposals and a suggestion to Mr. Isaac Alonso-Rice, the County's Traffic Engineer, to improve intersection operations (see Attachment 3). The Traffic Engineer followed up by contacting the County's Traffic Engineer to coordinate actions. She also observed the intersection operation from 7:30 to 9:00 AM on October 14, 2015, collected traffic counts, and discussed the intersection's operation with the City's signal operations experts.

Mr. Vartabedian also contacted the Superintendent of the Los Alamitos Unified School District, Dr. Sherry Kropp. Dr. Kropp informed Mr. Vartabedian that the number of students attending the elementary schools in Rossmoor has decreased by 85 over the last two years and the number of inter-district families enrolled in the Rossmoor schools has decreased by 166. There has also been an increase in the number of students riding the bus to school this year. The school district is also planning additional measures to increase the number of students riding the bus, walking and/or biking to school.

Discussion

Existing Conditions

The intersection of Katella Avenue and Walnut Street/Wallingsford Road is currently configured with one left turn lane and a shared left/through/right turn lane on northbound Wallingsford Road, one left turn lane, one through lane and one right turn lane on southbound Walnut Street, one left turn lane, three through lanes and one right turn



lane on westbound Katella Avenue, and one left turn lane, three through lanes and one shared through/right turn lane on eastbound Katella Avenue. Left-turn phasing is provided for Katella Avenue, however, the north and south legs are split phased due to their offset. Split phased means that the north and south legs are given completely separate green phases and do not go at the same time. This reduces the efficiency of the intersection operations.

There are painted crosswalks on the north, south and east legs of the intersection, and none on the west leg. An adult school crossing guard is located on the southeast corner and assists students using the crosswalks on the south and east legs. Since the intersection is signalized, the crossing guard primarily stops right-turning traffic from conflicting with the students.

The field review confirmed that during the AM peak traffic period, the intersection of Katella Avenue and Walnut Street/Wallingsford Road includes a high volume of school-related traffic. There are five schools that directly impact the intersection, including four elementary schools located in Rossmoor:

- Oak Middle School
- Richard Henry Lee Elementary School
- Rossmoor Elementary School
- Jack L. Weaver Elementary School
- Francis Hopkinson Elementary School

It was observed that the northbound traffic on Wallingsford Road often backed up more than a block and that not all of the traffic was cleared during the green. The southbound through traffic, proceeding across Katella Avenue to Wallingsford Road, occasionally did not have adequate green to clear. The westbound traffic on Katella Avenue turning onto Wallingsford Road at times exceeded the length of the left turn pocket and spilled over into the through lanes. The crossing guard was doing an effective job of stopping cars from intruding into the crosswalks when students were crossing.

Traffic count data was collected at the intersection on October 21, 2015 (see Attachment 4) for the AM peak, the afternoon school peak and the PM peak, and included vehicle counts, school pedestrian counts and bicycle counts. Although the northbound left turn volumes decreased by about half from the AM peak hour to the afternoon and PM peak hours, the northbound right turn volumes remained about the same. The number of students crossing Katella in the crosswalk during the AM peak hour was 48. The number was greater during the afternoon school peak, by about 30 percent, which is typical, since not all parents who drop their children off in the morning on the way to work can pick them up mid-afternoon. As expected, only six students used the crosswalk during the PM peak hour. They were likely high school students.

Modifications Suggested by Rossmoor Homeowners Association

As previously noted, on behalf of the RHA, Mr. Vartabedian proposed three possible actions to improve school pedestrian safety and traffic flow at the intersection. These are summarized below, and described in detail and illustrated in previous Attachment 3:

1. Proposal 1 would move the painted crosswalk from the east side of the intersection to the west side to eliminate pedestrian conflicts with northbound right-turning traffic.
2. Proposal 2 would keep the crosswalk on the east side of the intersection and modify the northbound traffic lanes on Wallingsford Road to convert the shared left/through/right turn lane into a right turn only lane and convert the left turn only lane to a shared left turn/through lane. This would also eliminate pedestrian conflicts with northbound right-turning traffic.
3. Mr. Vartabedian had a third suggestion, which we are calling Proposal 3, that would create a third lane on northbound Wallingsford to provide one left turn lane, one through lane and one right turn lane, to eliminate the conflict with the crosswalk. He acknowledged, however, that it might be difficult to accomplish this due to limited roadway width.

Intersection Review and Analysis

The City's signal operations expert, Iteris, Inc. (Iteris), joined the Traffic Engineer in a field observation on October 14, 2015. It became clear that the northbound traffic generally needed more green time than the southbound traffic. A modification to the operation would allow the northbound traffic to use any green time not needed by southbound traffic. This adjustment was made during that field visit and more northbound traffic was able to clear the intersection on their "first" green, without resulting in inadequate green time for the southbound traffic.

The RHA's proposals were considered and discussed while observing traffic and the signal operations. Traffic counts were later reviewed to provide additional data upon which to base a recommendation. Iteris followed up with a more detailed consideration of the conditions and RHA's proposals, and prepared a memorandum summarizing their analysis and findings (Attachment 5). Iteris found the following:

1. Proposal 1, which would move the painted crosswalk from the east leg to the west leg of Katella Avenue, would:
 - a. Increase the time needed for pedestrians to cross Katella Avenue since the current location is a shorter crossing.
 - b. Increase the southbound green time to accommodate the pedestrians, thereby decreasing the green time for all of the other movements and increasing the delay for other legs of the intersection, including the northbound leg.
2. Proposal 2, which would change the lane designations for northbound Wallingsford Road and provide westbound left turn/northbound right turn overlap, would:
 - a. Increase the delays for northbound left and through traffic, since one less lane would be provided for left-turning vehicles, plus less the green time would be decreased for the very high left turn volume. Unsafe driving would likely be a result of the increased driver frustration.

- b. Be in conflict with the current westbound U-turns. The raised median on Katella Avenue makes the U-turns necessary for motorists to be able to get to businesses on the south side of Katella Avenue.
3. Provide different signal operations during the school peak. The signal operations needed to accommodate school and commuter traffic during the AM peak period are different than what is needed the rest of the morning and day. The school needs are for a relatively short period. Signal timing and operations can be developed for the short time needed for school traffic and pedestrians, while providing additional green times to other movements outside of the school-related times.
4. Leading Pedestrian Interval. Pedestrian safety can be increased by starting the pedestrian WALK phase a few seconds before the start of northbound green, and ending the WALK sequence a few seconds before the end of the northbound green phase, allowing northbound right-turning vehicles to turn right when the school pedestrians are not present.

It should be noted that Iteris used traffic counts that had been collected in 2011 for another study in the area. The new AM peak hour traffic counts collected by the City in October, 2015 (see previous Attachment 4) were generally similar to the 2011 counts, but somewhat lower overall. The lower counts could be due to daily/weekly/seasonal variations, but most likely reflect the completion of the I-405/I-605 freeway interchange construction. The northbound left turn volumes are no longer six times higher than the northbound right turn movements, as in 2011, but they are still high, at four times the right turn movements.

RHA's third suggestion, which is a physical improvement, not a signal modification, was not reviewed by Iteris, only by the City's Traffic Engineer. RHA suggested adding a third northbound lane on Wallingsford Road at Katella Avenue, but was unsure of the feasibility. Based on our review, we determined the following:

1. It could be feasible, by moving the centerline west, thereby narrowing the southbound lane and providing added width for a third lane.
2. It would essentially be a second left turn pocket, since it would only extend for one block (125 feet), to Ruth Elaine Drive, where Wallingsford Road narrows.
3. The northbound configuration would likely be one left turn only lane, one shared left/through lane and one right turn only lane.
4. Further study would be necessary to determine the actual feasibility of implementing the improvement and the extent of the benefit.

The County's Traffic Engineer informed the City's Traffic Engineer that County staff would only need to be involved if proposed improvements would modify the lane/roadway configuration of Wallingsford Road south of Katella Avenue. Signal modifications are not under the County's jurisdiction. The County will assist and support the City in our efforts to improve the flow of traffic and enhance pedestrian safety at the intersection. The County Traffic Engineer also noted to Mr. Vartabedian that there are other avenues that RHA could pursue on their own, such as promoting the use of other outlets by their residents, using alternate routes and suggesting their residents modify their work schedules to avoid the peak hour traffic.

Findings and Recommendations

Our analysis of the existing conditions indicates that the school-related issues are limited to the morning peak period, when the commuter peak coincides with the school peak. It appears that a noticeable improvement can be made by modifying the signal timing and operations at the intersection of Katella Avenue and Walnut Street/Wallingsford Road. These improvements should be tried before any physical changes are made.

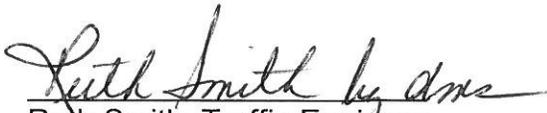
Based on our review of existing conditions, the input from Iteris and our consideration of the Rossmoor Homeowners Association's proposed improvements, we recommended the following:

1. The crosswalk on the east leg of Katella Avenue should not be relocated to the west leg. Overall, it would increase traffic congestion and delays for northbound left turn and through movements with no corresponding benefit to northbound right-turning traffic.
2. The northbound lanes should not be reconfigured to provide a right turn only lane. The result would be additional delays for northbound left and through movements, with increased driver frustration and the likelihood of unsafe behavior.
3. Adding a third northbound lane (left turn pocket) should be further evaluated to determine the feasibility and the extent of the benefit.
4. The signal timing should be modified to improve traffic flow during the school-related peak period(s) and to reduce the conflict between pedestrians using the crosswalk on Katella Avenue and the northbound right-turning motorists.

Fiscal Impact

There is no fiscal impact in conducting further study and modifying the signal timing.

Submitted By:


Ruth Smith, Traffic Engineer

- Attachments:*
- 1) *Email from Ralph Vartabedian, dated July 15, 2015*
 - 2) *Email from Ralph Vartabedian, dated August 4, 2015*
 - 3) *Email from Ralph Vartabedian to the County Traffic Engineer, dated September 30, 2015*
 - 4) *Intersection Peak Hour Traffic, Pedestrian and Bicycle Counts, collected on October 21, 2015.*
 - 5) *Iteris Memorandum, dated October 20, 2015*

Ruth Smith

From: Ralph Vartabedian <ralphv9@aol.com>
Sent: Tuesday, July 14, 2015 5:04 PM
To: Ruth Smith; isaac.alonso.rice@ocpw.ocgov.com; gstewart1953@verizon.net; Wgekler@aol.com; mark.nitikman@c2d2law.com; fastracinv@gmail.com; jruth@rossmoor-csd.org; skropp@losal.org; jeffbarke@gmail.com
Cc: SMendoza@cityoflosalamitos.org; DHunt@cityoflosalamitos.org
Subject: Re: Los Alamitos Traffic Commission

Follow Up Flag: Follow up
Due By: Wednesday, July 15, 2015 9:00 AM
Flag Status: Flagged

Dear Ruth,

Thank you very much for reaching out to me. I will plan to attend the Aug. 12 city traffic commission meeting.

In the meantime, I'd like to mention ongoing concerns about congestion within Rossmoor that relates to school traffic, in part the result of increases in interdistrict transfer students who attend elementary schools in Rossmoor. The RHA, the school district and the county traffic engineer, Isaac Alonso Rice, are examining some of these problems and hope to find solutions. I have copied Mr. Rice on this email.

There is one issue that involves your city: the crosswalk and intersection at Wallingsford and Katella. We believe this intersection is the most congested bottleneck in Rossmoor, since it is the only egress and ingress from our community's northern boundary.

At school rush hours, particularly in the morning, traffic backs up on northbound Wallingsford, and causes a backup that extends more than 100 yards on Hedwig Road. We have asked the county and we are asking you if we could study how to improve the traffic flow. I believe that many of the vehicles that are in this congestion are in fact Los Alamitos residents who drive their indistrict children to and from elementary schools in Rossmoor, so any improvement would benefit both of our communities. There are many other social, recreational, governmental and educational connections between our communities that involve traffic movements, as well.

The question I have is whether the current crosswalk location, street striping and signaling protocols are the most efficient possible. Northbound Wallingsford has two lanes, the left one designated for left turns only and the right lane designated for right turns and straight through traffic. The pedestrian crosswalk shares the light cycle in which traffic moves out of Rossmoor. As a result, the right lane gets tied up because of heavy use of the pedestrian crosswalk across Katella, which is on the east side of Wallingsford.

I would ask whether this is the best possible arrangement? I think it would be helpful to measure how many vehicles are traveling right, left and straight through the intersection from Rossmoor between 7:30 am and 9:30 a.m. Would it be possible to examine other designs, such as altering the signal so that pedestrians do not share the road with right turn vehicles or even moving the entire crosswalk to the west side of Wallingsford. My concern here is not only for vehicle movements but pedestrian safety. I believe your city has documented more than a couple hundred children must cross this very busy street on school days.

The school district last year had hired a consultant who recommended studying an option to relocate the crosswalk. I believe the signal currently has four cycles. If the crosswalk were on the west side of Wallingsford, the same four cycles would still be used but pedestrians could have unfettered movement in the one of the cycles. The other benefit would be students bound for Oak Middle School from Rossmoor on foot or on bikes would not have to cross Wallingsford. I am not a professional traffic engineer by any means, so I am not saying these solutions would work or are the only solutions.

Ultimately, your city's plan for a pedestrian bridge will help improve both pedestrian safety and traffic movements. The RHA fully supports this project. But we do not know when or if it will be built. And even if the bridge is built at some future date, a surface crosswalk may still be needed. So we would hope we could discuss further how to improve the current intersection.

Sincerely,
 Ralph Vartabedian
 RHA board member
 Traffic committee chair

Ruth Smith

From: RalphV9@aol.com
Sent: Tuesday, August 04, 2015 3:26 PM
To: Ruth Smith; isaac.alonso.rice@ocpw.ocgov.com; gstewart1953@verizon.net; Wgekler@aol.com; mark.nitikman@c2d2law.com; fastracinv@gmail.com; jruth@rossmoor-csd.org; skropp@losal.org; jeffbarke@gmail.com
Cc: SMendoza@cityoflosalamitos.org; DHunt@cityoflosalamitos.org; wgekler@aol.com; tim.whitacre@ocgov.com
Subject: Re: Los Alamitos Traffic Commission

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ruth,

I was speaking with Supervisor Michelle Steel's staff and they suggested I reach out to both you and Isaac Alonso Rice about coordinating the examination of the Katella and Wallingsford intersection. Perhaps you are already doing so. It seems to me that the county may have control of the lane signs on the Rossmoor side of the intersection, while the city has control of the signals and crosswalks.

I hope that we can find some way to expedite traffic exiting Rossmoor on Wallingsford during school rush hours, particularly in the morning. Specifically, I believe that pedestrians walking across Katella during the green light signal creates a back up in the right lane. I know that signal timing is difficult to tamper with, but maybe there is a way to improve flow without changing the signal timing. Perhaps we can discuss a few ideas at your Aug. 12 traffic commission meeting, which I hope to attend.

Sincerely,
Ralph Vartabedian

Ruth Smith

From: RalphV9@aol.com
Sent: Wednesday, September 30, 2015 3:48 PM
To: isaac.alonsorice@ocpw.ocgov.com
Cc: wgekler@aol.com; gstewart1953@verizon.net; leofam4@verizon.net;
fastracinv@gmail.com; mark.nitikman@c2d2law.com; Ruth Smith;
tim.whitacre@ocgov.com; skropp@losal.org; smendoza@cityoflosalamitos.org;
jeffbarke@gmail.com
Subject: (no subject)
Attachments: WALLINGSFORD INTERSECTION STUDY.docx

Isaac,

I have attached a report on the Katella/Wallingsford intersection, which we discussed earlier this month. I have included in the email list many of the key parties who are involved in current traffic issues. If you have any questions, don't hesitate to call or email me. Thanks for your consideration.

Ralph Vartabedian

RHA traffic chairman/board member

Sept. 20, 2015

Isaac Alonso Rice
Orange County Traffic Engineer

Dear Isaac,

I'm following up on our conversation earlier this month, specifically about the intersection of Katella and Wallingsford. I am providing for you as complete a report as possible on RHA's thoughts on improving the intersection.

The context of this report is the current effort by the county, the Los Alamitos Unified School District and the Rossmoor Homeowners Association to address growing traffic congestion in Rossmoor, particularly involving the four elementary schools in the community.

The largest single chokepoint in the community involves the Katella/Wallingsford intersection, which is the only egress from the community on its northern border.

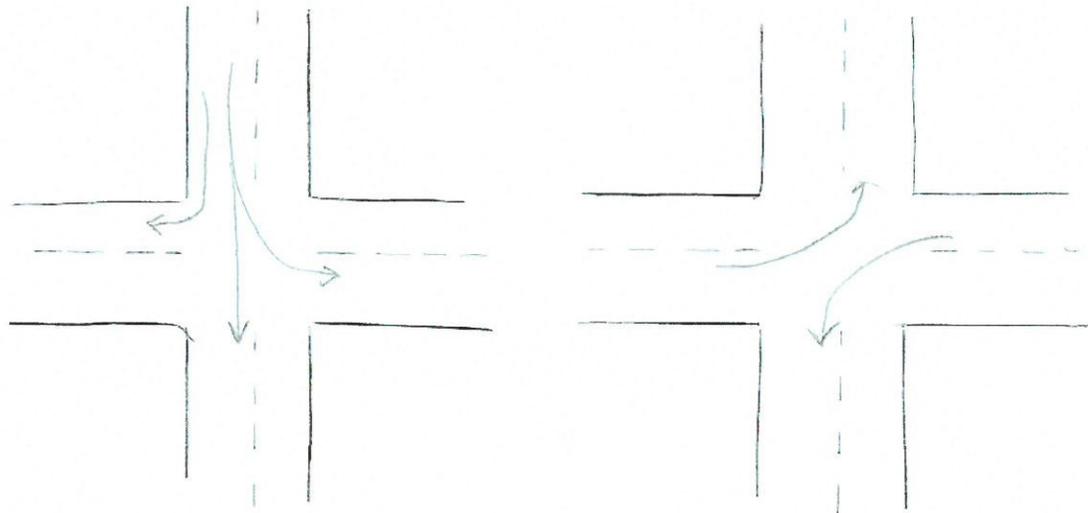
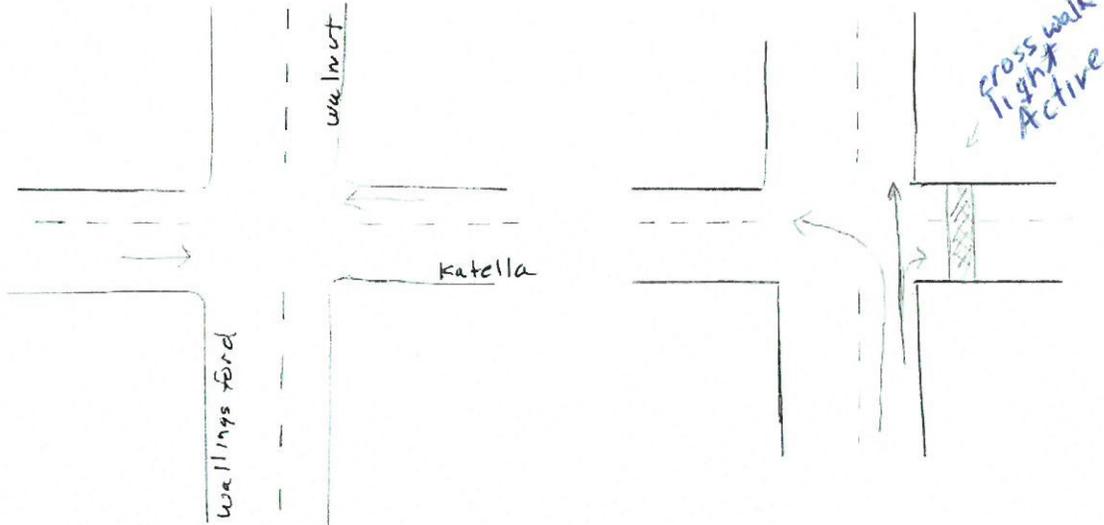
The current signal has four basic cycles. The pedestrian crosswalk across Katella is coordinated with the greenlight that allows traffic to move northbound on Wallingsford.

I am suggesting that you consider changes that would eliminate the conflict between pedestrians and traffic turning right from Wallingsford onto Katella. I think this can be done without disturbing the basic four cycles of the signal or the timing.

As you know, I'm not a traffic engineer, so you'll have to decide whether my suggestions would be effective. But I and others on the traffic committee have gone through this intersection almost every day for decades, so we've had a lot of time to think about it.

The current pedestrian crosswalk across Katella results in many cars in the right hand lane on northbound Wallingsford being held back during school commuting hours. Since the right lane is also signed for straight through traffic, those cars are held back, as well. In many cases, the storage on Wallingsford northbound does not clear on a green light. The following diagram outlines the existing four light cycles and shows the crosswalk light activating when traffic gets a greenlight on northbound Wallingsford.

Existing Katella/Wallingsford Signal cycles



I have two suggestions I'd like to offer for your evaluation. Proposal 1 involves moving the crosswalk to the west side of Wallingsford. Proposal 2 would keep the location of the existing crosswalk, which is east of Wallingsford.

In both proposals, pedestrian safety would be improved, because pedestrians would not share the road with turning cars and as a result traffic flow also would also improve.

First, let's consider moving the crosswalk to the west side, which would improve the entire flow of student foot and bicycle traffic to the middle school in Los Alamitos.

If you look at a map of Rossmoor, the vast majority of students can walk and bike to school without ever crossing Wallingsford, if the Katella crosswalk were located west of Wallingsford. Currently, those kids must cross Wallingsford west to east at Hedwig (or at Katella) and again later in Los Alamitos east to west.

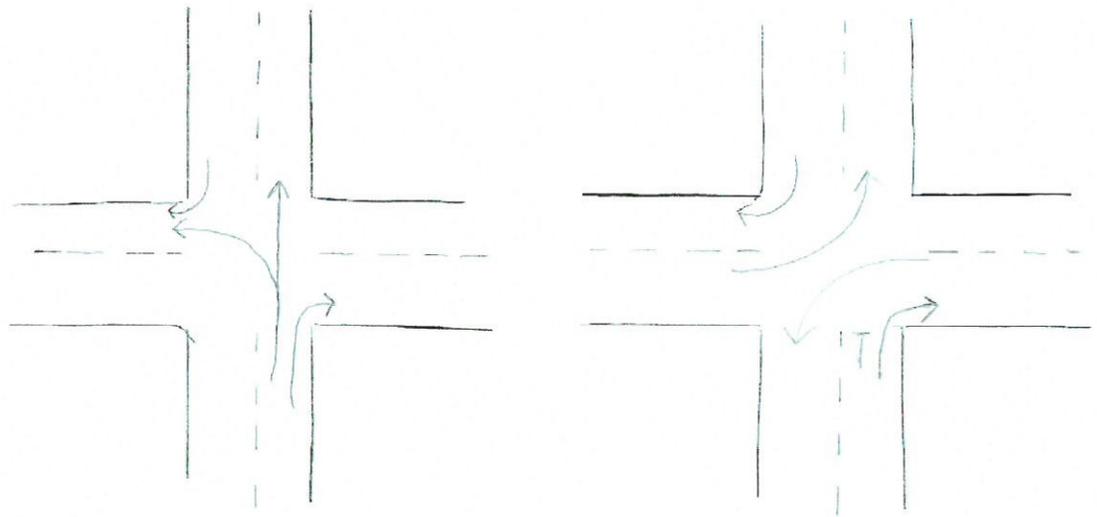
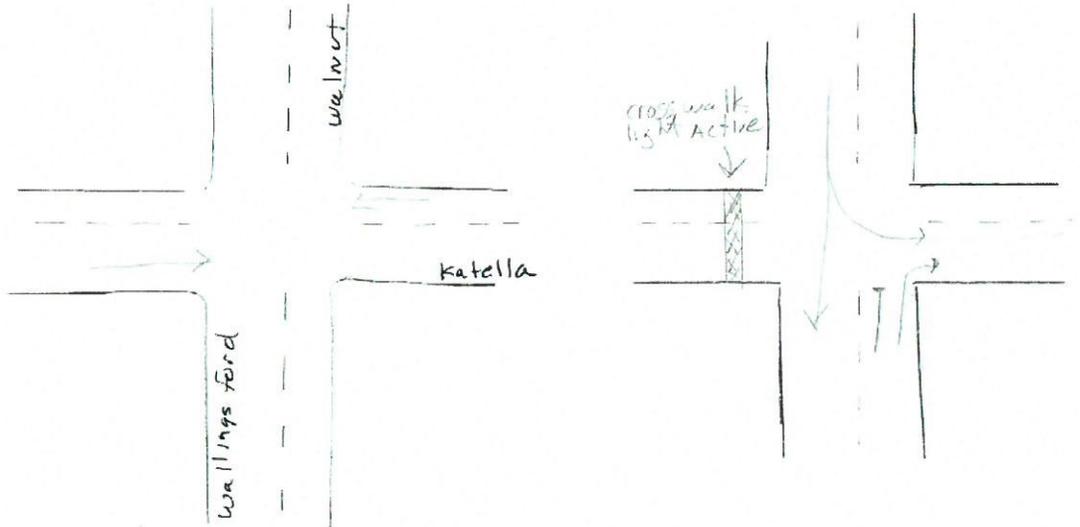
As you know, the RHA has asked the county to remove parking restrictions along the existing bike route on Foster and Hedwig roads. We have recently done some legal research, which found that under state and county law the children can legally ride their bikes on the sidewalk. We believe this is a safer and legal alternative for children of middle or elementary school age than riding in a street that carries 6,000 vehicles per day.

Changing the Katella crosswalk location would also allow you to have a bike route on Martha Ann/Ruth Elaine that would be a more direct and safer route to Oak Middle School and the elementary schools. Such a route, if it were on the west side of Martha Ann and Ruth Elaine would not have any street intersections that the kids would have to cross.

The big idea with putting the Katella crosswalk on the west side of Wallingsford is to allow pedestrians to cross Katella without sharing the road with traffic. As part of this design, you would also alter the lane designations on Wallingsford, so the right lane is a turn only lane and the left lane serves both left turning traffic and straight through traffic.

The diagram below outlines the sequence:

Proposal #1: Relocation of crosswalk
And New signal cycles



It is important to note that there is an asymmetry in traffic volume on Wallingsford/Walnut. A lot more traffic moves northbound on Wallingsford than southbound on Walnut, owing to turning movements out of Rossmoor. That's why I think it is more effective to have the pedestrian crosswalk west of Wallingsford, where there are fewer right-turning vehicles that would be held back while the pedestrian signal is active.

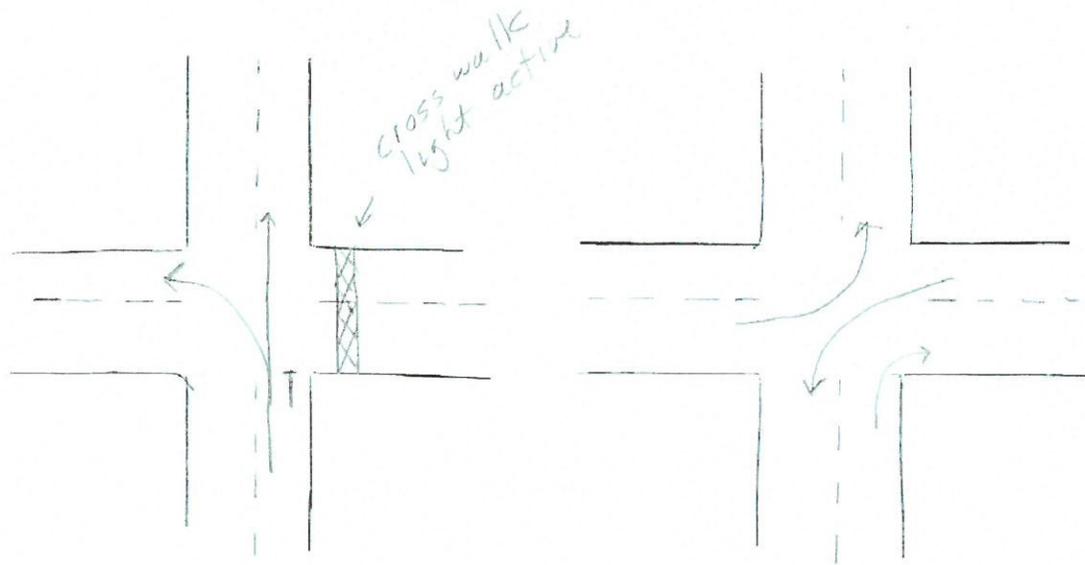
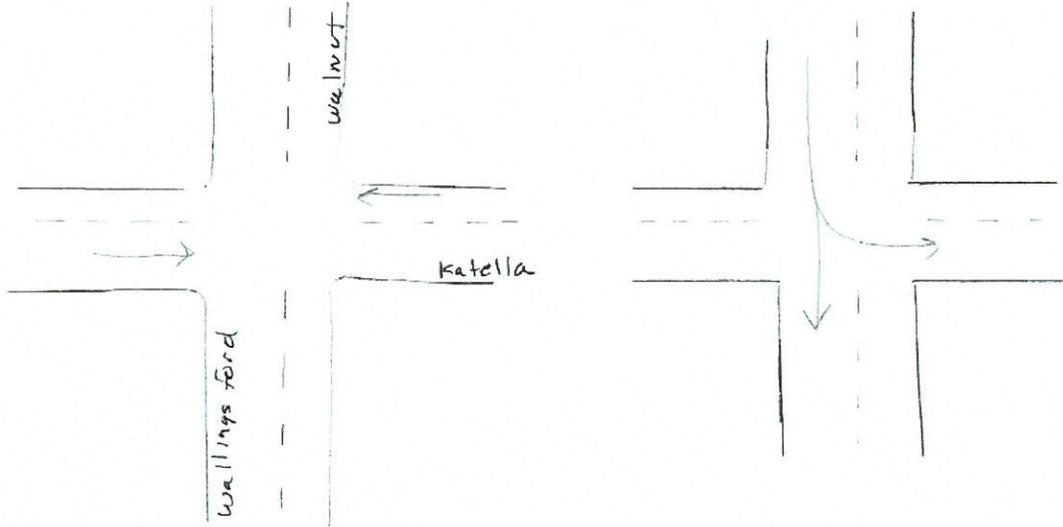
One difficulty with this plan is a narrow sidewalk on the west side of Wallingsford between Ruth Elaine and Katella. There is a private wall next to the sidewalk, located at 3361 Ruth Elaine.

Possibly, the county took a portion of the sidewalk to widen the street or possibly a homeowner in the past built the wall over the sidewalk with or without authorization. Either way, for this option to work, you would need to widen the sidewalk by moving the wall or taking a portion of Wallingsford. The southbound lane there is extremely wide, so possibly you could take a couple of feet to extend the sidewalk width.

Proposal 2 involves keeping the existing crosswalk location, but simply changing the lane designations on northbound Wallingsford so that the right lane allows only right turns and the left lane allows straight through movements or left turns. The change would be an important part of creating a cycle that eliminates the conflict of pedestrian movements and right turn traffic.

The following diagram shows how the plan would work:

Proposal #2: Maintain existing cross walk location, change lane designation



The issue on this proposal is whether all of the vehicles on northbound Wallingsford intending to go straight or turn left can clear on a single light. Since there is no conflict with pedestrians, I have a hunch you could entirely clear the left lane storage, but you would obviously have to analyze it with the volume data you have collected.

A third possible approach and perhaps the most difficult would involve creating a third lane on northbound Wallingsford, if the street could accommodate it. A third lane would enable a left turn lane, a right turn lane and a straight through lane, which would be controlled separately to eliminate a conflict with the crosswalk. But I believe the other two proposals would easily accommodate all of the existing traffic volume, improve flow and increase pedestrian safety.

If the Rossmoor Homeowners Association can be of any help in your evaluation of these proposals, please don't hesitate to ask.

Sincerely,

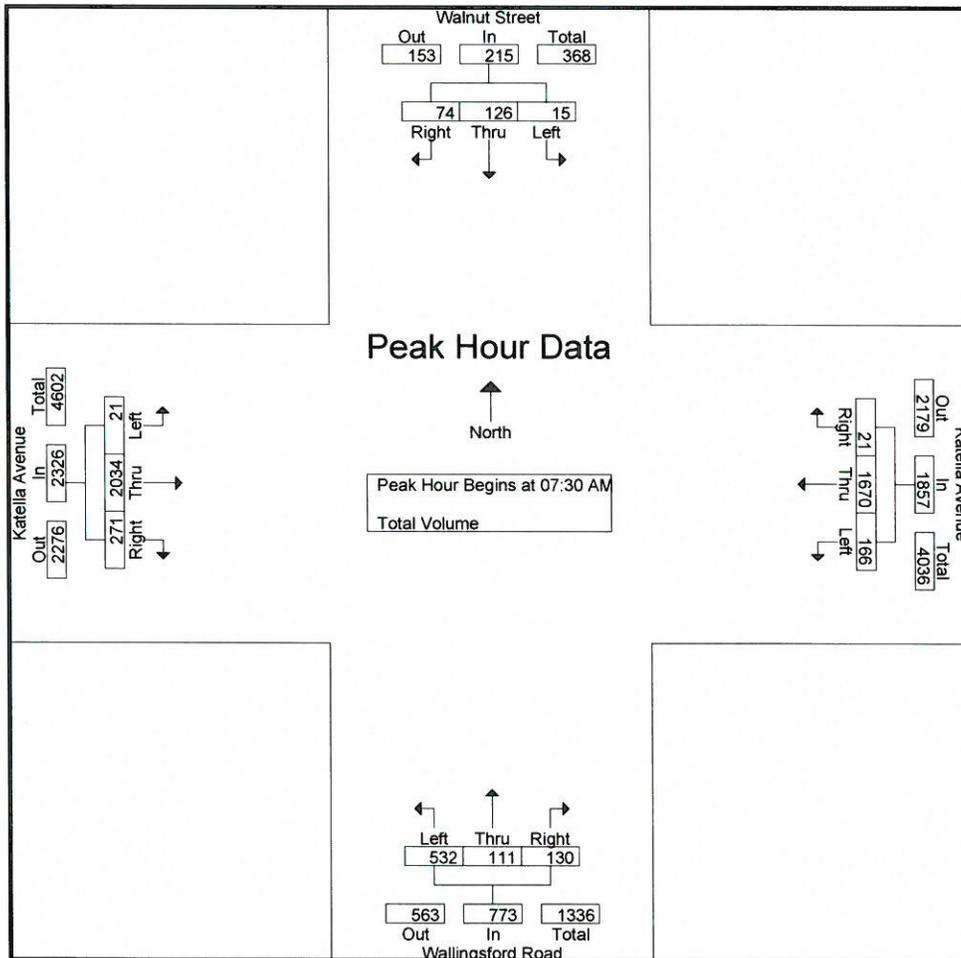
Ralph Vartabedian

RHA Board Member, Traffic Committee Chairman

Counts Unlimited
 PO Box 1178
 Corona, CA 92878
 (951) 268-6268

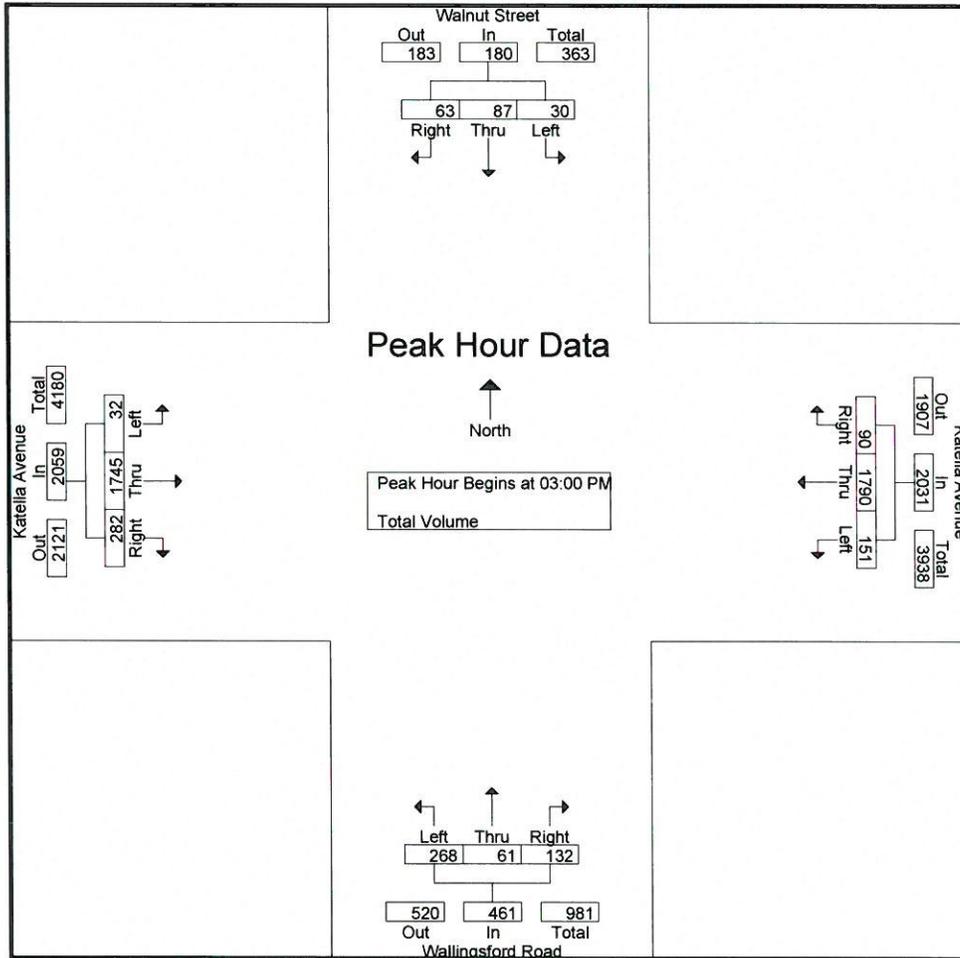
City of Los Alamitos
 N/S: Walnut Street/Wallingsford Road
 E/W: Katella Avenue
 Weather: Clear

File Name : LAMWWKAAM
 Site Code : 00715564
 Start Date : 10/21/2015
 Page No : 2



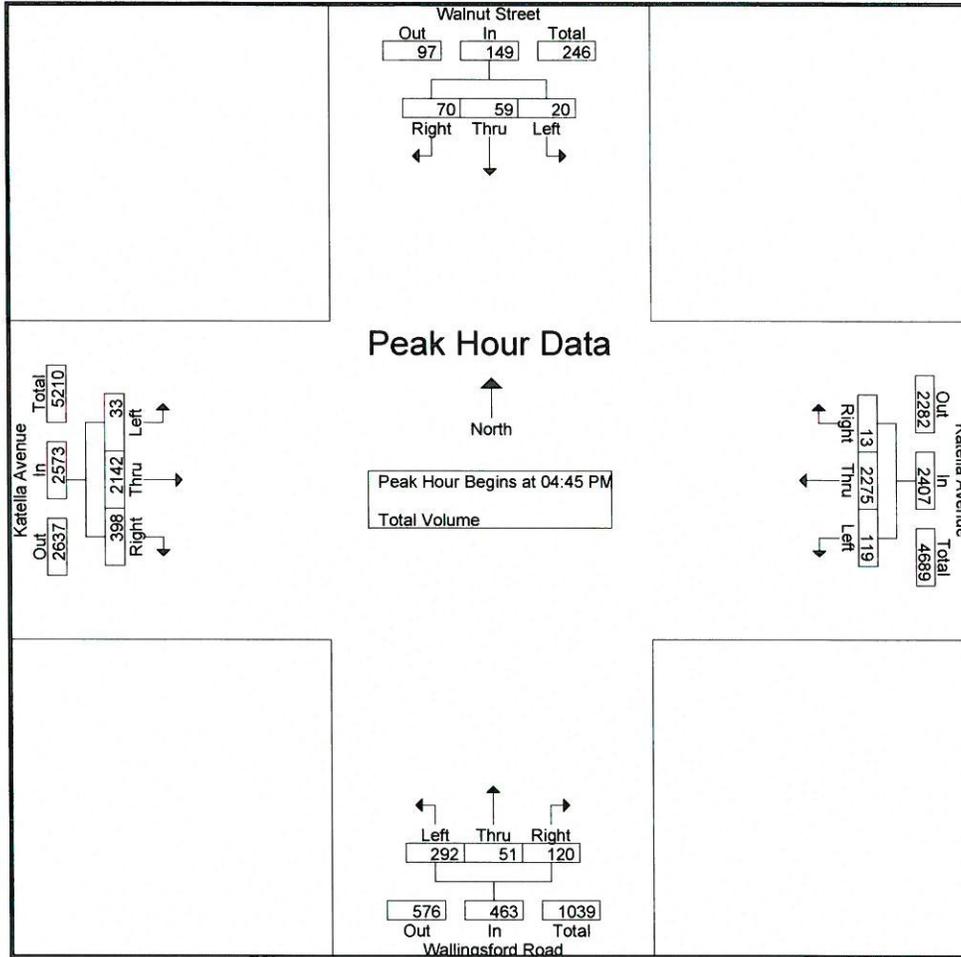
City of Los Alamitos
 N/S: Walnut Street/Wallingsford Road
 E/W: Katella Avenue
 Weather: Clear

File Name : LAMWWKAMD
 Site Code : 00715564
 Start Date : 10/21/2015
 Page No : 2



City of Los Alamitos
 N/S: Walnut Street/Wallingsford Road
 E/W: Katella Avenue
 Weather: Clear

File Name : LAMWWWKAPM
 Site Code : 00715564
 Start Date : 10/21/2015
 Page No : 2



Location: Los Alamitos
 N/S: Walnut Street/Wallingsford Road
 E/W: Katella Avenue



Site Code: 715564
 Date: 10/21/2015
 Weather: Clear

PEDESTRIANS (SCHOOL ONLY)

	North Leg Walnut Street	East Leg Katella Avenue	South Leg Wallingsford Road	West Leg Katella Avenue	TOTAL	
7:00 AM	3	5	3	0	11	
7:15 AM	0	4	2	0	6	
7:30 AM	1	3	1	0	5	
7:45 AM	2	7	4	0	13	AM Peak Hour 7:45-8:45
8:00 AM	0	20 48	5	0	25	
8:15 AM	4	16	3	0	23	
8:30 AM	4	5	3	0	12	
8:45 AM	3	0	0	0	3	
TOTAL VOLUMES:	17	60	21	0	98	

	North Leg Walnut Street	East Leg Katella Avenue	South Leg Wallingsford Road	West Leg Katella Avenue	TOTAL	
2:00 PM	2	1	0	0	3	
2:15 PM	1	3	0	0	4	
2:30 PM	0	0	0	0	0	
2:45 PM	1	7	4	0	12	School Afternoon Peak Hour 2:45-3:45
3:00 PM	14	36 65	9	0	59	
3:15 PM	6	17	2	0	25	
3:30 PM	4	5	6	0	15	
3:45 PM	2	7	0	0	9	
TOTAL VOLUMES:	30	76	21	0	127	

	North Leg Walnut Street	East Leg Katella Avenue	South Leg Wallingsford Road	West Leg Katella Avenue	TOTAL	
4:00 PM	0	0	1	0	1	
4:15 PM	2	2	1	0	5	
4:30 PM	1	2	0	0	3	
4:45 PM	1	1	0	0	2	PM Peak Hour 4:45-5:45
5:00 PM	1	1	0	0	2	
5:15 PM	1	1 6	0	0	2	
5:30 PM	2	3	0	0	5	
5:45 PM	0	1	0	0	1	
TOTAL VOLUMES:	8	11	2	0	21	

Location: Los Alamitos
 N/S: Walnut Street/Wallingsford Road
 E/W: Katella Avenue



Site Code: 2/22/3859
 Date: 10/21/2015
 Weather: Clear

BICYCLES

	North Leg Walnut Street	East Leg Katella Avenue	South Leg Wallingsford Road	West Leg Katella Avenue	TOTAL	
7:00 AM	0	5	1	0	6	
7:15 AM	0	5	1	0	6	
7:30 AM	1	6	1	0	8	AM Peak Hour 7:30-8:30
7:45 AM	2	9	4	0	15	
8:00 AM	1	14	2	0	17	
8:15 AM	1	12	5	0	18	
8:30 AM	0	0	0	0	0	
8:45 AM	0	0	0	0	0	
TOTAL VOLUMES:	5	51	14	0	70	

	North Leg Walnut Street	East Leg Katella Avenue	South Leg Wallingsford Road	West Leg Katella Avenue	TOTAL	
2:00 PM	0	1	0	0	1	
2:15 PM	0	1	0	0	1	
2:30 PM	0	3	0	0	3	
2:45 PM	0	1	1	0	2	
3:00 PM	0	18	3	0	21	School Afternoon Peak Hour 3:00-4:00
3:15 PM	1	9	3	0	13	
3:30 PM	0	4	1	0	5	
3:45 PM	0	3	1	1	5	
TOTAL VOLUMES:	1	40	9	1	51	

	North Leg Walnut Street	East Leg Katella Avenue	South Leg Wallingsford Road	West Leg Katella Avenue	TOTAL	
4:00 PM	0	5	1	0	6	
4:15 PM	0	5	1	0	6	
4:30 PM	1	6	1	0	8	PM Peak Hour 4:30-5:30
4:45 PM	2	9	4	0	15	
5:00 PM	1	14	2	0	17	
5:15 PM	1	12	5	0	18	
5:30 PM	0	0	0	0	0	
5:45 PM	0	0	0	0	0	
TOTAL VOLUMES:	5	51	14	0	70	



Memorandum

To:	Ruth Smith Willdan Engineering	From:	Bernard Li, Iteris Alicia Yang, Iteris Ramin Massoumi, Iteris
Date:	October 20, 2015	Job Number:	17-J16-1753
Re:	City of Los Alamitos – Katella Avenue at Wallingsford Road / Walnut Street Signal Operation		

Based on our field visit on Wednesday, October 14, 2015 morning at the intersection of Katella Avenue and Wallingsford Road / Walnut Street, below is our response to Mr. Ralph Vartabedian's request/inquiry, especially for the northbound approach out of the Rossmoor community.

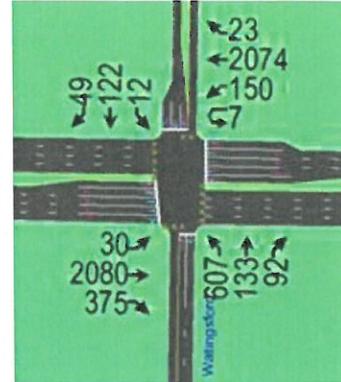
Key Points:

1. Northbound left-turn movements are six times higher than right-turn movements, and more than four times higher than the combined through and right-turn movements. Therefore, reconfiguring the lanes to create a shared left/through lane and dedicated right-turn lane would increase delays for all northbound left- and through vehicles, creating increased frustrations and the likelihood of unsafe driving.
2. The easterly crossing is the shortest crossing distance, and therefore requires the least amount of time for pedestrian indications. If the crossing was to be relocated to the west side, the required crossing time would increase, thereby increasing the duration for the southbound signal phase and increasing delays for all other movements. Although intuitively it may make sense to relocate the crosswalk to reduce delays for northbound right-turning vehicles, the relocation would likely increase delays for all northbound movements.
3. The peak crossing activity at this intersection is during school arrival times, approximately 15 minutes per day on weekday school days. There may be an opportunity to modify the signal timing during this relatively short peak period, which would ensure that the intersection operations are not unduly impacted during the remaining 23+ hours of the day.
4. Consider implementing a Leading Pedestrian Interval to ensure the pedestrians are in the crosswalk before any vehicle, which may also clear the crosswalk earlier to allow vehicles (northbound right-turners) to turn sooner.

Lane Configuration Modification

It was observed that northbound right-turners are waiting longer to be served when pedestrians are present, whether during the green or red. However, it was also observed that the volume of northbound left-turns are significantly higher throughout the morning peak to justify the need for the dual left-turn lanes.

Based on volumes collected in 2011 as part of the Katella Traffic Light Synchronization Project (to the right), the northbound left-turn volume for the morning peak is over six times those making a right. Additional counts can be collected to verify whether the counts remain relatively similar; however, it was observed in the field that majority of the vehicles were making a left-turn.



Relocation of Crosswalk

The northbound demand at Wallingsford Road out of Rossmoor experiences the heaviest peak hour traffic in the morning, which almost doubles that of the PM and midday peak demands, due to morning commuters heading towards I-605 and parents dropping off their children to the various schools in the area. During all peaks, the northbound left-turn also experiences the most demand in comparison to the through and right-turn. In addition to the vehicle traffic, pedestrians and bicyclists (mostly school children in the morning and afternoons) cross Katella Avenue using the east crosswalk at Wallingsford Road.

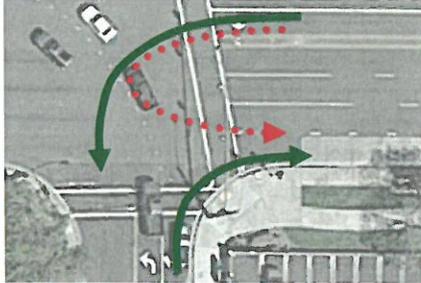


As noted by Mr. Vartabedian and as observed in the field, the northbound right-turn vehicles currently yield to pedestrians crossing Katella Avenue, which run concurrently with the northbound green signal indication (shown to the left). The northbound approach does experience heavier traffic all day versus the southbound approach, which includes right-turners.

The amount of time needed to cross the existing easterly crosswalk is 35 seconds, including the yellow and all red intervals. Currently, the northbound approach is heavy enough where it needs all 35 seconds, if not more, to clear the vehicle demand. If the crosswalk is relocated, the green time for the southbound approach will need to be increased to accommodate the pedestrian clearance (approximately 35 seconds) when it currently operates at about 20 seconds. The additional 15 seconds needed to service the southbound will need to be taken from other movements to maintain the existing cycle length, which is deemed not feasible due to heavy eastbound/westbound traffic along Katella Avenue. Furthermore, even if the cycle length was increased by this additional time, it will increase the total delay of the intersection as all movements will now wait longer to be served, but not get more time once they are served.

Based on the analysis above, it is not recommended to relocate the existing crosswalk.

Westbound Left-Turn with Northbound Right-Turn Overlap



Without a lane configuration modification for the south leg, there cannot be an overlap where the westbound left-turn and the northbound right-turn can run concurrently. Prior to discussing whether there is a possibility of adding a right-turn lane in addition to the dual left, an analysis will need to be made to determine if westbound u-turns should be restricted. If the overlap is implemented (as shown to the left), the westbound u-turns must be prohibited as there will be a conflict.

Signal Timing Modifications

There are signal timing alternatives that can be implemented to provide for more northbound green time without making any physical improvement:

- **Modify the sequence:** It was observed that in the morning peak, the northbound approach leads while the southbound approach lags. The way the signal operates, if there is any unused time by the northbound approach, there is a possibility that the southbound may use up that time. Because the volume for the northbound approach is higher, this sequence was changed to lead the southbound and lag the northbound; therefore, allowing the northbound to use up any unused time by the southbound approach, which was observed to occur more frequently.
- **Modify splits:** It appears that in June 2015, the sequence was change from leading southbound to lagging southbound due to complaints of not getting enough green time, so additional studies may be required to ensure proper time is given to both approaches by modifying the distribution of the current split times.
- **Different operation during school peak:** The typical split times for the entire morning coordination plan may not be sufficient to accommodate the peak of the school peak, which typically lasts 10-15 minutes. Rather than modifying the entire morning plan for this scenario, a different school plan can be implemented to operate only during the hours that are affected by the school traffic.
- **Leading Pedestrian Interval –** Start ped crossing sequence approximately 5 seconds before start of NB green, and terminate the phase approximately 5-10 seconds before end of green, allowing NB right-turning vehicles time to make a right-turn without pedestrians present.

Please let us know if you have any questions or if you would like for us to proceed with any of the recommendations above, especially in the signal timing modifications section.