CITY OF BELLAIRE TEXAS

PLANNING AND ZONING COMMISSION

JUNE 13, 2017

Council Chamber	Regular Session	6:00 PM

7008 S. RICE AVENUE
BELLAIRE, TX 77401

Chairman

Mr. Winfred Frazier

Commissioner	Commissioner	Vice Chairman
Jonathan Saikin	Bill Thorogood	Dirk Stiggins
Commissioner	**Commissioner**	**Commissioner**
Mike Axelrad	Marc Steinberg	S. Lynne Skinner

Mission Statement:
The City of Bellaire is dedicated to outstanding quality service and facilities to ensure an open, progressive, and secure community.

I. CALL TO ORDER AND ANNOUNCEMENT OF QUORUM

II. APPROVAL OF MINUTES FROM PAST MEETINGS

1. Planning and Zoning Commission - Regular Session - May 16, 2017 6:00 PM

III. REMINDER TO CITIZENS DESIRING TO ADDRESS THE COMMISSION

IV. GENERAL PUBLIC COMMENTS

Persons at the meeting who have indicated their desire to be herd on matters of general interest to the Commission by submitting the form provided shall have three minutes to present their comments. The Commission is not permitted to fully discuss, debate, or consider items that are not on the agenda. Questions presented to the Commission may be referred to staff.

V. PUBLIC HEARINGS

Docket #SU-2017-02, 03-Public Hearing on an application filed by Steven Gee, Project Manager, Houston Independent School District, for a Specific Use Permit, as required by Chapter 24, Planning and Zoning, Section 24-531 C. (2) a), for the re-construction and operation of Bellaire High School, at 5100 Maple Street, within the R-1 Residential Zoning District; and for a second Specific Use Permit, as required by Section 24-532 B. (2) a), for the re-purposing of Gordon Elementary School/Mandarin Chinese Language Immersion Magnet School as Bellaire High School's baseball practice facility, at 6300 Avenue B, within the R-3 Residential Zoning District.

1. **Presentation of the Public Hearing Process**
2. **Presentation by the Applicant**
3. **Staff Findings**
4. **Public Comments**
    i. **Persons at the meeting who have indicated their desire to address the Commission by submitting the form provided shall have three (3) minutes each to present comments concerning the Application. This time limit may be extended to five (5) minutes at the discretion of the Chair with the consent of the Commission.**
5. **Response of Applicant**
6. **Questions from the Commission**
7. **Invitation for Written Comments, if applicable**
8. **Closure of the Public Hearing**

VI. CURRENT BUSINESS (ITEMS FOR DISCUSSION, CONSIDERATION, AND/OR POSSIBLE ACTION)

1. **Consideration and possible action on a request to staff to present a plan forward on Visioning Bellaire: Urban Design and Beautification Conceptual Master Plan.**

VII. COMMITTEE REPORTS

VIII. CORRESPONDENCE

IX. REQUESTS FOR NEW BUSINESS, ANNOUNCEMENTS AND COMMENTS

1. **Staff liaison report on the status of projects previously addressed by the commission as well as projects for future meetings.**

2. **The Chairman shall recognize any Commissioner who wishes to bring New Business to the attention of the Commission. Consideration of New Business shall be for the limited purpose of determining whether the matter is appropriate for inclusion of a future Agenda of the Commission or for the referral to staff for investigation**

X. ADJOURNMENT

CITY OF BELLAIRE TEXAS

PLANNING AND ZONING COMMISSION

MAY 16, 2017

Council Chamber | **Regular Session** | **6:00 PM**

7008 S. RICE AVENUE
BELLAIRE, TX 77401

I. CALL TO ORDER AND ANNOUNCEMENT OF QUORUM

Chairman Frazier called the meeting to order at 6:04 PM, and announced that a quorum was present consisting of the following members:

Attendee Name	Title	Status	Arrived
Jonathan Saikin	Commissioner	Present	
Mike Axelrad	Commissioner	Present	
Winfred Frazier	Chairman	Present	
Bill Thorogood	Commissioner	Present	
Marc Steinberg	Commissioner	Absent	
Dirk Stiggins	Vice Chairman	Present	
S. Lynne Skinner	Commissioner	Present	
John McDonald	Director	Present	
Zachary Petrov	Assistant City Attorney	Present	
Ashley Parcus	Secretary	Present	
Trisha S. Pollard	Council Member	Present	

II. APPROVAL OF MINUTES FROM PAST MEETINGS

1. Planning and Zoning Commission - Workshop & Regular Session - Apr 11, 2017 6:00 PM

   Commissioner Stiggins asked that the comment he made giving staff kudos on the CIP be added to the minutes.

RESULT:	**APPROVED AS AMENDED [5 TO 0]**
MOVER:	Dirk Stiggins, Vice Chairman
SECONDER:	Mike Axelrad, Commissioner
AYES:	Saikin, Axelrad, Frazier, Stiggins, Skinner
ABSTAIN:	Thorogood
ABSENT:	Steinberg

III. REMINDER TO CITIZENS DESIRING TO ADDRESS THE COMMISSION

Chairman Frazier reminded anyone who wished to make public comment to fill out a sign in sheet.

IV. GENERAL PUBLIC COMMENTS

Persons at the meeting who have indicated their desire to be heard on matters of general interest to the Commission by submitting the form provided shall have three minutes to present their comments. The Commission is not permitted to fully discuss, debate, or consider items that

are not on the agenda. Questions presented to the Commission may be referred to staff.

There were no public comments.

V. CURRENT BUSINESS (ITEMS FOR DISCUSSION, CONSIDERATION, AND/OR POSSIBLE ACTION)

1. Docket # SUP-2017-01-Consideration of an application filed by Moody Soliman, on behalf of Prestige Automotive, for a Specific Use Permit as required by Chapter 24, Planning & Zoning, Section 24-536 Corridor Mixed-Use District, B. (2) d), to allow for the operation of an automobile service station at 5012 Bissonnet St, located in the CMU Zoning District.

   Mr. McDonald stated that this item is for the consideration of a specific use permit to reuse the automotive service station at the corner of South Rice and Bissonnet that was previously the Volvos Only location. He added that the public hearing for the request was held before the Commission at their April meeting, and that no public comment had been received regarding the application. Mr. McDonald explained that the applicant is not proposing any changes to the current site plan. He added that during the public hearing a question was brought up about design criteria applicable to the corridor mixed-use district, and as the requirements were reviewed, staff found that most would be burdensome to an existing structure. He mentioned that improved maintenance of the structure and the required landscaping would greatly benefit the site. Mr. McDonald stated that he recommends approval of the specific use permit with the following conditions, most of which were from the original SUP granted to Volvos Only:

1. That all vehicles remaining overnight shall be parked within an enclosed service bay or within a fenced area.

a. Any automobiles dropped off by customers for repairs at any time outside normal business hours (8:00 A.M. to 5:00 P.M., Monday through Friday) are excepted from this provision. However, the permit holder shall, as soon as practicable, take all steps necessary to cause such vehicles to be properly secured and screened.

2. The eight (8) foot screening fence currently in place on the property shall be maintained in such a manner as to provide for a one hundred (100) percent visual barrier, and if at any time the fence shall fail to provide the total visual barrier as herein required, the permit holder shall immediately cause the same to be replaced or repaired.

a. That the warped fence boards on the west side of the property be replaced.

3. The exterior of the structure shall be maintained in good repair, structurally sound, and sanitary so as not to pose a threat to the public health, safety, or welfare; and all damages to the stucco on the building be replaced and painted to match the building; that all parking lot striping be repainted and maintained; and that all parking lot signage be replaced.

4. No storage and/or display of merchandise or other property shall be permitted except within the existing structure.

5. The permit holder shall file with the Department of Development Services a landscaping plan which shall detail the type of landscaping materials and plants to be planted with the permeable areas within the property. The materials and plants detailed within this landscape plan shall be maintained in a healthy, growing state,

and if for any reason the condition of the landscaping and planting materials should deteriorate, the permit holder shall immediately replace the same to maintain full compliance with this requirement.

6. All mechanical repairs to vehicles serviced on this site requiring more than thirty (30) minutes from beginning to conclusion shall be performed inside the building located upon the permitted property.

7. No automotive body repairs or vehicle painting shall be permitted.

8. The permit holder shall at all times comply with the terms and provisions of the Code of Ordinances of the City of Bellaire, including, without limitations, requirements relating to signs, exterior storage of cars, parts, or accessories, and requirements prohibiting sales of cars, boats, or any other vehicles. Failure to comply with these regulations or any condition placed upon this permit shall constitute grounds for termination of the permit issued hereunder.

Mr. Soliman reiterated that they are not changing the site plan in any way. He then asked if condition # 1 would limit his business hours to 8:00 am-5:00 pm Monday through Friday.

Mr. McDonald explained that 8:00-5:00 were the business hours that were previously placed on Volvos Only. He added that if Mr. Soliman would like different hours to express those to the Commission and they will decide whether to amend that condition.

Mr. Soliman stated that he will need the business hours to be extended, most likely to 7:00 am-6:00 pm.

Chairman Frazier mentioned that during the public hearing Mr. Soliman stated that he understood and was comfortable with all of the previous conditions that had been placed on the property. Chairman Frazier added that he didn't want it to look as though Mr. Soliman was not appropriately made aware of the conditions that would be placed on the property.

Commissioner Saikin mentioned that the language within the condition would allow the applicant to extend his business hours beyond 8:00 am-5:00 pm. He added that it is simply requiring that the applicant take the necessary steps to ensure that all vehicles are secured and screened.

Mr. McDonald agreed. He explained that it is not limiting the business to the hours of 8:00 am -5:00 pm, it is simply stating that if a car is dropped off outside of the business hours the applicant will, as soon as practical, take all necessary steps to ensure that the vehicle is properly secured.

Commissioner Skinner mentioned that landscaping that has been required for previous projects never seems to get done. She asked if there would be a way to put a timeframe on the requirement in order to ensure that it is completed.

Mr. McDonald explained that staff would not even issue the Certificate of Occupancy until such time that the landscape plan has been filed with the City, approved, and installed. He added that it is a condition on the operation of the business, therefore, the applicant must meet those conditions before the business would be allowed to operate.

Commissioner Skinner asked where the trash receptacle will be located.

Mr. Soliman explained that it is located in the back, inside the fence. He added that it is on wheels and will be pushed out in the morning for trash pick-up and then wheeled back. Mr. Soliman stated that it is not visible from the street.

Vice Chairman Stiggins mentioned that in Mr. Soliman's application there was mention that there will be no body work or body painting taking place, and stated that he would like to see that added as a condition to the SUP.

Mr. McDonald agreed that the addition of that condition would be appropriate.

Vice Chairman Stiggins asked about the disposal of certain substances, such as, used oil, antifreeze, etc.

Mr. McDonald explained that the state has certain regulations when it comes to the disposal of those substances.

Commissioner Saikin asked Mr. Soliman if he has evaluated the volume of the new business compared to that of Volvos Only, due to the fact that more types of cars will be serviced. He questioned whether Mr. Soliman will have the necessary space for an increased amount of cars.

Mr. Soliman mentioned that the turnaround time for Volvos is significantly longer than with other makes of cars. He added that he does not anticipate much overnight storage needed, but if that does become the situation, he would look into making arrangements with nearby garages to house those cars as necessary.

Commissioner Saikin asked Mr. McDonald if the City would have to approve the parking agreements with other businesses.

Mr. McDonald explained that the City would not need to approve this type of agreement.

Mr. McDonald and the Commission felt that it would be a good idea for Mr. Soliman to go ahead and start making arrangements with garages in the surrounding area.

Commissioner Thorogood asked about days of the week that the business is allowed to operate.

Mr. McDonald asked Mr. Soliman if he wishes to be open any days other than Monday-Friday.

Mr. Soliman stated that he would like to operate on Saturdays as well.

Mr. McDonald again explained that condition #1 does not limit his operation to Monday-Friday, it just states that all cars need to be properly secured and screened as soon as possible.

Commissioner Axelrad asked if irrigation would be required as part of the landscaping.

Mr. McDonald stated that if there is no irrigation installed currently, then it would not be required. He added that they are fairly small areas of green space, which should not be hard to maintain.

Mr. Soliman assured the Commission that he takes pride in his landscaping and will not let it deteriorate.

Chairman Frazier mentioned that new signs installed on the property must follow the City's sign ordinances. He urged Mr. Soliman to become familiar with those regulations.

RESULT:	**APPROVED WITH CONDITIONS [UNANIMOUS]**
MOVER:	Mike Axelrad, Commissioner
SECONDER:	Bill Thorogood, Commissioner
AYES:	Saikin, Axelrad, Frazier, Thorogood, Stiggins, Skinner
ABSENT:	Steinberg

2. Approval of the Commission's Report & Recommendation to City Council regarding the request for a Specific Use Permit at 5012 Bissonnet Street.

   Staff assured the Commission that the conditions placed on the SUP, along with the concerns that were brought up as part of the consideration would be added to the report and recommendation.

RESULT:	**ADOPTED AS AMENDED [UNANIMOUS]**
MOVER:	Bill Thorogood, Commissioner
SECONDER:	Dirk Stiggins, Vice Chairman
AYES:	Saikin, Axelrad, Frazier, Thorogood, Stiggins, Skinner
ABSENT:	Steinberg

3. Application filed by James Lassiter, for a total plat vacation of "Amending Plat of Lot 3 and 4, Block 3 of Post Oak Plaza." The property is addressed as 4707 Braeburn Drive.

   Mr. McDonald explained to the Commission that back in 2009, Mr. Lassiter was granted an amending plat to combine lots 3 and 4, block 3 of Post Oak Plaza into one property. He added that Mr. Lassiter now wishes to vacate that amending plat in order to sell each lot off individually. Mr. McDonald mentioned that due to the fact that the Planning and Zoning Commission was the body that approved the amending plat, they also have to approve the vacation of that amending plat. He then pointed out that the back part of the property currently has a tennis court located on it. He explained that no accessory uses are allowed on a lot without a primary use, and stated that as a condition to the approval of the plat vacation, the tennis court would have to be demolished prior to the subdivision of the lots in order to avoid creating a non-conforming lot. Mr. McDonald stated that there is also a lien on the property, which will need to be released prior to recordation of the plat vacation. He informed the Commission that he recommends approval of the request with the two conditions mentioned.

   Chairman Frazier mentioned that the County has this property listed as Lot 3A, Block 1 instead of lots 3 and 4, block 3. He asked if that was correct.

   Mr. McDonald explained that Lot 3A represented the fact that the two lots had been combined, and block 1 was also of the amending plat. He added that once the plat has been vacated it will be returning to its original description of lots 3 and 4, Block 3.

RESULT:	**APPROVED WITH CONDITIONS [UNANIMOUS]**
MOVER:	Bill Thorogood, Commissioner
SECONDER:	Mike Axelrad, Commissioner
AYES:	Saikin, Axelrad, Frazier, Thorogood, Stiggins, Skinner
ABSENT:	Steinberg

VI. COMMITTEE REPORTS

There were no committee reports.

VII. CORRESPONDENCE

There was no correspondence.

VIII. REQUESTS FOR NEW BUSINESS, ANNOUNCEMENTS AND COMMENTS

1. Staff liaison report on the status of projects previously addressed by the Commission, as well as projects for future meetings.

a. Properties at Newcastle and Bissonnet, and Newcastle and Howard

Mr. McDonald explained that the properties located at the corner of Newcastle and Bissonnet and Bissonnet and Howard are still tied up in some title issues. He added that he checked the Supreme Court website and found that no ruling has been made yet, and that there have been more filings as recently as March of this year. Mr. McDonald stated that the last time he spoke with one of the current property owners they were hoping to have a decision in 2017. He mentioned that the single-family residential development should be moving forward as soon as this is resolved, however, the front property is currently undecided due to the fact that Texas Children's decided to move their offices into the Chase Building.

b. Bellaire Town Center

Mr. McDonald informed the Commission that the site plan for Bellaire Town Center has been approved, however, there is an alley that runs through the property. He added that they will have to seek an abandonment for that through City Council, and they are currently working on that application.

c. Bellaire High School

Mr. McDonald stated that Bellaire High School has submitted an SUP application to construct the new school, which will be coming before the Commission for a public hearing at the June meeting. He mentioned that they will also be seeking two variances through the Board of Adjustment, one for height and another for lot coverage. Mr. McDonald informed the Commission that they are also planning to demolish the old Gordon Elementary/Mandarin site to use as the school's baseball practice facility, which will help to free up some space at the high school.

Mr. McDonald also mentioned that the construction of H-E-B is under way.

Chairman Frazier asked if a workshop should be scheduled to review the Bellaire High School application.

Mr. McDonald stated that if, after the public hearing, the Commission still has questions, staff could schedule a workshop prior to the consideration of the application to discuss it in more detail. He added that he has been following this project for the past 3 years and the recent presentation before the project advisory

team was the first time that there have been no objections to the plan. Mr. McDonald stated that there were teachers, neighbors, and parents present, and everyone felt that HISD had done their best to address the previous concerns.

Mr. McDonald also mentioned that there is a resident who would like to combine two lots into one, however, there is an issue regarding the interpretation of a corner lot. He added that because he cannot reject a plat, it will be coming before the Commission for approval.

Commissioner Skinner asked if there had been any updates on the Chevron property.

Mr. McDonald mentioned that City Council had approved the changes to the Comprehensive Plan, but with numerous revisions. He added that it is more tightly focused on single-family residential, with other uses allowed through the SUP or PD process. Mr. McDonald stated that at this time, staff is not planning to bring forward any proposed changes to the zoning until after the property has been purchased and staff has been given an idea of what the owner is looking to do with it.

Mr. McDonald informed the Commission that City Council recently held a workshop where he presented on the Comprehensive Plan update, including a discussion on Chevron and the Beautification Plan. He added that there was also a conversation about the Bellaire Boulevard Estate Overlay District (BBEOD) and how the underlying zoning is inconsistent. Mr. McDonald mentioned that in the next few months, and most likely in a workshop session, staff will introduce a proposal to re-zone that area in an effort to strengthen the purpose for which the BBEOD was created.

2. **The Chairman shall recognize any Commissioner who wishes to bring New Business to the attention of the Commission. Consideration of New Business shall be for the limited purpose of determining whether the matter is appropriate for inclusion of a future Agenda of the Commission or for the referral to staff for investigation.**

No new business was brought to the attention of the Commission.

Commissioner Thorogood mentioned that in July the Commission will go through a transition, and that it is very important to get the new Commissioners up to speed on zoning and the applications that they will be considering at the July meeting.

Mr. McDonald agreed. He added that staff plans to meet with the new Commissioners to get them caught up on what they will need to know in order to be prepared to vote on those applications.

IX. ADJOURNMENT

Motion: a motion was made by Commissioner Thorogood and seconded by Commissioner Axelrad to adjourn the meeting.

Vote: the motion was carried on a vote of 6-0.

The meeting was adjourned at 6:48 PM.

Planning and Zoning Commission
City Council Chambers, First Floor of City Hall
Bellaire, TX 77401

Meeting: 06/13/17 06:00 PM
Department: Development Services
Category: Public Hearing
Department Head: John McDonald
DOC ID: 2300

SCHEDULED
PUBLIC HEARING (ID # 2300)

Item Title:

Docket #SU-2017-02, 03-Public Hearing on an application filed by Steven Gee, Project Manager, Houston Independent School District, for a Specific Use Permit, as required by Chapter 24, Planning and Zoning, Section 24-531 C. (2) a), for the re-construction and operation of Bellaire High School, at 5100 Maple Street, within the R-1 Residential Zoning District; and for a second Specific Use Permit, as required by Section 24-532 B. (2) a), for the re-purposing of Gordon Elementary School/Mandarin Chinese Language Immersion Magnet School as Bellaire High School's baseball practice facility, at 6300 Avenue B, within the R-3 Residential Zoning District.

Background/Summary:

The Houston Independent School District (HISD) has applied for two Specific Use Permits to reconstruct Bellaire High School (BHS) at its current site and to reuse the former Gordon Elementary/Mandarin Chinese Immersion School (Gordon) site. The current high school will be replaced with a new school, more centrally located, and to include adequate on-site parking through both structured and surface parking. At Gordon, the current buildings will be replaced with a baseball field that will host varsity practices and junior varsity and freshman practices and games.

The R-1 Residential District (BHS) and the R-3 Residential District (Gordon) both allow the use of "schools" with a Specific Use Permit. Though this is technically two applications for two distinct sites, since they encompass a single project, they are to be presented and considered together.

The proposed BHS will require two variances: increase in maximum height and increase in maximum impervious coverage. The applicant seeks to increase the current maximum height of 45 feet to 60 feet for a portion of the main educational building and to increase the maximum lot coverage from 50% up to 80%. HISD will be before the Board of Adjustment on June 15 (next Thursday) to present their variance requests. It is anticipated that the Board will rule that same night.

BELLAIRE HIGH SCHOOL

Site Details
Property Owner: Houston Independent School District
Applicant: Steven Gee, Project Manager

Location: 5100 Maple Street

Legal Description: Bellaire High School, being a 18.154 acres of the Bellaire High School Subdivision out of the William J. Brown Survey, Abstract No. 132, City of Bellaire, Harris County, Texas

Current Zoning: R-1 Residential, with a Specific Use Permit

Requested Zoning: R-1, with a Specific Use Permit

Notice Information
Owners of property within 200 feet: 191 (an additional 38 letters were mailed to tenants)
Notification letters mailed: May 31, 2017
Legal Notice published: May 30, 2017

Notification signs posted as required.

Adjacent Base Zoning and Land Uses
Direction: North
Current Base Zoning: R-1
Current Land Use: Residential

Direction: East
Current Base Zoning: R-3
Current Land Use: Residential/Church

Direction: South
Current Base Zoning: R-1
Current Land Use: Residential

Direction: West
Current Base Zoning: R-1
Current Land Use: Residential

Transportation
Thoroughfare: S. Rice Ave
Existing Character: Arterial; two lanes in each direction with turning lane; Sidewalk on both sides.

Thoroughfare: Maple Street, Ferris Avenue
Existing Character: Local Streets; one lane in each direction; Sidewalks on both sides of Maple and Ferris.

Public Transit: METRO Bus Stop, Route 49.

Traffic Impact: A Traffic Impact Analysis (TIA) was provided by the applicant and reviewed by the City's traffic engineer. City's traffic engineer prepared comments to be addressed that were provided to the applicant. We are awaiting their response.

Parking: Off-street vehicle parking requirements for a school are based on a parking demand study. The applicant has submitted a study showing that a total of 735 onsite parking spaces will be needed: 465 for students and 270 for faculty/staff.

Utilities
Water: No proposed changes or issues at this time.

Wastewater: No proposed changes or issues at this time.

Drainage: A drainage plan will be filed with the building permit application. The current drainage and detention system will be replaced to address the additional lot coverage and placement of new buildings.

Public Safety
Police: Generally, security for a HISD site is handled by HISD Police with support, as needed, from the Bellaire Police Department.

Fire: No concerns at this time. The Fire Marshal participates in the review of the building plans and will comment as appropriate at that time.

GORDON ELEMENTARY/MANDARIN

Site Details
Property Owner: Houston Independent School District
Applicant: Steven Gee, Project Manager

Location: 6300 Avenue B

Legal Description: Gordon Elementary School, a 5.9404 acre tract of land out of Lot 2, Block 4, Westmoreland Farms Amended First Subdivision in the J. Blessing Survey, Harris County, Texas

Current Zoning: R-3 Residential District

Requested Zoning: R-3, with a Specific Use Permit

Notice Information
Owners of property within 200 feet: 98 (an additional 24 letters were mailed to tenants)
Notification letters mailed: June 1, 2017
Legal Notice published: May 30, 2017
Notification signs posted as required.

Adjacent Base Zoning and Land Uses
Direction: North
Current Base Zoning: Loop 610
Current Land Use: Private School/SUP

Direction: East
Current Base Zoning: CMU/R-3
Current Land Use: Commercial/Residential

Direction: South
Current Base Zoning: R-1
Current Land Use: City Park

Direction: West
Current Base Zoning: R-3
Current Land Use: Residential

Transportation
Thoroughfare: Bissonnet Ave
Existing Character: Arterial; two lanes in each direction with turning lane; Sidewalk on south side.

Thoroughfare: Avenue B
Existing Character: Collector; one lane in each direction; Sidewalks on west side.

Public Transit: METRO Bus Stop, Route 65.

Traffic Impact: A Traffic Impact Analysis (TIA) has not yet been finalized for Gordon yet. The TIA will be submitted, reviewed and approved prior to the consideration of this item at the July meeting.

Parking: Off-street vehicle parking requirements for a school are based on a parking demand study. A

parking demand study has not yet been completed. This will be finalized prior to the consideration of this item at the July meeting.

Utilities
Water: No proposed changes or issues at this time.

Wastewater: No proposed changes or issues at this time.

Drainage: A drainage plan will be filed with the building permit application. The current drainage and detention system will be replaced to the change to the property through redevelopment.

Public Safety
Police: Generally, security for a HISD site is handled by HISD Police with support, as needed, from the Bellaire Police Department.

Fire: No concerns at this time. The Fire Marshal participates in the review of the building plans and will comment as appropriate at that time.

Recommendation
No action is required on June 13. This item is scheduled for consideration on July 11.

ATTACHMENTS:

- Bellaire HS SUP Application (PDF)
- Bellaire HS SUP TIA (PDF)
- Written Comments-BHS (PDF)

HISD | Construction Services
SERVICE EXCELLENCE

May 16, 2017

Mr. John McDonald
Director of Community Development
City of Bellaire
7008 South Rice Avenue
Bellaire, TX 77401

RE: Planning and Zoning Commission
Specific Use Permit Amendment
HISD Bellaire High School Rebuild

Dear Mr. McDonald:

Enclosed is the Houston Independent School District's application for a specific use amendment to construct the Bellaire High School Rebuild project at the 5100 Maple Street site and as part of the same project, repurpose the Gordon Elementary School site at 6300 Avenue B. In conjunction with our architecture firm, PBK Architects, Houston Independent School District (HISD) is requesting that this specific use amendment be considered at the June 13, 2017 Planning and Zoning Commission meeting.

The proposed project will be completed in phases on two sites. The first phase entails the repurposing of the recently vacated Gordon Elementary School site. In this phase the Bellaire High School baseball practice facility will be relocated to the Gordon site at 6300 Avenue B in Bellaire. The first phase will also include a proposed new central plant for building support utilities.

The second phase will be the construction of the new proposed facility at the current Bellaire High School campus on 5100 Maple Street in Bellaire. Once the main campus facility is built, students and staff will move into the new facility, thereby vacating the current facility which will be demolished. Finishing out the project, a new parking garage and surface parking lot will be constructed on the site of the demolished facility and the sports playing field with artificial turf will be constructed.

Measures will be taken to assure that there will be minimized impact to the immediate neighbors around both construction sites (Maple Street and Avenue B) including designated construction parking and access, as well as adhering to working hour and noise guidelines as prescribed in the Code of Ordinances.

We have included as an attachment, the Traffic Impact Analysis (TIA) and Parking Demand Analysis recently performed by Traffic Engineers, Inc. Currently the school accommodates 468 on-site parking spaces including the pull-in spaces on South Rice, Maple and Ferris. The traffic engineer performed a parking analysis survey which cites that a total 735 on-site parking spaces should be provided on the new proposed campus. The street areas that currently host the pull-in spaces on South Rice, Maple and Ferris will be reclaimed and used as part of the proposed landscape buffer. In an attempt to save much needed site space, the new design calls for a parking structure to be constructed to house the majority of these on-site spaces.

The same traffic engineering report also recommends off-street queuing for buses and drop-off vehicles. Currently bus and drop-off vehicle queuing is on South Rice Boulevard and Maple Street. These proposed increased on-site parking and circulation improvements will help to minimize traffic congestion in the area around the school.

HISD | Construction Services
SERVICE EXCELLENCE

The TIA also recommends that the intersection of South Rice Avenue and Maple Street and the intersection of South Rice Avenue and Holly Street be signalized. Additionally, restriping for left turn lanes on South Rice Avenue is recommended.

The proposed Bellaire High School Rebuild plans will incorporate landscape buffers and street trees. New trees and screening will be installed per the City of Bellaire's Code of Ordinances and we will minimize existing tree removal on both the Maple Street and the Avenue B sites, replacing the removed trees as feasibility permits. Surface parking areas will be provided with the prescribed trees per the Ordinance and we will provide a landscaped headlight berm at the surface parking lot proposed on Maple Street in order to shield the headlights of parking vehicles from the across-street neighbors.

Simultaneously with this Specific Use Permit application, we are seeking two variance applications on the 5100 Maple Street site. One variance is requesting to allow increasing the maximum height of structure. The second variance is requesting to allow increasing the maximum lot coverage. The artificial turf playing field proposed for the Bellaire High School site will be an open area but is technically considered impervious cover, thus adding to the site lot coverage.

As an HISD standard for the 2012 Bond projects, the new proposed Bellaire High School project will be a LEED Certified building. The storm water pollution prevention measures for both sites are proposed to be prepared according to City of Bellaire and Harris County standards to minimize pollution in storm water runoff from construction by managing soil erosion, waterway sedimentation and airborne dust generation. Additional measures such as construction waste management and recycling will be taken to minimize the environmental impacts of the construction activities.

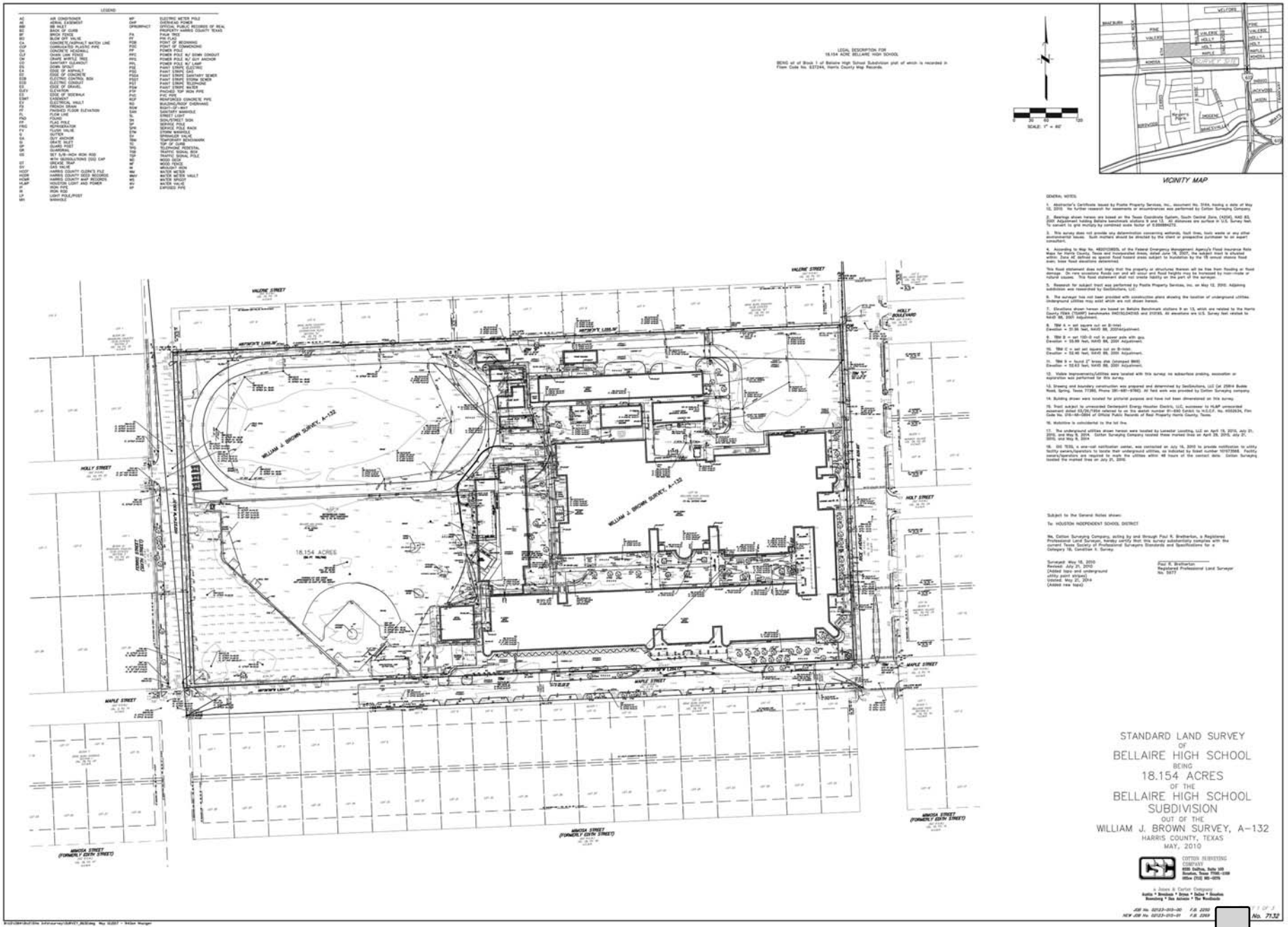
PBK Architects is delivering this letter, our check in the amount of $1,055.00 for the application fee, and the following attachments to you:

- Site survey (both sites)
- Current plat (both sites)
- Ownership documents (both sites)
- Aerial photo of vicinity map (both sites)
- Aerial photo of location map (both sites)
- Existing and proposed site plans (both sites)
- Existing and proposed queuing (both sites)
- Proposed drainage improvements (both sites)
- Photographs of existing screening (both sites)
- Proposed landscape buffers (both sites)
- Proposed site access plan (both sites)
- Parking demand analysis, Traffic Engineers Inc. (5100 Maple site only)
- Traffic impact analysis, Traffic Engineers, Inc. (5100 Maple site only)

Please let us know of any additional information you need in order to process our application. We very much appreciate your assistance.

Sincerely,

Steven Gee Jr.
HISD Project Manager
sgee@houstonisd.org
713-556-9261


LEGEND
LEGAL DESCRIPTION FOR
18.154 ACRE BELLAIRE HIGH SCHOOL
BEING all of Block 1 of Bellaire High School Subdivision plat of which is recorded in Film Code No. 637244, Harris County Map Records.
VICINITY MAP
GENERAL NOTES:
Subject to the General Notes shown:
To: HOUSTON INDEPENDENT SCHOOL DISTRICT
VALERIE STREET
HOLLY BOULEVARD
HOLLY STREET
MAPLE STREET
MIMOSA STREET
(FORMERLY EDEN STREET)
WILLIAM J. BROWN SURVEY, A-132
18.154 ACRES
STANDARD LAND SURVEY
OF
BELLAIRE HIGH SCHOOL
BEING
18.154 ACRES
OF THE
BELLAIRE HIGH SCHOOL
SUBDIVISION
OUT OF THE
WILLIAM J. BROWN SURVEY, A-132
HARRIS COUNTY, TEXAS
MAY, 2010
COTTON SURVEYING COMPANY
No. 7132

5.a

Packet Pg. 18

Attachment: Bellaire HS SUP Application (2300 : BHS SUP)

5.a

THE STATE OF TEXAS §
COUNTY OF HARRIS §

740937
KNOW ALL MEN BY THESE PRESENTS:

That we, LEROY J. WHEELER and wife, HELEN WILLIAMS WHEELER, residents of Harris County, Texas, for and in consideration of the sum of Ten ($10.00) DOLLARS and other good and valuable consideration cash in hand paid by the Houston Independent School District, a body corporate created by virtue of a special Act of the 38th Legislature of the State of Texas, approved by the Governor of the State of Texas on March 20, 1923, of the County of Harris, State of Texas, the receipt of which is hereby acknowledged and confessed, have granted, bargained, sold, assigned, transferred and conveyed, and by these presents do grant, bargain, sell, assign, transfer and convey unto the said Houston Independent School District, of the County of Harris, State of Texas, the following described tract or parcel of land, to-wit:

Lot Seventeen (17) in Block Eighteen (18), Westmoreland Farms Amended First Subdivision in the Wm. J. Brown Survey, Abstract 132, Harris County, Texas, as per plat of said subdivision recorded in Volume 3, pages 60 and 61 of the Map Records of Harris County, Texas, particularly described as follows:

Beginning at an iron rod set 0.4 feet East of a 3/4" iron pipe for the South West corner of Lot 17, Block 18, being 25 feet East of the center line of Sixth Street and 30 feet North of the center line of Maple Street,

Thence N. 89° 59' East along the North line of Maple Street a distance of 634.4 feet to a point in old down fence running North and being 0.3 feet North of a 1¼" Iron Pipe and being the South East corner of Lot 17 and the South West corner of Lot 18;

Thence N. 0° 02' E. along common line between Lot 17 and Lot 18 and being also along old down fence a distance of 630.22 feet to a 1½" iron pipe in fence corner, the North East corner of Lot 17 and the North West corner of Lot 18;

Thence S. 89° 59' West along fence 635.24 feet to a 1" iron pipe in a fence corner, being 25 feet East of the center line of Sixth Street and being also the North West corner of Lot 17;

Thence South 630.22 feet along the East line of Sixth Street to the place of beginning and containing 9.184 Acres.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging, unto the said Houston Independent School District, its successors and assigns forever; and we do hereby bind ourselves, our heirs, executors and administrators, to warrant and forever defend all and singular the said premises unto the said Houston Independent School District, its successors and assigns, against every person whomsoever lawfully claiming, or to claim the same, or any part thereof.

WITNESS OUR HANDS, this the 27 day of April, 1950.

LeRoy J. Wheeler

Helen Williams Wheeler

THE STATE OF TEXAS :

COUNTY OF HARRIS :

BEFORE ME, the undersigned authority, on this day personally appeared LEROY J. WHEELER, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN under my hand and seal of office this 27 day of April, 1950.

Murray Cameron
Notary Public in and for
Harris County, Texas

THE STATE OF TEXAS :

COUNTY OF HARRIS :

BEFORE ME, the undersigned authority, on this day personally appeared HELEN WILLIAMS WHEELER, wife of LEROY J. WHEELER, known to me to be the person whose name is subscribed to the foregoing instrument, and having been examined by me privily and apart from her husband and having the same fully explained to her, she, the said HELEN WILLIAMS WHEELER, acknowledged such instrument to be her act and deed and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.

GIVEN under my hand and seal of office this 27 day of April, 1950.

Murray Cameron
Notary Public in and for
Harris County, Texas

Filed for Record May 5 - 1950, at 3:25 o'clock P.M.

Recorded May 22 - 1950, at 9:12 o'clock A.M.

W. D. MILLER, Clerk County Court, Harris County, Texas.

BY Ruth Thompson Deputy

THE STATE OF TEXAS)
COUNTY OF HARRIS)

51059

KNOW ALL MEN BY THESE PRESENTS:

That we, T. D. McMILLAN, R. D. McMILLAN, MRS. MAY McMILLAN, a widow, all residents of Bellaire, Harris County, Texas, J. C. McMILLAN, a resident of Maplewood, Louisiana, and RUBY MENEFEE and husband, G. E. MENEFEE, residents of Busch, Arkansas, for and in consideration of the sum of Ten Dollars ($10.00), and other good and valuable consideration cash in hand paid by the Houston Independent School District, a body corporate created by virtue of a special Act of the 38th Legislature of the State of Texas, approved by the Governor of the State of Texas on March 20, 1923, of the County of Harris, State of Texas, the receipt of which is hereby acknowledged and confessed, HAVE GRANTED, BARGAINED, SOLD, ASSIGNED, TRANSFERRED AND CONVEYED, and by these presents do grant, bargain, sell, assign, transfer and convey unto the said HOUSTON INDEPENDENT SCHOOL DISTRICT of the County of Harris, State of Texas, the following described tract or parcel of land, to-wit:

Lot Eighteen (18) in Block Eighteen (18), Westmoreland Farms Amended First Subdivision in the Wm. J. Brown Survey, Abstract 132, Harris County, Texas, as per plat of said subdivision recorded in Volume 3, pages 60 and 61 of the Map Records of Harris County, Texas, particularly described as follows:

BEGINNING at an iron rod set for the South East corner of Lot 18, Block 18, being 45 feet W. of the center line of Rice Street and 30 feet North of the center line of Maple Street;

THENCE N. 0 deg. 03' E. along West line of Rice Street a distance of 628.82 feet to an iron rod in fence corner set for the N. E. corner of Lot 18 and being 45 feet West of the center line of Rice Street;

THENCE N. 89 deg. 55' W. along fence a distance of 620.15 feet to a 1-1/2 inch iron pipe in fence corner being N. W. corner Lot 18 and N. E. corner Lot 17;

THENCE S. 0 deg. 02' W. along common line between Lot 17 and 18 and being also along old down fence a distance of 630.22 feet to a point 0.3 feet North of a 1-1/4" iron pipe; said point being the S. W. corner of Lot 18 and the S. E. corner of Lot 17 and being 30 feet North

of the center line of Maple Street;
THENCE N. 89 deg. 59' E. along the North line of Maple Street a distance of 619.9 feet to the place of beginning, and containing 8.960 acres.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereunto in anywise belonging, unto the said Houston Independent School District, its successors and assigns, forever; and we do hereby bind ourselves, our heirs, executors and administrators, to warrant and forever defend all and singular the said premises unto the said Houston Independent School District, its successors and assigns, against every person whomsoever lawfully claiming, or to claim the same, or any part thereof.

WITNESS OUR HANDS this the 26 day of April, 1950.

T. D. McMillan

R. D. McMillan

Mrs. May McMillan

J. C. McMillan

Ruby Menefee

G. E. Menefee

690 690

THE STATE OF TEXAS)
)
COUNTY OF HARRIS)

Before me, the undersigned authority, on this day personally appeared T. D. McMILLAN, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 26 day of April, 1950.

May

T. D. McMillan

Notary Public in and for
Harris County, Texas

NOTARY PUBLIC * TEXAS * COUNTY OF HARRIS

THE STATE OF TEXAS)
)
COUNTY OF HARRIS)

Before me, the undersigned authority, on this day personally appeared R. D. McMILLAN, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office, this the 26 day of April, 1950.

Murray Cameron

R. D. McMillan

Notary Public in and for
Harris County, Texas

THE STATE OF TEXAS)
)
COUNTY OF HARRIS)

Before me, the undersigned authority, on this day personally appeared MRS. MAY McMILLAN, a widow, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that she executed the same for the purposes and consixeration therein expressed.

Given under my hand and seal of office, this the 26 day of April, 1950.

May

Mrs. May McMillan

Notary Public in and for
Harris County, Texas

NOTARY PUBLIC * TEXAS * COUNTY OF HARRIS

20110147374
04/13/2011 RP2 $32.00

6 Easmt B

EASEMENT

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

STATE OF TEXAS }
KNOW ALL PERSONS BY THESE PRESENTS:
COUNTY OF HARRIS }

THAT, Houston Independent School District, herein called Grantor, whether one or more, for and in consideration of the sum of ONE DOLLAR ($1.00) CASH to Grantor paid by CenterPoint Energy Houston Electric, LLC, herein called Grantee, whose principal address is P. O. Box 1700, Houston, Texas 77251-1700, has **GRANTED, SOLD AND CONVEYED** and by these presents, does **GRANT, SELL AND CONVEY** unto said Grantee, its successors and assigns, all or in part, an exclusive, unobstructed, perpetual easement (hereinafter referred to as the "Easement Area", whether one or more), for electric distribution and communication facilities (hereinafter referred to as "Facilities") consisting of a variable number of wires and cables and all necessary and desirable equipment and appurtenances, including, but not limited to, towers or poles made of wood, metal or other materials, props and guys, located within the following described lands owned by Grantor, to wit:

lll

D

That certain 18.154-acre tract of land, being all of Lot 17A in Block 1 of Bellaire High School Subdivision, a subdivision situated in the William J. Brown Survey, Abstract 132, Harris County, Texas, according to the map or plat thereof recorded in Film Code 637244 of the Map Records of said County and State.

The Easement Area herein granted is described as follows:

J:\JOB FILES\B2011\55320571\55320571-1.DOC 02/10/11 klr

JOB 55320571-1
MAP 5154
S/C Bellaire

MHM

An easement ten (10) feet wide, the location of the centerline of which is shown by the dot-dash symbol on Sketch No. 11-0057, hereto attached and made a part hereof, together with unobstructed aerial easements ten (10) feet wide, beginning at a plane sixteen (16) feet above the ground and extending upward, located on both sides of and adjoining said ten (10) foot wide easement.

Grantor or its successors or assigns shall observe and exercise all notification laws as per the Underground Facility Damage Prevention and Safety Act, also known as "ONE CALL" & "CALL BEFORE YOU DIG", when working in or near the Easement Area.

To the extent that such Laws and Codes apply to Grantor, its successors or assigns, Grantor or its successors or assigns shall observe all safety codes and laws which apply to working along, within and or near the Easement Area and Facilities during construction activities and safe clearance from such Facilities, including O.S.H.A., Chapter 752 of the Texas Health and Safety Code, the National Electric Code, and the National Electrical Safety Code. Grantor, its successors or assigns, is hereby obligated to place National Electrical Safety Code notices into Community Deed Restrictions when Easement Area falls within Residential Developments.

Notwithstanding the description of the Easement Area set forth in the exhibits, the parties intend that the Easement Area granted herein shall run to the edge of Grantor's property so that the exteriors of all ground or aerial easements herein granted are to intersect with the exteriors of all adjoining easements and/or property lines without any gaps in the property granted.

Grantee shall also have reasonable rights of ingress and egress to and from said Easement Area, together with reasonable working space, for the purposes of erecting, installing, operating, maintaining, replacing, inspecting, and removing said Facilities, together with the additional right to remove from said Easement Area and land immediately

JOB 55320571-1
MAP 5154
S/C Bellaire

adjoining thereto, all bushes, trees and parts thereof, or other structures or improvements which are within, protrude, bisect, encroach or overhang into said Easement Area and which, in the sole opinion of Grantee, endanger or may interfere with the efficient, safe and proper operation, and maintenance of said Facilities.

TO HAVE AND TO HOLD the above described Easement Area, together with all and singular the rights and appurtenances thereto in anywise belonging, unto Grantee, its successors or assigns, forever, and Grantor does hereby bind itself and its successors, heirs, assigns, and legal representatives, to fully warrant and forever defend all and singular the above described Easement Area and rights unto said Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through or under Grantor, but not otherwise. In the event of a deficiency in title or actions taken by others which results in the relocation of Grantee's Facilities, the Grantor herein, its successors and assigns, will be responsible for all costs associated with the relocation and/or removal of Grantee's Facilities.

EXECUTED this 31 day of MARCH, 20 11.

Houston Independent School District

BY: Ronny Clark
Signature

RONNY CLARK
Name typed or printed

PROJECT MANAGER
Title

J:\JOB FILES\B2011\55320571\55320571-1.DOC 02/10/11 klr

JOB 55320571-1
MAP 5154
S/C Bellaire

STATE OF TEXAS }

COUNTY OF Harris }

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Ronny Clark, _____ of Houston Independent School District, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (__)he executed the same for the purposes and consideration therein expressed, in the capacity therein stated, and as the act and deed of said school district.

Given under my hand and seal of office this 31st day of March, 20 11.

TROI LYZETTE PERRY
Notary Public, State of Texas
My Commission Expires
February 13, 2015

Troi Lyzette Perry
Notary's Signature

Troi Lyzette Perry
Name typed or printed

2/13/11
Commission Expires

AFTER RECORDING RETURN TO:
SURVEYING & RIGHT OF WAY
CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC
P. O. BOX 1700
HOUSTON, TX 77251-1700

FILED FOR RECORD
8:00 AM

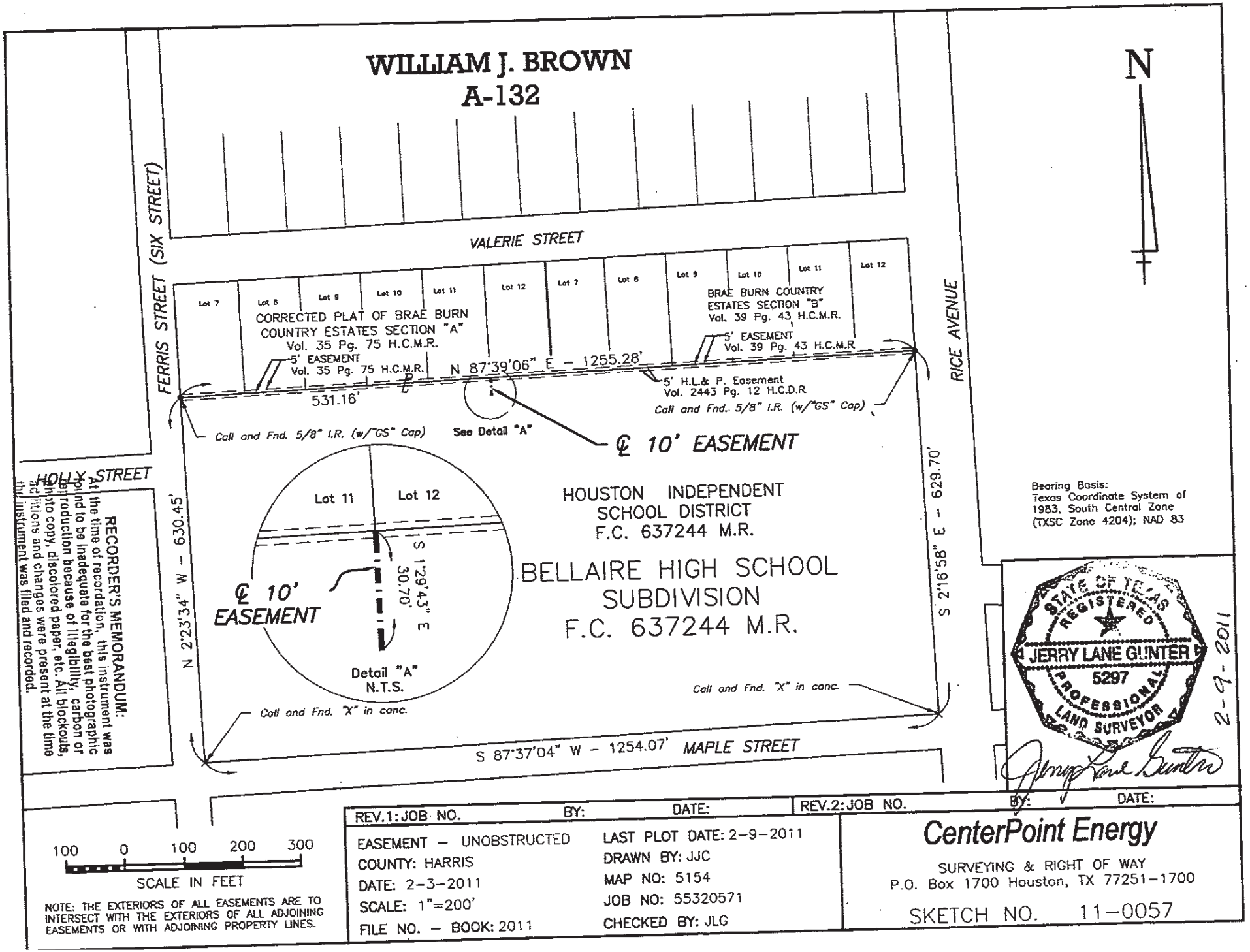
APR 13 2011

Stan Stanart
County Clerk, Harris County, Texas

J:\JOB FILES\B2011\55320571\55320571-1.DOC 02/10/11 klr

JOB 55320571-1
MAP 5154
S/C Bellaire

RP 076-06-1021



ANY PROVISION HEREIN WHICH RESTRICTS THE SALE RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.

THE STATE OF TEXAS
COUNTY OF HARRIS

I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas

APR 13 2011

Stan Stanart
COUNTY CLERK
HARRIS COUNTY, TEXAS

016-48-0894

5484(6-85)

Job ER4425
Map 5154B
PS 607U
Zone West-Bellaire
APA/s 12-06-91

N552634

E A S E M E N T

STATE OF TEXAS §
KNOW ALL PERSONS BY THESE PRESENTS:
COUNTY OF HARRIS §

02/26/92 00511030 N552634 $ 11.00

THAT, Houston Independent School District, herein called Grantor, whether one or more, for and in consideration of the sum of ONE DOLLAR ($1.00) CASH to Grantor paid by Houston Lighting & Power Company, a Texas corporation, herein called Grantee, whose principal address is P. O. Box 1700, Houston, Texas 77251, has **GRANTED, SOLD AND CONVEYED** and by these presents, does **GRANT, SELL AND CONVEY** unto said Grantee, its successors and assigns, an easement for electric distribution facilities (consisting of all necessary and desirable equipment and appurtenances) at, below and from ground level upward, located on, under, over, and across the following described lands, to wit:

Lot 18, in Block 18, of Westmoreland Farms Amended First Subdivision, located within the William J. Brown 1/3 League, Abstract 132, in Harris County, Texas, according to the map or plat thereof, recorded in Volume 3, Page 60, of the Map Records of said County and State, and being the same property described in a deed to Houston Independent School District by T. D. McMillan, et al., dated April 26, 1950, and recorded in Volume 2101, Page 688, of the Deed Records of Harris County, Texas.

The easements herein granted are described as follows:

1. An easement ten (10) feet wide and 101.70 feet long, the location of the centerline of which is shown by a dot-dash symbol on Sketch No. 91-690, attached hereto and made a part hereof.

2. An easement twenty (20) feet wide and twenty-five (25) feet long for Grantee's padmounted transformer station, the location of which is shown by a crosshatched area (see Detail "A") on said attached sketch.

Grantee shall also have rights of ingress and egress to and from said easement, together with reasonable working space, for the purposes of erecting, installing, operating, maintaining, replacing, inspecting, and removing said electric distribution facilities, together with the additional right to remove

016-48-0895

5484(6-85)

Job ER4425
Map 5154B
PS 607U
Zone West-Bellaire
APA/s 12-06-91

from said easement and land adjoining thereto, all bushes, trees and parts thereof, or other structures which, in the opinion of Grantee, endanger or may interfere with the efficiency, safe and proper operation, and maintenance of said electric distribution facilities.

TO HAVE AND TO HOLD the above described easement, together with all and singular the rights and appurtenances thereto in anywise belonging, unto Grantee, its successors or assigns, forever, and Grantor does hereby bind itself and its successors, heirs, assigns, and legal representatives, to warrant and forever defend all and singular the above described easement and rights unto said Grantee, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof.

EXECUTED this 17th day of DECEMBER, 1991.

HOUSTON INDEPENDENT SCHOOL DISTRICT

BY: _____
Construction Manager

K. Patrick Renfro, AIA
(Name typed or printed)

5484(6-85)

016-48-0896
Job ER4425
Map 5154B
PS 607U
Zone West-Bellaire
APA/s 12-06-91

STATE OF TEXAS)(

COUNTY OF HARRIS)(

This instrument was acknowledged before me on DECEMBER 17, 1991, by K. Patrick Renfro, AIA, Construction Manager, Houston Independent School District, on behalf of said school district.

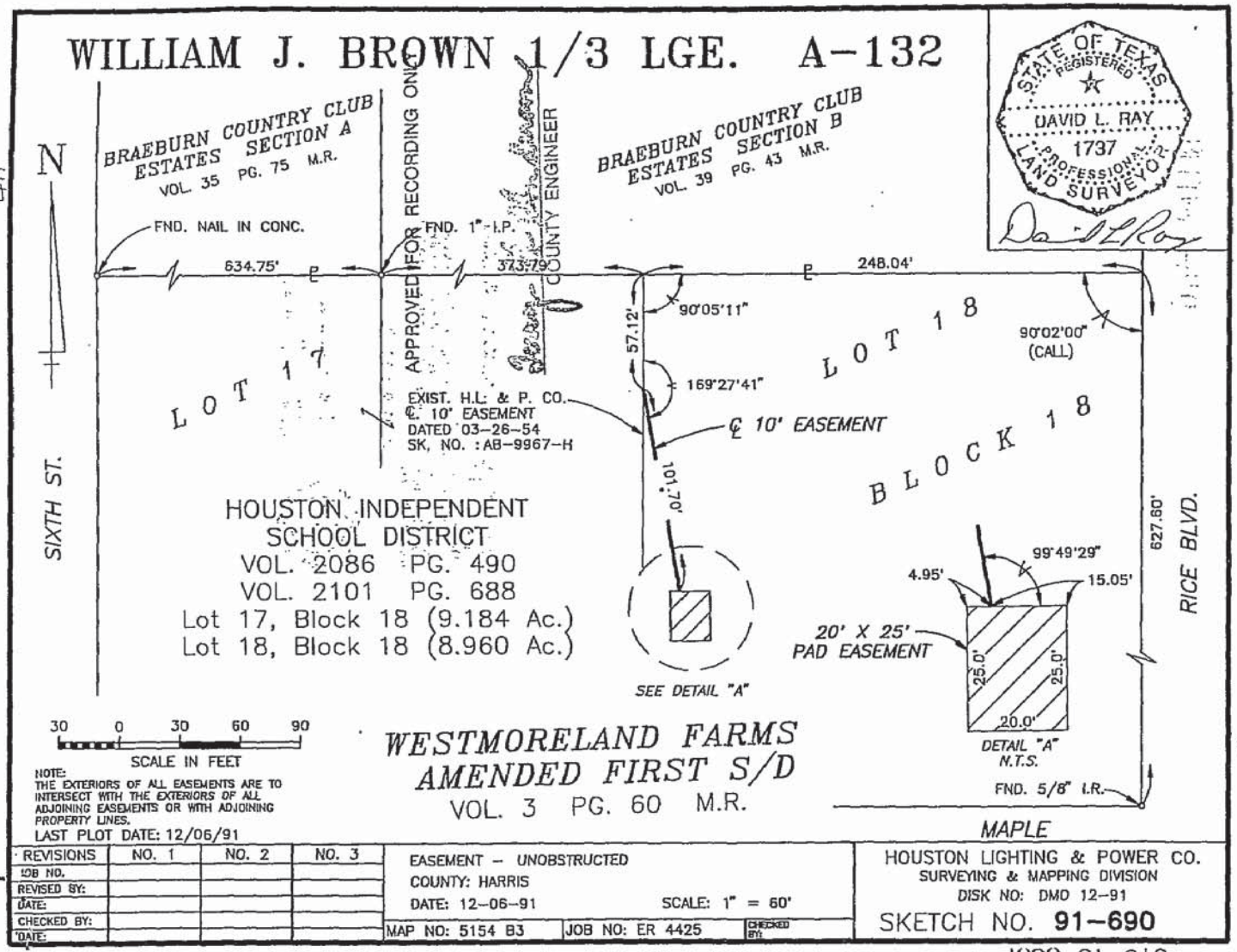
Notary's Signature

PATRICIA B. GONZALES
(Name typed or printed)

Commission Expires: 12/27/93

RETURN TO:
V. W. Clement
HOUSTON LIGHTING & POWER COMPANY
P. O. BOX 1700
HOUSTON, TEXAS, 77251

POSTED BY:
DOCKETS
LJ/ICDS
DRFTNG
L/RCDS


WILLIAM J. BROWN 1/3 LGE. A-132
BRAEBURN COUNTRY CLUB ESTATES SECTION A
VOL. 35 PG. 75 M.R.
BRAEBURN COUNTRY CLUB ESTATES SECTION B
VOL. 39 PG. 43 M.R.
APPROVED FOR RECORDING ONLY
COUNTY ENGINEER
STATE OF TEXAS
REGISTERED
DAVID L. RAY
1737
PROFESSIONAL
LAND SURVEYOR
N
SIXTH ST.
FND. NAIL IN CONC.
FND. 1" I.P.
634.75'
373.79'
248.04'
57.12'
90°05'11"
90°02'00"
(CALL)
169°27'41"
LOT 17
LOT 18
BLOCK 18
EXIST. H.L. & P. CO.
℄ 10' EASEMENT
DATED 03-26-54
SK, NO. : AB-9967-H
℄ 10' EASEMENT
101.70'
627.60'
RICE BLVD.
HOUSTON INDEPENDENT
SCHOOL DISTRICT
VOL. 2086 PG. 490
VOL. 2101 PG. 688
Lot 17, Block 18 (9.184 Ac.)
Lot 18, Block 18 (8.960 Ac.)
99°49'29"
4.95'
15.05'
20' X 25'
PAD EASEMENT
25.0'
25.0'
20.0'
DETAIL "A"
N.T.S.
SEE DETAIL "A"
30 0 30 60 90
SCALE IN FEET
NOTE:
THE EXTERIORS OF ALL EASEMENTS ARE TO INTERSECT WITH THE EXTERIORS OF ALL ADJOINING EASEMENTS OR WITH ADJOINING PROPERTY LINES.
LAST PLOT DATE: 12/06/91
WESTMORELAND FARMS
AMENDED FIRST S/D
VOL. 3 PG. 60 M.R.
FND. 5/8" I.R.
MAPLE
REVISIONS NO. 1 NO. 2 NO. 3
JOB NO.
REVISED BY:
DATE:
CHECKED BY:
DATE:
EASEMENT - UNOBSTRUCTED
COUNTY: HARRIS
DATE: 12-06-91
SCALE: 1" = 60'
MAP NO: 5154 B3
JOB NO: ER 4425
CHECKED BY:
HOUSTON LIGHTING & POWER CO.
SURVEYING & MAPPING DIVISION
DISK NO: DMO 12-91
SKETCH NO. 91-690

016-48-0897

016-48-0898

FILED FOR RECORD
8:30 A.M.

FEB 26 1992

Anita Rodheaver
County Clerk, Harris County, Texas

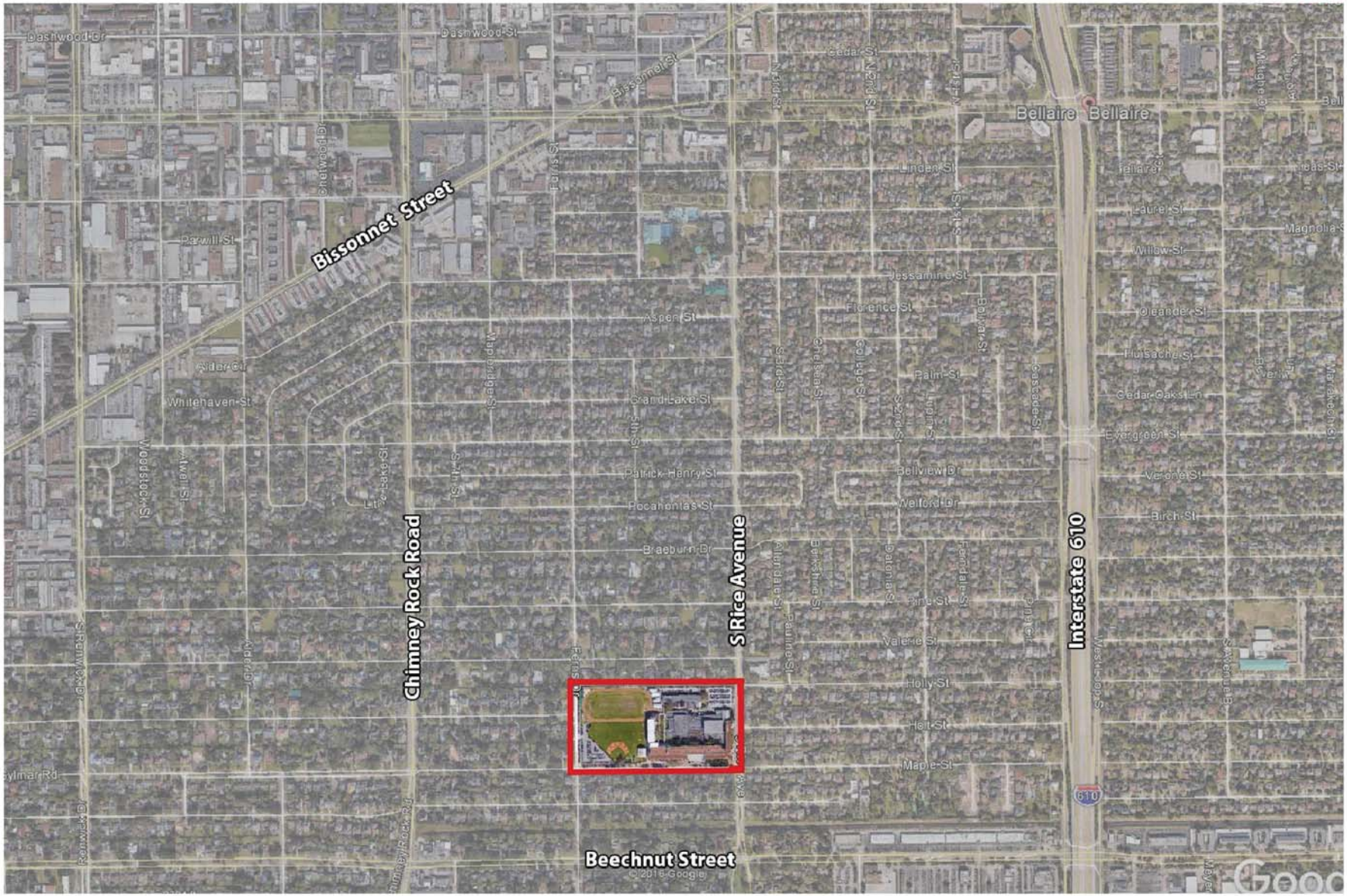
ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL, OR USE OF THE DESCRIBED REAL PROPERTY BECAUSE OF COLOR OR RACE IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.

THE STATE OF TEXAS }
COUNTY OF HARRIS }

I hereby certify that this instrument was FILED in File Number Sequence on the date and at the time stamped hereon by me; and was duly RECORDED, in the Official Public Records of Real Property of Harris County, Texas on

FEB 26 1992

COUNTY CLERK,
HARRIS COUNTY, TEXAS



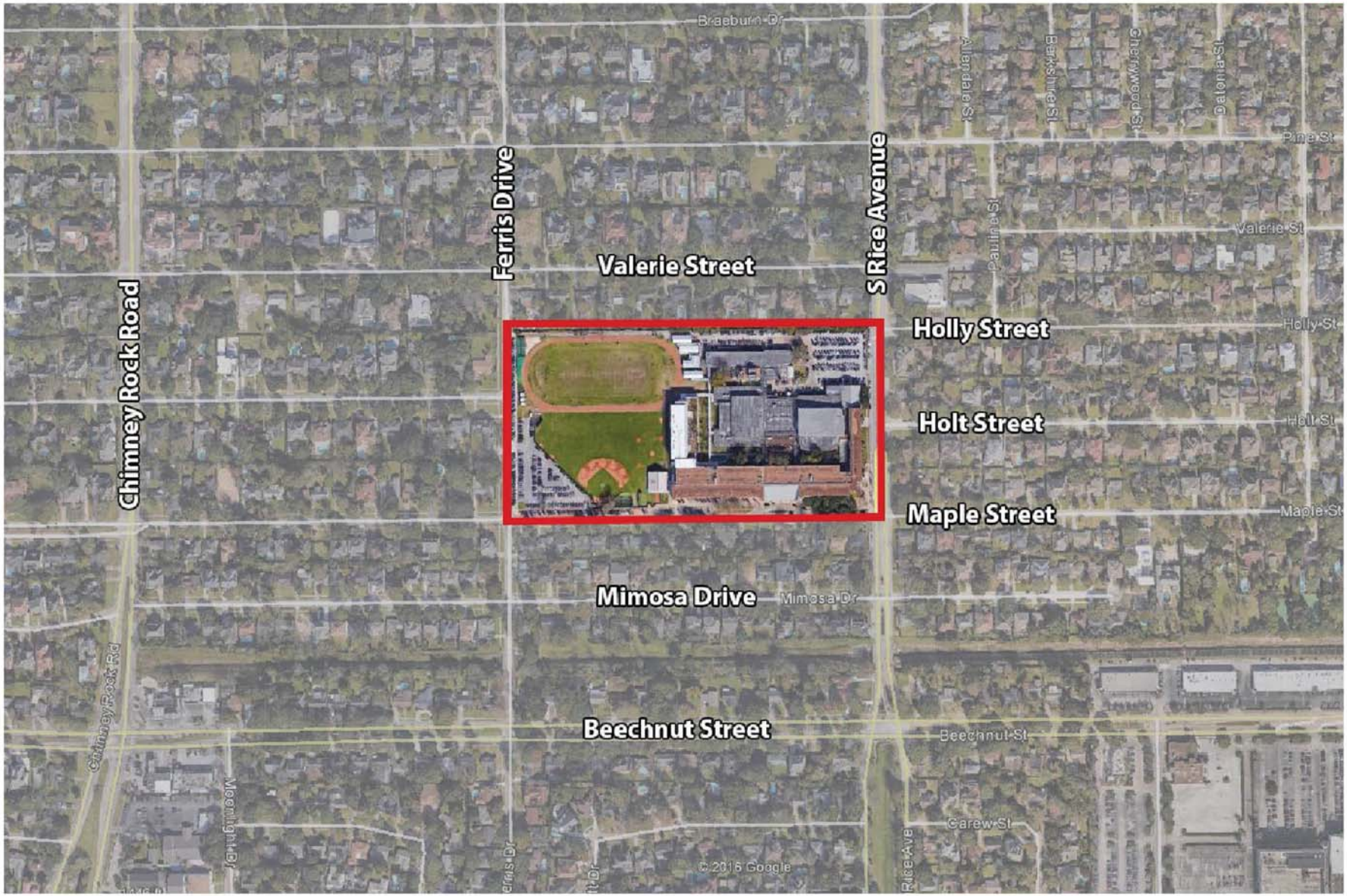
BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Vicinity Map

0 280 560 1,120 Ft

5.a



BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Location Map

0 120 240 480 F

5.a

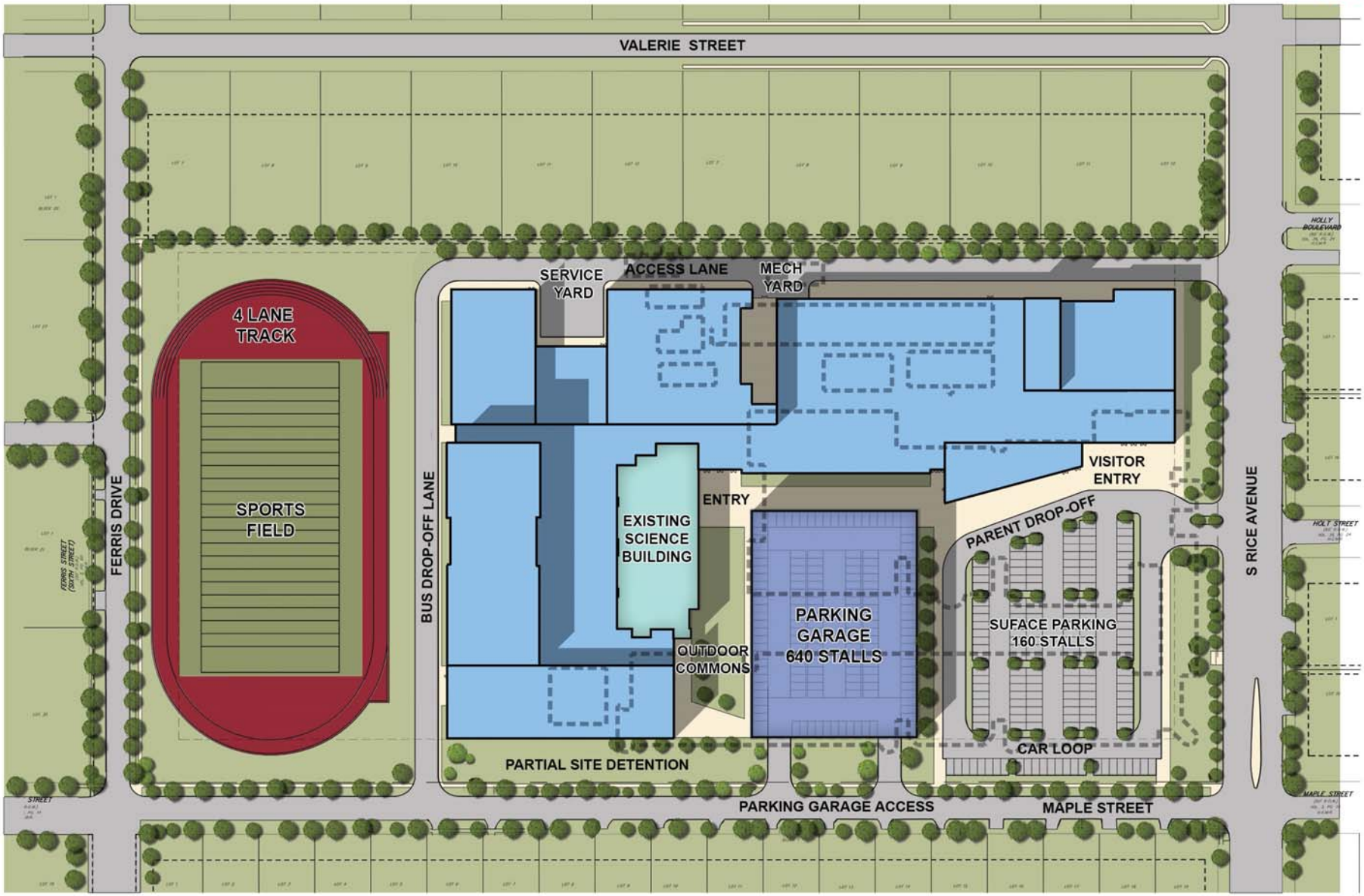
BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Site Plan

0 50 100 200

5.a



BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Buildings to be demolished

Proposed Site Plan

0 40 80 160 F

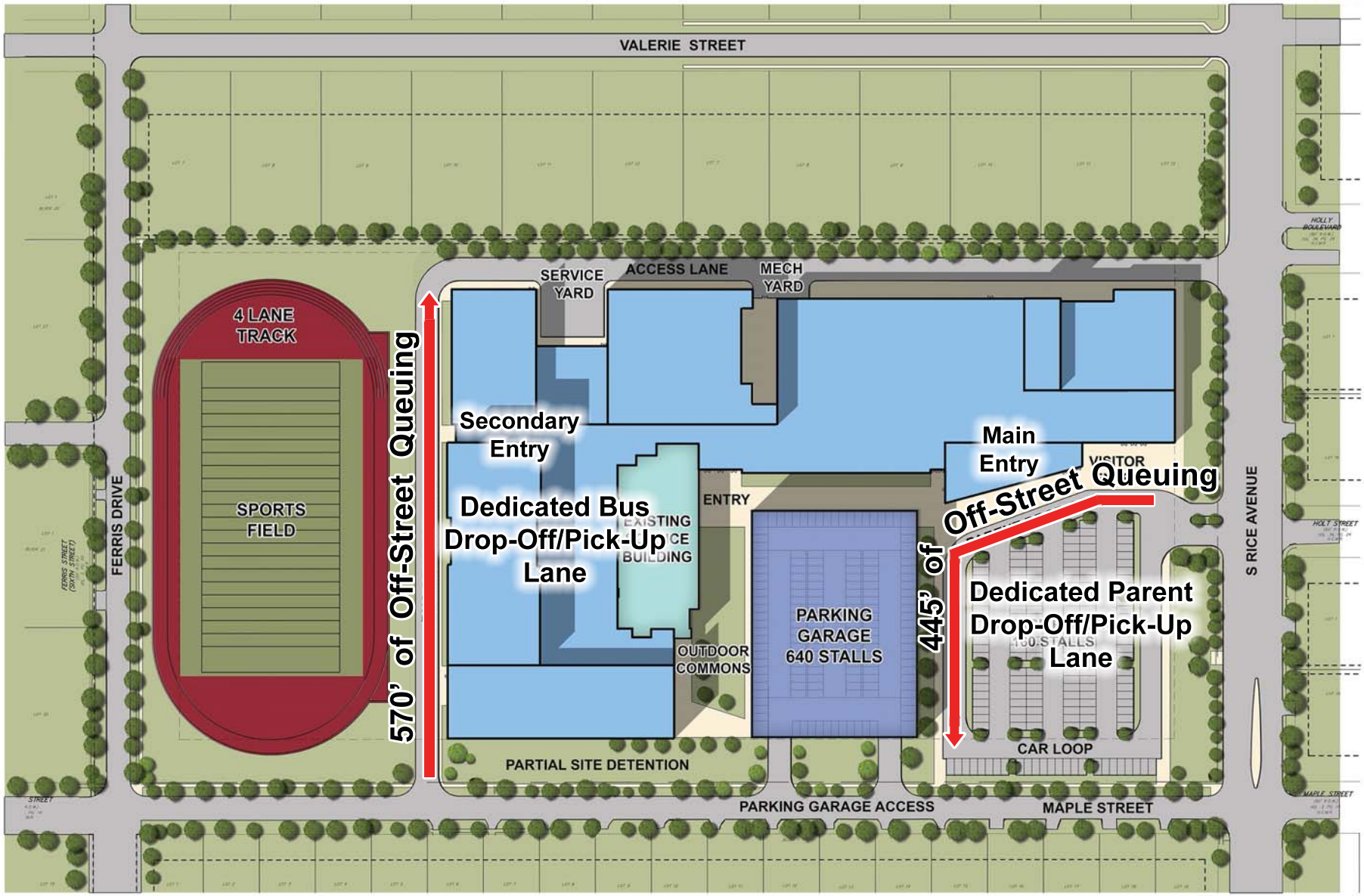
5.a

BELLAIRE HIGH SCHOOL - Bellaire, TX
HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Queue Plan

0 50 100 200 FT

5.a

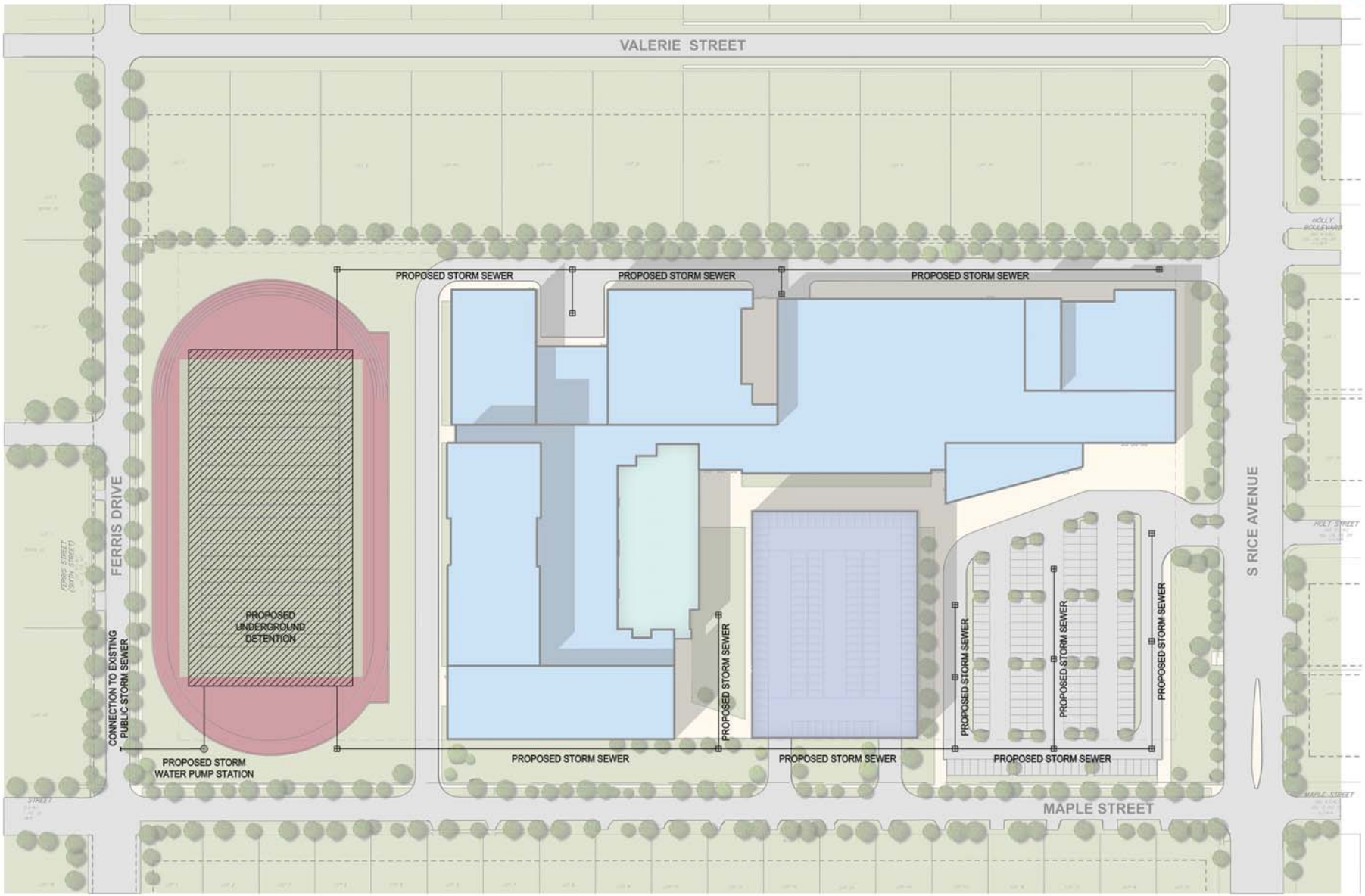


BELLAIRE HIGH SCHOOL - Bellaire, TX
HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Queue Plan

0 40 80 160 FT

5.a



BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Drainage Plan

0 40 80 160

5.a

Ferris Drive - Looking Northeast at North Property Boundary

S Rice Avenue - Looking Northwest at North Property Boundary

Ferris Dr & Maple St - Looking at Southwest Corner of Property Boundary

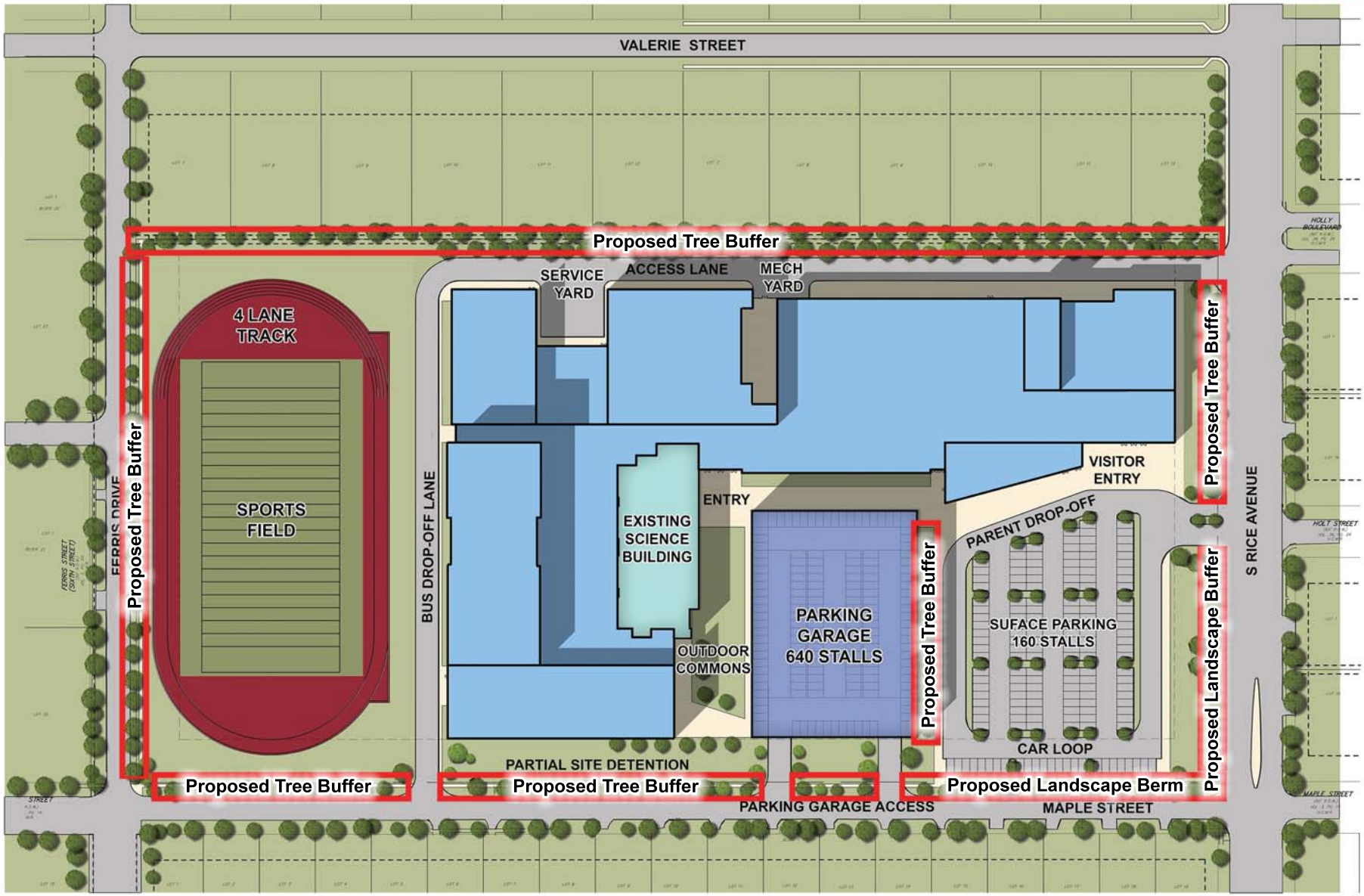
S Rice Avenue - Looking at Southeast Corner of Property Boundary

BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Landscape Buffer Photos

5.a



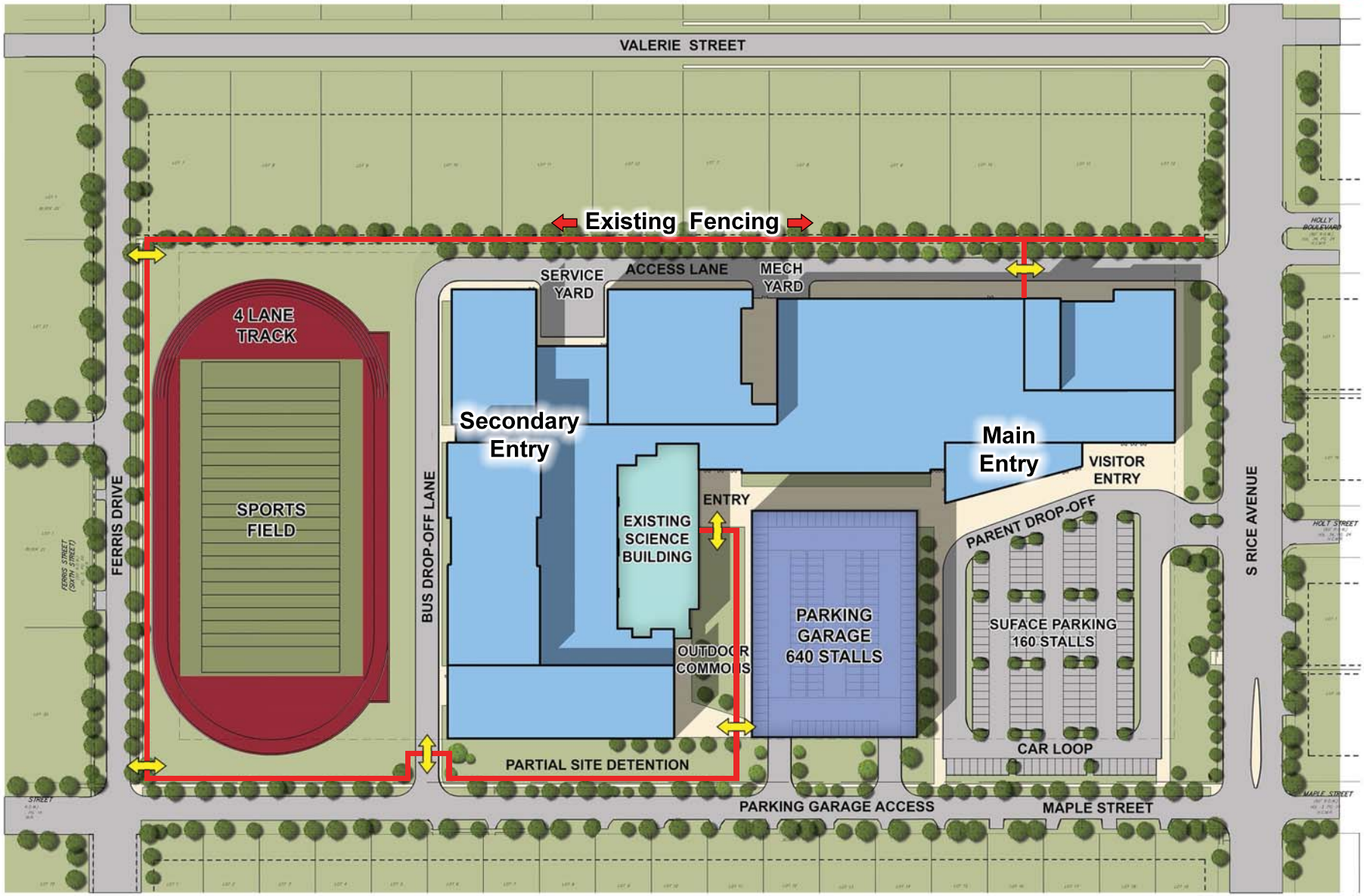
BELLAIRE HIGH SCHOOL - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Landscape Buffers

0 40 80 160 FT

5.a



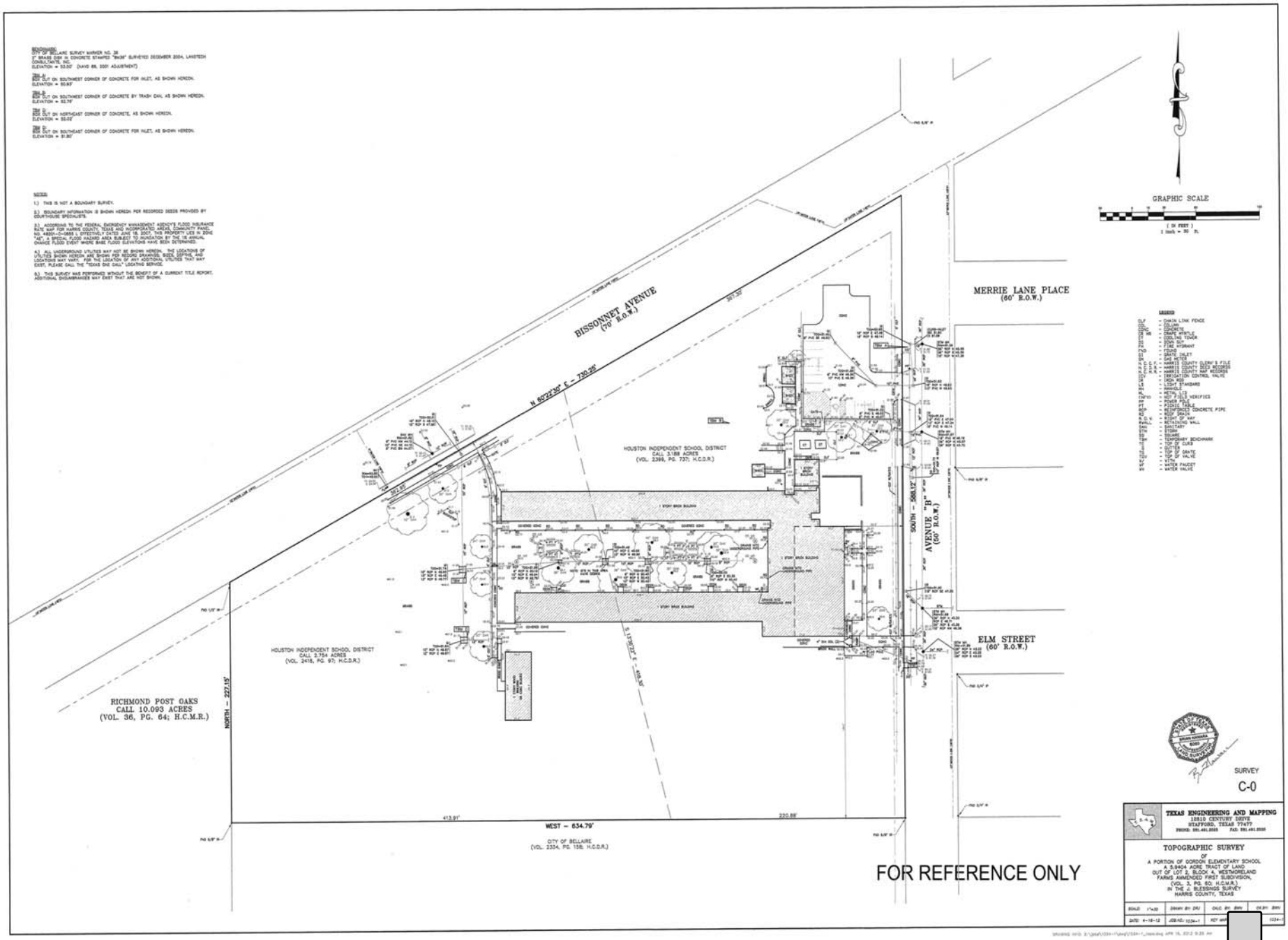
BELLAIRE HIGH SCHOOL - Bellaire, TX
HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Fencing
Access Gates

Proposed Site Access Plan

0 40 80 160 F

5.a


BISSONNET AVENUE
(70' R.O.W.)
N 89°22'30" E - 730.26'
MERRIE LANE PLACE
(60' R.O.W.)
GRAPHIC SCALE
HOUSTON INDEPENDENT SCHOOL DISTRICT
CALL 3.188 ACRES
(VOL. 2399, PG. 737; H.C.D.R.)
AVENUE "B"
(50' R.O.W.)
SOUTH - 568.12'
ELM STREET
(60' R.O.W.)
HOUSTON INDEPENDENT SCHOOL DISTRICT
CALL 2.754 ACRES
(VOL. 2416, PG. 97; H.C.D.R.)
RICHMOND POST OAKS
CALL 10.093 ACRES
(VOL. 36, PG. 64; H.C.M.R.)
NORTH - 227.15'
WEST - 634.79'
CITY OF BELLAIRE
(VOL. 2334, PG. 138; H.C.D.R.)
FOR REFERENCE ONLY
SURVEY
C-0
TEXAS ENGINEERING AND MAPPING
13810 CENTURY DRIVE
STAFFORD, TEXAS 77477
TOPOGRAPHIC SURVEY
OF
A PORTION OF GORDON ELEMENTARY SCHOOL
A 5.8404 ACRE TRACT OF LAND
OUT OF LOT 2, BLOCK 4, WESTMORELAND
FARMS AMENDED FIRST SUBDIVISION,
(VOL. 3, PG. 60, H.C.M.R.)
IN THE J. BLESSINGS SURVEY
HARRIS COUNTY, TEXAS

5.a

THE STATE OF TEXAS :
: KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF HARRIS :

That we, CHOYCE ALLISON and wife, IMOGENE G. ALLISON, residents of Harris County, Texas, for and in consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration cash in hand paid by the HOUSTON INDEPENDENT SCHOOL DISTRICT, a body corporate created by virtue of a special Act of the 38th Legislature of the State of Texas, approved by the Governor of the State of Texas on March 20, 1923, of the County of Harris, State of Texas, the receipt of which is hereby acknowledged and confessed, have GRANTED, BARGAINED, SOLD, ASSIGNED, TRANSFERRED and CONVEYED, and by these presents do GRANT, BARGAIN, SELL, ASSIGN, TRANSFER and CONVEY unto the said HOUSTON INDEPENDENT SCHOOL DISTRICT of the County of Harris, State of Texas, that certain parcel or tract of land containing 3.188 acres out of Lot 2, Block 4, Amended First Subdivision of Westmoreland Farms in the J. Blessing Survey, Harris County, Texas, and being more particularly described by metes and bounds as follows:

BEGINNING at an iron rod set at the intersection of the west line of Avenue B and the south line of Richmond Road, said point being the northeast corner of this tract of land;

THENCE South along the west line of Avenue B 588.30 feet to a 1-inch iron rod, the southeast corner of this tract of land;

THENCE West 221.0 feet of a 1-inch iron pipe in the center of a drainage ditch, the southwest corner of this tract of land;

THENCE North 13° 36' 22" West along the center line of said drainage ditch 418.30 feet to a 1-inch iron rod in the south line of Richmond Road;

THENCE North 60° 22' 30" East along the south line of Richmond Road 367.30 feet to the place of beginning and containing 3.188 acres of land.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging, unto the said Houston Independent School District, its successors and assigns forever; and we do hereby bind ourselves, our heirs, executors and administrators, to warrant and forever defend all and singular the said premises unto the said Houston Independent School District, its successors and assigns, against every person whomsoever lawfully claiming or to claim the same, or any part thereof.

WITNESS OUR HANDS this the 19th day of February, 1952.

Choyce Allison

Imogene G. Allison

THE STATE OF TEXAS :
:
COUNTY OF HARRIS :

BEFORE ME, the undersigned authority, on this day personally appeared CHOYCE ALLISON and wife, IMOGENE G. ALLISON, both known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they each executed the same for the purposes and consideration therein expressed, and the said IMOGENE G. ALLISON, wife of the said Choyce Allison, having been examined by me privily and apart from her husband, and having the same fully explained to her, she, the said Imogene G. Allison, acknowledged such instrument to be her act and deed, and she declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 19 day of February, 1952.

Notary Public in and for
Harris County, Texas

Filed for Record Feb 21-1952, at 10:50 o'clock A .M
Recorded Mar 5-1952 at 11:44 o'clock A .M
W. D. MILLER, Clerk County Court, Harris County, Texas.
By Vera Brennan Deputy.

980742

THE STATE OF TEXAS :
: KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF HARRIS :

That the RICHWOOD CORPORATION, a corporation organized and existing under and by virtue of the laws of the State of Texas and having its principal office in Houston, Harris County, Texas, for and in consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration cash in hand to it paid by the HOUSTON INDEPENDENT SCHOOL DISTRICT, a body corporate created by virtue of a special act of the 38th Legislature of the State of Texas, approved by the Governor of the State of Texas on March 20, 1923, the receipt of which is hereby acknowledged and confessed, has GRANTED, BARGAINED, SOLD, ASSIGNED, TRANSFERRED and CONVEYED, and by these presents does GRANT, BARGAIN, SELL, ASSIGN, TRANSFER and CONVEY unto the said HOUSTON INDEPENDENT SCHOOL DISTRICT, of the County of Harris, State of Texas, the following described tract of land in Harris County, Texas, to-wit:

2.754 acres of land out of Lot 2, Block 4, Amended First Subdivision of Westmoreland Farms in the J. Blessing Survey, Harris County, Texas, according to the map of said subdivision recorded in Vol. 3, Page 60 of the Map Records of Harris County, Texas, and being more particularly described as follows:

BEGINNING at a 1-inch iron rod, the northeast corner of this tract of land on the south line of Richmond Road in the center of a drainage ditch, said point being also the northwest corner of a tract of land formerly owned by Choyce Allison, et ux;

THENCE S. 13° 36' 22" E. along the center line of said drainage ditch 418.3 feet to a 1-inch iron pipe, the southeast corner of said tract of land, same being the southwest corner of said Allison tract;

THENCE W. 414.0 feet to a 1-inch iron rod in the west line of said Lot 2, the southwest corner of this tract of land;

98 18

THENCE North 227.1 feet along the west line of said Lot 2 to a 1-inch square iron rod in the south line of Richmond Road;

THENCE N. 60° 22' 30" E. along the south line of Richmond Road 362.95 feet to the place of beginning and containing 2.754 acres of land.

TO HAVE AND TO HOLD the above described premises, together with all and singular the rights and appurtenances thereto in anywise belonging, unto the said Houston Independent School District, its successors and assigns forever, and Grantor does hereby bind itself, its successors and assigns, to warrant and forever defend all and singular the said premises unto the said Houston Independent School District, its successors and assigns, against every person whomsoever lawfully claiming, or to claim the same, or any part thereof.

IN WITNESS WHEREOF, Richwood Corporation has caused these presents to be executed and attested, and its corporate seal hereunto fixed, by its officers thereunto duly authorized, this the 17th day of March, 1952.

RICHWOOD CORPORATION

By H. M. Cresswell Jr.
Vice-Pres.

ATTEST:

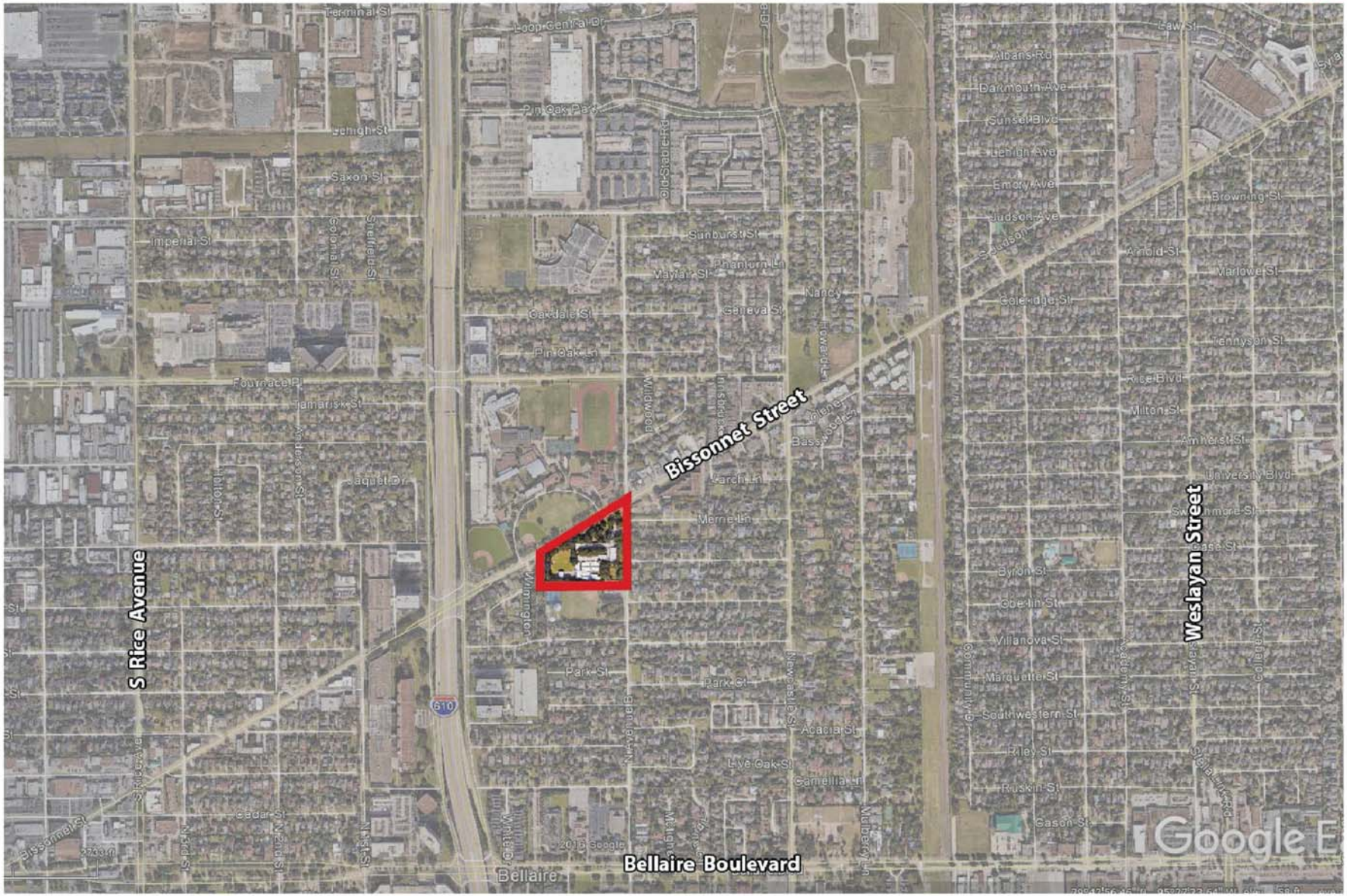
Asst. Sec'y

THE STATE OF TEXAS :
:
COUNTY OF HARRIS :

BEFORE ME, the undersigned authority, on this day personally appeared H. M. Cresswell Jr. Vice-President of the RICHWOOD CORPORATION, a corporation, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity therein stated, and as the act and deed of said corporation.

GIVEN under my hand and seal of office this the 17th day of March, 1952.

B. E. Baumgardner
Notary Public in and for
Harris County, Texas



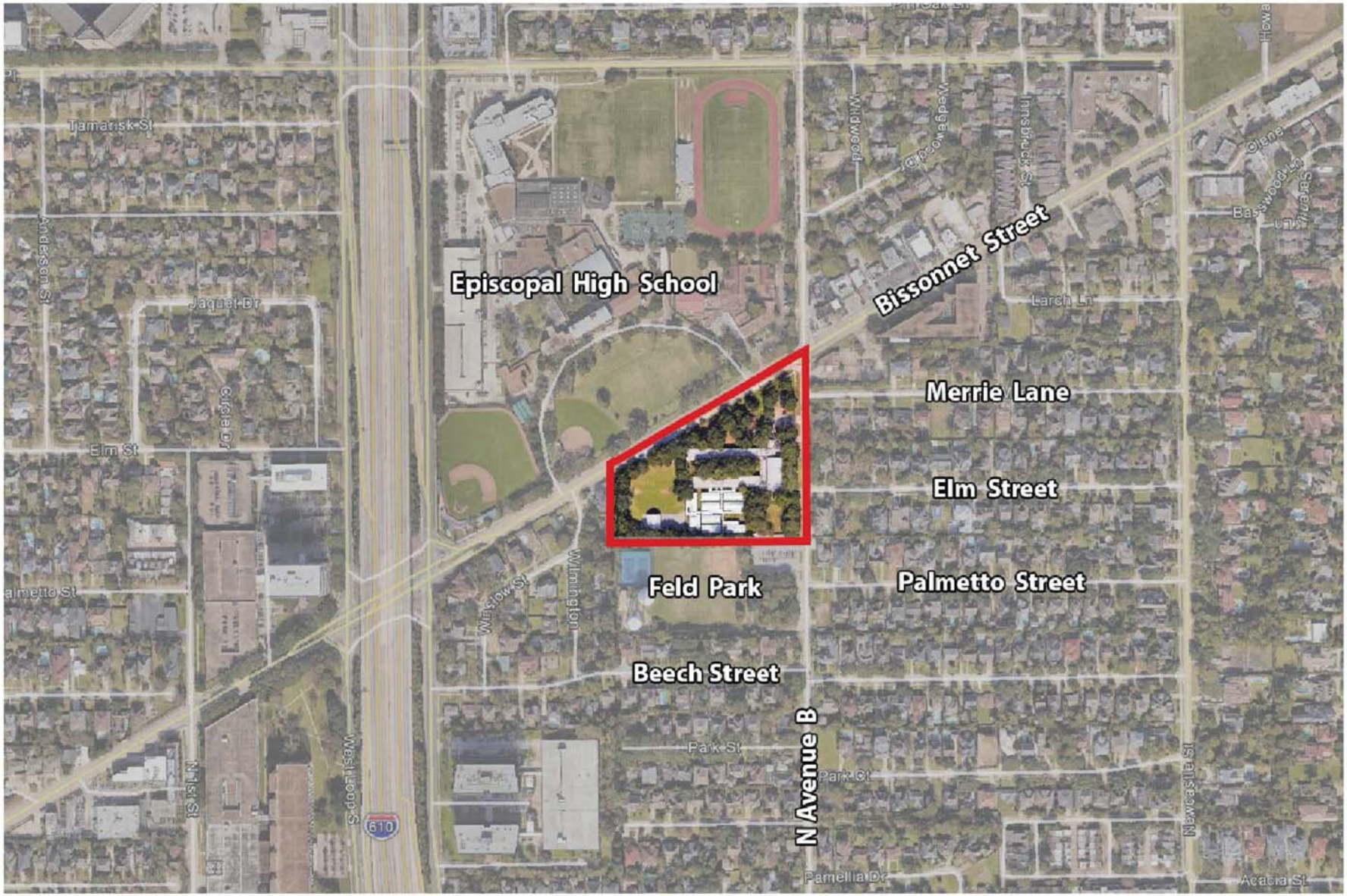
BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Vicinity Map

0 280 560 1,120 F

5.a



BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Location Map

0 120 240 480 Ft

5.a

BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Site Plan

0 50 100 200

5.a

BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Buildings to be demolished - - - - - - - -

Proposed Site Plan

0 50 100 200

5.a

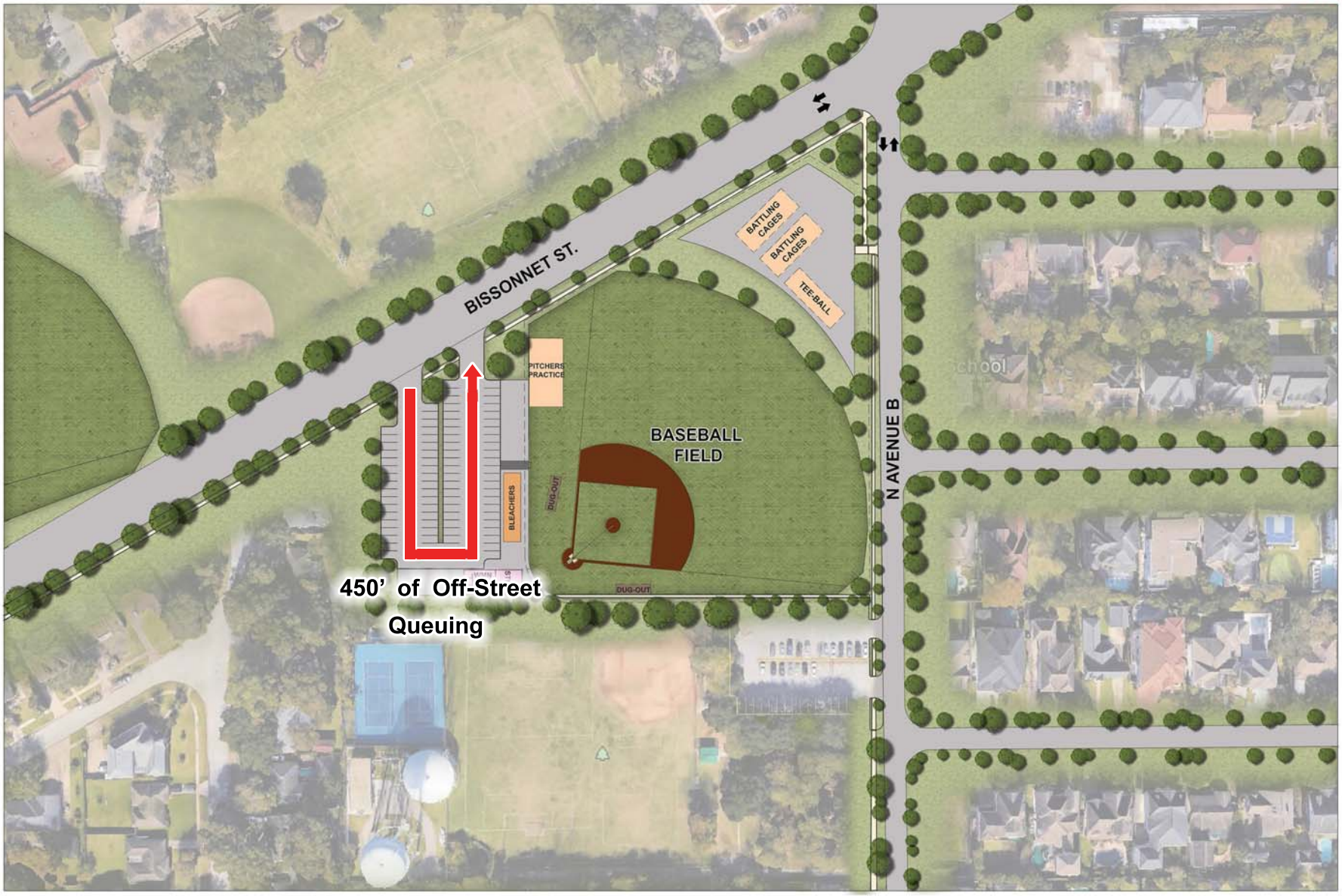
BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Queue Plan

0 50 100 200

5.a



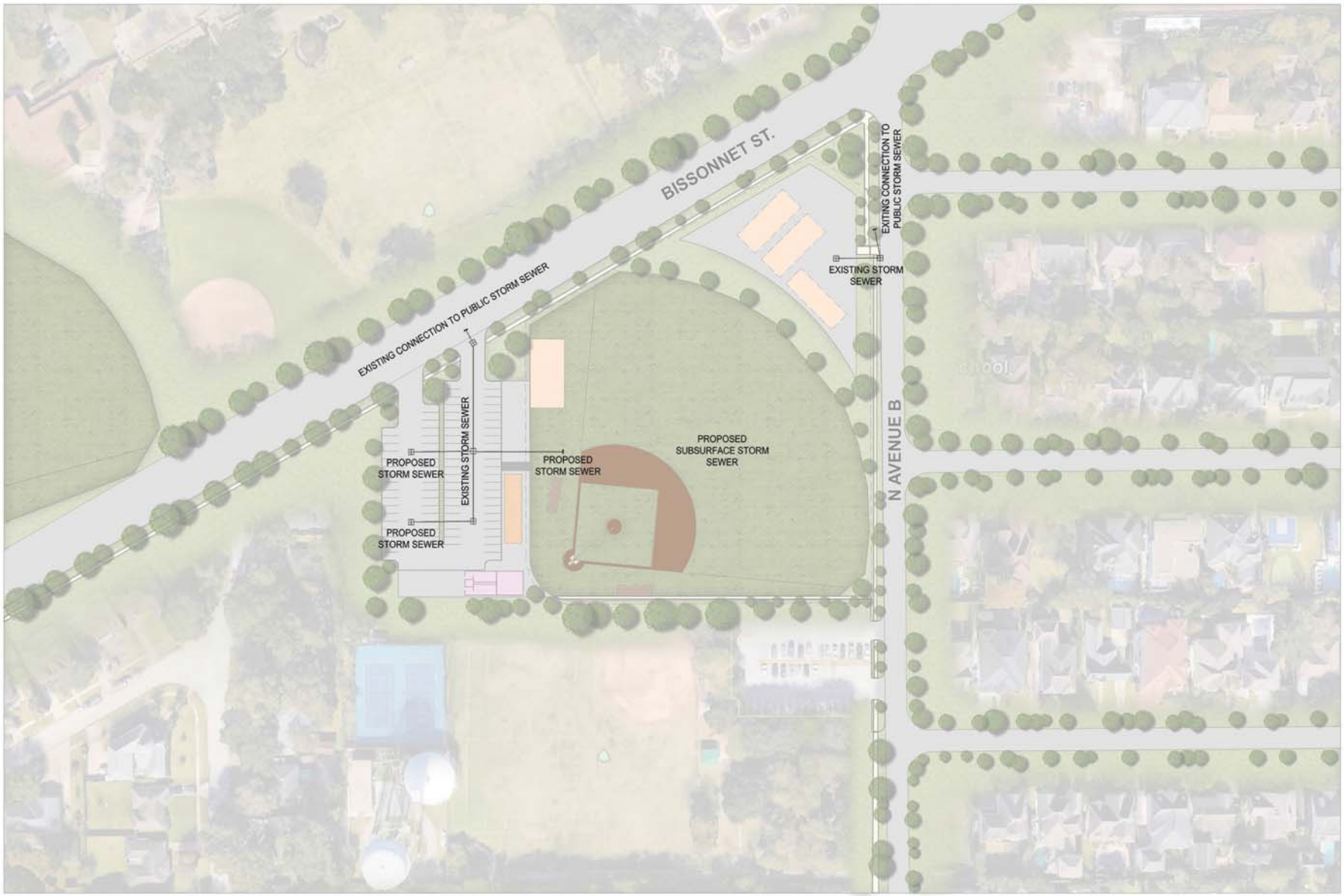
BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Queue Plan

0 50 100 200

5.a



BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Drainage Plan

N

0 40 80 160

5.a

Bissonnet Street - Looking Southwest at North Property Boundary

N Avenue B - Looking at Northeast Corner of Property Boundary

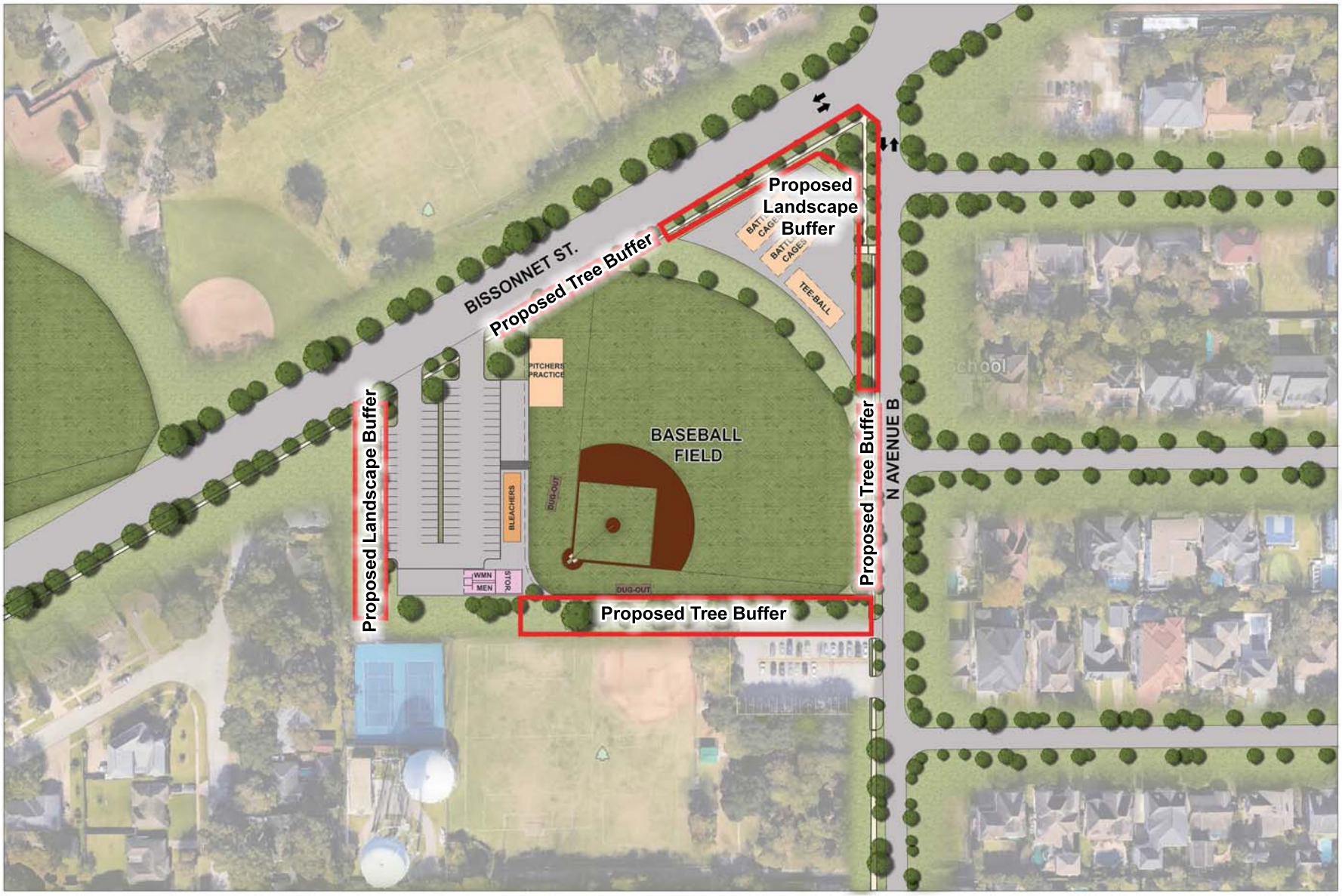
Bissonnet Street - Looking Northeast at North Property Boundary

N Avenue B - Looking West at East Property Boundary

BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Existing Landscape Buffer Photos



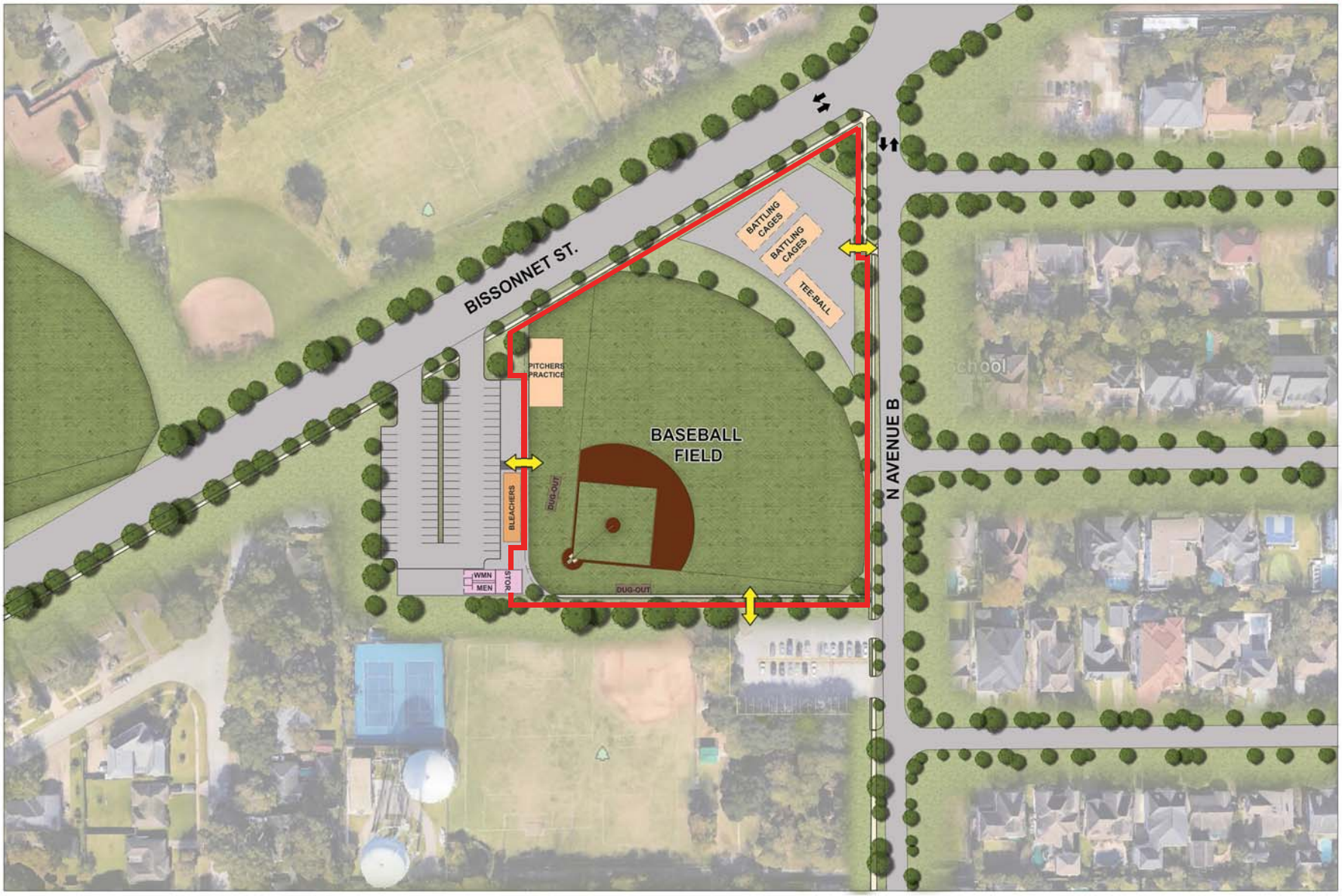
BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Landscape Buffers

0 50 100 200 FT

5.a



BELLAIRE HS Baseball Field - Bellaire, TX

HOUSTON INDEPENDENT SCHOOL DISTRICT

Proposed Fencing

Access Gates

Proposed Site Access Plan

0 50 100 200 FT

5.a

TRAFFIC ENGINEERS, INC.
INNOVATIVE TRANSPORTATION SOLUTIONS

801 Congress Street, Suite 325
Houston, TX 77002

Voice (713) 270-8145
www.trafficengineers.com

May 15, 2017

Mr. Sam Savage
PBK
11 Greenway Plaza, 22nd Floor
Houston, Texas 77046
P: 713-965-0608
sam.savage@pbk.com

Re: Parking Demand Analysis for Proposed Bellaire High School

Dear Mr. Savage:

This letter report summarizes the results of the parking demand analysis conducted for the proposed Bellaire High School. The proposed Bellaire High School is expected to accommodate 3100 students between grade 9 and grade 12. The site plan for Bellaire High School is shown in **Figure 1**.

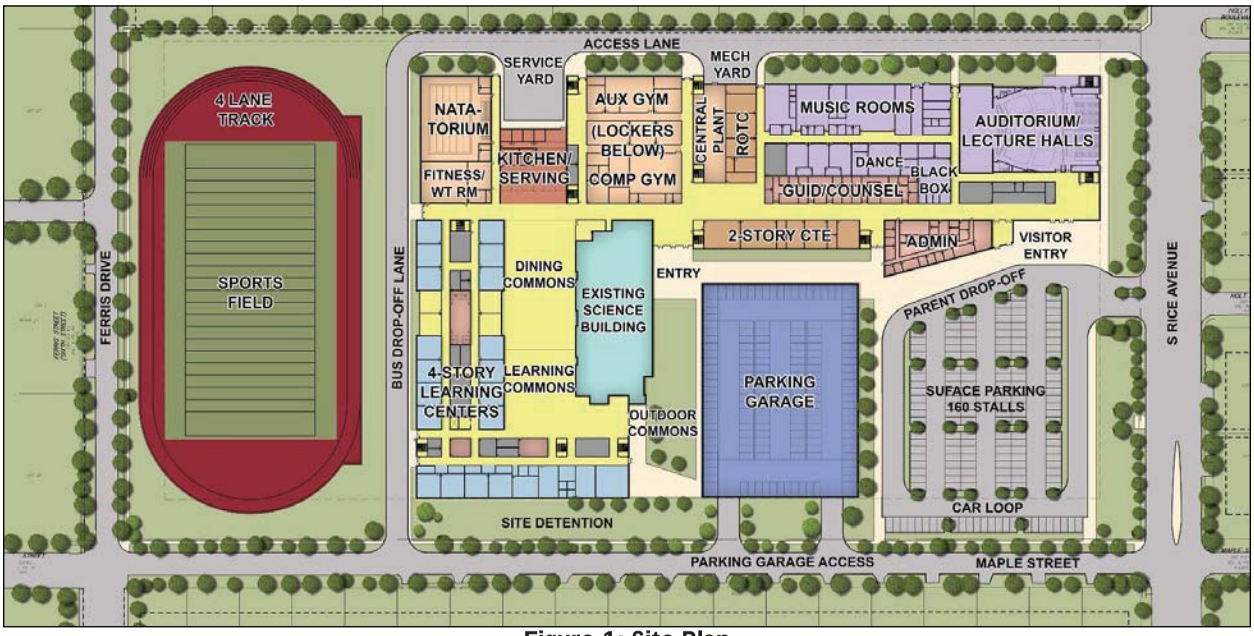


Figure 1: Site Plan

Access to the high school will be provided by three driveways on Maple Street and two driveways on South Rice Avenue. The three driveways on Maple Street will provide access to the bus loading/unloading zone and the parking garage. The driveways on South Rice Avenue will provide access to the student pick-up/drop-off area and the bus loading/unloading zone.

The parking demand analysis was conducted using the 4th Edition ITE Parking Generation Manual. The Parking Generation Manual segregates high schools at a suburban site and at an urban site due to variation in parking demand rates. According to the Parking Generation Manual, the average peak period parking demand for a high school at a suburban site is 0.23 vehicles per student and a range provided between 0.14 and 0.31 vehicles per student. Similarly, the average peak period parking demand for a high school at an urban site is 0.09 vehicles per student, with a range provided between 0.03 and 0.15 vehicles per student.

All the urban site high schools surveyed in the 4th Edition ITE Parking Generation Manual were located three blocks of the transit service.

Bellaire High School is located at an urban site, with good transit, walk and bike facilities. **Figure 2** illustrates the area transit service.

A number of student walkers and bikers are also present at Bellaire High School. There is a bike parking facility with bike racks installed near the baseball field on Maple Street. Some students also park at the parking lot facing South Rice Avenue.

Figure 2: Area Transit Map

The site plan for proposed Bellaire High School recommends improved sidewalks, bike paths and bike storage facilities. **Figure 3** provides an illustration of the recommended bicycle facilities proposed at Bellaire High School. Providing secure bicycle parking racks and bike paths that minimize the need for bicyclists to cross school driveways and parking lots is associated with an increase in the share of bicyclists.

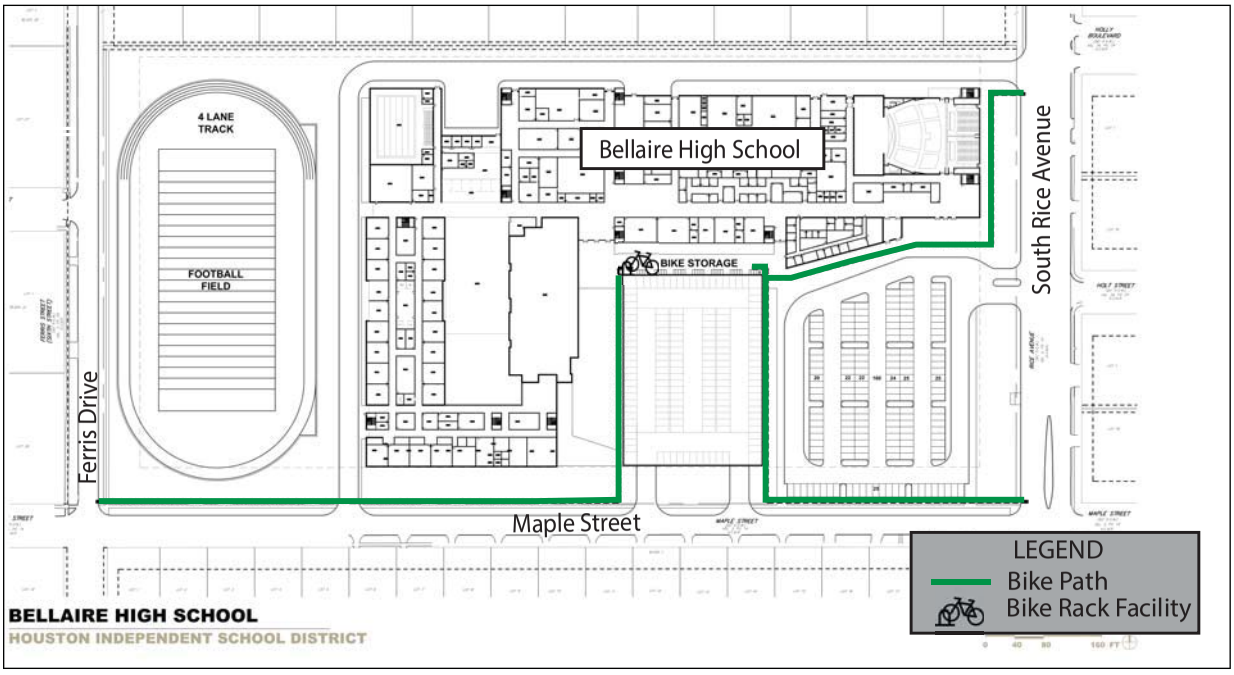


Figure 3: Bike Facilities Planned at Proposed Bellaire High School

With the availability of good transit, walk and bike facilities, it is reasonable to assume that Bellaire High School would fall under the classification of a high school at an urban site. The upper value provided in the range for average peak period parking demand at a high school located in an urban site was used in the analysis due to climatic and local conditions in the Houston region. Based on this assumption, the number of parking spaces required for students is estimated to be 465 parking spaces (using a peak period parking demand of 0.15 vehicles per student and an ultimate enrollment of 3100 students). Houston Independent School District (HISD) has requested 270 parking spaces for accommodating staff parking requirement. Hence, it is estimated that a total of 735 parking spaces is required to accommodate student and staff parking demand at Bellaire High School. It is recommended that parking spaces for students be authorized and alloted using a hang tag system.

Please contact me at 713-398-7461, or dustin@trafficengineers.com, if you have any questions regarding this study.

Sincerely,

Dustin W. Qualls, PE, PTOE

Principal

Bellaire High School Rebuild

Traffic Impact Analysis

Prepared for

PBK

Prepared by
Traffic Engineers, Inc.
Texas Registration #F-3158

May 15, 2017

, PE, PTOE

This report presents a documentation of the Traffic Study for proposed Bellaire High School. The proposed Bellaire High School rebuild consists of demolishing existing structures and constructing new buildings along with parking facilities. The proposed Bellaire High School is expected to accommodate an attendance of 3100 students between grade 9 and grade 12. The contents in the report are arranged as follows:

1. Site Plan

The site plan for Bellaire High School is shown in **Figure 1**. Access to the high school will be provided by three driveways on Maple Street and two driveways on South Rice Avenue. The three driveways on Maple Street will provide access to the bus loading/unloading zone and the parking garage. The driveways on South Rice Avenue will provide access to the student pick-up/drop-off driveway and the bus loading/unloading zone.

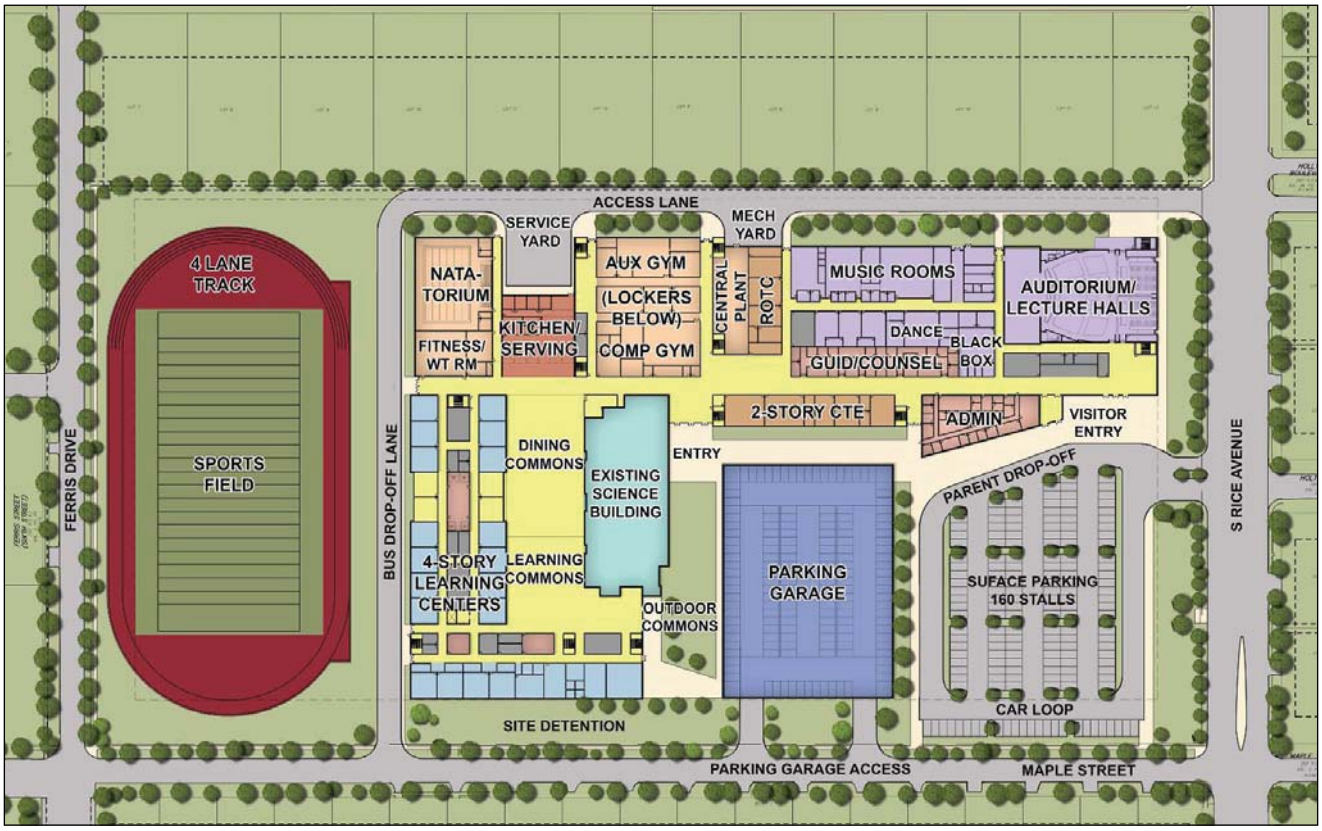


Figure 1: Site Plan

2. Existing Conditions & Observations

Traffic Engineers, Inc.(TEI) observed dismissal and arrival conditions at Bellaire High School on the 26th and 30th of January 2017. **Figure 2** shows an aerial indicating the location of the observations.

Figure 2: Aerial Map

The observations and corresponding locations are listed below:

Pedestrians crossing the intersection of South Rice Avenue at Holly Street.

Parents double stacking on the left most lane at South Rice Avenue and buses stacked adjacent to the left most lane.

Majority of the student walkers from Bellaire High School use the sidewalk on South Rice Avenue. A portion of the existing sidewalk on South Rice Avenue adjacent the school parking lot has no buffer space from the roadway. NACTO's Urban Street Design Guide recommends that sidewalks should be delineated by a vertical and horizontal separation from moving traffic to provide adequate buffer space and a sense of safety for pedestrians.

A number of students bikers are present at Bellaire High School. There is a bike parking facility with bike racks installed near the baseball field on Maple Street. The figure shows bikes parked against the fence in the car parking lot facing South Rice Avenue.

A police officer stationed at the intersection of South Rice Avenue and Maple Street controls vehicular and pedestrian traffic during school dismissal period.

3.0 Trip Generation

The Trip Generation and assumptions used in the study are shown in **Table 1**.

Table 1: Trip Generation

	AM Peak Hour Traffic		PM Peak Hour Traffic	
	Enter	Exit	Enter	Exit
Number of student drivers who park[1,2]	514	0	0	25
Number of parents who drop off students[1,2]	392	392	189	189
Buses[3]	22	22	22	22
Staff[4]	243	0	0	243
Total	**1171**	**414**	**211**	**479**

[1] Based on the 9th Edition ITE Trip Generation Manual for an ultimate enrollment of 3100 students

[2] The split between students who park and parents who drop off students were based on the approximate number of parking spaces available for students in the parking garage. It is assumed that there are 800 parking stalls available, 270 are allotted for staff and 16 for special needs. The rest 514 parking stalls are assumed to be used by students.

[3] Based on information from PBK

[4] 90% of 270 Staff

4.0 Trip Distribution

Trips were distributed in consideration of the Bellaire High School attendance zone. **Figure 3** illustrates the estimated trip distribution for Bellaire High School.

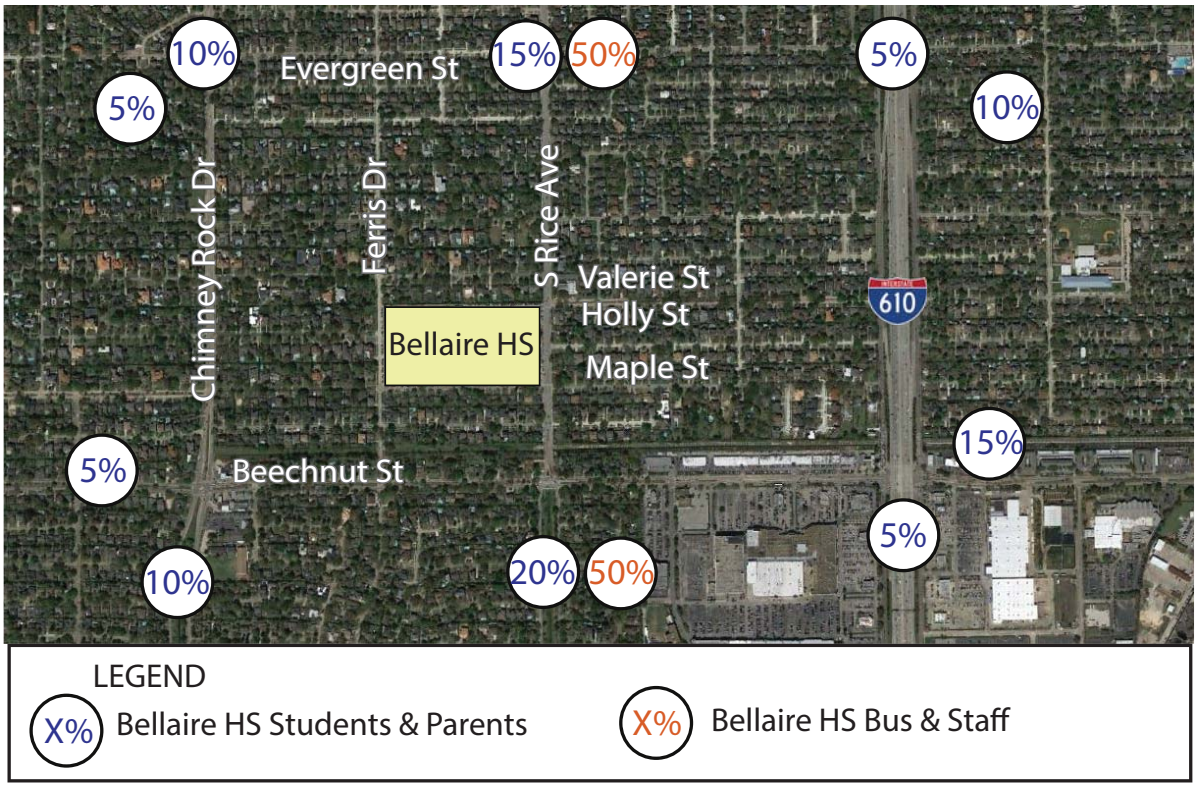


Figure 3: Trip Distribution

5.0 On-Site Storage

The on-site storage provided at the proposed Bellaire High School site plan is listed below:

- The parent drop-off/pick-up driveway in the proposed site plan provides a total of 445 linear feet (19 car spaces), using a factor of 23 feet per vehicle in a queue utilizing single stacking. If double stacking is utilized, a total of to 890 linear feet (38 vehicle spaces) will be available (refer **Figure 4)**.
- The bus loading/unloading zone in the proposed site plan provides a total of 570 linear feet (13 bus spaces), using a factor of 43 feet per bus in a queue utilizing single stacking. If double stacking is utilized, a total of 1140 linear feet (26 bus spaces) will be available (refer **Figure 4)**.

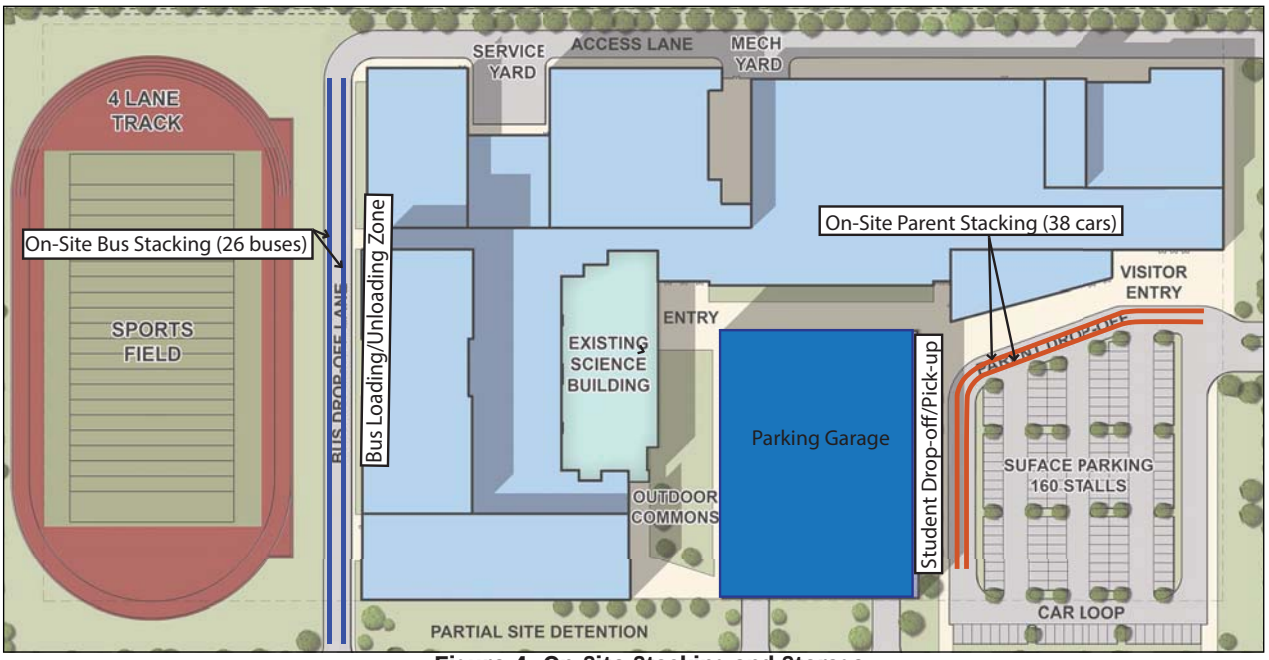


Figure 4: On-Site Stacking and Storage

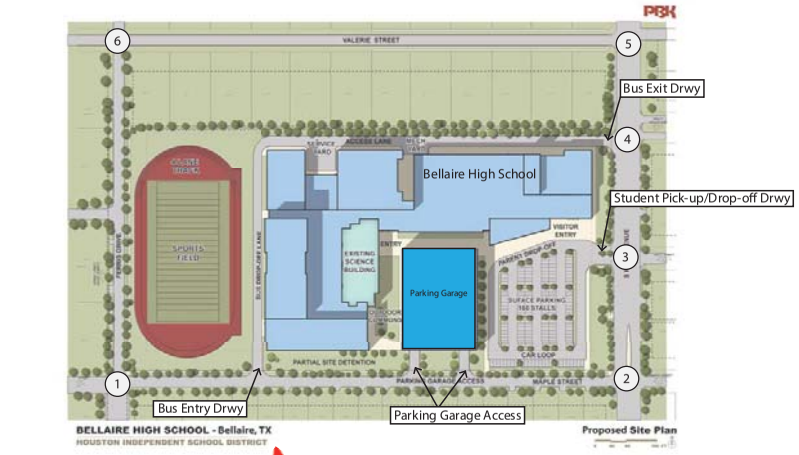
6.0 Projected Site Turning Movement Counts

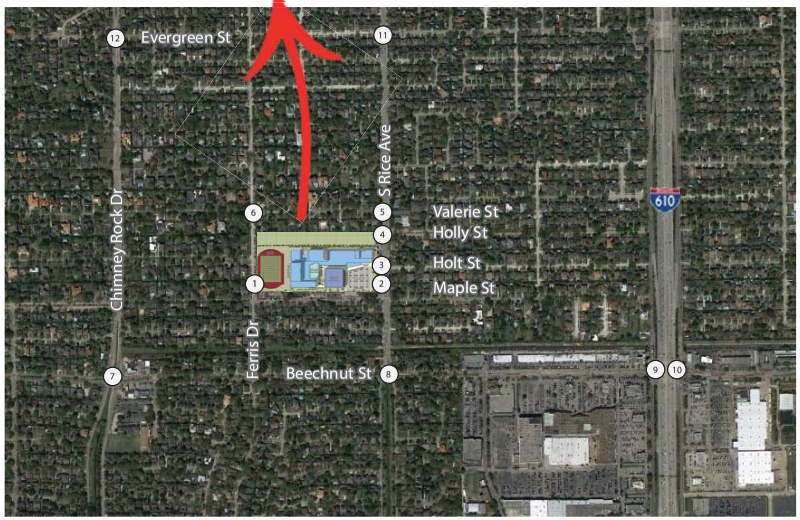
Traffic projections were developed for year 2021 site generated and year 2021 build-out volumes for both AM and school PM peak hour conditions. Description of the site generated and build-out conditions are provided below:

- Year 2021 Site Generated Volumes are trips generated from the proposed Bellaire High School. The trip generation used in the analysis is provided in **Table 1** and the trip distribution used is provided in **Figure 3.**
- Year 2021 build-out volumes are the 2017 background volumes without school traffic (provided in **Appendix A**) grown 1% for 4 years to obtain 2021 background volumes combined with the site generated volumes.

Traffic projections for year 2021 site generated trips and year 2021 build-out volumes for the AM and school PM peak hour are provided in **Figures 5** through **8.**

Figure 5: Site Generated AM Peak Hour Volumes (Year 2021)





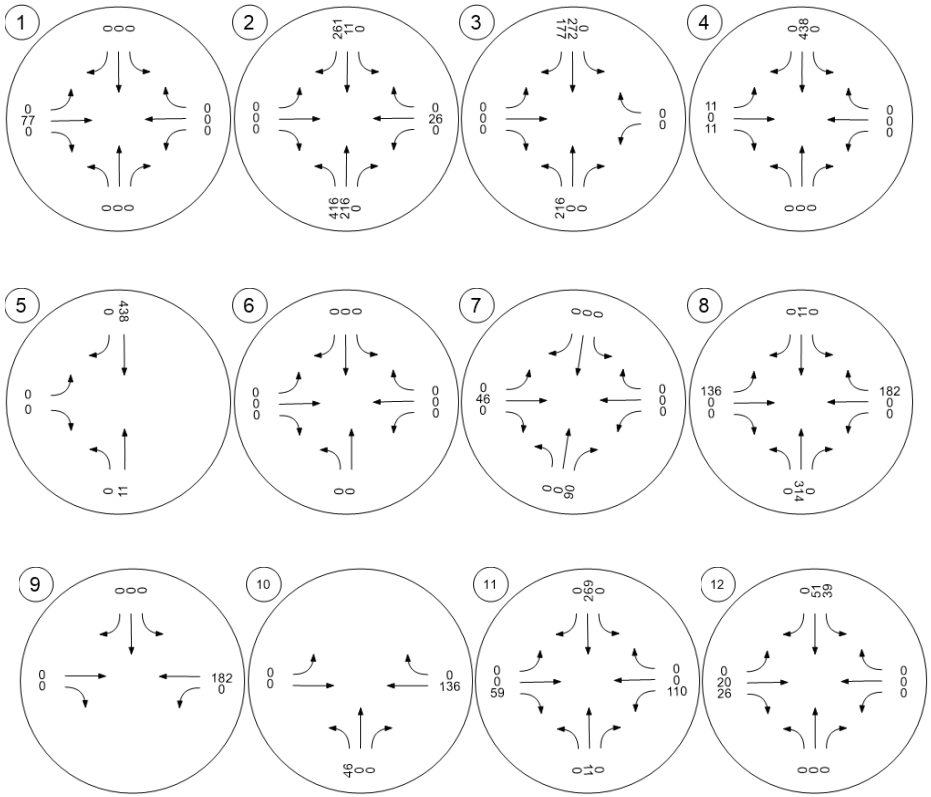
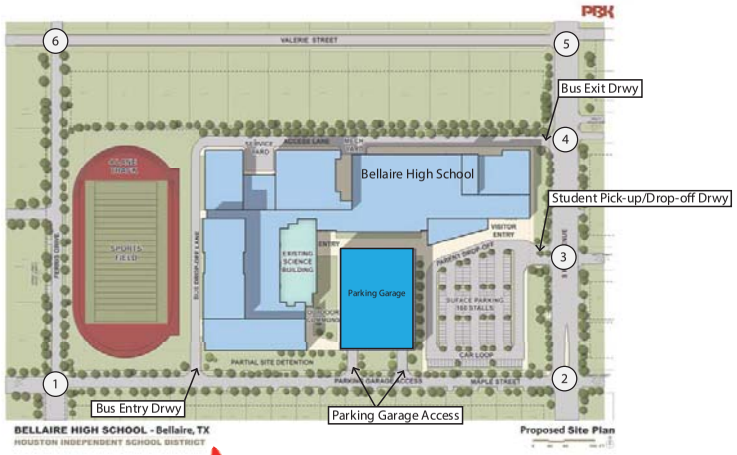
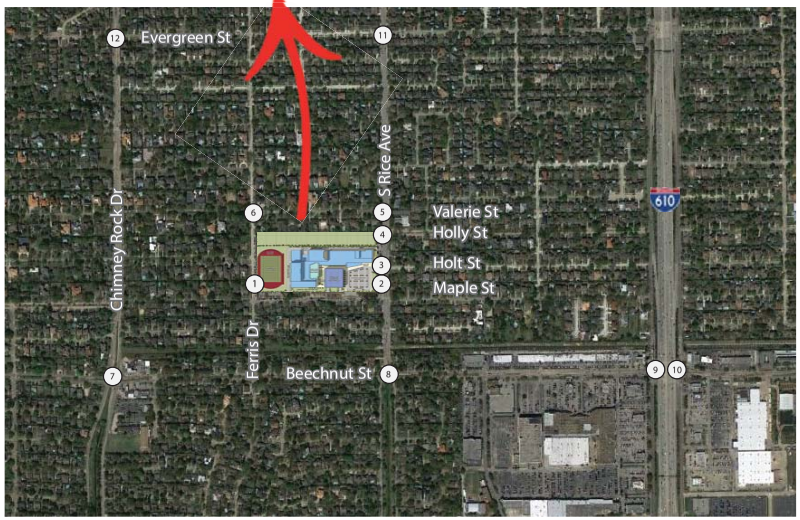


Figure 6: Build-out AM Peak Hour Volumes (Year 2021)





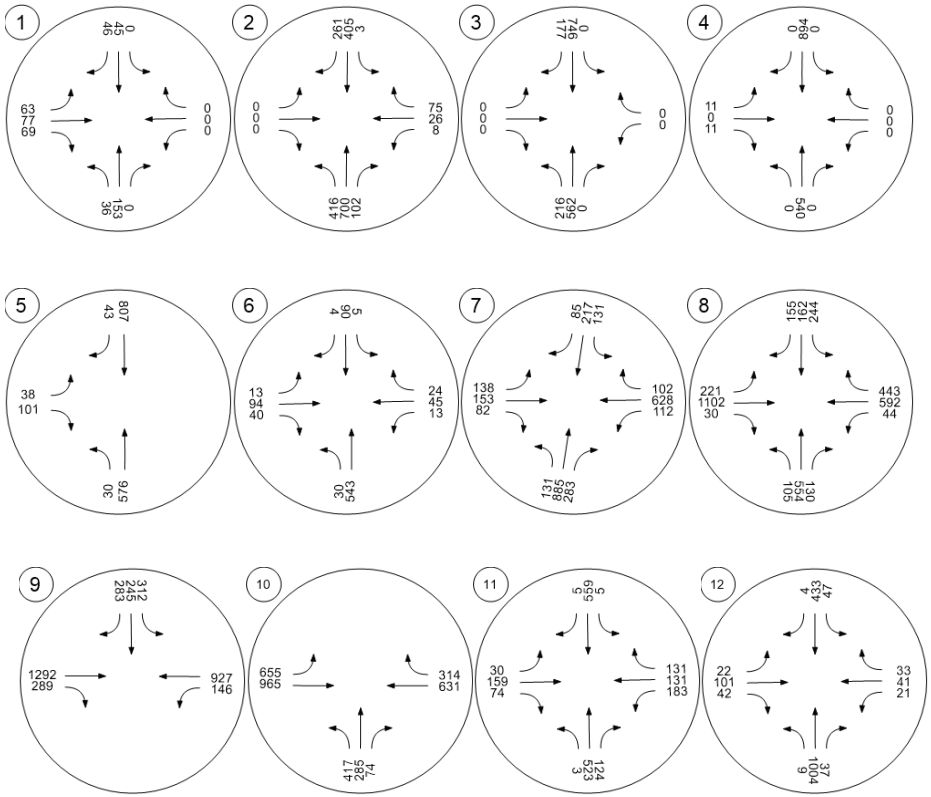
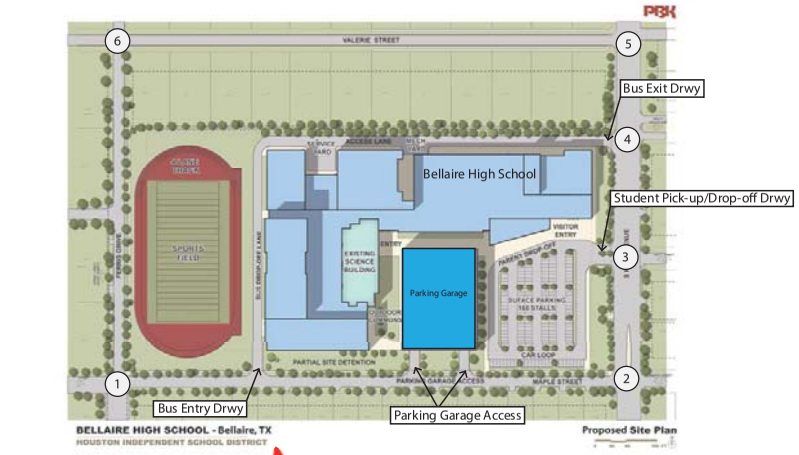
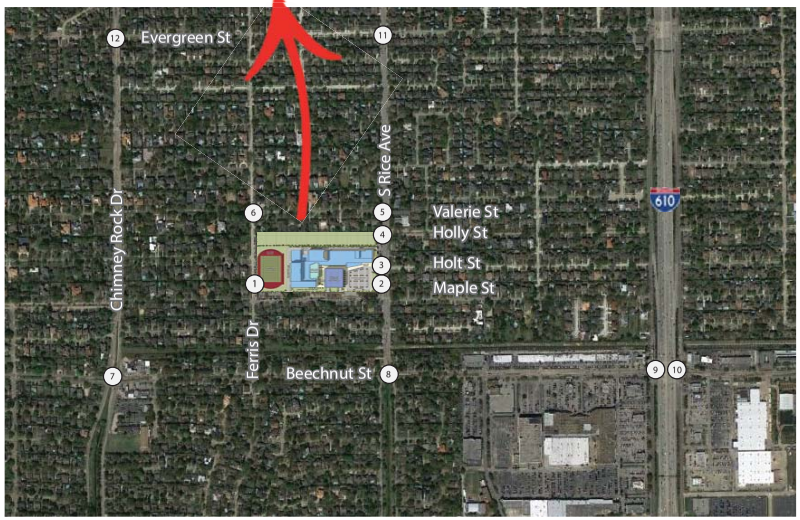


Figure 7: Site Generated PM School Peak Hour Volumes (Year 2021)





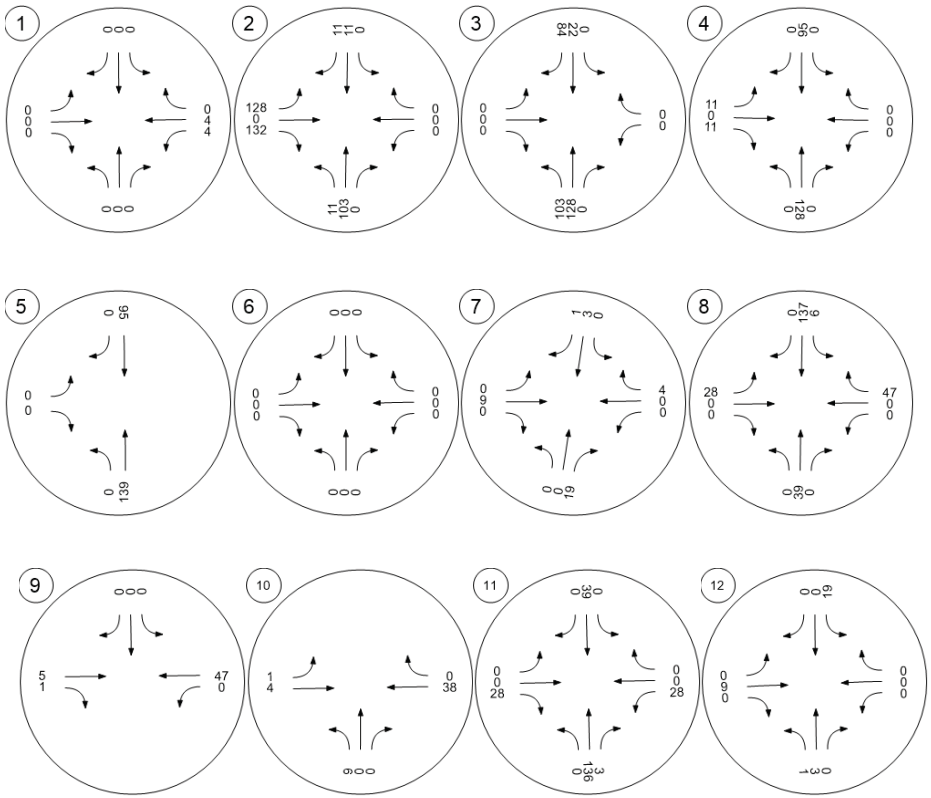
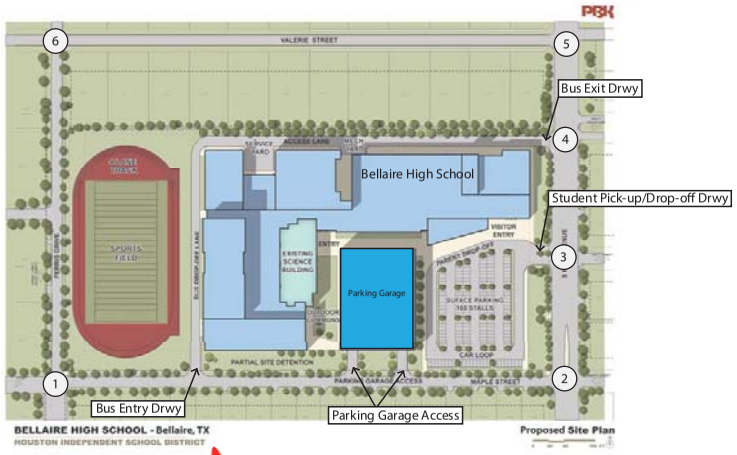
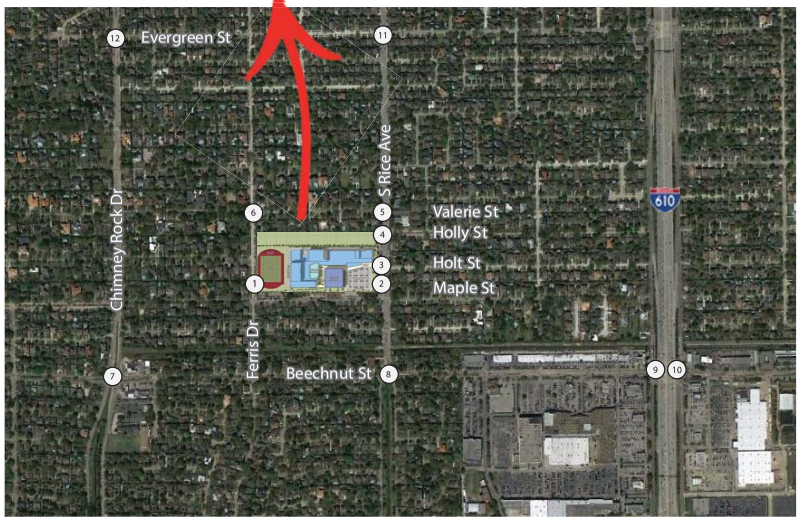
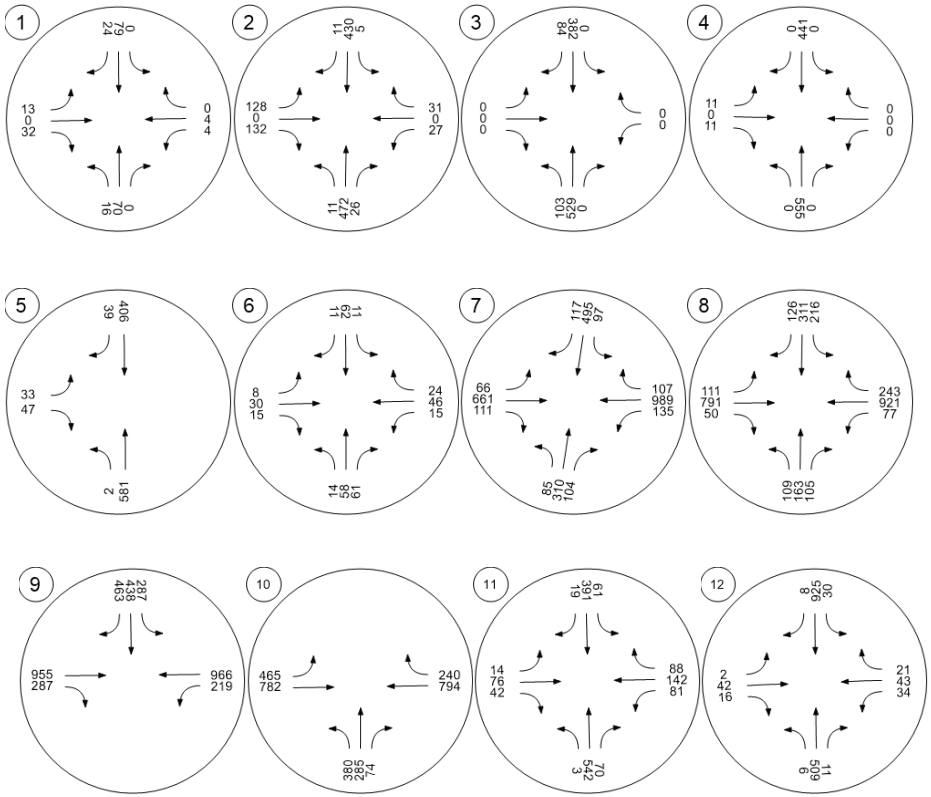


Figure 8: Build-out PM School Peak Hour Volumes (Year 2021)







7.0 Pedestrian and Bicycle Facility Recommendations

Pedestrian and bicycle facilities are intended to make walking and biking safer and convenient for users. The pedestrian and bicycle facilities recommended in the study are described below.

Pedestrian Facilities:

NACTO's Urban Street Design Guide recommends that sidewalks should be delineated by vertical and horizontal separation from moving traffic to provide adequate buffer space and a sense of safety for pedestrians. This study recommends providing adequate buffer space between the sidewalks and roadway for all sidewalks abutting the school site.

Bicycle Facilities:

Providing bicycle paths is associated with an increase in the share of bicyclists. The study recommends providing secure bicycle parking racks and bike paths that minimize the need for bicyclists to cross school driveways and parking lots. Bicycle lanes and paths should be designated through the use of signs or painted symbols. **Figure 9** shows an illustration of pavement marking for bicycle lane and bicycle crossing. **Figure 10** provides an illustration of the recommended bicycle facilities at the proposed Bellaire High School.

Figure 9: Bicycle Facility, Vassar Street, Cambridge, MA

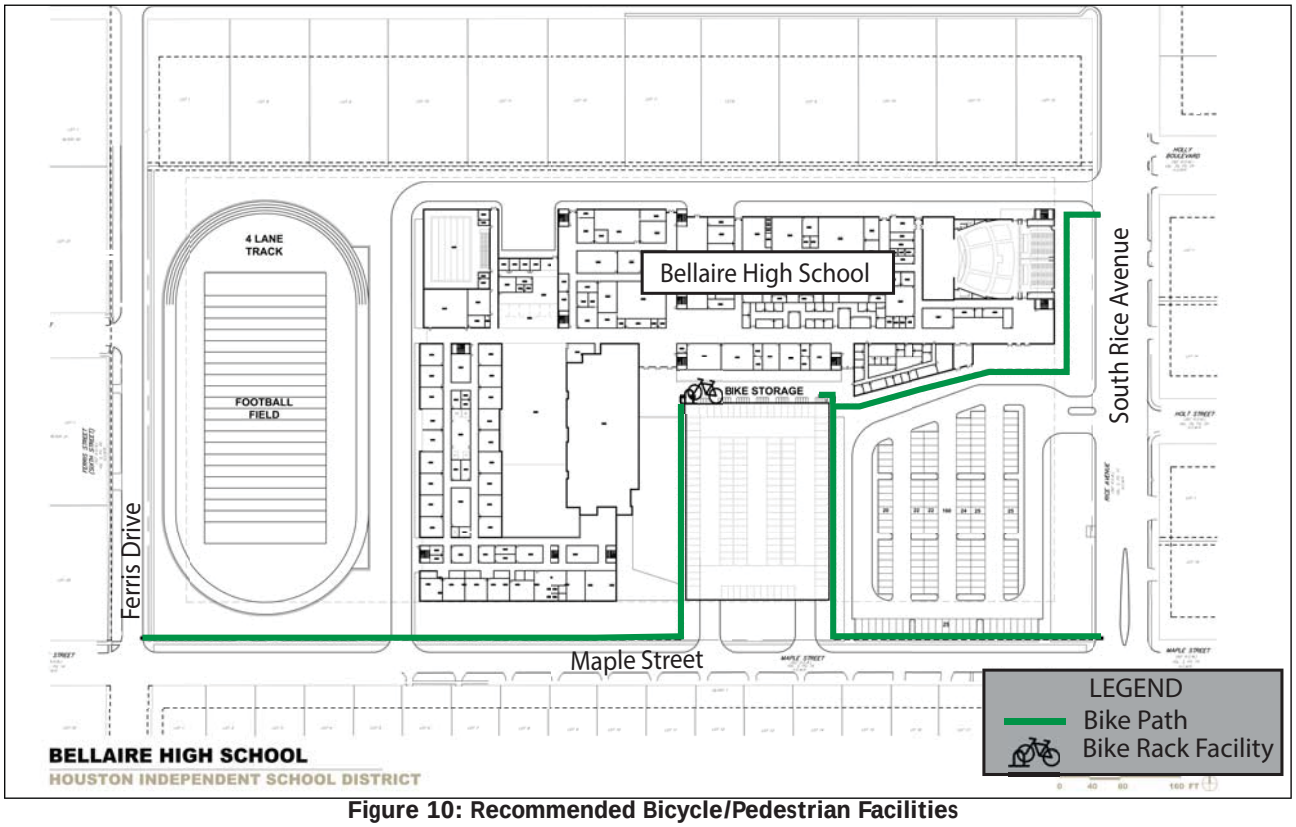


Figure 10: Recommended Bicycle/Pedestrian Facilities

8.0 Parking Demand Analysis

The parking demand analysis was conducted using the 4th Edition ITE Parking Generation Manual. The Parking Generation Manual segregates high schools at a suburban site and at an urban site due to variation in parking demand rates. According to the Parking Generation Manual, the average peak period parking demand for a high school at a suburban site is 0.23 vehicles per student and a range provided between 0.14 and 0.31 vehicles per student. Similarly, the average peak period parking demand for a high school at an urban site is 0.09 vehicles per student, with a range provided between 0.03 and 0.15 vehicles per student.

With the availability of good transit, walk and bike facilities, it is reasonable to assume that Bellaire High School would fall under the classification of a high school at an urban site. The upper value provided in the range for average peak period parking demand at a high school located in an urban site was used in the analysis due to climatic and local conditions in the Houston region. Based on this assumption, the number of parking spaces required for students is estimated to be 465 parking spaces (using a peak period parking demand of 0.15 vehicles per student and an ultimate enrollment of 3100 students). Houston Independent School District (HISD) has requested 270 parking spaces for accommodating staff parking requirement. Hence, it is estimated that a total of 735 parking spaces (combined in the parking garage and surface parking lot) is required to accommodate student and staff parking demand at Bellaire High School. It is recommended that parking spaces for students be authorized and alloted using a hang tag system.

9.0 Capacity Analysis

Capacity analysis provides information regarding traffic operations at an intersection and is expressed in terms of the level-of-service (LOS). The level-of-service indicates the average seconds of delay experienced by a motorist at a signalized intersection or at the stop controlled approaches of an unsignalized intersection. As a frame of reference, intersection levels-of-service range from A to F, with LOS A representing free flow conditions and LOS F representing highly congested conditions. In general, a signalized intersection operating at LOS D or better in an urban area is characterized by acceptable delays.

A comparison between year 2021 build-out scenario with no improvements and year 2021 build-out scenario with mitigation reflects the traffic impacts associated with and without mitigation. The build-out scenario with mitigation includes the following improvements to the study intersections:

- Re-stripe South Rice Avenue for left turn lanes at the intersection of:
  - South Rice Avenue at Maple St, and
  - South Rice Avenue at Holly Street
- Signalize the intersections, of:
  - South Rice Avenue at Maple St and
  - South Rice Avenue at Holly Street

Table 2 lists and compares the capacity analysis (worst movement, delay and LOS) for year 2021 build-out scenario with no improvements and year 2021 build-out scenario with mitigation for the AM peak hour. **Table 3** lists and compares the capacity analysis (worst movement, delay and LOS) for year 2021 build-out scenario with no improvements and year 2021 build-out scenario with mitigation for the school PM peak hour.

Table 2: AM Peak Hour Capacity Analysis and Comparison for Different Scenarios

		2021 Build-out No Improvements				2021 Build-out with Mitigation			
#	Intersection	Control Type	Worst Movnt	Delay (s/veh)	LOS	Control Type	Worst Movnt	Delay (s/veh)	LOS
1	Maple St at Ferris Dr	All-way stop	EB Thru	10.0	B	All-way stop	EB Thru	10.0	B
2	**S. Rice Avenue at Maple St**	**Two-way stop**	WB Right	>500	F	**Signalized**	NB Left	45.5	D
3	S. Rice Avenue at Student Drop-off/Pick-up Drwy	Two-way stop	EB Thru	77.8	F	Two-way stop	EB Thru	77.8	F
4	**S. Rice Ave at Bus Exit Drwy/Holly Street**	**Two-way stop**	EB Left	45.0	E	**Signalized**	EB Left	8.0	A
5	S. Rice Ave at Valerie St	Two-way stop	EB Left	93.2	F	Two-way stop	EB Left	93.2	F
6	Valerie St at Ferris Dr	All-way stop	NB Left	13.4	B	All-way stop	NB Left	13.4	B
7	Chimney Rock Rd at Beechnut St	Signalized	NB Left	31.8	C	Signalized	NB Left	31.8	C
8	Beechnut St at S Rice Ave	Signalized	WB Right	69.0	E	Signalized	WB Right	69.0	E
9	Beechnut at 610 SB Feeder	Signalized	SB Left	94.3	F	Signalized	SB Left	94.3	F
10	Beechnut at 610 NB Feeder	Signalized	NB Left	54.4	D	Signalized	NB Left	54.4	D
11	S. Rice at Evergreen St	Signalized	EB Thru	25.0	C	Signalized	EB Thru	25.0	C
12	Chimney Rock Rd at Evergreen St	Signalized	NB Left	16.0	B	Signalized	NB Left	16.0	B

LOS and Delay for two-way stop are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection

Table 3: School PM Peak Hour Capacity Analysis and Comparison for Different Scenarios

		2021 Build-out No Improvements				2021 Build-out with Mitigation			
#	Intersection	Control Type	Worst Movnt	Delay (s/veh)	LOS	Control Type	Worst Movnt	Delay (s/veh)	LOS
1	Maple St at Ferris Dr	All-way stop	NB Thru	7.8	A	All-way stop	NB Thru	7.8	A
2	**S. Rice Avenue at Maple St**	**Two-way stop**	EB Thru	168.9	F	**Signalized**	SB Left	23.0	C
3	S. Rice Avenue at Student Drop-off/Pick-up Drwy	Two-way stop	EB Thru	25.8	D	Two-way stop	EB Thru	25.8	D
4	**S. Rice Ave at Bus Exit Drwy/Holly Street**	**Two-way stop**	EB Thru	45.2	E	**Signalized**	EB Left	8.2	A
5	S. Rice Ave at Valerie St	Two-way stop	EB Left	22.4	C	Two-way stop	EB Left	22.4	C
6	Valerie St at Ferris Dr	All-way stop	NB Right	8.3	A	All-way stop	NB Right	8.3	A
7	Chimney Rock Rd at Beechnut St	Signalized	SB Left	20.3	C	Signalized	SB Left	20.3	C
8	Beechnut St at S Rice Ave	Signalized	NB Left	32.9	C	Signalized	NB Left	32.9	C
9	Beechnut at 610 SB Feeder	Signalized	SB Left	157.0	F	Signalized	SB Left	157.0	F
10	Beechnut at 610 NB Feeder	Signalized	NB Left	43.6	D	Signalized	NB Left	43.6	D
11	S. Rice at Evergreen St	Signalized	EB Thru	31.7	C	Signalized	EB Thru	31.7	C
12	Chimney Rock Rd at Evergreen St	Signalized	NB Left	11.9	B	Signalized	NB Left	11.9	B

LOS and Delay for two-way stop are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection

A summary of the capacity analysis for year 2021 Build-out scenario with no improvements and year 2021 Build-out scenario with mitigation is provided below:

1. Year 2021 Build-out Scenario with No Improvements:

   - During the AM peak hour, the stop controlled intersections of South Rice Avenue at Maple Street, South Rice Avenue at Student Pick-up/Drop-off Driveway, and South Rice Avenue at Valerie Street is expected to operate at LOS F.
   - During the school PM peak hour, the stop controlled intersections of South Rice Avenue at Maple Street is expected to operate at LOS F.
   - The signalized intersection of Beechnut at Interstate Highway 610 Southbound Feeder is observed to operate at LOS F during the AM and school PM peak hour.
   - It was observed that the rest of the study intersections operated at acceptable levels of service under the 2021 build-out with no improvements scenario.

2. Year 2021 Build-out Scenario with Mitigation:

   - It was observed that the intersection of South Rice Avenue at Maple Street and South Rice Avenue at Holly Street operated at acceptable levels of service under the 2021 build-out scenario with mitigation. Subsequently, the intersections of South Rice Avenue at Student Pick-up/Drop-off Driveway and South Rice Avenue at Valerie Street will be metered by the traffic signal at the intersection of South Rice Avenue at Maple Street and South Rice Avenue at Holly Street and will operate at a LOS better than the limitations of the traffic model.

10.0 Draft Conclusions and Recommendations

The following is a summary of conclusions and recommendations based on traffic study for the proposed Bellaire High School rebuild:

1. Based on year 2021 build-out scenario with mitigation, it is recommended to
   - Re-stripe South Rice Avenue for left turn lanes at the intersection of:
     - South Rice Avenue at Maple St, and
     - South Rice Avenue at Holly Street
   - Signalize the intersections of:
     - South Rice Avenue at Maple St, and
     - South Rice Avenue at Holly Street
2. It is recommended to provide bike paths and secure bike racks at each main approach to the school site to minimize bicyclists crossing school driveways (refer **Figure 10**).
3. It is recommended to delineate sidewalks along South Rice Avenue with landscaped buffers between sidewalks and through lanes of travel. This will provide adequate buffer space between pedestrians and vehicles to provide improved safety for pedestrians.
4. It is estimated that a total of 735 parking spaces (combined in the parking garage and surface parking lot) is required to accommodate student and staff parking demand at Bellaire High School. It is recommended that parking spaces for students be authorized and alloted using a hang tag system.

Appendix A

Figure 3-1
Background Traffic Conditions
Year 2017

Bellaire High School

= AM Trips
(#) = PM Trips

N

EHRA

Packet P

Appendix B

Vistro File: E:\...\BellaireHighSchool_AMv10.vistro
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Scenario 8 Build out_2021_No Improvements
5/14/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Maple St at Ferris Dr	All-way stop	HCM 2010	EB Thru	0.365	10.0	B
2	S. Rice Avenue at Maple St	Two-way stop	HCM 2010	WB Right	0.312	10,000.0	F
3	Student Drop-off/Pick-up Drwy	Two-way stop	HCM 2010	EB Thru	0.000	77.8	F
4	S. Rice Ave at Bus Exit Drwy/Holly Street	Two-way stop	HCM 2010	EB Left	0.170	45.0	E
5	Valerie St. at S. Rice Ave	Two-way stop	HCM 2010	EB Left	0.548	93.2	F
6	Valerie St at Ferris Dr	All-way stop	HCM 2010	NB Left	0.571	13.4	B
7	Chimney Rock Rd at Beechnut St	Signalized	HCM 2010	NB Left	0.654	31.8	C
8	Beechnut St at S Rice Ave	Signalized	HCM 2010	WB Right	0.855	69.0	E
9	Beechnut at 610 SB Feeder	Signalized	HCM 2010	SB Left	0.874	94.3	F
10	Beechnut at 610 NB Feeder	Signalized	HCM 2010	NB Left	0.701	54.4	D
11	S. Rice at Evergreen St	Signalized	HCM 2010	EB Thru	0.676	25.0	C
12	Chimney Rock Rd at Evergreen St	Signalized	HCM 2010	NB Left	0.518	16.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Maple St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.365

Intersection Setup

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Base Volume Input [veh/h]	36	153	0	0	45	46	63	0	69	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	77	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	153	0	0	45	46	63	77	69	0	0	0
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	51	0	0	15	15	21	26	23	0	0	0
Total Analysis Volume [veh/h]	48	204	0	0	60	61	84	103	92	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	745	771	765	686
Degree of Utilization, x	0.34	0.16	0.36	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.50	0.55	1.68	0.00
95th-Percentile Queue Length [ft]	37.46	13.87	41.89	0.00
Approach Delay [s/veh]	10.29	8.54	10.38	0.00
Approach LOS	B	A	B	A
Intersection Delay [s/veh]	10.00			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 2: S. Rice Avenue at Maple St

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.312

Intersection Setup

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Base Volume Input [veh/h]	0	465	102	3	379	0	0	0	0	8	0	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	416	216	0	0	11	261	0	0	0	0	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	416	700	102	3	405	261	0	0	0	8	26	75
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	292	43	1	169	109	0	0	0	3	11	31
Total Analysis Volume [veh/h]	693	1167	170	5	675	435	0	0	0	13	43	125
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	1	1

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.11	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.31
d_M, Delay for Movement [s/veh]	94.28	0.00	0.00	12.11	0.00	0.00	10000.0	10000.0	12.58	10000.0	10000.0	10000.0
Movement LOS	F	A	A	B	A	A	F	F	B	F	F	F
95th-Percentile Queue Length [veh]	20.93	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	25.31	25.31	25.31
95th-Percentile Queue Length [ft]	523.36	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	632.68	632.68	632.68
d_A, Approach Delay [s/veh]	32.19			0.05			6670.86			10000.00		
Approach LOS	D			A			F			F		
d_I, Intersection Delay [s/veh]	563.86											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Student Drop-off/Pick-up Drwy

Control Type:	Two-way stop	Delay (sec / veh):	77.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	S. Rice Avenue			S. Rice Ave			Drwy			Holt St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	S. Rice Avenue			S. Rice Ave			Drwy			Holt St		
Base Volume Input [veh/h]	0	540	0	0	456	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	216	0	0	0	272	177	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	562	0	0	746	177	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	141	0	0	187	44	0	0	0	0	0	0
Total Analysis Volume [veh/h]	216	562	0	0	746	177	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.29	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.91	0.00	0.00	8.58	0.00	0.00	68.54	77.80	11.58	51.60	0.00	10.03
Movement LOS	B	A	A	A	A	A	F	F	B	F		B
95th-Percentile Queue Length [veh]	3.14	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	78.46	39.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.31			0.00			52.64			30.81		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	1.51											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: S. Rice Ave at Bus Exit Drwy/Holly Street

Control Type:	Two-way stop	Delay (sec / veh):	45.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	S. Rice Ave			S. Rice Ave			Bus Exit Drw			Holly Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Rice Ave			S. Rice Ave			Bus Exit Drw			Holly Street		
Base Volume Input [veh/h]	0	540	0	0	456	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	438	0	11	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	540	0	0	894	0	11	0	11	0	0	0
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	225	0	0	373	0	5	0	5	0	0	0
Total Analysis Volume [veh/h]	0	900	0	0	1490	0	18	0	18	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	1	1

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.17	0.00	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.06	0.00	0.00	9.80	0.00	0.00	45.04	39.95	21.20	25.94	33.84	11.47
Movement LOS	B	A	A	A	A	A	E	E	C	D	D	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.81	0.81	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	20.15	20.15	20.15	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			33.12			23.75		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	0.49											
Intersection LOS	E											

Generated with PTV VISTRO
Version 5.00-00

Scenario 8: 8 Build out_2021_No Improvements
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Intersection Level Of Service Report
Intersection 5: Valerie St. at S. Rice Ave

Control Type:	Two-way stop	Delay (sec / veh):	93.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

Intersection Setup

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Base Volume Input [veh/h]	30	543	355	43	38	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	438	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	576	807	43	38	101
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	192	269	14	13	34
Total Analysis Volume [veh/h]	40	768	1076	57	51	135
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.55	0.29
d_M, Delay for Movement [s/veh]	11.29	0.00	0.00	0.00	93.19	62.24
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	4.90	2.45	0.00	0.00	6.38	6.38
95th-Percentile Queue Length [ft]	122.41	61.21	0.00	0.00	159.61	159.61
d_A, Approach Delay [s/veh]	0.56		0.00		70.73	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	6.40					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Valerie St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Base Volume Input [veh/h]	30	543	0	5	90	4	13	94	40	13	45	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	543	0	5	90	4	13	94	40	13	45	24
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	181	0	2	30	1	4	31	13	4	15	8
Total Analysis Volume [veh/h]	40	724	0	7	120	5	17	125	53	17	60	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	670	676	616	613	592
Degree of Utilization, x	0.57	0.56	0.21	0.32	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.62	3.55	0.81	1.37	0.67
95th-Percentile Queue Length [ft]	90.52	88.81	20.18	34.16	16.73
Approach Delay [s/veh]	14.84		10.43	11.61	10.44
Approach LOS	B		B	B	B
Intersection Delay [s/veh]	13.43				
Intersection LOS	B				

Generated with PTV VISTRO
Version 5.00-00

Scenario 8: 8 Build out_2021_No Improvements
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Intersection Level Of Service Report
Intersection 7: Chimney Rock Rd at Beechnut St

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	126	851	186	126	209	82	133	103	79	108	604	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	90	0	0	0	0	46	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	885	283	131	217	85	138	153	82	112	628	102
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	251	80	37	62	24	39	43	23	32	178	29
Total Analysis Volume [veh/h]	149	1006	322	149	247	97	157	174	93	127	714	116
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	40	0	5	40	0	40	40	0	40	40	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	23	0	22	23	0	11	42	0	33	64	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	26	17	17	5	26	17	17	7	19	19	6	18	18
g / C, Green / Cycle	0.08	0.42	0.27	0.27	0.08	0.42	0.27	0.27	0.12	0.30	0.30	0.10	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.13	0.23	0.19	0.20	0.13	0.19	0.08	0.06	0.09	0.07	0.08	0.07	0.23	0.23
s, saturation flow rate [veh/h]	1128	1738	3227	1583	558	395	3227	1583	1774	1863	1651	1774	1863	1773
c, Capacity [veh/h]	113	797	887	435	113	348	887	435	207	560	496	170	521	496
d1, Uniform Delay [s]	31.89	13.59	20.64	21.06	31.89	12.25	18.16	17.87	27.31	16.87	16.92	28.09	21.45	21.45
k, delay calibration	0.50	0.50	0.11	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	192.9	2.27	0.93	2.50	26.38	0.30	0.17	0.26	5.65	0.23	0.27	6.45	3.21	3.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.32	0.50	0.68	0.74	0.66	0.21	0.28	0.22	0.76	0.25	0.26	0.75	0.82	0.82
d, Delay for Lane Group [s/veh]	224.8	15.86	21.57	23.55	58.27	12.55	18.33	18.13	32.95	17.10	17.19	34.55	24.66	24.81
Lane Group LOS	F	B	C	C	E	B	B	B	C	B	B	C	C	C
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	7.89	4.30	3.80	4.31	2.04	0.65	1.35	1.06	2.51	1.46	1.35	2.09	5.89	5.62
50th-Percentile Queue Length [ft]	197.1	107.6	95.12	107.8	50.97	16.30	33.70	26.41	62.86	36.49	33.78	52.35	147.17	140.62
95th-Percentile Queue Length [veh]	13.58	7.71	6.85	7.72	3.67	1.17	2.43	1.90	4.53	2.63	2.43	3.77	9.87	9.51
95th-Percentile Queue Length [ft]	339.5	192.6	171.2	192.9	91.75	29.34	60.66	47.54	113.16	65.69	60.80	94.24	246.65	237.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	224.83	19.29	23.55	42.93	18.33	18.13	32.95	17.12	17.19	34.55	24.72	24.81
Movement LOS	F	B	C	D	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	40.96			23.45			23.00			26.04		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.85											
Intersection LOS	C											
Intersection V/C	0.654											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 8: 8 Build out_2021_No Improvements
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Intersection Level Of Service Report
Intersection 8: Beechnut St at S Rice Ave

Control Type:	Signalized	Delay (sec / veh):	69.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	101	231	125	235	145	149	82	1060	29	42	569	251
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	314	0	0	11	0	136	0	0	0	0	182
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	554	130	244	162	155	221	1102	30	44	592	443
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	157	37	69	46	44	63	313	9	13	168	126
Total Analysis Volume [veh/h]	119	630	148	277	184	176	251	1252	34	50	673	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	40	40	0	40	40	0	40	40	0	40	40	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	21	0	22	31	0	17	53	0	24	60	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	31	31	23	43	43	21	56	56	5	40	40
g / C, Green / Cycle	0.08	0.24	0.24	0.17	0.33	0.33	0.16	0.43	0.43	0.04	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.07	0.22	0.22	0.16	0.10	0.11	0.14	0.35	0.35	0.03	0.34	0.34
s, saturation flow rate [veh/h]	1774	1863	1742	1774	1863	1583	1774	1863	1845	1774	1863	1603
c, Capacity [veh/h]	146	444	415	308	613	521	282	798	790	66	571	491
d1, Uniform Delay [s]	58.83	48.25	48.25	52.78	32.55	33.00	53.75	32.60	32.65	62.20	45.21	45.21
k, delay calibration	0.11	0.24	0.24	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.26	14.11	14.93	9.38	0.27	0.38	9.46	8.65	8.85	16.12	68.54	74.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.91	0.91	0.90	0.30	0.34	0.89	0.81	0.81	0.76	1.10	1.11
d, Delay for Lane Group [s/veh]	69.09	62.35	63.18	62.16	32.82	33.38	63.21	41.25	41.50	78.33	113.75	120.15
Lane Group LOS	E	E	E	E	C	C	E	D	D	E	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	4.28	14.39	13.56	9.67	4.41	4.29	8.80	19.47	19.41	1.94	29.16	25.96
50th-Percentile Queue Length [ft]	107.12	359.80	338.95	241.84	110.35	107.27	219.94	486.67	485.31	48.49	729.02	649.01
95th-Percentile Queue Length [veh]	7.68	20.61	19.60	14.77	7.86	7.69	13.66	26.70	26.64	3.49	40.47	36.70
95th-Percentile Queue Length [ft]	191.98	515.34	489.92	369.36	196.49	192.20	341.55	667.57	665.96	87.28	1011.81	917.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.09	62.65	63.18	62.16	32.82	33.38	63.21	41.37	41.50	78.33	114.17	120.15
Movement LOS	E	E	E	E	C	C	E	D	D	E	F	F
d_A, Approach Delay [s/veh]	63.59			45.73			44.94			115.16		
Approach LOS	E			D			D			F		
d_I, Intersection Delay [s/veh]	68.99											
Intersection LOS	E											
Intersection V/C	0.855											

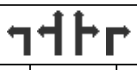
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: Beechnut at 610 SB Feeder

Control Type:	Signalized	Delay (sec / veh):	94.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	0	0	0	300	236	272	0	1242	278	140	716	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	182	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	312	245	283	0	1292	289	146	927	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	78	61	71	0	323	72	37	232	0
Total Analysis Volume [veh/h]	0	0	0	312	245	283	0	1292	289	146	927	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Overlap	Permiss	Split	Split	Split	Split	Split	Split
Signal group	0	0	0	3	4	0	0	2	0	3	1	0
Auxiliary Signal Groups					3,4							
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	5	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	5	30	0	0	30	0	5	30	0
Amber [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	31	21	0	0	49	0	31	19	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				Yes	No			No			No	
Maximum Recall				No	No			No			No	
Pedestrian Recall				No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	R	C	C	L	C	C
C, Cycle Length [s]		97	97	97	97	97	97	97	97	97
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		5	25	25	16	30	30	30	30	30
g / C, Green / Cycle		0.05	0.26	0.26	0.16	0.31	0.31	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate		0.12	0.12	0.12	0.12	0.30	0.31	0.08	0.31	0.20
s, saturation flow rate [veh/h]		1774	1826	1573	1583	3547	1698	1774	1863	1695
c, Capacity [veh/h]		92	467	403	258	1099	526	551	578	526
d1, Uniform Delay [s]		46.75	34.39	34.40	41.35	37.82	38.42	29.14	38.40	33.56
k, delay calibration		0.50	0.11	0.11	0.11	0.11	0.45	0.11	0.46	0.19
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		665.1	0.78	0.91	4.67	6.23	37.72	0.25	39.40	2.40
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		2.41	0.49	0.49	0.76	0.96	1.00	0.27	1.01	0.65
d, Delay for Lane Group [s/veh]		711.9	35.17	35.30	46.02	44.05	76.14	29.39	77.80	35.96
Lane Group LOS		F	D	D	D	D	F	C	F	D
Critical Lane Group		Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		19.15	5.12	4.43	5.07	13.70	18.37	2.94	20.46	7.99
50th-Percentile Queue Length [ft]		478.6	128.1	110.8	126.8	342.43	459.33	73.53	511.55	199.73
95th-Percentile Queue Length [veh]		30.90	8.84	7.89	8.77	19.77	25.43	5.29	28.13	12.62
95th-Percentile Queue Length [ft]		772.4	220.9	197.2	219.1	494.17	635.77	132.35	703.27	315.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	486.43	35.23	43.27	0.00	49.96	76.14	29.39	62.41	0.00
Movement LOS				F	D	D		D	E	C	E	
d_A, Approach Delay [s/veh]	0.00			215.36			54.74			57.92		
Approach LOS	A			F			D			E		
d_I, Intersection Delay [s/veh]	94.33											
Intersection LOS	F											
Intersection V/C	0.874											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 8: 8 Build out_2021_No Improvements
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Intersection Level Of Service Report
Intersection 10: Beechnut at 610 NB Feeder

Control Type:	Signalized	Delay (sec / veh):	54.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	357	274	71	0	0	0	630	928	0	0	476	302
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	0	0	0	0	0	0	0	0	0	136	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	417	285	74	0	0	0	655	965	0	0	631	314
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	78	20	0	0	0	180	265	0	0	173	86
Total Analysis Volume [veh/h]	458	313	81	0	0	0	720	1060	0	0	693	345
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Overlap	Permiss	Permiss	Permiss	Permiss	Split	Split	Permiss	Permiss	Split	Split
Signal group	7	8	0	0	0	0	0	5	0	0	6	0
Auxiliary Signal Groups		7,8										
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	5	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	25	31	0	0	0	0	0	45	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	10	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	Yes	No						No			No	
Maximum Recall	No	No						No			No	
Pedestrian Recall	No	No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		L	C	C	C	C
C, Cycle Length [s]	74	74	74	74		74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	0.00	0.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	38	38	38		28	28	28	20	20
g / C, Green / Cycle	0.07	0.51	0.51	0.51		0.38	0.38	0.38	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.12	0.12		0.34	0.33	0.33	0.20	0.22
s, saturation flow rate [veh/h]	1774	1774	1695	1577		1774	1846	1695	3547	1584
c, Capacity [veh/h]	120	907	866	806		676	703	646	949	424
d1, Uniform Delay [s]	34.51	10.17	10.06	10.07		21.55	21.25	21.19	24.68	25.41
k, delay calibration	0.50	0.50	0.50	0.50		0.34	0.32	0.32	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	437.4	0.67	0.63	0.69		12.29	9.61	9.87	1.10	4.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.91	0.25	0.23	0.24		0.90	0.87	0.87	0.73	0.82
d, Delay for Lane Group [s/veh]	471.9	10.83	10.69	10.77		33.83	30.87	31.06	25.77	29.46
Lane Group LOS	F	B	B	B		C	C	C	C	C
Critical Lane Group	Yes	Yes	No	No		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	16.69	2.05	1.80	1.71		11.35	10.91	9.99	5.37	5.86
50th-Percentile Queue Length [ft]	417.1	51.21	45.01	42.74		283.68	272.70	249.65	134.21	146.41
95th-Percentile Queue Length [veh]	27.27	3.69	3.24	3.08		16.87	16.32	15.17	9.17	9.83
95th-Percentile Queue Length [ft]	681.6	92.17	81.02	76.93		421.79	408.11	379.22	229.20	245.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	241.40	10.72	10.77	0.00	0.00	0.00	33.31	30.97	0.00	0.00	25.78	29.46
Movement LOS	F	B	B				C	C			C	C
d_A, Approach Delay [s/veh]	134.73			0.00			31.94			27.00		
Approach LOS	F			A			C			C		
d_I, Intersection Delay [s/veh]	54.40											
Intersection LOS	D											
Intersection V/C	0.701											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: S. Rice at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	3	492	119	5	279	5	29	153	14	70	126	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	0	269	0	0	0	59	110	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	523	124	5	559	5	30	159	74	183	131	131
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	149	35	1	159	1	9	45	21	52	37	37
Total Analysis Volume [veh/h]	3	594	141	6	635	6	34	181	84	208	149	149
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	23	0	0	23	0	0	23	0	0	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	13	21
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.20	0.33
(v / s)_i Volume / Saturation Flow Rate	0.21	0.22	0.19	0.19	0.17	0.29
s, saturation flow rate [veh/h]	1852	1580	1674	1690	1765	1737
c, Capacity [veh/h]	585	452	535	483	360	567
d1, Uniform Delay [s]	21.11	21.17	20.11	20.56	24.86	20.86
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.18
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.40	2.58	1.09	1.64	5.01	8.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

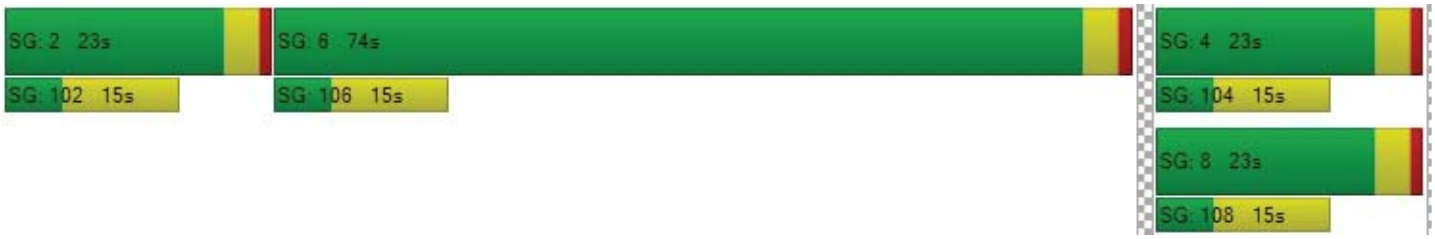
X, volume / capacity	0.68	0.75	0.60	0.67	0.83	0.89
d, Delay for Lane Group [s/veh]	22.51	23.75	21.20	22.20	29.87	29.07
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	5.28	4.66	4.06	4.24	4.64	7.92
50th-Percentile Queue Length [ft]	132.03	116.57	101.40	106.08	115.89	197.92
95th-Percentile Queue Length [veh]	9.05	8.20	7.30	7.62	8.17	12.53
95th-Percentile Queue Length [ft]	226.25	205.11	182.51	190.54	204.16	313.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.51	22.93	23.75	21.20	21.70	22.20	29.87	29.87	29.87	29.07	29.07	29.07
Movement LOS	C	C	C	C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.08			21.70			29.87			29.07		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.98											
Intersection LOS	C											
Intersection V/C	0.676											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Chimney Rock Rd at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	215.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	9	965	36	8	367	4	21	78	15	20	39	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	39	51	0	0	20	26	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1004	37	47	433	4	22	101	42	21	41	33
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	285	11	13	123	1	6	29	12	6	12	9
Total Analysis Volume [veh/h]	10	1141	42	53	492	5	25	115	48	24	47	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	2	0	0	1	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	51	71	0	9	29	0	0	21	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	48	48	48	48	48	48	48	48
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	19	19	3	21	21	7	4
g / C, Green / Cycle	0.01	0.39	0.39	0.05	0.43	0.43	0.14	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.32	0.32	0.03	0.13	0.13	0.11	0.06
s, saturation flow rate [veh/h]	1774	1863	1840	1774	1863	1856	1771	1737
c, Capacity [veh/h]	23	727	718	94	802	799	250	145
d1, Uniform Delay [s]	23.64	13.18	13.18	22.30	9.03	9.04	19.91	21.62
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.83	2.34	2.37	5.13	0.22	0.22	4.53	7.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

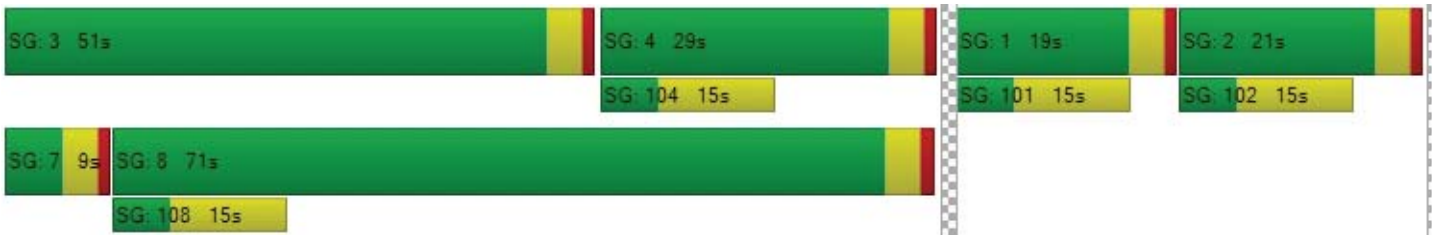
X, volume / capacity	0.43	0.82	0.82	0.56	0.31	0.31	0.75	0.75
d, Delay for Lane Group [s/veh]	35.46	15.51	15.55	27.43	9.25	9.25	24.44	29.17
Lane Group LOS	D	B	B	C	A	A	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.18	5.08	5.02	0.67	1.41	1.40	2.12	1.39
50th-Percentile Queue Length [ft]	4.51	126.90	125.60	16.70	35.18	35.09	53.06	34.84
95th-Percentile Queue Length [veh]	0.33	8.77	8.70	1.20	2.53	2.53	3.82	2.51
95th-Percentile Queue Length [ft]	8.13	219.27	217.51	30.07	63.33	63.17	95.50	62.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.46	15.53	15.55	27.43	9.25	9.25	24.44	24.44	24.44	29.17	29.17	29.17
Movement LOS	D	B	B	C	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	15.70			11.01			24.44			29.17		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	15.96											
Intersection LOS	B											
Intersection V/C	0.518											

Sequence

Ring 1	3	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Vistro File: E:\...\BellaireHighSchool_AMv10.vistro
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Scenario 8 Build out_2021_No Improvements
5/14/2017

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: zone	Student Parkers			1.000	0.000	50.00	50.00	514	0	514	32.43
2: zone	Parents Dropping/Picking up			1.000	0.000	50.00	50.00	392	392	784	49.46
17: zone	buses			1.000	0.000	50.00	50.00	22	22	44	2.78
22: zone	staff			1.000	0.000	50.00	50.00	243	0	243	15.33
					Added Trips Total			**1171**	**414**	**1585**	**100.00**

Vistro File: E:\...\BellaireHighSchool_AMv10.vistro
Report File: E:\...\BellaireHS_AM_No Improvements.pdf

Scenario 8 Build out_2021_No Improvements
5/14/2017

Trip Distribution summary

Zone / Gate	Zone 1: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
22: zone	0.00	0	0.00	0
4: Gate	15.00	77	15.00	0
5: Gate	5.00	26	5.00	0
6: Gate	5.00	26	5.00	0
7: Gate	10.00	51	10.00	0
8: Gate	5.00	26	5.00	0
9: Gate	10.00	51	10.00	0
10: Gate	5.00	26	5.00	0
11: Gate	10.00	51	10.00	0
12: Gate	20.00	103	20.00	0
14: Gate	15.00	77	15.00	0
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	0.00	0
20: Gate	0.00	0	0.00	0
Total	**100.00**	**514**	**100.00**	**0**

Zone / Gate	Zone 2: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
22: zone	0.00	0	0.00	0
4: Gate	15.00	59	15.00	59
5: Gate	5.00	20	5.00	20
6: Gate	5.00	20	5.00	20
7: Gate	10.00	39	10.00	39
8: Gate	5.00	20	5.00	20
9: Gate	10.00	39	10.00	39
10: Gate	5.00	20	5.00	20
11: Gate	10.00	39	10.00	39
12: Gate	20.00	78	20.00	77
14: Gate	15.00	59	15.00	59
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	0.00	0
20: Gate	0.00	0	0.00	0
Total	**100.00**	**393**	**100.00**	**392**

Zone / Gate	Zone 17: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
22: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	11	50.00	11
14: Gate	50.00	11	50.00	11
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	50.00	11
20: Gate	0.00	0	50.00	11
Total	**100.00**	**22**	**200.00**	**44**

Zone / Gate	Zone 22: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	122	50.00	0
14: Gate	50.00	122	50.00	0
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	0.00	0
20: Gate	0.00	0	0.00	0
Total	**100.00**	**244**	**100.00**	**0**

Vistro File: E:\...\BellaireHighSchool_PMv10.vistro
Report File: E:\...\BellaireHS_PM_No Improvements.pdf

Scenario 6 5 Build_out_No_Improvements
5/14/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Maple St at Ferris Dr	All-way stop	HCM 2010	NB Thru	0.155	7.8	A
2	S. Rice Avenue at Maple St	Two-way stop	HCM 2010	EB Thru	0.000	168.9	F
3	Student Pick-up/Drop-off Drwy	Two-way stop	HCM 2010	EB Thru	0.000	25.8	D
4	S. Rice Ave at Bus Exit Drwy/Holly Street	Two-way stop	HCM 2010	EB Thru	0.000	45.2	E
5	Valerie St. at S. Rice Ave	Two-way stop	HCM 2010	EB Left	0.174	22.4	C
6	Valerie St at Ferris Dr	All-way stop	HCM 2010	NB Right	0.209	8.3	A
7	Chimney Rock Rd at Beechnut St	Signalized	HCM 2010	SB Left	0.583	20.3	C
8	Beechnut St at S Rice Ave	Signalized	HCM 2010	NB Left	0.669	32.9	C
9	Beechnut at 610 SB Feeder	Signalized	HCM 2010	SB Left	0.905	157.0	F
10	Beechnut at 610 NB Feeder	Signalized	HCM 2010	NB Left	0.713	43.6	D
11	S. Rice at Evergreen St	Signalized	HCM 2010	EB Thru	0.640	31.7	C
12	Chimney Rock Rd at Evergreen St	Signalized	HCM 2010	NB Left	0.391	11.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Maple St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.155

Intersection Setup

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Base Volume Input [veh/h]	16	70	0	0	79	24	13	0	32	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	4	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	70	0	0	79	24	13	0	32	4	4	0
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	23	0	0	26	8	4	0	11	1	1	0
Total Analysis Volume [veh/h]	21	93	0	0	105	32	17	0	43	5	5	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	845	885	874	774
Degree of Utilization, x	0.13	0.15	0.07	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.47	0.55	0.22	0.04
95th-Percentile Queue Length [ft]	11.64	13.65	5.52	0.98
Approach Delay [s/veh]	7.92	7.81	7.42	7.71
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.77			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 2: S. Rice Avenue at Maple St

Control Type:	Two-way stop	Delay (sec / veh):	168.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Base Volume Input [veh/h]	0	355	26	5	403	0	0	0	0	27	0	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	103	0	0	11	11	128	0	132	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	472	26	5	430	11	128	0	132	27	0	31
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	197	11	2	179	5	53	0	55	11	0	13
Total Analysis Volume [veh/h]	18	787	43	8	717	18	213	0	220	45	0	52
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	1	1

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.01	0.01	0.00	0.89	0.00	0.35	0.29	0.00	0.09
d_M, Delay for Movement [s/veh]	9.24	0.00	0.00	9.56	0.00	0.00	167.35	168.86	158.01	36.30	29.74	19.37
Movement LOS	A	A	A	A	A	A	F	F	F	E	D	C
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	0.03	0.00	0.00	19.03	19.03	19.03	1.68	1.68	1.68
95th-Percentile Queue Length [ft]	1.59	0.00	0.00	0.76	0.00	0.00	475.66	475.66	475.66	41.90	41.90	41.90
d_A, Approach Delay [s/veh]	0.20			0.10			162.61			27.22		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	34.56											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Student Pick-up/Drop-off Drwy

Control Type:	Two-way stop	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	S. Rice Avenue			S. Rice Avenue			Drwy			Holt St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	S. Rice Avenue			S. Rice Avenue			Drwy			Holt St		
Base Volume Input [veh/h]	0	386	0	0	346	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	103	128	0	0	22	84	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	529	0	0	382	84	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	132	0	0	96	21	0	0	0	0	0	0
Total Analysis Volume [veh/h]	103	529	0	0	382	84	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.64	0.00	0.00	8.48	0.00	0.00	21.69	25.82	9.68	22.60	0.00	9.91
Movement LOS	A	A	A	A	A	A	C	D	A	C		A
95th-Percentile Queue Length [veh]	1.21	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	30.18	15.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	1.41			0.00			19.06			16.25		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.81											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: S. Rice Ave at Bus Exit Drwy/Holly Street

Control Type:	Two-way stop	Delay (sec / veh):	45.2
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	S. Rice Avenue			S. Rice Ave			Bus Exit Drwy			Holly Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	S. Rice Avenue			S. Rice Ave			Bus Exit Drwy			Holly Street		
Base Volume Input [veh/h]	0	427	0	0	346	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	128	0	0	95	0	11	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	555	0	0	441	0	11	0	11	0	0	0
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	231	0	0	184	0	5	0	5	0	0	0
Total Analysis Volume [veh/h]	0	925	0	0	735	0	18	0	18	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.13	0.00	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.16	0.00	0.00	9.90	0.00	0.00	33.33	45.18	13.58	35.83	42.32	11.59
Movement LOS	A	A	A	A	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54	0.54	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	13.56	13.56	13.56	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			23.46			29.91		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	0.50											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Valerie St. at S. Rice Ave

Control Type:	Two-way stop	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.174

Intersection Setup

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Base Volume Input [veh/h]	2	425	299	39	33	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	139	95	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	581	406	39	33	47
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	194	135	13	11	16
Total Analysis Volume [veh/h]	3	775	541	52	44	63
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.17	0.09
d_M, Delay for Movement [s/veh]	8.69	0.00	0.00	0.00	22.36	13.29
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	1.93	0.96	0.00	0.00	1.05	1.05
95th-Percentile Queue Length [ft]	48.19	24.10	0.00	0.00	26.14	26.14
d_A, Approach Delay [s/veh]	0.03		0.00		17.02	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.25					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Valerie St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.209

Intersection Setup

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Base Volume Input [veh/h]	14	58	61	11	62	11	8	30	15	15	46	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	58	61	11	62	11	8	30	15	15	46	24
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	19	20	4	21	4	3	10	5	5	15	8
Total Analysis Volume [veh/h]	19	77	81	15	83	15	11	40	20	20	61	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	847	797	783	792
Degree of Utilization, x	0.21	0.14	0.09	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.79	0.49	0.30	0.50
95th-Percentile Queue Length [ft]	19.65	12.32	7.45	12.41
Approach Delay [s/veh]	8.37	8.26	8.05	8.30
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.28			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Chimney Rock Rd at Beechnut St

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.583

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	82	298	82	93	473	112	63	627	107	130	951	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	19	0	3	1	0	9	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	310	104	97	495	117	66	661	111	135	989	107
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	88	30	28	141	33	19	188	32	38	281	30
Total Analysis Volume [veh/h]	97	352	118	110	563	133	75	751	126	153	1124	122
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	40	0	5	40	0	40	40	0	40	40	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	23	0	22	23	0	11	42	0	33	64	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	10	10	5	19	10	10	4	20	20	7	23	23
g / C, Green / Cycle	0.09	0.33	0.17	0.17	0.09	0.33	0.17	0.17	0.06	0.35	0.35	0.11	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.10	0.07	0.08	0.13	0.11	0.08	0.04	0.24	0.24	0.09	0.34	0.34
s, saturation flow rate [veh/h]	844	901	3227	1583	1025	1776	3227	1583	1774	1863	1771	1774	1863	1800
c, Capacity [veh/h]	125	438	553	271	130	724	553	271	108	653	621	203	753	727
d1, Uniform Delay [s]	28.89	13.87	22.00	21.43	28.88	14.89	22.40	21.66	26.60	16.05	16.05	24.79	15.52	15.57
k, delay calibration	0.11	0.39	0.11	0.11	0.20	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	0.88	0.94	1.10	7.98	0.24	1.40	1.37	7.69	1.30	1.37	5.56	2.60	2.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.21	0.57	0.44	0.60	0.31	0.67	0.49	0.69	0.69	0.69	0.75	0.84	0.84
d, Delay for Lane Group [s/veh]	30.24	14.75	22.94	22.53	36.86	15.14	23.80	23.03	34.29	17.36	17.42	30.35	18.11	18.36
Lane Group LOS	C	B	C	C	D	B	C	C	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.57	0.90	1.90	1.41	1.38	2.08	2.27	1.61	1.18	4.69	4.47	2.21	6.91	6.78
50th-Percentile Queue Length [ft]	14.14	22.39	47.49	35.19	34.50	52.08	56.83	40.30	29.57	117.28	111.78	55.16	172.83	169.48
95th-Percentile Queue Length [veh]	1.02	1.61	3.42	2.53	2.48	3.75	4.09	2.90	2.13	8.24	7.94	3.97	11.23	11.05
95th-Percentile Queue Length [ft]	25.46	40.30	85.49	63.34	62.09	93.75	102.2	72.54	53.23	206.09	198.47	99.28	280.63	276.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.24	22.13	22.53	36.86	20.82	23.03	34.29	17.38	17.42	30.35	18.22	18.36
Movement LOS	C	C	C	D	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	21.98			22.49			18.72			19.56		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.35											
Intersection LOS	C											
Intersection V/C	0.583											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Intersection Level Of Service Report
Intersection 8: Beechnut St at S Rice Ave

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	105	119	101	202	167	121	80	761	48	74	886	188
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	39	0	6	137	0	28	0	0	0	0	47
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	163	105	216	311	126	111	791	50	77	921	243
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	46	30	61	88	36	32	225	14	22	262	69
Total Analysis Volume [veh/h]	124	185	119	245	353	143	126	899	57	88	1047	276
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	19	0	21	27	0	11	70	0	10	69	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	73	73	73	73	73	73	73	73	73	73	73	73
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	9	9	12	16	16	7	31	31	5	29	29
g / C, Green / Cycle	0.07	0.12	0.12	0.17	0.22	0.22	0.09	0.42	0.42	0.07	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.09	0.09	0.14	0.14	0.14	0.07	0.26	0.26	0.05	0.37	0.37
s, saturation flow rate [veh/h]	1774	1863	1627	1774	1863	1683	1774	1863	1824	1774	1863	1731
c, Capacity [veh/h]	121	229	200	298	415	375	165	792	775	117	741	689
d1, Uniform Delay [s]	34.19	30.86	30.98	29.47	25.75	25.78	32.47	16.38	16.38	33.68	20.98	21.15
k, delay calibration	0.29	0.11	0.11	0.11	0.11	0.11	0.11	0.18	0.18	0.11	0.37	0.38
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	69.26	3.76	4.90	5.64	1.56	1.74	7.04	1.29	1.32	9.28	14.68	17.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.03	0.69	0.72	0.82	0.63	0.63	0.76	0.61	0.61	0.75	0.92	0.93
d, Delay for Lane Group [s/veh]	103.45	34.62	35.87	35.11	27.31	27.52	39.51	17.66	17.69	42.96	35.66	38.67
Lane Group LOS	F	C	D	D	C	C	D	B	B	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	4.41	2.84	2.65	4.45	4.08	3.73	2.43	6.02	5.90	1.79	13.06	12.90
50th-Percentile Queue Length [ft]	110.19	71.01	66.17	111.37	102.06	93.26	60.81	150.54	147.61	44.82	326.54	322.45
95th-Percentile Queue Length [veh]	7.91	5.11	4.76	7.92	7.35	6.71	4.38	10.05	9.89	3.23	18.99	18.79
95th-Percentile Queue Length [ft]	197.81	127.82	119.11	197.90	183.70	167.87	109.45	251.15	247.23	80.67	474.71	469.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	103.45	34.79	35.87	35.11	27.37	27.52	39.51	17.68	17.69	42.96	36.71	38.67
Movement LOS	F	C	D	D	C	C	D	B	B	D	D	D
d_A, Approach Delay [s/veh]	54.98			29.96			20.22			37.48		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	32.91											
Intersection LOS	C											
Intersection V/C	0.669											

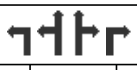
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: Beechnut at 610 SB Feeder

Control Type:	Signalized	Delay (sec / veh):	157.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.905

Intersection Setup

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	0	0	0	276	421	445	0	913	275	211	884	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	5	1	0	47	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	287	438	463	0	955	287	219	966	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	72	110	116	0	239	72	55	242	0
Total Analysis Volume [veh/h]	0	0	0	287	438	463	0	955	287	219	966	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Overlap	Permiss	Split	Split	Split	Split	Split	Split
Signal group	0	0	0	3	4	0	0	2	0	0	1	0
Auxiliary Signal Groups					3,4							
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	5	5	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	50	9	0	0	32	0	0	29	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				Yes	Yes			No			No	
Maximum Recall				No	No			No			No	
Pedestrian Recall				No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	R	C	C	L	C	C
C, Cycle Length [s]		76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		5	14	14	5	23	23	27	27	27
g / C, Green / Cycle		0.07	0.18	0.18	0.07	0.30	0.30	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate		0.16	0.19	0.18	0.18	0.23	0.25	0.12	0.32	0.22
s, saturation flow rate [veh/h]		1774	1863	1513	1583	3547	1660	1774	1863	1695
c, Capacity [veh/h]		116	342	278	104	1076	504	631	662	602
d1, Uniform Delay [s]		36.44	33.44	33.18	36.44	27.88	28.43	21.73	27.64	24.53
k, delay calibration		0.50	0.50	0.50	0.50	0.11	0.18	0.11	0.31	0.13
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		684.7	57.18	45.14	791.5	1.19	5.61	0.33	11.08	1.29
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		2.47	1.03	0.96	2.70	0.77	0.82	0.35	0.89	0.62
d, Delay for Lane Group [s/veh]		721.1	90.62	78.31	827.9	29.07	34.04	22.06	38.72	25.82
Lane Group LOS		F	F	E	F	C	C	C	D	C
Critical Lane Group		Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		24.29	12.02	8.58	24.76	7.50	8.20	3.32	12.65	6.49
50th-Percentile Queue Length [ft]		607.2	300.4	214.5	618.9	187.54	205.05	82.95	316.28	162.31
95th-Percentile Queue Length [veh]		38.70	17.99	13.38	39.51	11.99	12.90	5.97	18.48	10.67
95th-Percentile Queue Length [ft]		967.4	449.7	334.5	987.6	299.84	322.47	149.31	462.12	266.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	721.18	88.24	572.67	0.00	29.73	34.04	22.06	33.69	0.00
Movement LOS				F	F	F		C	C	C	C	
d_A, Approach Delay [s/veh]	0.00			414.24			30.73			31.54		
Approach LOS	A			F			C			C		
d_I, Intersection Delay [s/veh]	157.03											
Intersection LOS	F											
Intersection V/C	0.905											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 6: 6 5 Build_out_No_Improvements
Report File: E:\...\BellaireHS_PM_No Improvements.pdf

Intersection Level Of Service Report
Intersection 10: Beechnut at 610 NB Feeder

Control Type:	Signalized	Delay (sec / veh):	43.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	357	274	71	0	0	0	446	748	0	0	727	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	1	4	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	380	285	74	0	0	0	465	782	0	0	794	240
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	78	20	0	0	0	128	215	0	0	218	66
Total Analysis Volume [veh/h]	418	313	81	0	0	0	511	859	0	0	873	264
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Overlap	Permiss	Permiss	Permiss	Permiss	Split	Split	Permiss	Permiss	Split	Split
Signal group	7	8	0	0	0	0	0	5	0	0	6	0
Auxiliary Signal Groups		7,8										
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	5	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	18	60	0	0	0	0	0	23	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	Yes	No						No			No	
Maximum Recall	No	No						No			No	
Pedestrian Recall	No	No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		L	C	C	C	C
C, Cycle Length [s]	66	66	66	66		66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	0.00	0.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	14	14	14		21	21	21	19	19
g / C, Green / Cycle	0.08	0.21	0.21	0.21		0.32	0.32	0.32	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.12	0.12		0.26	0.26	0.26	0.21	0.23
s, saturation flow rate [veh/h]	1774	1776	1695	1576		1774	1853	1695	3547	1659
c, Capacity [veh/h]	135	378	360	335		565	590	539	1018	476
d1, Uniform Delay [s]	30.45	23.19	23.16	23.20		20.66	20.61	20.60	21.30	21.71
k, delay calibration	0.50	0.50	0.50	0.50		0.13	0.13	0.13	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	289.6	5.90	6.05	6.69		3.56	3.23	3.49	1.10	3.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.57	0.56	0.56	0.56		0.81	0.81	0.81	0.74	0.80
d, Delay for Lane Group [s/veh]	320.1	29.09	29.21	29.90		24.22	23.84	24.09	22.41	24.79
Lane Group LOS	F	C	C	C		C	C	C	C	C
Critical Lane Group	Yes	No	No	Yes		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	12.87	3.38	3.21	3.08		6.48	6.66	6.12	5.04	5.39
50th-Percentile Queue Length [ft]	321.6	84.44	80.29	77.10		162.09	166.45	153.11	126.09	134.73
95th-Percentile Queue Length [veh]	21.28	6.08	5.78	5.55		10.66	10.89	10.18	8.73	9.20
95th-Percentile Queue Length [ft]	531.9	151.9	144.5	138.7		266.49	272.24	254.58	218.17	229.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	174.53	29.45	29.90	0.00	0.00	0.00	24.18	23.97	0.00	0.00	22.72	24.79
Movement LOS	F	C	C				C	C			C	C
d_A, Approach Delay [s/veh]	105.10			0.00			24.05			23.20		
Approach LOS	F			A			C			C		
d_I, Intersection Delay [s/veh]	43.59											
Intersection LOS	D											
Intersection V/C	0.713											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: S. Rice at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	3	390	64	59	338	18	13	73	13	51	137	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	136	3	0	39	0	0	0	28	28	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	542	70	61	391	19	14	76	42	81	142	88
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	154	20	17	111	5	4	22	12	23	40	25
Total Analysis Volume [veh/h]	3	616	80	69	444	22	16	86	48	92	161	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	34	0	0	30	0	0	19	0	0	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	72	72	72	72	72	72
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	14	14	8	17
g / C, Green / Cycle	0.24	0.24	0.19	0.19	0.11	0.23
(v / s)_i Volume / Saturation Flow Rate	0.20	0.20	0.15	0.15	0.09	0.20
s, saturation flow rate [veh/h]	1862	1625	1840	1670	1754	1752
c, Capacity [veh/h]	450	393	352	319	194	409
d1, Uniform Delay [s]	25.81	25.84	27.72	27.72	31.06	26.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.95	4.58	4.16	4.57	6.42	5.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

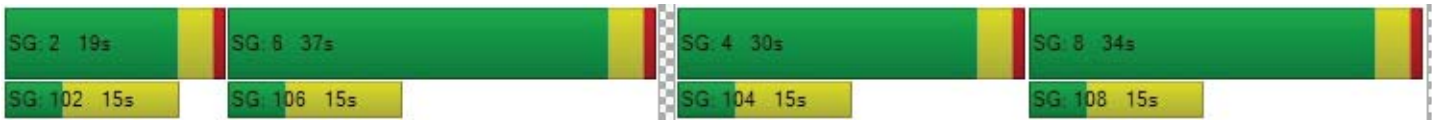
X, volume / capacity	0.83	0.83	0.80	0.80	0.77	0.86
d, Delay for Lane Group [s/veh]	29.77	30.41	31.88	32.30	37.48	31.87
Lane Group LOS	C	C	C	C	D	C
Critical Lane Group	No	Yes	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh]	6.18	5.48	4.77	4.37	2.77	6.08
50th-Percentile Queue Length [ft]	154.40	136.94	119.31	109.25	69.33	152.05
95th-Percentile Queue Length [veh]	10.25	9.32	8.36	7.80	4.99	10.13
95th-Percentile Queue Length [ft]	256.29	232.90	208.88	194.96	124.80	253.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.77	30.03	30.41	31.88	32.10	32.30	37.48	37.48	37.48	31.87	31.87	31.87
Movement LOS	C	C	C	C	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	30.07			32.08			37.48			31.87		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	31.69											
Intersection LOS	C											
Intersection V/C	0.640											

Sequence

Ring 1	2	6	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Chimney Rock Rd at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	215.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	5	487	11	11	889	8	2	32	15	33	41	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	3	0	19	0	0	0	9	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	509	11	30	925	8	2	42	16	34	43	21
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	145	3	9	263	2	1	12	5	10	12	6
Total Analysis Volume [veh/h]	7	578	13	34	1051	9	2	48	18	39	49	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	2	0	0	1	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	18	70	0	9	61	0	0	19	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	12	12	1	14	14	2	3
g / C, Green / Cycle	0.01	0.35	0.35	0.04	0.38	0.38	0.07	0.09
(v / s)_i Volume / Saturation Flow Rate	0.00	0.16	0.16	0.02	0.28	0.28	0.04	0.06
s, saturation flow rate [veh/h]	1774	1863	1848	1774	1863	1857	1777	1765
c, Capacity [veh/h]	17	649	644	73	707	705	124	168
d1, Uniform Delay [s]	17.67	9.05	9.06	16.83	9.65	9.65	16.15	15.69
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.71	0.50	0.51	4.64	1.63	1.63	3.75	4.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.46	0.46	0.47	0.75	0.75	0.55	0.67
d, Delay for Lane Group [s/veh]	32.38	9.56	9.56	21.47	11.28	11.29	19.90	20.23
Lane Group LOS	C	A	A	C	B	B	B	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh]	0.12	1.36	1.35	0.32	2.76	2.75	0.58	0.94
50th-Percentile Queue Length [ft]	2.98	33.94	33.74	8.10	68.96	68.78	14.47	23.55
95th-Percentile Queue Length [veh]	0.21	2.44	2.43	0.58	4.96	4.95	1.04	1.70
95th-Percentile Queue Length [ft]	5.36	61.09	60.73	14.58	124.12	123.80	26.05	42.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.38	9.56	9.56	21.47	11.28	11.29	19.90	19.90	19.90	20.23	20.23	20.23
Movement LOS	C	A	A	C	B	B	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	9.83			11.60			19.90			20.23		
Approach LOS	A			B			B			C		
d_I, Intersection Delay [s/veh]	11.85											
Intersection LOS	B											
Intersection V/C	0.391											

Sequence

Ring 1	3	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: E:\...\BellaireHighSchool_PMv10.vistro
Report File: E:\...\BellaireHS_PM_No Improvements.pdf

Scenario 6 5 Build_out_No_Improvements
5/14/2017

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: zone	Student Parkers			1.000	0.000	50.00	50.00	0	25	25	3.62
2: zone	Parents Dropping/Picking up			1.000	0.000	50.00	50.00	189	189	378	54.78
17: zone	Bus			1.000	0.000	50.00	50.00	22	22	44	6.38
21: zone	Staff			1.000	0.000	50.00	50.00	0	243	243	35.22
					Added Trips Total			**211**	**479**	**690**	**100.00**

Vistro File: E:\...\BellaireHighSchool_PMv10.vistro
Report File: E:\...\BellaireHS_PM_No Improvements.pdf

Scenario 6 5 Build_out_No_Improvements
5/14/2017

Trip Distribution summary

Zone / Gate	Zone 1: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
21: zone	0.00	0	0.00	0
4: Gate	15.00	0	15.00	4
5: Gate	5.00	0	5.00	1
6: Gate	5.00	0	5.00	1
7: Gate	10.00	0	10.00	3
8: Gate	5.00	0	5.00	1
9: Gate	10.00	0	10.00	3
10: Gate	5.00	0	5.00	1
11: Gate	10.00	0	10.00	3
12: Gate	20.00	0	20.00	4
13: Gate	0.00	0	0.00	0
14: Gate	15.00	0	15.00	4
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	0.00	0
Total	**100.00**	**0**	**100.00**	**25**

Zone / Gate	Zone 2: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
21: zone	0.00	0	0.00	0
4: Gate	20.00	38	20.00	40
5: Gate	5.00	9	5.00	9
6: Gate	5.00	9	5.00	9
7: Gate	10.00	19	10.00	19
8: Gate	5.00	9	5.00	9
9: Gate	10.00	19	10.00	19
10: Gate	5.00	9	5.00	9
11: Gate	10.00	19	10.00	19
12: Gate	15.00	28	15.00	28
13: Gate	0.00	0	0.00	0
14: Gate	15.00	28	15.00	28
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	0.00	0
Total	**100.00**	**187**	**100.00**	**189**

Zone / Gate	Zone 17: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
21: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	11	50.00	11
13: Gate	0.00	0	0.00	0
14: Gate	50.00	11	50.00	11
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	50.00	11
Total	**100.00**	**22**	**150.00**	**33**

Zone / Gate	Zone 21: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	0	50.00	122
13: Gate	0.00	0	0.00	0
14: Gate	50.00	0	50.00	121
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	0.00	0
Total	**100.00**	**0**	**100.00**	**243**

Appendix C

Vistro File: E:\...\BellaireHighSchool_AMv10.vistro
Report File: E:\...\BellaireHS_AM.pdf

Scenario 7 Build out_2021
5/15/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Maple St at Ferris Dr	All-way stop	HCM 2010	EB Thru	0.365	10.0	B
2	S. Rice Avenue at Maple St	Signalized	HCM 2010	NB Left	0.819	45.5	D
3	Student Drop-off/Pick-up Drwy	Two-way stop	HCM 2010	EB Thru	0.000	77.8	F
4	S. Rice Ave at Bus Exit Drwy/Holly Street	Signalized	HCM 2010	EB Left	0.421	8.0	A
5	Valerie St. at S. Rice Ave	Two-way stop	HCM 2010	EB Left	0.548	93.2	F
6	Valerie St at Ferris Dr	All-way stop	HCM 2010	NB Left	0.571	13.4	B
7	Chimney Rock Rd at Beechnut St	Signalized	HCM 2010	NB Left	0.654	31.8	C
8	Beechnut St at S Rice Ave	Signalized	HCM 2010	WB Right	0.855	69.0	E
9	Beechnut at 610 SB Feeder	Signalized	HCM 2010	SB Left	0.874	94.3	F
10	Beechnut at 610 NB Feeder	Signalized	HCM 2010	NB Left	0.701	54.4	D
11	S. Rice at Evergreen St	Signalized	HCM 2010	EB Thru	0.676	25.0	C
12	Chimney Rock Rd at Evergreen St	Signalized	HCM 2010	NB Left	0.518	16.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Maple St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.365

Intersection Setup

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Base Volume Input [veh/h]	36	153	0	0	45	46	63	0	69	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	77	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	153	0	0	45	46	63	77	69	0	0	0
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	51	0	0	15	15	21	26	23	0	0	0
Total Analysis Volume [veh/h]	48	204	0	0	60	61	84	103	92	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	745	771	765	686
Degree of Utilization, x	0.34	0.16	0.36	0.00

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.50	0.55	1.68	0.00
95th-Percentile Queue Length [ft]	37.46	13.87	41.89	0.00
Approach Delay [s/veh]	10.29	8.54	10.38	0.00
Approach LOS	B	A	B	A
Intersection Delay [s/veh]	10.00			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 2: S. Rice Avenue at Maple St

Control Type:	Signalized	Delay (sec / veh):	45.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.819

Intersection Setup

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Base Volume Input [veh/h]	0	465	102	3	379	0	0	0	0	8	0	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	416	216	0	0	11	261	0	0	0	0	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	416	700	102	3	405	261	0	0	0	8	26	75
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	292	43	1	169	109	0	0	0	3	11	31
Total Analysis Volume [veh/h]	693	1167	170	5	675	435	0	0	0	13	43	125
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	60	38	0	44	22	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	87	87	87	87	87	87	87	87
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	59	59	1	30	30	0	12
g / C, Green / Cycle	0.34	0.68	0.68	0.01	0.34	0.34	0.00	0.13
(v / s)_i Volume / Saturation Flow Rate	0.39	0.36	0.37	0.00	0.32	0.32	0.00	0.11
s, saturation flow rate [veh/h]	1774	1863	1783	1774	1863	1622	1863	1655
c, Capacity [veh/h]	608	1255	1201	14	631	550	2	222
d1, Uniform Delay [s]	28.76	7.26	7.45	43.19	28.04	28.07	0.00	36.84
k, delay calibration	0.50	0.49	0.50	0.11	0.40	0.40	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	81.44	1.57	1.86	14.40	20.06	22.57	0.00	7.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

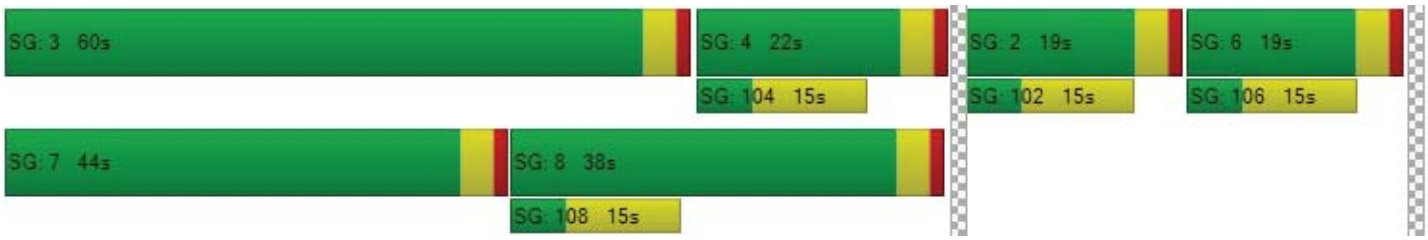
X, volume / capacity	1.14	0.53	0.56	0.35	0.94	0.94	0.00	0.82
d, Delay for Lane Group [s/veh]	110.19	8.84	9.31	57.59	48.10	50.65	0.00	43.99
Lane Group LOS	F	A	A	E	D	D	A	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh]	25.81	5.75	5.96	0.16	14.94	13.43	0.00	4.12
50th-Percentile Queue Length [ft]	645.32	143.72	148.88	4.07	373.51	335.86	0.00	103.12
95th-Percentile Queue Length [veh]	37.13	9.68	9.96	0.29	21.28	19.45	0.00	7.42
95th-Percentile Queue Length [ft]	928.26	242.02	248.94	7.32	531.99	486.14	0.00	185.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	110.19	9.04	9.31	57.59	48.41	50.65	0.00	0.00	0.00	43.99	43.99	43.99
Movement LOS	F	A	A	E	D	D	A	A	A	D	D	D
d_A, Approach Delay [s/veh]	43.59			49.32			0.00			43.99		
Approach LOS	D			D			A			D		
d_I, Intersection Delay [s/veh]	45.54											
Intersection LOS	D											
Intersection V/C	0.819											

Sequence

Ring 1	3	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Student Drop-off/Pick-up Drwy

Control Type:	Two-way stop	Delay (sec / veh):	77.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	S. Rice Avenue			S. Rice Ave			Drwy			Holt St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	S. Rice Avenue			S. Rice Ave			Drwy			Holt St		
Base Volume Input [veh/h]	0	540	0	0	456	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	216	0	0	0	272	177	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	562	0	0	746	177	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	141	0	0	187	44	0	0	0	0	0	0
Total Analysis Volume [veh/h]	216	562	0	0	746	177	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.29	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.91	0.00	0.00	8.58	0.00	0.00	68.54	77.80	11.58	51.60	0.00	10.03
Movement LOS	B	A	A	A	A	A	F	F	B	F		B
95th-Percentile Queue Length [veh]	3.14	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	78.46	39.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.31			0.00			52.64			30.81		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	1.51											
Intersection LOS	F											

Generated with PTV VISTRO
Version 5.00-00

Scenario 7: 7 Build out_2021
Report File: E:\...\BellaireHS_AM.pdf

Intersection Level Of Service Report
Intersection 4: S. Rice Ave at Bus Exit Drwy/Holly Street

Control Type:	Signalized	Delay (sec / veh):	8.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.421

Intersection Setup

Name	S. Rice Ave			S. Rice Ave			Bus Exit Drw			Holly Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Rice Ave			S. Rice Ave			Bus Exit Drw			Holly Street		
Base Volume Input [veh/h]	0	540	0	0	456	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	438	0	11	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	540	0	0	894	0	11	0	11	0	0	0
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	225	0	0	373	0	5	0	5	0	0	0
Total Analysis Volume [veh/h]	0	900	0	0	1490	0	18	0	18	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	2	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	73	0	9	71	0	19	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	5	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	35	35	35	35	35	35	35	35
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	18	18	0	18	18	2	0
g / C, Green / Cycle	0.00	0.50	0.50	0.00	0.50	0.50	0.04	0.00
(v / s)_i Volume / Saturation Flow Rate	0.00	0.24	0.24	0.00	0.40	0.40	0.02	0.00
s, saturation flow rate [veh/h]	1774	1863	1863	1774	1863	1863	1673	1863
c, Capacity [veh/h]	0	942	942	0	942	942	72	0
d1, Uniform Delay [s]	0.00	5.72	5.72	0.00	7.23	7.23	16.60	0.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.38	0.38	0.00	1.54	1.54	5.21	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.48	0.48	0.00	0.79	0.79	0.50	0.00
d, Delay for Lane Group [s/veh]	0.00	6.10	6.10	0.00	8.77	8.77	21.81	0.00
Lane Group LOS	A	A	A	A	A	A	C	A
Critical Lane Group	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]	0.00	1.28	1.28	0.00	2.86	2.86	0.34	0.00
50th-Percentile Queue Length [ft]	0.00	31.88	31.88	0.00	71.61	71.61	8.61	0.00
95th-Percentile Queue Length [veh]	0.00	2.30	2.30	0.00	5.16	5.16	0.62	0.00
95th-Percentile Queue Length [ft]	0.00	57.38	57.38	0.00	128.91	128.91	15.50	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	6.10	6.10	0.00	8.77	8.77	21.81	21.81	21.81	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A	C	C	C	A	A	A
d_A, Approach Delay [s/veh]	6.10			8.77			21.81			0.00		
Approach LOS	A			A			C			A		
d_I, Intersection Delay [s/veh]	7.97											
Intersection LOS	A											
Intersection V/C	0.421											

Sequence

Ring 1	3	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Valerie St. at S. Rice Ave

Control Type:	Two-way stop	Delay (sec / veh):	93.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

Intersection Setup

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Base Volume Input [veh/h]	30	543	355	43	38	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	438	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	576	807	43	38	101
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	192	269	14	13	34
Total Analysis Volume [veh/h]	40	768	1076	57	51	135
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.55	0.29
d_M, Delay for Movement [s/veh]	11.29	0.00	0.00	0.00	93.19	62.24
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	4.90	2.45	0.00	0.00	6.38	6.38
95th-Percentile Queue Length [ft]	122.41	61.21	0.00	0.00	159.61	159.61
d_A, Approach Delay [s/veh]	0.56		0.00		70.73	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	6.40					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Valerie St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Base Volume Input [veh/h]	30	543	0	5	90	4	13	94	40	13	45	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	543	0	5	90	4	13	94	40	13	45	24
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	181	0	2	30	1	4	31	13	4	15	8
Total Analysis Volume [veh/h]	40	724	0	7	120	5	17	125	53	17	60	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	670	676	616	613	592
Degree of Utilization, x	0.57	0.56	0.21	0.32	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.62	3.55	0.81	1.37	0.67
95th-Percentile Queue Length [ft]	90.52	88.81	20.18	34.16	16.73
Approach Delay [s/veh]	14.84		10.43	11.61	10.44
Approach LOS	B		B	B	B
Intersection Delay [s/veh]	13.43				
Intersection LOS	B				

Generated with PTV VISTRO
Version 5.00-00

Scenario 7: 7 Build out_2021
Report File: E:\...\BellaireHS_AM.pdf

Intersection Level Of Service Report
Intersection 7: Chimney Rock Rd at Beechnut St

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	126	851	186	126	209	82	133	103	79	108	604	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	90	0	0	0	0	46	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	885	283	131	217	85	138	153	82	112	628	102
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	251	80	37	62	24	39	43	23	32	178	29
Total Analysis Volume [veh/h]	149	1006	322	149	247	97	157	174	93	127	714	116
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	40	0	5	40	0	40	40	0	40	40	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	23	0	22	23	0	11	42	0	33	64	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	26	17	17	5	26	17	17	7	19	19	6	18	18
g / C, Green / Cycle	0.08	0.42	0.27	0.27	0.08	0.42	0.27	0.27	0.12	0.30	0.30	0.10	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.13	0.23	0.19	0.20	0.13	0.19	0.08	0.06	0.09	0.07	0.08	0.07	0.23	0.23
s, saturation flow rate [veh/h]	1128	1738	3227	1583	558	395	3227	1583	1774	1863	1651	1774	1863	1773
c, Capacity [veh/h]	113	797	887	435	113	348	887	435	207	560	496	170	521	496
d1, Uniform Delay [s]	31.89	13.59	20.64	21.06	31.89	12.25	18.16	17.87	27.31	16.87	16.92	28.09	21.45	21.45
k, delay calibration	0.50	0.50	0.11	0.11	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	192.9	2.27	0.93	2.50	26.38	0.30	0.17	0.26	5.65	0.23	0.27	6.45	3.21	3.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.32	0.50	0.68	0.74	0.66	0.21	0.28	0.22	0.76	0.25	0.26	0.75	0.82	0.82
d, Delay for Lane Group [s/veh]	224.8	15.86	21.57	23.55	58.27	12.55	18.33	18.13	32.95	17.10	17.19	34.55	24.66	24.81
Lane Group LOS	F	B	C	C	E	B	B	B	C	B	B	C	C	C
Critical Lane Group	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	7.89	4.30	3.80	4.31	2.04	0.65	1.35	1.06	2.51	1.46	1.35	2.09	5.89	5.62
50th-Percentile Queue Length [ft]	197.1	107.6	95.12	107.8	50.97	16.30	33.70	26.41	62.86	36.49	33.78	52.35	147.17	140.62
95th-Percentile Queue Length [veh]	13.58	7.71	6.85	7.72	3.67	1.17	2.43	1.90	4.53	2.63	2.43	3.77	9.87	9.51
95th-Percentile Queue Length [ft]	339.5	192.6	171.2	192.9	91.75	29.34	60.66	47.54	113.16	65.69	60.80	94.24	246.65	237.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	224.83	19.29	23.55	42.93	18.33	18.13	32.95	17.12	17.19	34.55	24.72	24.81
Movement LOS	F	B	C	D	B	B	C	B	B	C	C	C
d_A, Approach Delay [s/veh]	40.96			23.45			23.00			26.04		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	31.85											
Intersection LOS	C											
Intersection V/C	0.654											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 7: 7 Build out_2021
Report File: E:\...\BellaireHS_AM.pdf

Intersection Level Of Service Report
Intersection 8: Beechnut St at S Rice Ave

Control Type:	Signalized	Delay (sec / veh):	69.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	101	231	125	235	145	149	82	1060	29	42	569	251
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	314	0	0	11	0	136	0	0	0	0	182
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	554	130	244	162	155	221	1102	30	44	592	443
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	157	37	69	46	44	63	313	9	13	168	126
Total Analysis Volume [veh/h]	119	630	148	277	184	176	251	1252	34	50	673	503
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	40	40	0	40	40	0	40	40	0	40	40	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	21	0	22	31	0	17	53	0	24	60	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	31	31	23	43	43	21	56	56	5	40	40
g / C, Green / Cycle	0.08	0.24	0.24	0.17	0.33	0.33	0.16	0.43	0.43	0.04	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.07	0.22	0.22	0.16	0.10	0.11	0.14	0.35	0.35	0.03	0.34	0.34
s, saturation flow rate [veh/h]	1774	1863	1742	1774	1863	1583	1774	1863	1845	1774	1863	1603
c, Capacity [veh/h]	146	444	415	308	613	521	282	798	790	66	571	491
d1, Uniform Delay [s]	58.83	48.25	48.25	52.78	32.55	33.00	53.75	32.60	32.65	62.20	45.21	45.21
k, delay calibration	0.11	0.24	0.24	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.26	14.11	14.93	9.38	0.27	0.38	9.46	8.65	8.85	16.12	68.54	74.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.91	0.91	0.90	0.30	0.34	0.89	0.81	0.81	0.76	1.10	1.11
d, Delay for Lane Group [s/veh]	69.09	62.35	63.18	62.16	32.82	33.38	63.21	41.25	41.50	78.33	113.75	120.15
Lane Group LOS	E	E	E	E	C	C	E	D	D	E	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	4.28	14.39	13.56	9.67	4.41	4.29	8.80	19.47	19.41	1.94	29.16	25.96
50th-Percentile Queue Length [ft]	107.12	359.80	338.95	241.84	110.35	107.27	219.94	486.67	485.31	48.49	729.02	649.01
95th-Percentile Queue Length [veh]	7.68	20.61	19.60	14.77	7.86	7.69	13.66	26.70	26.64	3.49	40.47	36.70
95th-Percentile Queue Length [ft]	191.98	515.34	489.92	369.36	196.49	192.20	341.55	667.57	665.96	87.28	1011.81	917.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.09	62.65	63.18	62.16	32.82	33.38	63.21	41.37	41.50	78.33	114.17	120.15
Movement LOS	E	E	E	E	C	C	E	D	D	E	F	F
d_A, Approach Delay [s/veh]	63.59			45.73			44.94			115.16		
Approach LOS	E			D			D			F		
d_I, Intersection Delay [s/veh]	68.99											
Intersection LOS	E											
Intersection V/C	0.855											

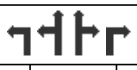
Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 9: Beechnut at 610 SB Feeder

Control Type:	Signalized	Delay (sec / veh):	94.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.874

Intersection Setup

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	0	0	0	300	236	272	0	1242	278	140	716	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	182	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	312	245	283	0	1292	289	146	927	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	78	61	71	0	323	72	37	232	0
Total Analysis Volume [veh/h]	0	0	0	312	245	283	0	1292	289	146	927	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Overlap	Permiss	Split	Split	Split	Split	Split	Split
Signal group	0	0	0	3	4	0	0	2	0	3	1	0
Auxiliary Signal Groups					3,4							
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	0	0	5	5	0	0	5	0	5	5	0
Maximum Green [s]	0	0	0	5	30	0	0	30	0	5	30	0
Amber [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	31	21	0	0	49	0	31	19	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall				Yes	No			No			No	
Maximum Recall				No	No			No			No	
Pedestrian Recall				No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	R	C	C	L	C	C
C, Cycle Length [s]		97	97	97	97	97	97	97	97	97
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		5	25	25	16	30	30	30	30	30
g / C, Green / Cycle		0.05	0.26	0.26	0.16	0.31	0.31	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate		0.12	0.12	0.12	0.12	0.30	0.31	0.08	0.31	0.20
s, saturation flow rate [veh/h]		1774	1826	1573	1583	3547	1698	1774	1863	1695
c, Capacity [veh/h]		92	467	403	258	1099	526	551	578	526
d1, Uniform Delay [s]		46.75	34.39	34.40	41.35	37.82	38.42	29.14	38.40	33.56
k, delay calibration		0.50	0.11	0.11	0.11	0.11	0.45	0.11	0.46	0.19
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		665.1	0.78	0.91	4.67	6.23	37.72	0.25	39.40	2.40
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		2.41	0.49	0.49	0.76	0.96	1.00	0.27	1.01	0.65
d, Delay for Lane Group [s/veh]		711.9	35.17	35.30	46.02	44.05	76.14	29.39	77.80	35.96
Lane Group LOS		F	D	D	D	D	F	C	F	D
Critical Lane Group		Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		19.15	5.12	4.43	5.07	13.70	18.37	2.94	20.46	7.99
50th-Percentile Queue Length [ft]		478.6	128.1	110.8	126.8	342.43	459.33	73.53	511.55	199.73
95th-Percentile Queue Length [veh]		30.90	8.84	7.89	8.77	19.77	25.43	5.29	28.13	12.62
95th-Percentile Queue Length [ft]		772.4	220.9	197.2	219.1	494.17	635.77	132.35	703.27	315.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	486.43	35.23	43.27	0.00	49.96	76.14	29.39	62.41	0.00
Movement LOS				F	D	D		D	E	C	E	
d_A, Approach Delay [s/veh]	0.00			215.36			54.74			57.92		
Approach LOS	A			F			D			E		
d_I, Intersection Delay [s/veh]	94.33											
Intersection LOS	F											
Intersection V/C	0.874											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Beechnut at 610 NB Feeder

Control Type:	Signalized	Delay (sec / veh):	54.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	357	274	71	0	0	0	630	928	0	0	476	302
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	0	0	0	0	0	0	0	0	0	136	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	417	285	74	0	0	0	655	965	0	0	631	314
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	78	20	0	0	0	180	265	0	0	173	86
Total Analysis Volume [veh/h]	458	313	81	0	0	0	720	1060	0	0	693	345
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Overlap	Permiss	Permiss	Permiss	Permiss	Split	Split	Permiss	Permiss	Split	Split
Signal group	7	8	0	0	0	0	0	5	0	0	6	0
Auxiliary Signal Groups		7,8										
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	5	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	25	31	0	0	0	0	0	45	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	5	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	10	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	Yes	No						No			No	
Maximum Recall	No	No						No			No	
Pedestrian Recall	No	No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		L	C	C	C	C
C, Cycle Length [s]	74	74	74	74		74	74	74	74	74
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	0.00	0.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	38	38	38		28	28	28	20	20
g / C, Green / Cycle	0.07	0.51	0.51	0.51		0.38	0.38	0.38	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.13	0.13	0.12	0.12		0.34	0.33	0.33	0.20	0.22
s, saturation flow rate [veh/h]	1774	1774	1695	1577		1774	1846	1695	3547	1584
c, Capacity [veh/h]	120	907	866	806		676	703	646	949	424
d1, Uniform Delay [s]	34.51	10.17	10.06	10.07		21.55	21.25	21.19	24.68	25.41
k, delay calibration	0.50	0.50	0.50	0.50		0.34	0.32	0.32	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	437.4	0.67	0.63	0.69		12.29	9.61	9.87	1.10	4.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.91	0.25	0.23	0.24		0.90	0.87	0.87	0.73	0.82
d, Delay for Lane Group [s/veh]	471.9	10.83	10.69	10.77		33.83	30.87	31.06	25.77	29.46
Lane Group LOS	F	B	B	B		C	C	C	C	C
Critical Lane Group	Yes	Yes	No	No		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	16.69	2.05	1.80	1.71		11.35	10.91	9.99	5.37	5.86
50th-Percentile Queue Length [ft]	417.1	51.21	45.01	42.74		283.68	272.70	249.65	134.21	146.41
95th-Percentile Queue Length [veh]	27.27	3.69	3.24	3.08		16.87	16.32	15.17	9.17	9.83
95th-Percentile Queue Length [ft]	681.6	92.17	81.02	76.93		421.79	408.11	379.22	229.20	245.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	241.40	10.72	10.77	0.00	0.00	0.00	33.31	30.97	0.00	0.00	25.78	29.46
Movement LOS	F	B	B				C	C			C	C
d_A, Approach Delay [s/veh]	134.73			0.00			31.94			27.00		
Approach LOS	F			A			C			C		
d_I, Intersection Delay [s/veh]	54.40											
Intersection LOS	D											
Intersection V/C	0.701											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: S. Rice at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	3	492	119	5	279	5	29	153	14	70	126	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	0	269	0	0	0	59	110	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	523	124	5	559	5	30	159	74	183	131	131
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	149	35	1	159	1	9	45	21	52	37	37
Total Analysis Volume [veh/h]	3	594	141	6	635	6	34	181	84	208	149	149
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	23	0	0	23	0	0	23	0	0	74	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	19	19	13	21
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.20	0.33
(v / s)_i Volume / Saturation Flow Rate	0.21	0.22	0.19	0.19	0.17	0.29
s, saturation flow rate [veh/h]	1852	1580	1674	1690	1765	1737
c, Capacity [veh/h]	585	452	535	483	360	567
d1, Uniform Delay [s]	21.11	21.17	20.11	20.56	24.86	20.86
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.18
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.40	2.58	1.09	1.64	5.01	8.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

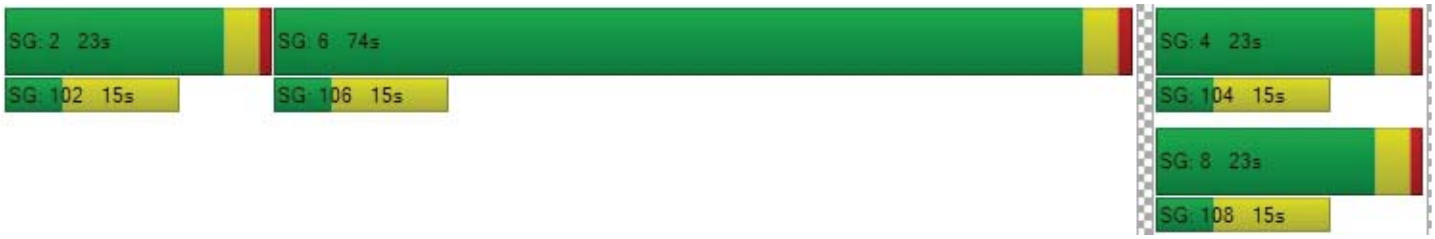
X, volume / capacity	0.68	0.75	0.60	0.67	0.83	0.89
d, Delay for Lane Group [s/veh]	22.51	23.75	21.20	22.20	29.87	29.07
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	5.28	4.66	4.06	4.24	4.64	7.92
50th-Percentile Queue Length [ft]	132.03	116.57	101.40	106.08	115.89	197.92
95th-Percentile Queue Length [veh]	9.05	8.20	7.30	7.62	8.17	12.53
95th-Percentile Queue Length [ft]	226.25	205.11	182.51	190.54	204.16	313.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.51	22.93	23.75	21.20	21.70	22.20	29.87	29.87	29.87	29.07	29.07	29.07
Movement LOS	C	C	C	C	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	23.08			21.70			29.87			29.07		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	24.98											
Intersection LOS	C											
Intersection V/C	0.676											

Sequence

Ring 1	2	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Generated with PTV VISTRO
Version 5.00-00

Scenario 7: 7 Build out_2021
Report File: E:\...\BellaireHS_AM.pdf

Intersection Level Of Service Report
Intersection 12: Chimney Rock Rd at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	215.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	9	965	36	8	367	4	21	78	15	20	39	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	39	51	0	0	20	26	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1004	37	47	433	4	22	101	42	21	41	33
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	285	11	13	123	1	6	29	12	6	12	9
Total Analysis Volume [veh/h]	10	1141	42	53	492	5	25	115	48	24	47	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	2	0	0	1	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	51	71	0	9	29	0	0	21	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	48	48	48	48	48	48	48	48
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	19	19	3	21	21	7	4
g / C, Green / Cycle	0.01	0.39	0.39	0.05	0.43	0.43	0.14	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.32	0.32	0.03	0.13	0.13	0.11	0.06
s, saturation flow rate [veh/h]	1774	1863	1840	1774	1863	1856	1771	1737
c, Capacity [veh/h]	23	727	718	94	802	799	250	145
d1, Uniform Delay [s]	23.64	13.18	13.18	22.30	9.03	9.04	19.91	21.62
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.83	2.34	2.37	5.13	0.22	0.22	4.53	7.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

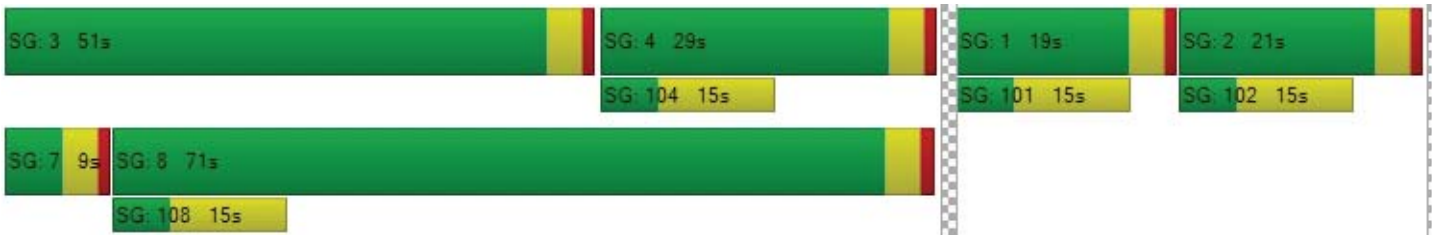
X, volume / capacity	0.43	0.82	0.82	0.56	0.31	0.31	0.75	0.75
d, Delay for Lane Group [s/veh]	35.46	15.51	15.55	27.43	9.25	9.25	24.44	29.17
Lane Group LOS	D	B	B	C	A	A	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.18	5.08	5.02	0.67	1.41	1.40	2.12	1.39
50th-Percentile Queue Length [ft]	4.51	126.90	125.60	16.70	35.18	35.09	53.06	34.84
95th-Percentile Queue Length [veh]	0.33	8.77	8.70	1.20	2.53	2.53	3.82	2.51
95th-Percentile Queue Length [ft]	8.13	219.27	217.51	30.07	63.33	63.17	95.50	62.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.46	15.53	15.55	27.43	9.25	9.25	24.44	24.44	24.44	29.17	29.17	29.17
Movement LOS	D	B	B	C	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	15.70			11.01			24.44			29.17		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	15.96											
Intersection LOS	B											
Intersection V/C	0.518											

Sequence

Ring 1	3	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Vistro File: E:\...\BellaireHighSchool_AMv10.vistro
Report File: E:\...\BellaireHS_AM.pdf

Scenario 7 Build out_2021
5/15/2017

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: zone	Student Parkers			1.000	0.000	50.00	50.00	514	0	514	32.43
2: zone	Parents Dropping/Picking up			1.000	0.000	50.00	50.00	392	392	784	49.46
17: zone	buses			1.000	0.000	50.00	50.00	22	22	44	2.78
22: zone	staff			1.000	0.000	50.00	50.00	243	0	243	15.33
					Added Trips Total			**1171**	**414**	**1585**	**100.00**

Vistro File: E:\...\BellaireHighSchool_AMv10.vistro
Report File: E:\...\BellaireHS_AM.pdf

Scenario 7 Build out_2021
5/15/2017

Trip Distribution summary

Zone / Gate	Zone 1: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
22: zone	0.00	0	0.00	0
4: Gate	15.00	77	15.00	0
5: Gate	5.00	26	5.00	0
6: Gate	5.00	26	5.00	0
7: Gate	10.00	51	10.00	0
8: Gate	5.00	26	5.00	0
9: Gate	10.00	51	10.00	0
10: Gate	5.00	26	5.00	0
11: Gate	10.00	51	10.00	0
12: Gate	20.00	103	20.00	0
14: Gate	15.00	77	15.00	0
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	0.00	0
20: Gate	0.00	0	0.00	0
Total	**100.00**	**514**	**100.00**	**0**

Zone / Gate	Zone 2: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
22: zone	0.00	0	0.00	0
4: Gate	15.00	59	15.00	59
5: Gate	5.00	20	5.00	20
6: Gate	5.00	20	5.00	20
7: Gate	10.00	39	10.00	39
8: Gate	5.00	20	5.00	20
9: Gate	10.00	39	10.00	39
10: Gate	5.00	20	5.00	20
11: Gate	10.00	39	10.00	39
12: Gate	20.00	78	20.00	77
14: Gate	15.00	59	15.00	59
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	0.00	0
20: Gate	0.00	0	0.00	0
Total	**100.00**	**393**	**100.00**	**392**

Zone / Gate	Zone 17: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
22: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	11	50.00	11
14: Gate	50.00	11	50.00	11
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	50.00	11
20: Gate	0.00	0	50.00	11
Total	**100.00**	**22**	**200.00**	**44**

Zone / Gate	Zone 22: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	122	50.00	0
14: Gate	50.00	122	50.00	0
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
19: Gate	0.00	0	0.00	0
20: Gate	0.00	0	0.00	0
Total	**100.00**	**244**	**100.00**	**0**

Vistro File: E:\...\BellaireHighSchool_PMv10.vistro
Report File: E:\...\BellaireHS_PM.pdf

Scenario 5 5 Build_ou
5/15/2017

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Maple St at Ferris Dr	All-way stop	HCM 2010	NB Thru	0.155	7.8	A
2	S. Rice Avenue at Maple St	Signalized	HCM 2010	SB Left	0.607	23.0	C
3	Student Pick-up/Drop-off Drwy	Two-way stop	HCM 2010	EB Thru	0.000	25.8	D
4	S. Rice Ave at Bus Exit Drwy/Holly Street	Signalized	HCM 2010	EB Left	0.270	8.2	A
5	Valerie St. at S. Rice Ave	Two-way stop	HCM 2010	EB Left	0.174	22.4	C
6	Valerie St at Ferris Dr	All-way stop	HCM 2010	NB Right	0.209	8.3	A
7	Chimney Rock Rd at Beechnut St	Signalized	HCM 2010	SB Left	0.583	20.3	C
8	Beechnut St at S Rice Ave	Signalized	HCM 2010	NB Left	0.669	32.9	C
9	Beechnut at 610 SB Feeder	Signalized	HCM 2010	SB Left	0.905	157.0	F
10	Beechnut at 610 NB Feeder	Signalized	HCM 2010	NB Left	0.713	43.6	D
11	S. Rice at Evergreen St	Signalized	HCM 2010	EB Thru	0.640	31.7	C
12	Chimney Rock Rd at Evergreen St	Signalized	HCM 2010	NB Left	0.391	11.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. for all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Maple St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.155

Intersection Setup

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Ferris Dr			Ferris Dr			Maple St			Maple St		
Base Volume Input [veh/h]	16	70	0	0	79	24	13	0	32	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	4	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	70	0	0	79	24	13	0	32	4	4	0
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	23	0	0	26	8	4	0	11	1	1	0
Total Analysis Volume [veh/h]	21	93	0	0	105	32	17	0	43	5	5	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	845	885	874	774
Degree of Utilization, x	0.13	0.15	0.07	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.47	0.55	0.22	0.04
95th-Percentile Queue Length [ft]	11.64	13.65	5.52	0.98
Approach Delay [s/veh]	7.92	7.81	7.42	7.71
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.77			
Intersection LOS	A			

Generated with PTV VISTRO
Version 5.00-00

Scenario 5: 5 5 Build_out
Report File: E:\...\BellaireHS_PM.pdf

Intersection Level Of Service Report
Intersection 2: S. Rice Avenue at Maple St

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.607

Intersection Setup

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S. Rice Avenue			Maple St			Maple St		
Base Volume Input [veh/h]	0	355	26	5	403	0	0	0	0	27	0	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	103	0	0	11	11	128	0	132	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	472	26	5	430	11	128	0	132	27	0	31
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	197	11	2	179	5	53	0	55	11	0	13
Total Analysis Volume [veh/h]	18	787	43	8	717	18	213	0	220	45	0	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	56	27	0	55	26	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	57	57	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	17	17	1	17	17	19	5
g / C, Green / Cycle	0.02	0.30	0.30	0.01	0.29	0.29	0.33	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.25	0.25	0.01	0.22	0.22	0.29	0.06
s, saturation flow rate [veh/h]	1597	1676	1646	1597	1676	1662	1505	1500
c, Capacity [veh/h]	35	507	497	17	487	483	492	122
d1, Uniform Delay [s]	27.70	18.58	18.59	28.17	18.47	18.47	18.22	25.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.11	3.50	3.57	19.24	2.43	2.46	5.85	11.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.83	0.83	0.47	0.76	0.76	0.88	0.80
d, Delay for Lane Group [s/veh]	38.81	22.09	22.15	47.42	20.90	20.93	24.07	37.05
Lane Group LOS	D	C	C	D	C	C	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh]	0.34	5.06	4.98	0.19	4.29	4.26	5.54	1.59
50th-Percentile Queue Length [ft]	8.45	126.52	124.51	4.83	107.18	106.40	138.46	39.77
95th-Percentile Queue Length [veh]	0.61	8.75	8.64	0.35	7.68	7.64	9.40	2.86
95th-Percentile Queue Length [ft]	15.21	218.76	216.01	8.69	192.07	190.99	234.95	71.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.81	22.12	22.15	47.42	20.91	20.93	24.07	24.07	24.07	37.05	37.05	37.05
Movement LOS	D	C	C	D	C	C	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	22.47			21.20			24.07			37.05		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	23.02											
Intersection LOS	C											
Intersection V/C	0.607											

Sequence

Ring 1	3	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Student Pick-up/Drop-off Drwy

Control Type:	Two-way stop	Delay (sec / veh):	25.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	S. Rice Avenue			S. Rice Avenue			Drwy			Holt St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	S. Rice Avenue			S. Rice Avenue			Drwy			Holt St		
Base Volume Input [veh/h]	0	386	0	0	346	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	103	128	0	0	22	84	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	529	0	0	382	84	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	132	0	0	96	21	0	0	0	0	0	0
Total Analysis Volume [veh/h]	103	529	0	0	382	84	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.64	0.00	0.00	8.48	0.00	0.00	21.69	25.82	9.68	22.60	0.00	9.91
Movement LOS	A	A	A	A	A	A	C	D	A	C		A
95th-Percentile Queue Length [veh]	1.21	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	30.18	15.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	1.41			0.00			19.06			16.25		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.81											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: S. Rice Ave at Bus Exit Drwy/Holly Street

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.270

Intersection Setup

Name	S. Rice Avenue			S. Rice Ave			Bus Exit Drwy			Holly Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	S. Rice Avenue			S. Rice Ave			Bus Exit Drwy			Holly Street		
Base Volume Input [veh/h]	0	427	0	0	346	0	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	128	0	0	95	0	11	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	555	0	0	441	0	11	0	11	0	0	0
Peak Hour Factor	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	231	0	0	184	0	5	0	5	0	0	0
Total Analysis Volume [veh/h]	0	925	0	0	735	0	18	0	18	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	2	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	27	0	9	24	0	75	75	0	0	9	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	5	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	27	27	27	27	27	27	27	27
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	10	10	0	10	10	1	0
g / C, Green / Cycle	0.00	0.37	0.37	0.00	0.37	0.37	0.05	0.00
(v / s)_i Volume / Saturation Flow Rate	0.00	0.25	0.25	0.00	0.20	0.20	0.02	0.00
s, saturation flow rate [veh/h]	1774	1863	1863	1774	1863	1863	1673	1863
c, Capacity [veh/h]	1	688	688	1	688	688	77	1
d1, Uniform Delay [s]	0.00	7.25	7.25	0.00	6.79	6.79	12.75	0.00
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	1.15	1.15	0.00	0.65	0.65	4.38	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.67	0.67	0.00	0.53	0.53	0.47	0.00
d, Delay for Lane Group [s/veh]	0.00	8.40	8.40	0.00	7.44	7.44	17.13	0.00
Lane Group LOS	A	A	A	A	A	A	B	A
Critical Lane Group	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.00	1.39	1.39	0.00	1.00	1.00	0.25	0.00
50th-Percentile Queue Length [ft]	0.00	34.81	34.81	0.00	24.90	24.90	6.34	0.00
95th-Percentile Queue Length [veh]	0.00	2.51	2.51	0.00	1.79	1.79	0.46	0.00
95th-Percentile Queue Length [ft]	0.00	62.65	62.65	0.00	44.82	44.82	11.41	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	8.40	8.40	0.00	7.44	7.44	17.13	17.13	17.13	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A	B	B	B	A	A	A
d_A, Approach Delay [s/veh]	8.40			7.44			17.13			0.00		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	8.17											
Intersection LOS	A											
Intersection V/C	0.270											

Sequence

Ring 1	3	4	2	6	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Valerie St. at S. Rice Ave

Control Type:	Two-way stop	Delay (sec / veh):	22.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.174

Intersection Setup

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	S. Rice Ave		S. Rice Ave		Valerie St	
Base Volume Input [veh/h]	2	425	299	39	33	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.04	1.04	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	139	95	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	581	406	39	33	47
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	194	135	13	11	16
Total Analysis Volume [veh/h]	3	775	541	52	44	63
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.17	0.09
d_M, Delay for Movement [s/veh]	8.69	0.00	0.00	0.00	22.36	13.29
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	1.93	0.96	0.00	0.00	1.05	1.05
95th-Percentile Queue Length [ft]	48.19	24.10	0.00	0.00	26.14	26.14
d_A, Approach Delay [s/veh]	0.03		0.00		17.02	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.25					
Intersection LOS	C					

Generated with PTV VISTRO
Version 5.00-00

Scenario 5: 5 5 Build_out
Report File: E:\...\BellaireHS_PM.pdf

Intersection Level Of Service Report
Intersection 6: Valerie St at Ferris Dr

Control Type:	All-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.209

Intersection Setup

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Ferris Dr			Ferris Dr			Valerie St			Valerie St		
Base Volume Input [veh/h]	14	58	61	11	62	11	8	30	15	15	46	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	58	61	11	62	11	8	30	15	15	46	24
Peak Hour Factor	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	19	20	4	21	4	3	10	5	5	15	8
Total Analysis Volume [veh/h]	19	77	81	15	83	15	11	40	20	20	61	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	847	797	783	792
Degree of Utilization, x	0.21	0.14	0.09	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.79	0.49	0.30	0.50
95th-Percentile Queue Length [ft]	19.65	12.32	7.45	12.41
Approach Delay [s/veh]	8.37	8.26	8.05	8.30
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.28			
Intersection LOS	A			

Generated with PTV VISTRO
Version 5.00-00

Scenario 5: 5 5 Build_out
Report File: E:\...\BellaireHS_PM.pdf

Intersection Level Of Service Report
Intersection 7: Chimney Rock Rd at Beechnut St

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.583

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	82	298	82	93	473	112	63	627	107	130	951	99
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	19	0	3	1	0	9	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	310	104	97	495	117	66	661	111	135	989	107
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	88	30	28	141	33	19	188	32	38	281	30
Total Analysis Volume [veh/h]	97	352	118	110	563	133	75	751	126	153	1124	122
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	40	0	5	40	0	40	40	0	40	40	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	23	0	22	23	0	11	42	0	33	64	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		Yes	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	19	10	10	5	19	10	10	4	20	20	7	23	23
g / C, Green / Cycle	0.09	0.33	0.17	0.17	0.09	0.33	0.17	0.17	0.06	0.35	0.35	0.11	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.10	0.07	0.08	0.13	0.11	0.08	0.04	0.24	0.24	0.09	0.34	0.34
s, saturation flow rate [veh/h]	844	901	3227	1583	1025	1776	3227	1583	1774	1863	1771	1774	1863	1800
c, Capacity [veh/h]	125	438	553	271	130	724	553	271	108	653	621	203	753	727
d1, Uniform Delay [s]	28.89	13.87	22.00	21.43	28.88	14.89	22.40	21.66	26.60	16.05	16.05	24.79	15.52	15.57
k, delay calibration	0.11	0.39	0.11	0.11	0.20	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.35	0.88	0.94	1.10	7.98	0.24	1.40	1.37	7.69	1.30	1.37	5.56	2.60	2.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.21	0.57	0.44	0.60	0.31	0.67	0.49	0.69	0.69	0.69	0.75	0.84	0.84
d, Delay for Lane Group [s/veh]	30.24	14.75	22.94	22.53	36.86	15.14	23.80	23.03	34.29	17.36	17.42	30.35	18.11	18.36
Lane Group LOS	C	B	C	C	D	B	C	C	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.57	0.90	1.90	1.41	1.38	2.08	2.27	1.61	1.18	4.69	4.47	2.21	6.91	6.78
50th-Percentile Queue Length [ft]	14.14	22.39	47.49	35.19	34.50	52.08	56.83	40.30	29.57	117.28	111.78	55.16	172.83	169.48
95th-Percentile Queue Length [veh]	1.02	1.61	3.42	2.53	2.48	3.75	4.09	2.90	2.13	8.24	7.94	3.97	11.23	11.05
95th-Percentile Queue Length [ft]	25.46	40.30	85.49	63.34	62.09	93.75	102.2	72.54	53.23	206.09	198.47	99.28	280.63	276.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.24	22.13	22.53	36.86	20.82	23.03	34.29	17.38	17.42	30.35	18.22	18.36
Movement LOS	C	C	C	D	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	21.98			22.49			18.72			19.56		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.35											
Intersection LOS	C											
Intersection V/C	0.583											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 5: 5 5 Build_out
Report File: E:\...\BellaireHS_PM.pdf

Intersection Level Of Service Report
Intersection 8: Beechnut St at S Rice Ave

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.669

Intersection Setup

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S Rice Ave			S Rice Ave			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	105	119	101	202	167	121	80	761	48	74	886	188
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	39	0	6	137	0	28	0	0	0	0	47
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	163	105	216	311	126	111	791	50	77	921	243
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	46	30	61	88	36	32	225	14	22	262	69
Total Analysis Volume [veh/h]	124	185	119	245	353	143	126	899	57	88	1047	276
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	3	8	0	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	5	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	19	0	21	27	0	11	70	0	10	69	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	Yes	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	73	73	73	73	73	73	73	73	73	73	73	73
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	9	9	12	16	16	7	31	31	5	29	29
g / C, Green / Cycle	0.07	0.12	0.12	0.17	0.22	0.22	0.09	0.42	0.42	0.07	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.07	0.09	0.09	0.14	0.14	0.14	0.07	0.26	0.26	0.05	0.37	0.37
s, saturation flow rate [veh/h]	1774	1863	1627	1774	1863	1683	1774	1863	1824	1774	1863	1731
c, Capacity [veh/h]	121	229	200	298	415	375	165	792	775	117	741	689
d1, Uniform Delay [s]	34.19	30.86	30.98	29.47	25.75	25.78	32.47	16.38	16.38	33.68	20.98	21.15
k, delay calibration	0.29	0.11	0.11	0.11	0.11	0.11	0.11	0.18	0.18	0.11	0.37	0.38
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	69.26	3.76	4.90	5.64	1.56	1.74	7.04	1.29	1.32	9.28	14.68	17.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.03	0.69	0.72	0.82	0.63	0.63	0.76	0.61	0.61	0.75	0.92	0.93
d, Delay for Lane Group [s/veh]	103.45	34.62	35.87	35.11	27.31	27.52	39.51	17.66	17.69	42.96	35.66	38.67
Lane Group LOS	F	C	D	D	C	C	D	B	B	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	4.41	2.84	2.65	4.45	4.08	3.73	2.43	6.02	5.90	1.79	13.06	12.90
50th-Percentile Queue Length [ft]	110.19	71.01	66.17	111.37	102.06	93.26	60.81	150.54	147.61	44.82	326.54	322.45
95th-Percentile Queue Length [veh]	7.91	5.11	4.76	7.92	7.35	6.71	4.38	10.05	9.89	3.23	18.99	18.79
95th-Percentile Queue Length [ft]	197.81	127.82	119.11	197.90	183.70	167.87	109.45	251.15	247.23	80.67	474.71	469.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	103.45	34.79	35.87	35.11	27.37	27.52	39.51	17.68	17.69	42.96	36.71	38.67
Movement LOS	F	C	D	D	C	C	D	B	B	D	D	D
d_A, Approach Delay [s/veh]	54.98			29.96			20.22			37.48		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	32.91											
Intersection LOS	C											
Intersection V/C	0.669											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 5: 5 5 Build_out
Report File: E:\...\BellaireHS_PM.pdf

Intersection Level Of Service Report
Intersection 9: Beechnut at 610 SB Feeder

Control Type:	Signalized	Delay (sec / veh):	157.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.905

Intersection Setup

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			Yes			Yes	

Volumes

Name	610 SB Feeder			610 SB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	0	0	0	276	421	445	0	913	275	211	884	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.04	1.04	1.04	1.00	1.04	1.04	1.04	1.04	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	5	1	0	47	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	287	438	463	0	955	287	219	966	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	72	110	116	0	239	72	55	242	0
Total Analysis Volume [veh/h]	0	0	0	287	438	463	0	955	287	219	966	0
Presence of On-Street Parking				No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Overlap	Permiss	Split	Split	Split	Split	Split	Split
Signal group	0	0	0	3	4	0	0	2	0	0	1	0
Auxiliary Signal Groups					3,4							
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	0	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	0	0	0	5	5	0	0	30	0	0	30	0
Amber [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	50	9	0	0	32	0	0	29	0
Vehicle Extension [s]	0.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	10	0	0	10	0
Rest In Walk					No			No			No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall				Yes	Yes			No			No	
Maximum Recall				No	No			No			No	
Pedestrian Recall				No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group		L	C	C	R	C	C	L	C	C
C, Cycle Length [s]		76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]		2.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]		5	14	14	5	23	23	27	27	27
g / C, Green / Cycle		0.07	0.18	0.18	0.07	0.30	0.30	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate		0.16	0.19	0.18	0.18	0.23	0.25	0.12	0.32	0.22
s, saturation flow rate [veh/h]		1774	1863	1513	1583	3547	1660	1774	1863	1695
c, Capacity [veh/h]		116	342	278	104	1076	504	631	662	602
d1, Uniform Delay [s]		36.44	33.44	33.18	36.44	27.88	28.43	21.73	27.64	24.53
k, delay calibration		0.50	0.50	0.50	0.50	0.11	0.18	0.11	0.31	0.13
I, Upstream Filtering Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]		684.7	57.18	45.14	791.5	1.19	5.61	0.33	11.08	1.29
d3, Initial Queue Delay [s]		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio		0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PF, progression factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity		2.47	1.03	0.96	2.70	0.77	0.82	0.35	0.89	0.62
d, Delay for Lane Group [s/veh]		721.1	90.62	78.31	827.9	29.07	34.04	22.06	38.72	25.82
Lane Group LOS		F	F	E	F	C	C	C	D	C
Critical Lane Group		Yes	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh]		24.29	12.02	8.58	24.76	7.50	8.20	3.32	12.65	6.49
50th-Percentile Queue Length [ft]		607.2	300.4	214.5	618.9	187.54	205.05	82.95	316.28	162.31
95th-Percentile Queue Length [veh]		38.70	17.99	13.38	39.51	11.99	12.90	5.97	18.48	10.67
95th-Percentile Queue Length [ft]		967.4	449.7	334.5	987.6	299.84	322.47	149.31	462.12	266.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	721.18	88.24	572.67	0.00	29.73	34.04	22.06	33.69	0.00
Movement LOS				F	F	F		C	C	C	C	
d_A, Approach Delay [s/veh]	0.00			414.24			30.73			31.54		
Approach LOS	A			F			C			C		
d_I, Intersection Delay [s/veh]	157.03											
Intersection LOS	F											
Intersection V/C	0.905											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 10: Beechnut at 610 NB Feeder

Control Type:	Signalized	Delay (sec / veh):	43.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	610 NB Feeder			610 NB Feeder			Beechnut St			Beechnut St		
Base Volume Input [veh/h]	357	274	71	0	0	0	446	748	0	0	727	231
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.00	1.00	1.00	1.04	1.04	1.00	1.00	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	1	4	0	0	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	380	285	74	0	0	0	465	782	0	0	794	240
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	78	20	0	0	0	128	215	0	0	218	66
Total Analysis Volume [veh/h]	418	313	81	0	0	0	511	859	0	0	873	264
Presence of On-Street Parking	No		No				No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Overlap	Permiss	Permiss	Permiss	Permiss	Split	Split	Permiss	Permiss	Split	Split
Signal group	7	8	0	0	0	0	0	5	0	0	6	0
Auxiliary Signal Groups		7,8										
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	0	0	0	5	0	0	5	0
Maximum Green [s]	5	30	0	0	0	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	18	60	0	0	0	0	0	23	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	Yes	No						No			No	
Maximum Recall	No	No						No			No	
Pedestrian Recall	No	No						No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		L	C	C	C	C
C, Cycle Length [s]	66	66	66	66		66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00		4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	0.00	0.00		2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	14	14	14		21	21	21	19	19
g / C, Green / Cycle	0.08	0.21	0.21	0.21		0.32	0.32	0.32	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.12	0.12		0.26	0.26	0.26	0.21	0.23
s, saturation flow rate [veh/h]	1774	1776	1695	1576		1774	1853	1695	3547	1659
c, Capacity [veh/h]	135	378	360	335		565	590	539	1018	476
d1, Uniform Delay [s]	30.45	23.19	23.16	23.20		20.66	20.61	20.60	21.30	21.71
k, delay calibration	0.50	0.50	0.50	0.50		0.13	0.13	0.13	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	289.6	5.90	6.05	6.69		3.56	3.23	3.49	1.10	3.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.57	0.56	0.56	0.56		0.81	0.81	0.81	0.74	0.80
d, Delay for Lane Group [s/veh]	320.1	29.09	29.21	29.90		24.22	23.84	24.09	22.41	24.79
Lane Group LOS	F	C	C	C		C	C	C	C	C
Critical Lane Group	Yes	No	No	Yes		Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	12.87	3.38	3.21	3.08		6.48	6.66	6.12	5.04	5.39
50th-Percentile Queue Length [ft]	321.6	84.44	80.29	77.10		162.09	166.45	153.11	126.09	134.73
95th-Percentile Queue Length [veh]	21.28	6.08	5.78	5.55		10.66	10.89	10.18	8.73	9.20
95th-Percentile Queue Length [ft]	531.9	151.9	144.5	138.7		266.49	272.24	254.58	218.17	229.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	174.53	29.45	29.90	0.00	0.00	0.00	24.18	23.97	0.00	0.00	22.72	24.79
Movement LOS	F	C	C				C	C			C	C
d_A, Approach Delay [s/veh]	105.10			0.00			24.05			23.20		
Approach LOS	F			A			C			C		
d_I, Intersection Delay [s/veh]	43.59											
Intersection LOS	D											
Intersection V/C	0.713											

Sequence

Ring 1	2	4	-	3	1	-	-	-	-	-	-	-	-	-	-	-
Ring 2	7	5	-	6	8	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO
Version 5.00-00

Scenario 5: 5 5 Build_out
Report File: E:\...\BellaireHS_PM.pdf

Intersection Level Of Service Report
Intersection 11: S. Rice at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	31.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	S. Rice Ave			S. Rice Ave			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	3	390	64	59	338	18	13	73	13	51	137	85
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	136	3	0	39	0	0	0	28	28	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	542	70	61	391	19	14	76	42	81	142	88
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	154	20	17	111	5	4	22	12	23	40	25
Total Analysis Volume [veh/h]	3	616	80	69	444	22	16	86	48	92	161	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal group	0	8	0	0	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	5	0	0	5	0	0	5	0	0	5	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	34	0	0	30	0	0	19	0	0	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	C	C
C, Cycle Length [s]	72	72	72	72	72	72
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	14	14	8	17
g / C, Green / Cycle	0.24	0.24	0.19	0.19	0.11	0.23
(v / s)_i Volume / Saturation Flow Rate	0.20	0.20	0.15	0.15	0.09	0.20
s, saturation flow rate [veh/h]	1862	1625	1840	1670	1754	1752
c, Capacity [veh/h]	450	393	352	319	194	409
d1, Uniform Delay [s]	25.81	25.84	27.72	27.72	31.06	26.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.95	4.58	4.16	4.57	6.42	5.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

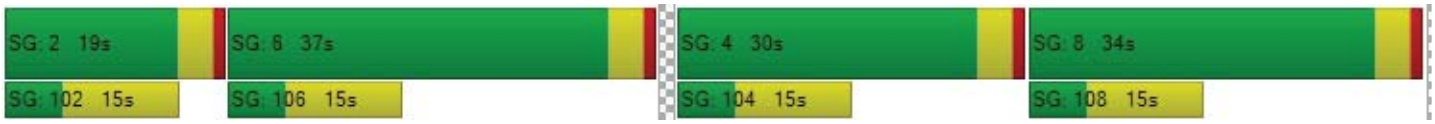
X, volume / capacity	0.83	0.83	0.80	0.80	0.77	0.86
d, Delay for Lane Group [s/veh]	29.77	30.41	31.88	32.30	37.48	31.87
Lane Group LOS	C	C	C	C	D	C
Critical Lane Group	No	Yes	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh]	6.18	5.48	4.77	4.37	2.77	6.08
50th-Percentile Queue Length [ft]	154.40	136.94	119.31	109.25	69.33	152.05
95th-Percentile Queue Length [veh]	10.25	9.32	8.36	7.80	4.99	10.13
95th-Percentile Queue Length [ft]	256.29	232.90	208.88	194.96	124.80	253.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.77	30.03	30.41	31.88	32.10	32.30	37.48	37.48	37.48	31.87	31.87	31.87
Movement LOS	C	C	C	C	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	30.07			32.08			37.48			31.87		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	31.69											
Intersection LOS	C											
Intersection V/C	0.640											

Sequence

Ring 1	2	6	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 12: Chimney Rock Rd at Evergreen St

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

Intersection Setup

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	215.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chimney Rock Rd			Chimney Rock Rd			Evergreen St			Evergreen St		
Base Volume Input [veh/h]	5	487	11	11	889	8	2	32	15	33	41	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	3	0	19	0	0	0	9	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	509	11	30	925	8	2	42	16	34	43	21
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	145	3	9	263	2	1	12	5	10	12	6
Total Analysis Volume [veh/h]	7	578	13	34	1051	9	2	48	18	39	49	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	3	8	0	7	4	0	0	2	0	0	1	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	18	70	0	9	61	0	0	19	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	12	12	1	14	14	2	3
g / C, Green / Cycle	0.01	0.35	0.35	0.04	0.38	0.38	0.07	0.09
(v / s)_i Volume / Saturation Flow Rate	0.00	0.16	0.16	0.02	0.28	0.28	0.04	0.06
s, saturation flow rate [veh/h]	1774	1863	1848	1774	1863	1857	1777	1765
c, Capacity [veh/h]	17	649	644	73	707	705	124	168
d1, Uniform Delay [s]	17.67	9.05	9.06	16.83	9.65	9.65	16.15	15.69
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.71	0.50	0.51	4.64	1.63	1.63	3.75	4.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.46	0.46	0.47	0.75	0.75	0.55	0.67
d, Delay for Lane Group [s/veh]	32.38	9.56	9.56	21.47	11.28	11.29	19.90	20.23
Lane Group LOS	C	A	A	C	B	B	B	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	Yes
50th-Percentile Queue Length [veh]	0.12	1.36	1.35	0.32	2.76	2.75	0.58	0.94
50th-Percentile Queue Length [ft]	2.98	33.94	33.74	8.10	68.96	68.78	14.47	23.55
95th-Percentile Queue Length [veh]	0.21	2.44	2.43	0.58	4.96	4.95	1.04	1.70
95th-Percentile Queue Length [ft]	5.36	61.09	60.73	14.58	124.12	123.80	26.05	42.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.38	9.56	9.56	21.47	11.28	11.29	19.90	19.90	19.90	20.23	20.23	20.23
Movement LOS	C	A	A	C	B	B	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	9.83			11.60			19.90			20.23		
Approach LOS	A			B			B			C		
d_I, Intersection Delay [s/veh]	11.85											
Intersection LOS	B											
Intersection V/C	0.391											

Sequence

Ring 1	3	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: E:\...\BellaireHighSchool_PMv10.vistro
Report File: E:\...\BellaireHS_PM.pdf

Scenario 5 5 Build_out
5/15/2017

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: zone	Student Parkers			1.000	0.000	50.00	50.00	0	25	25	3.62
2: zone	Parents Dropping/Picking up			1.000	0.000	50.00	50.00	189	189	378	54.78
17: zone	Bus			1.000	0.000	50.00	50.00	22	22	44	6.38
21: zone	Staff			1.000	0.000	50.00	50.00	0	243	243	35.22
					Added Trips Total			**211**	**479**	**690**	**100.00**

Vistro File: E:\...\BellaireHighSchool_PMv10.vistro
Report File: E:\...\BellaireHS_PM.pdf
Scenario 5 5 Build_out
5/15/2017

Trip Distribution summary

Zone / Gate	Zone 1: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
21: zone	0.00	0	0.00	0
4: Gate	15.00	0	15.00	4
5: Gate	5.00	0	5.00	1
6: Gate	5.00	0	5.00	1
7: Gate	10.00	0	10.00	3
8: Gate	5.00	0	5.00	1
9: Gate	10.00	0	10.00	3
10: Gate	5.00	0	5.00	1
11: Gate	10.00	0	10.00	3
12: Gate	20.00	0	20.00	4
13: Gate	0.00	0	0.00	0
14: Gate	15.00	0	15.00	4
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	0.00	0
Total	**100.00**	**0**	**100.00**	**25**

Zone / Gate	Zone 2: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
21: zone	0.00	0	0.00	0
4: Gate	20.00	38	20.00	40
5: Gate	5.00	9	5.00	9
6: Gate	5.00	9	5.00	9
7: Gate	10.00	19	10.00	19
8: Gate	5.00	9	5.00	9
9: Gate	10.00	19	10.00	19
10: Gate	5.00	9	5.00	9
11: Gate	10.00	19	10.00	19
12: Gate	15.00	28	15.00	28
13: Gate	0.00	0	0.00	0
14: Gate	15.00	28	15.00	28
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	0.00	0
Total	**100.00**	**187**	**100.00**	**189**

Zone / Gate	Zone 17: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
21: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	11	50.00	11
13: Gate	0.00	0	0.00	0
14: Gate	50.00	11	50.00	11
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	50.00	11
Total	**100.00**	**22**	**150.00**	**33**

Zone / Gate	Zone 21: zone			
	To zone:		From zone:	
	Share %	Trips	Share %	Trips
1: zone	0.00	0	0.00	0
2: zone	0.00	0	0.00	0
17: zone	0.00	0	0.00	0
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	0.00	0	0.00	0
7: Gate	0.00	0	0.00	0
8: Gate	0.00	0	0.00	0
9: Gate	0.00	0	0.00	0
10: Gate	0.00	0	0.00	0
11: Gate	0.00	0	0.00	0
12: Gate	50.00	0	50.00	122
13: Gate	0.00	0	0.00	0
14: Gate	50.00	0	50.00	121
15: Gate	0.00	0	0.00	0
16: Gate	0.00	0	0.00	0
18: Gate	0.00	0	0.00	0
Total	**100.00**	**0**	**100.00**	**243**

As a resident across the street from Bellaire High School, 5117 Maple, I would like to make some comments about the plan for BHS and my concerns are as follows.

The drawing that arrived in the mail a few days ago with the June 15 hearing notice about the plan is unlike anything that I have seen previously discussed I question the practicality of the overall design. I also think it presents some safety issues for students walking and paying attention to nothing but their cellphones.

In short, with regard to traffic flow, “Everything seems to be planned to happen on Maple Street”. Already, the traffic problems are very bad on this street in the mornings and afternoon. Traffic is “Full Stop” at times just when we residents are needing to exit our driveways to go to work, or whatever. And our exiting our driveways also slow the pace of traffic. The traffic backup is apparently at this time only caused by “drop off” traffic, Maple residents and the limited number of parking permit holders. If the current design passes, in addition will be added traffic to and from the parking garage and bus traffic, the flow of which is not well explained by the drawing. However, what is clear is that the bus traffic will flow on Maple St. Although there is a “Parent Drop Off “ area planned, what will prevent parents from still using Maple for that purpose? I submit that drop off drivers will use both - whichever they think get it one fastest, and that will not be preventable. Winding through a parking lot with cars parking and leaving to drop off seems poorly planned. Also, people are creatures of habit and if they have used Maple Street for drop off, they will continue to do so. It is also said that street parking will no longer be allowed on Maple. When that happens, there will be more traffic into and out of the garage leading to long lines for the garage, it would seem.

Also, there are 19 driveways on the 5100 block of Maple and there are only two, one in each of the two blocks of Ferris street that border the school. Yet, Ferris Street will not share any of the burden of traffic flow. Residents coming and going to their homes in the 5100 block of Maple and Rice, however, will get all the traffic. Why not spread the traffic flow four ways instead of two?

To me, the more logical solution would be to move the garage planned location to the far North side of the property, off a main thoroughfare, and install a through vehicular road for it along the entire block, which would allow traffic and/or buses to enter on one side of the school and exit the other (onto Ferris or Rice) without passing 19 driveways. This would also split the traffic flow four ways, instead of two. If that plan is not acceptable, I think at the least, the through road on the North side of the school should be built and utilized in some way to take some of the traffic off of Maple and give traffic more avenues to flow to and from the school. Also, students would be safer walking on the school grounds thoroughfare than crossing a city street.

It is also unfair to us Maple Street residences to have to take the burden of virtually all the vehicular and bus traffic. It might be best to leave the sports field where it is so there can be useful traffic flow entrances and exits installed on Ferris Street.

I speak for many concerned homeowners on the 5100 Block of Maple and believe the design should not be allowed, as planned.

Lastly, this is The City of Bellaire's opportunity to improve a poorly designed traffic flow. Improving this situation would increase property values on Maple Street and thus increase the city's tax base.

Daniel & Sandra DeHart
5117 Maple St.
Bellaire, TX 77401
Tel: 281-222-0343
www.surveyordehart.com
surveyordehart@yahoo.com

Dear Bellaire City Council Members and Members of the Bellaire Planning and Zoning Commission,

My name is Garrick Behelfer and I live with my wife and two daughters at 5119 Maple. My family has watched with interest as numerous plans to rebuild Bellaire High School have been created and re-worked almost continuously since the 2012 HISD bond election passed. I attended most of the early community involvement meetings, but stopped attending when the meetings devolved into complete disagreement among different constituencies, these constituencies seemingly made up of neighbors living on different streets surrounding the school. Not long after this, the remaining meetings were postponed indefinitely.

I recently read an article by Michelle Leigh Smith that was published in the Southwest News on May 16th that features a new conceptual plan for the school. This new plan includes a multi-level parking garage that can only be accessed from Maple Street. In almost all previous plans dating back to 2014 (please see attachment) which included a multi-story parking garage, this parking garage was on the north side of the property, very close to where the current teacher / staff parking is now located, and would have been accessed via South Rice and the access lane that borders the north side of the school. Since these were the first plans proposed, it could be argued that the parking structure was placed in the singular location that made the most sense to the planners and architects from a traffic flow and lot layout standpoint. Not long after these earlier plans were presented, almost every resident of Valerie Street with a home that backed-up to the school property protested the placement and proposed height of the parking garage in no uncertain terms. It was not much later that the community involvement meetings ceased to be held. To the best of my knowledge, the new conceptual plan presented in May 16th's Southwest News is the first new site plan presented to the public since the community involvement meetings broke down. In my opinion, this new plan is reasonable evidence that the various parties with input into the process take very seriously a strong coalition of concerned neighbors: the new plan moves the parking garage out of the Valerie residents' backyards and into our front yards. I find this proposed solution to be neither equitable nor acceptable.

As residents of the 5100 block of Maple, we face several challenges that other blocks do not, simply due to geography. Morning and afternoon traffic along our stretch of Maple is already arguably the worst of all the neighborhood streets and 5100 Maple is the only block which is switched to one-way traffic during the school day, which can make things difficult if you are in a hurry to head east in the morning. Part of the parking garage concept as it is presented in the plan is to disallow future street parking for students that drive to school and have them park in the garage. Therefore, all those students that were previously spread out over neighborhood streets surrounding the school will now be funneling into the sole parking garage entrance on Maple. I cannot understand how any logical traffic study could genuinely argue that this proposal would be an improvement over the already bad situation that we have always faced. And, again, our homes are the only homes that directly face the school; there has been considerable uproar from our Valerie neighbors over the possibility of constructing a parking structure that would loom over their backyards, but approximately one-half of the 5100 Maple homes have dealt with a three story structure 100 feet beyond their front windows since 1955.

There is also no denying that the 5100 block of Maple has not experienced the wave of rebuilds that has swept across most of the rest of the city of Bellaire. The reason for this exclusion is fairly obvious. Who would want to invest a million dollars or more into a new home across from

a school so that they can face nightmarish traffic and a never-ending need to pick up student litter from their front yard? If the plans for the school move forward as proposed and a change is not made to the parking situation, then the city can almost certainly count on a whole residential block to provide no more than anemic growth to the tax base for the foreseeable future. But, if things are done right, there could exist one more block where new home construction could potentially multiply property values on that block by many times over.

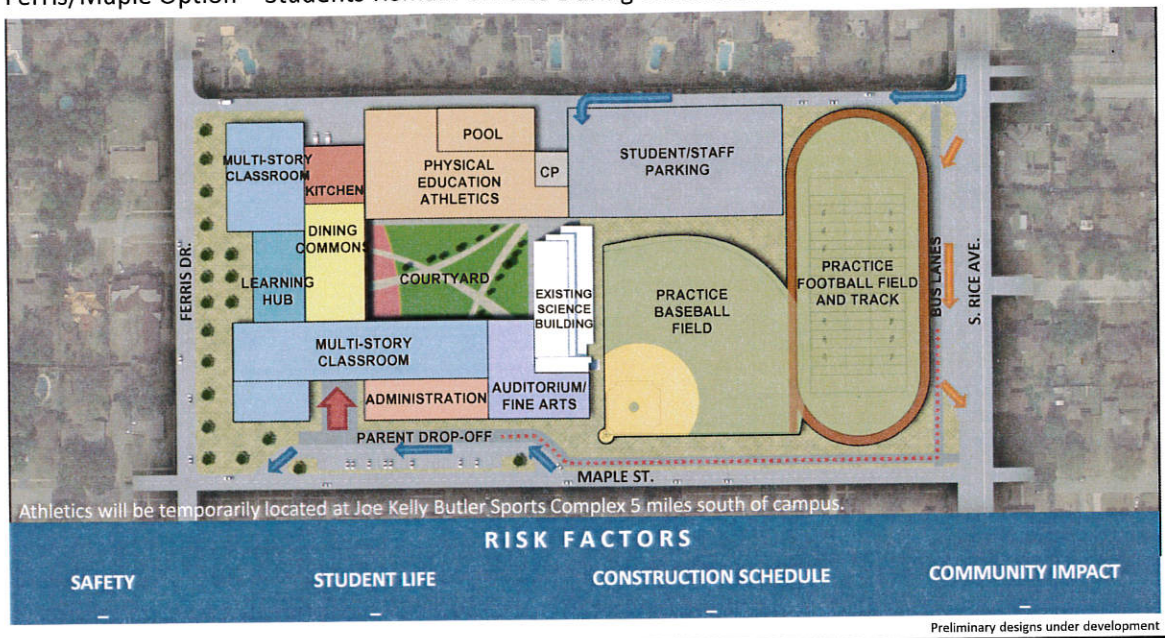
My family purchased our home at 5119 Maple in 2012 because we love Bellaire and we want to be able to send our young daughters to some of the best schools that HISD has to offer. We moved there in spite of the geographic issues and before the bond election had passed. In short, we were well aware of what we were getting ourselves into. However, this should not be taken as license to design a campus which continues to focus any existing and future challenges upon us, simply because it has always been that way and because it may seem to be the path of least resistance.

According to the published Bellaire City Council priorities, “It is a priority of this council to remain sensitive to and address commercial/institutional impact on adjacent residential areas.” I believe that you now have the opportunity and the responsibility to provide your input into a campus design that treats everyone in the community fairly. I would truly welcome and appreciate your assistance and support in making our concerns known to HISD as this new project is planned.

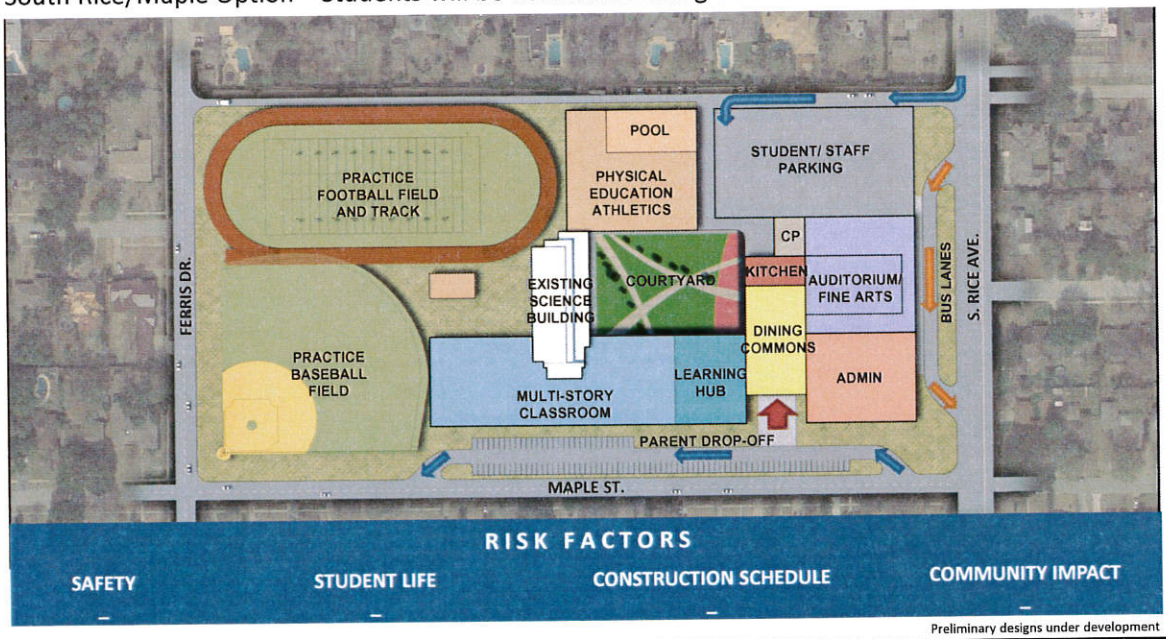
Sincerely,
Garrick M. Behelfer
5119 Maple
(713)560-9319

Plans Presented at September 2014 Community Meeting

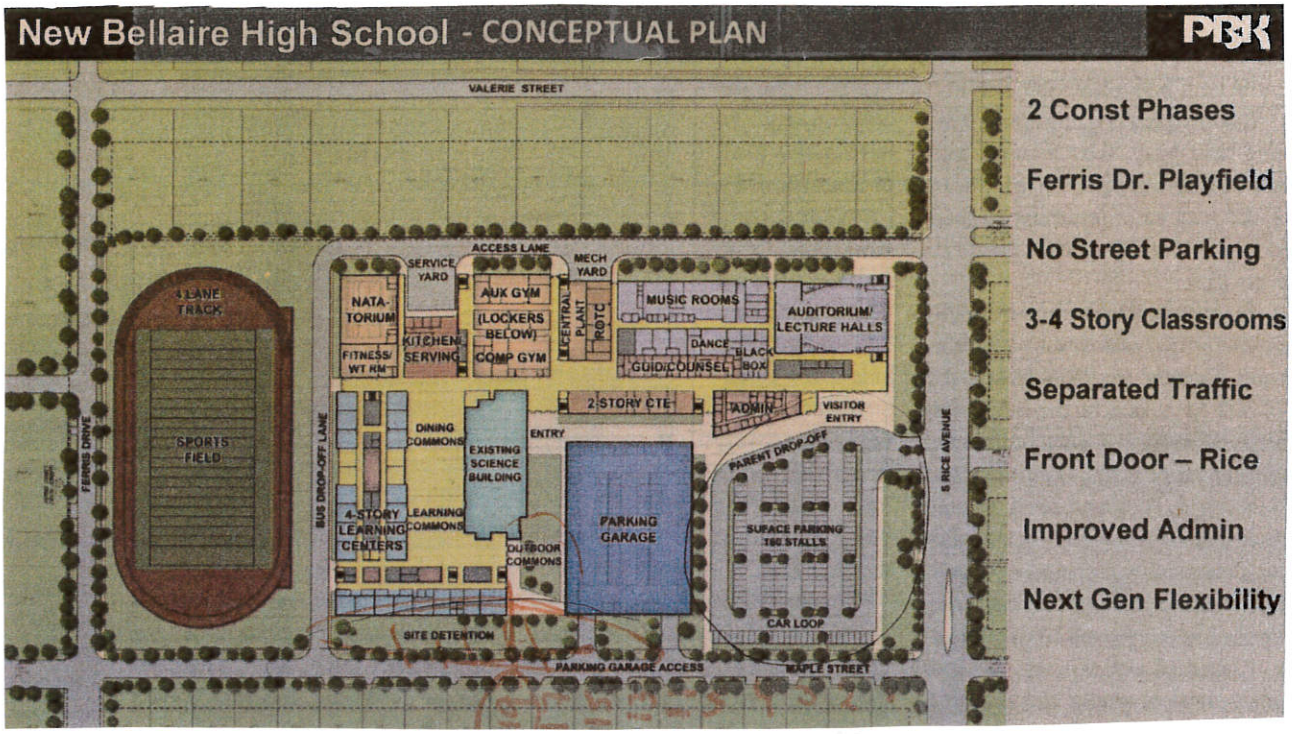
Ferris/Maple Option – Students Remain On-Site During Construction

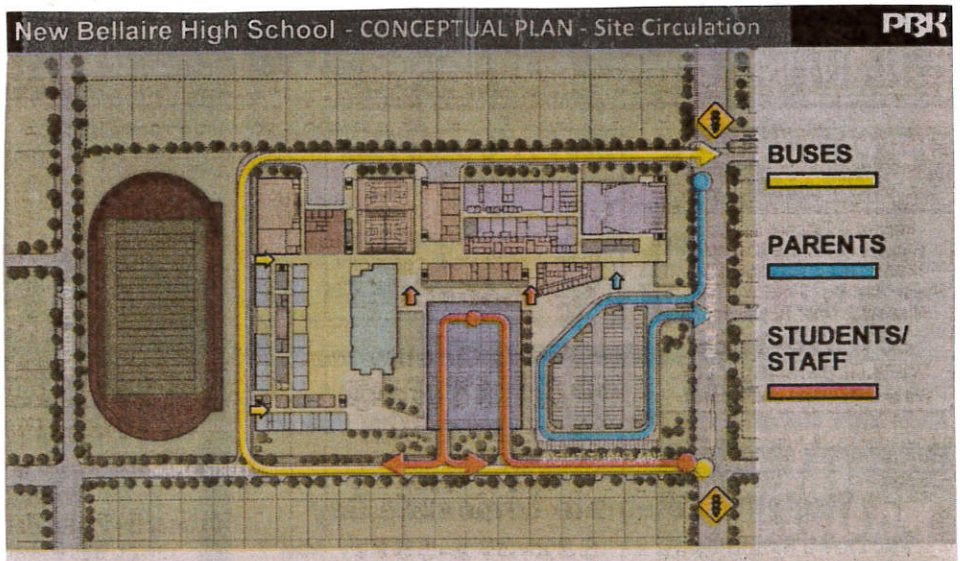


South Rice/Maple Option – Students will be Relocated During Construction



Plan Published in May 16, 2017 Southwest News





I have lived in Bellaire 30 years and love our city. However, it never occurred to me that I would need to campaign to be represented on this issue of rebuilding Bellaire High School, but it has now come to that. I live on Maple Street in a small bungalow. My home is not a $1,000,000+ home, but it is my home just the same and I love it. Everyone that moved next to the high school knew what they were moving into, including the people on Ferris and Valerie and the benefits and inevitable sacrifices they would have to make in doing so. It seems some have forgotten that. I do not believe the responsibility and burden of the high school that is a result of the current plan under consideration is only for Maple Street to bear.

I was very upset when a neighbor shared with me some of Mr. Gray's letters to his neighbors (excluding Maple Street, of course), and here are some of his thoughts. I can supply a copy of his letter if you do not have one.

According to Mr. and Mrs. Gray, there are 4,000 people attending and working at the school everyday. When also considering parents who drive their children to school, they believe easily over 5,000. Then why are all entries and exits only on a one block span of Maple. Presently there is a senior parking garage on Ferris, there is limited parking spots on Ferris and there is a "road" along the fence of Valerie Street backyards.

With the new plan only Maple is being to take the brunt of the traffic off of Rice Blvd. This is what Mr. Gray has campaigned for.

Valerie street neighbors do not want the parking garage on Rice, or behind them and apparently want it as far away from them as possible. . They do not want anything along their fence line either. Therefore, they get their way on the garage location and a new special fence and extra trees? I believe a parking garage on Rice was an excellent idea. It feeds to Rice where there are more lanes to handle the traffic.

Mr. Gray says This is not simply a matter of vehicle congestion in our neighborhood, it puts pedestrians at risk as numerous vehicles utilize narrow streets. I do not want our students to be at risk, so why are we putting all entries and exits of 4,000 people on a one block area on Maple Street. Has a Security Study been done? If so, I would like to see it.

I question if a traffic study been completed by a reputable independent outside firm and what the findings were? If so, I would like to see it. If not, why not?

He does not want Ferris Street used because it will show an exponential increase in loitering and trash before school, after school, and during lunch. I have lived on Maple Street and yes there is some trash that blows thru, and parking on the street sometimes is an issue, but considering the number of students, I have not had any major issues or problems. And, why should he be exempted from that possibility when he knew that was a possibility when he moved there?

Bellaire High School existed when the residents purchased their house on Ferris, Valerie, Maple and Rice. They cannot wake up one day and decide they suddenly do not want the responsibility or burden, nor can they decide to suddenly give it to the residents of Maple Street. I believe it

should be shared by all four sides of the high school. They are being cavalier and opportunistic, it seems.

The City of Bellaire claims to be a city for families and homes. The website says the City is dedicated to outstanding quality service to ensure an open, progressive and secure community. I hope that the residents of Maple Street will be represented fairly.

I would like to have a confirmation that this email was received and will be reviewed by the proper persons before the Hearing next week.

Respectfully,
Sandra DeHart
5117 Maple
713-851-0665

Bellaire City Council Members:

I am the resident at 5115 Maple Street. I have seen the proposed building plan of Bellaire High School. I would like to share my concerns with you in hopes that you will get this plan rejected by HISD. I have a son that attends Bellaire HS and while I support the school's need to re-build, this plan will greatly affect both the property value of the homes and the safety of the residents on the 5100 block of Maple.

First of all, the traffic in the mornings and afternoons on Monday-Friday is already atrocious. It becomes impossible at times to get out of my driveway because cars are STOPPED on my street. Additionally, many cars ignore the one-way morning restriction and the permit parking only on our curb-side. In the afternoon, many parents squeeze onto the street on both sides to wait for their students to be let out. I have had my driveway BLOCKED many of times by inconsiderate drivers. I have had to maneuver my vehicle out of my driveway to avoid hitting a car that is parked on the curb across the street from me IN THE NO PARKING ZONE. While the plans have a new parent drop off lane, getting 640 cars in and out of a parking structure RIGHT across the street from my home (in addition to the existing traffic) will most certainly cause a worse problem than what we already have. It also appears there will be an influx of busses that will need to gain access to the bus drop off lane to/from Maple St. Busses currently drop off on Rice and Rice is 4 lanes of traffic as opposed to the 1 lane of Maple St (while it's one-way in the AM/PM).

Second, it appears that the Outdoor Commons area is right in front of my neighbor at 5117. If you drive down the 5100 block of Maple any day of the school year, Monday-Friday, you will see that our yards are completely littered with trash. I've had entire notebooks of papers blow into my yard as well as Chick-fil-a bags, cups, Styrofoam containers, busted sauce packets etc. They are already ill mannered when it comes to their neighbors, the last thing we need is to have their lunch area right in front of our homes.

I think the solution would be to put the parking structure at the front North Corner of the property off of RICE. This way, the structure is in someone's BACK yard as opposed to our front yard, and the 4 lanes of Rice can handle the additional traffic as opposed to the ONE lane of Maple.

I have children that are still living at home. My youngest is 13. This plan had zero consideration for the residents on the 5100 block of Maple. I'm concerned about the safety of my children and my property under this current plan. I expect there to be an increased number of accidents from people pulling into and out of the parking structure. Additionally, my son is let off the bus at Maple and Ferris; I'd fear him walking down a street with 640+ cars exiting (not to mention the others that will continue to get picked up on Maple) and an unknown number of busses. Please do your part to reject this plan and force them to go back to the drawing board with consideration of the residents on Maple St.

Thank you,

Cindy L. Reichek
5115 Maple St.
Bellaire, TX 77401
(832) 689-1405