TOWN OF CARRBORO

NORTH CAROLINA

TRANSMITTAL **PLANNING DEPARTMENT**

DELIVERED VIA: ☒ *HAND* ☐ *MAIL* ☐ *FAX* ☒ *EMAIL*

To: **David Andrews, Town Manager**
Mayor and Board of Aldermen

From: **Zachary Hallock, Transportation Planner**

Date: **October 11, 2019**

Subject: **Lloyd Farm Development – Plantation Acres Existing Traffic Conditions**

Introduction

On October 23, 2018 the Board of Aldermen reviewed and approved the Conditional Rezoning request for the Lloyd Farm Development, details from this meeting can be found at: https://carrboro.legistar.com/LegislationDetail.aspx?ID=3707566&GUID=EEACFBE8-8449-4EA7-AD8E-9757247221DF.

As part of that approval, the Board directed Town staff to conduct a traffic calming study when it was deemed appropriate within the Plantation Acres neighborhood under the framework defined by the Town's Residential Traffic Management Plan (RTMP). This plan can be found at: http://nc-carrboro.civicplus.com/DocumentCenter/View/1433/Residential-Traffic-Management-Plan.

In early 2019, traffic counts were collected by both the Town and the developer's Traffic Engineer to inform this assessment and to determine if traffic calming measures could be implemented by the Town prior to and independent of traffic calming measures which would be associated with the future development of the Lloyd Farm site. This memo will provide an overview of the collected data and analysis including 48-hour vehicular volume & speed counts and peak period bicycle-pedestrian counts using the same methodology as the RTMP.

Data Collection

Traffic counts were collected at nine locations throughout the Plantation Acres neighborhood by both the Town and by the developer (as part of their data collection to inform the Traffic Impact

Analysis for NCDOT). A map displaying the individual count locations and date of collection can be found as Appendix A. The data collection locations, start date, start time, duration, and collecting organization are as follows:

- **Carol Street 100 Block**: 2/26/2019, 12:00 AM, 48-hours, collected by Town of Carrboro
- **Carol Street 200 Block**: 1/15/2019, 12:00 AM, 24-hours AND 1/24/19, 12:00 AM, 24-hours, collected by National Data & Surveying Services
- **Carol Street 300 Block**: 2/20/2019, 12:00 AM, 48-hours, collected by Town of Carrboro
- **James Street 200 Block**: 1/15/2019, 12:00 AM, 24-hours AND 1/24/19, 12:00 AM, 24-hours, collected by National Data & Surveying Services
- **James Street 400 Block**: 2/20/2019, 12:00 AM, 48-hours, collected by Town of Carrboro
- **Lorraine Street 200 Block**: 2/26/2019, 12:00 AM, 48-hours, collected by Town of Carrboro
- **Lorraine Street 400 Block**: 1/15/2019, 12:00 AM, 24-hours AND 1/24/19, 12:00 AM, 24-hours, collected by National Data & Surveying Services
- **Lisa Drive 300 Block**: 3/5/2019, 12:00 AM, 48-hours, collected by Town of Carrboro
- **Quail Roost Drive 100 Block**: 3/5/2019, 12:00 AM, 48-hours, collected by Town of Carrboro

Bicycle and pedestrian peak period volumes were collected in locations to correspond with the traffic count locations. In some cases, counts were done at a single intersection to cover all approaches. The locations, start time, and duration of the Bike-Ped counts are summarized below, all counts were conducted for 2 hours:

Bike and Pedestrian Counts in Plantation Acres

Location	Date	Start Time	Bikes	Peds
Carol Street west of Lorraine Street	Thursday, April 04, 2019	7:00 AM	3	8
Lorraine Street south of Carol Street	Thursday, April 04, 2019	7:00 AM	1	8
James Street south of Quail Roost Drive	Thursday, May 02, 2019	6:45 AM	4	20
Quail Roost Drive west of James Street	Thursday, May 02, 2019	6:45 AM	17	13
Lisa Drive at Carol Street	Thursday, May 30, 2019	6:45 AM	9	24

Traffic Calming Analysis

The primary criteria used to assess traffic conditions are the daily traffic volume and 85th percentile speed (the speed at or below which 85% of vehicles travel). If these are not observed as being sufficiently higher than the anticipated values (street volume standards as defined by the LUO and the posted speed limit respectively) physical modifications to the street will not be considered. Other items which factor into the analysis are peak hour bicycle volume, peak hour pedestrian volume, school & transit bus stop locations, and distance to pedestrian generator (retail or parks). The traffic volume and speed data collected is summarized below:

Traffic Volumes and 85th Percentile Speed in Plantation Acres

Location	Daily Volume	Standard Volume	85th Percentile Speed	Speed Limit
100 Carol St	362	800	44.5	25
200 Carol St	444	800	30.0	25
300 Carol St	542	800	37.2	25
200 James St	1103	800	31.0	25
400 James St	868	800	32.9	25
200 Lorraine St	752	800	37.5	25
400 Lorraine St	615	800	28.0	25
200 Lisa Dr	170	200	32.3	25
100 Quail Roost Rd	247	200	31.4	25

Conclusions and Recommendations

This section will outline potential physical traffic calming treatments to consider and the next steps moving forward. As shown above, 8 of the 9 locations assessed have 85th percentile speeds which are more than 5 MPH above the posted speed limit but only two locations have daily volumes which exceed the standard. A well-designed set of traffic calming elements placed thoughtfully throughout the street network (in particular placement of traffic calming devices on Carol Street and in conjunction with existing devices on James Street) can still provide calming benefits to other sections. The key focus of this process will be to engage the residents of the Plantation Acres neighborhood and gauge their experiences and observations of traffic patterns. This forum would also provide an opportunity to discuss different types of traffic calming treatments, the pros and cons of each, and identify the preferred treatment by location. Additionally, due to the length of time until the Lloyd Farm Phase 1 development is anticipated, there is a window in which temporary traffic calming measures (after being vetted with the neighborhood community) can be tested out, to determine the most effective solution.

Carol Street

Based on condition #7 of the Lloyd Farm Rezoning the Town will place Local "Traffic Only/No Thru Traffic" signs at the Old Fayetteville entrance, and can consider other traffic calming modifications (prior to completion of development Phase 1) such as pedestrian lanes, advisory bike lanes, and paint based curb extensions @ Lisa Drive, or other low cost treatments.

Residents have requested that the connection of Carol Street to Old Fayetteville Road to be investigated for the potential of closing off one direction of traffic. Due to the currently low volumes, and low anticipated additional volumes from the proposed Lloyd Farm Development, the specific direction which traffic is allowed is not expected to have major impacts on the surrounding network. Feedback from the local residents will be used to inform this decision and this improvement will not be made until the completion of development phase 1. Furthermore, as identified in condition #7 of the Lloyd Farm Rezoning, operational analysis and design work will be conducted to determine impacts of any potential modifications to access Carol Street from

Old Fayetteville Street (such as making a portion of Carol Street one-way or complete closing of the driveway to Old Fayetteville).

The Town will also consider other long-term traffic calming treatments along Carol Street such as a raised crosswalk or raised intersection where the neighborhood sidepath will connect from the development into Plantation Acres. The $15,000 identified in condition #7 of the Rezoning should be earmarked for a long-term, permanent, traffic calming improvement to be made along Carol Street after the completion of development phase 1 and not used for short-term modifications that would address the existing conditions.

Appendix A

Map of Traffic Count Locations

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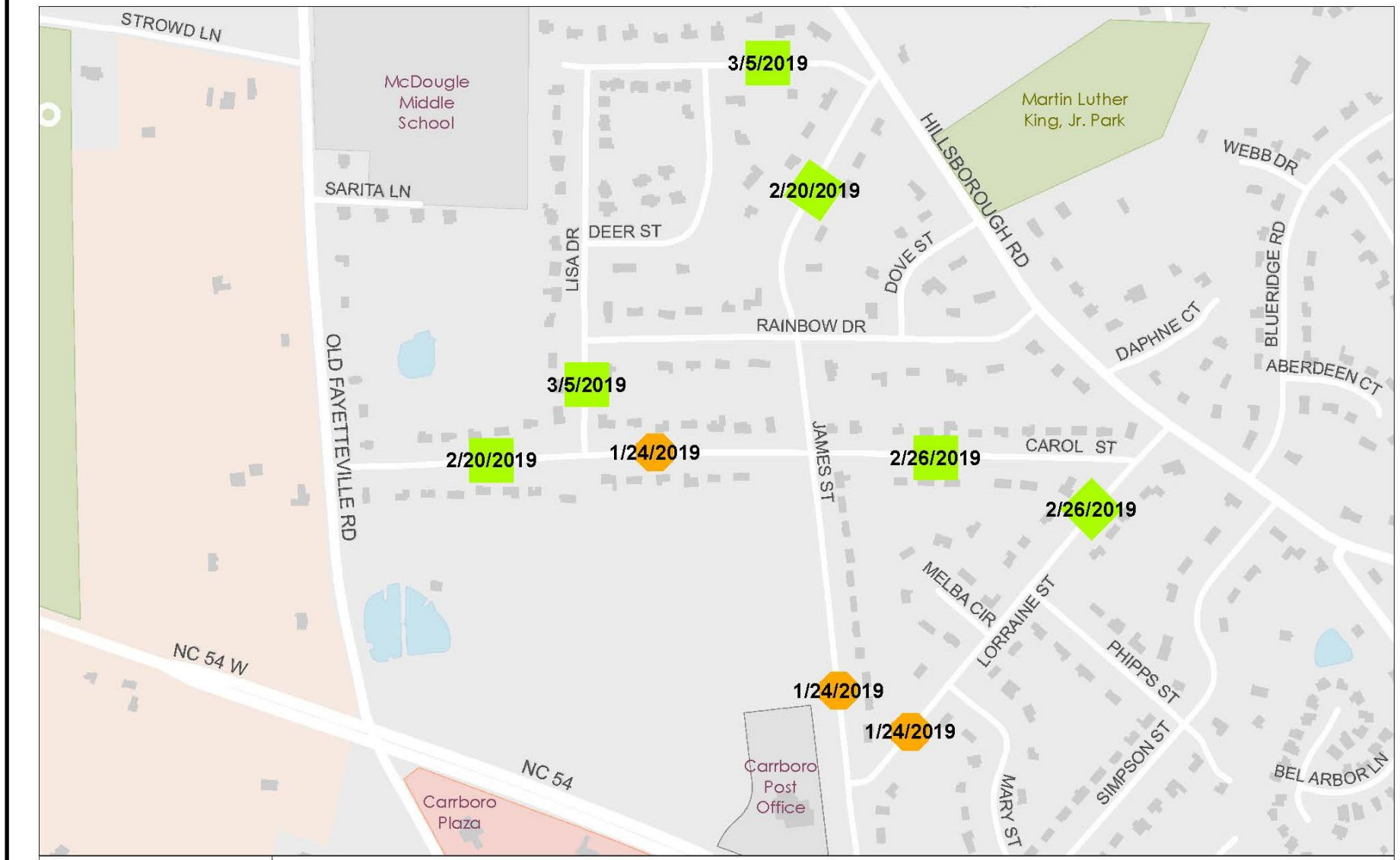

TOWN OF CARRBORO
301 W. Main St.
Carrboro, NC 27510

Feet
0 155 310 620
NC State Plane Coordinate System (NAD83)

THIS MAP IS NOT A CERTIFIED SURVEY
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Plantation Acres - Traffic Count Locations

Town Collected Count

Developer Collected Count