BLOOMINGTON TRAFFIC COMMISSION
AGENDA
June 24, 2015
5:30 P.M. – COUNCIL CHAMBERS

I. Call to Order

II. Approval of Minutes – April 22, 2015

III. Public Comment

IV. Communications from Commission

V. Reports from Staff

A. Traffic Signal Upgrades – Flashing Yellow Turn Lights

VI. Old Business - none

VII. New Business –
A. School Speed Zone - N. Rogers Street between W. 6th and W. 8th Streets
B. Traffic Signal Upgrades – No Flashing Signals

VIII. Traffic Inquiries

A. No parking zone - N. Fairview Street on the east-side of street between W. 6th Street and east-west alley
B. Traffic safety issues - S. High Street from Wimbleton Ln./Greenbriar Ln. to Wexley Rd.
C. On-street parking - revise the current day and time regulations for eleven on-street parking spaces on E. 2nd Street (located in front of the Bloomingfoods store).

IX. Adjournment

Next meeting – July 22, 2015

City of Bloomington Traffic Commission Minutes (DRAFT)
April 22, 2015 in the Council Chambers, City Hall

Traffic Commission minutes are transcribed in a summarized outline manner. Audio recordings of the meeting are available in the Planning and Transportation Department for reference.

Attendance
Traffic Commission: James Batcho, Andrew Cibor, Ryan Cobine, Judi Maki, Abigail Pietsch, Sarah Ryterband, and Joe VanDeventer

Others in Attendance: Daniel McMullen, Nate Nickel (Staff), and Scott Robinson (Staff).

I. Call to Order (~5:30 PM)

II. Approval of Minutes – February 25, 2015 (Mr. Cobine motioned, and Mr. VanDeventer seconded, to approve the minutes. The motion passed 7-0).

III. Communications from Commission - none

IV. Public Comment - Mr. McMullan shared his comments regarding his concerns over the MPO 2035 Long Range Transportation Plan that supports bicycle lanes, bicycle amenities, and promotes alternative modes of transportation. He supports transportation options, but all should be equal and not favor one over the other.

V. Reports from Staff

A. Andrew Cibor, the new Transportation & Traffic Engineer, and new Commissioner Abigail Pietsch were introduced.

VI. Old Business

A. W. 10th Street and N. Monroe Street – design alternatives: The Commission revisited the speed concerns expressed for this intersection. There was consensus that potential opportunities exist to address this intersection through narrowing or other treatments, but fiscal constraints will be a reality as well. Staff will continue to research options and report back on them at a future meeting.

B. E. 3rd Street and S. Union Street/S. Rose Avenue – temporary left-turn restrictions: The Commission agreed that congestion is an issue at these locations. However, no realistic temporary measures are currently practical. As a result, no further action on this issue will be pursued at this time.

C. **Crosswalk Marking Guidance -** The Commission felt that the City of Boulder, Colorado example provided by staff was a great template to follow in developing guidelines. Further efforts regarding education, especially with new residents and Indiana University students, will be important as well. More research and discussion to develop specific guidance will be needed.

VII. New Business – none

VIII. Traffic Inquiries

A. **N. Rogers Street – add school speed zone between W. 7th and W. 8th Streets**: The consensus of the Commission was that this was an important issue to address. More information is needed to make sure all adjacent streets (not just Rogers) that receive walking traffic to Fairview Elementary School are included in any future school speed zone. Staff will talk with MCCSC personnel to learn more about walking patterns. This issue will be considered again at a future meeting.
B. **S. Morton Street - allow additional on-street parking and convert to a one-way street between W. Dodds Street and W. Grimes Lane**: There were concerns about a one-way configuration creating problems for public safety response times and diverting traffic to other locations instead; on-street parking could reduce visibility for drivers as well. Exploring shared parking concepts on existing lots would be more appropriate instead. As a result, no further action on this issue will be pursued at this time.

Mr. Cibor asked that staff research three topics for future Traffic Commission discussion. These include: eliminating the late night flashing yellow/red traffic signal configuration, adding flashing yellow arrow left-turn traffic signals, and further clarifying B-Line Trail user/vehicle rights-of-way at trail crossings with streets.

IX. Adjournment (~6:35 PM)

Next meeting – May 27, 2015

5.0 TRAFFIC SIGNAL DESIGN AND ILLUMINATION

This chapter addresses traffic signal hardware and software—the infrastructure that controls the assignment of right-of-way for all intersection users, including vehicles, pedestrians, emergency vehicles, transit operators, trucks, and light-rail transit vehicles at locations where conflicts or hazardous conditions exist. The proper application and design of the traffic signal is a key component in improving the safety and efficiency of the intersection.

This chapter presents an overview of the fundamental principles of traffic signal design and illumination as they apply to signalized intersections. The topics discussed include:

- Traffic signal control types.
- Traffic signal phasing.
- Vehicle and pedestrian detection.
- Traffic signal pole layout.
- Traffic signal controllers.
- Basic signal timing parameters.
- Signing and pavement marking.
- Illumination.

5.1 TRAFFIC SIGNAL PHASING

The MUTCD defines a signal phase as the right-of-way, yellow change, and red clearance intervals in a cycle that are assigned to an independent traffic movement or combination of traffic movements.[(1)] Signal phasing is the sequence of individual signal phases or combinations of signal phases within a cycle that define the order in which various pedestrian and vehicular movements are assigned the right-of-way. The MUTCD provides rules for determining controller phasing, selecting allowable signal indication combinations for displays on an approach to a traffic control signal, and determining the order in which signal indications can be displayed.

Signal phasing at many intersections in the United States makes use of a standard National Electrical Manufacturers Association (NEMA) ring-and-barrier structure, shown in Exhibit 5-1. This structure organizes phases to prohibit conflicting movements (e.g., eastbound and southbound through movements) from timing concurrently, while allowing non-conflicting movements (e.g., northbound and southbound through movements) to time together. Most signal phasing patterns in use in the United States can be achieved through the selective assignment of phases to the standard NEMA ring-and-barrier structure.

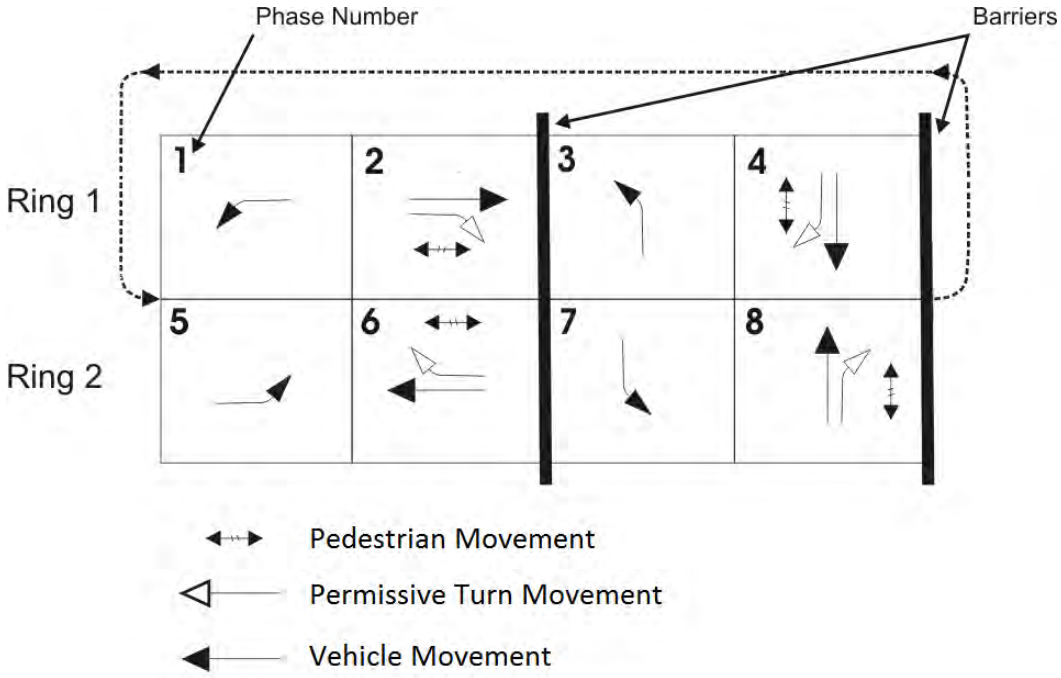


Exhibit 5-1. Standard NEMA ring-and-barrier structure.

Depending on the complexity of the intersection, two to eight phases are typically used, although most controllers provide far more phases to serve complex intersections or sets of intersections. Pedestrian movements are typically assigned to parallel vehicle movements.

Developing an appropriate phasing plan begins with determining the left-turn phase type at the intersection. The most basic form of control for a four-legged intersection is "permissive only" control, which allows drivers to make left turns after yielding to conflicting traffic and pedestrians and provides no special protected interval for left turns. As a general rule, practitioners should keep the number of phases to a minimum because each additional phase in the signal cycle reduces the time available to other phases, and each phase has its own startup delay time.

Provision of a separate left-turn lane, while not required, is recommended when providing a separate left-turn phase. Left-turn lanes increase operational efficiency by providing storage space where vehicles can await an adequate gap without blocking other traffic movements at the intersection. Left-turn lanes also increase the safety of an intersection by reducing rear-end and left-turn crashes. In most cases, the development of a signal phasing plan should involve an engineering analysis of the intersection. Several software packages are suitable for selecting an optimal phasing plan for a given set of geometric and traffic conditions for both individual intersections and for system optimization.

Practitioners must consider all intersection users during the development of a phasing plan, including pedestrians, bicyclists, transit vehicles, older drivers, and children. For example, on wide roadways pedestrian timing may require timing longer than what is required for vehicular traffic, which may have an effect on the operation analysis. The presence of older pedestrians or children may require a longer pedestrian clearance interval based on their slower walking speeds.

5.1.1 "Permissive-Only" Left-Turn Phasing

"Permissive-only" (also called "permitted-only") phasing allows two opposing approaches to time concurrently, with left turns allowed after motorists yield to conflicting traffic and pedestrians. Exhibit 5-2 illustrates one possible implementation of this phasing pattern. Note that the two

opposing movements could be run in concurrent phases using two rings; for example, the eastbound and westbound through movements shown in Exhibit 5-2 could be assigned as phase 2 and phase 6, respectively.

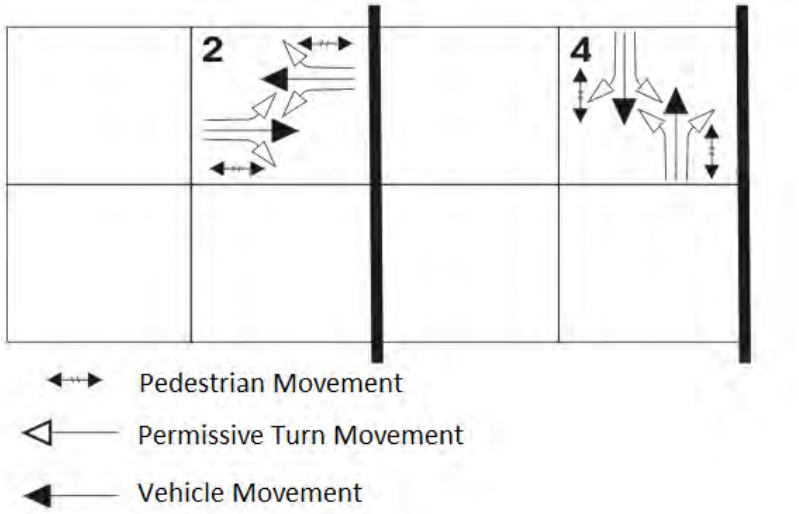


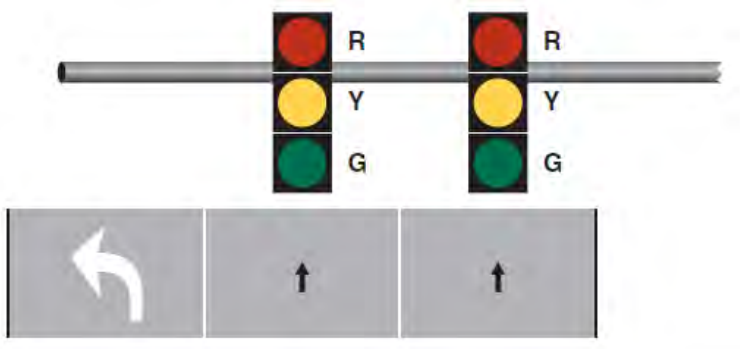
Exhibit 5-2. Typical phasing diagram for “permissive-only” left-turn phasing.

For most high-volume intersections, "permissive-only" left-turn phasing is generally not practical for major street movements because safety will be compromised in such situations, including left-turn safety. Minor side street movements, however, may function acceptably using “permissive-only” left-turn phasing, provided that traffic volumes are low enough to operate efficiently and safely without additional left-turn protection.

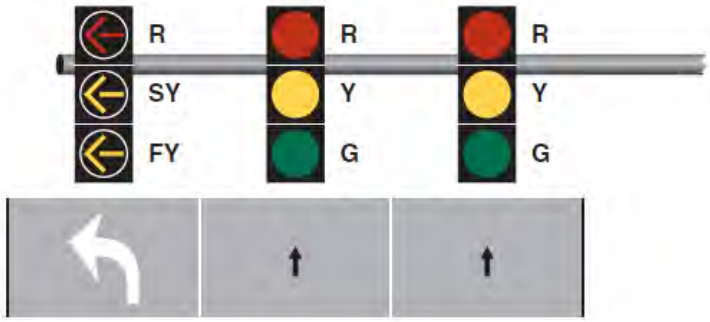
“Permissive-only” displays are signified most commonly in one of two ways. In the first case, if there is not an exclusive signal head assigned to a left-turn movement; instead, a three-section head with a circular green, circular yellow, and circular red is used. In this case, no regulatory sign is required.

In the second case, if there is a traffic signal head aligned with an exclusive left-turn lane, a three-section head with a flashing yellow arrow, steady yellow arrow, and steady red arrow is used.

As traffic volumes increase at the intersection, the number of adequate gaps to accommodate left-turning vehicles on the permissive indication may result in safety concerns at the intersection. Exhibit 5-3 shows common signal head arrangements that implement “permissive-only” phasing; refer to the MUTCD for other configurations.



(a) Permissive left-turn phasing using three-section signal heads over the through lanes only.



(b) Permissive left-turn phasing using three-section signal heads over the through lanes and a three-section signal head over the left turn lane.

Exhibit 5-3. Possible signal head arrangements for "permissive-only" left-turn phasing
(Source: 2009 MUTCD)

5.1.1 "Protected-Only" Left-Turn Phasing

"Protected-only" phasing consists of providing a separate phase for left-turning traffic and allowing left turns to be made only on a green left arrow signal indication, with no pedestrian movement or vehicular traffic conflicting with the left turn. As a result, left-turn movements with "protected-only" phasing have a higher capacity than those with "permissive-only" phasing due to fewer conflicts. However, under lower volume conditions, this phasing scheme can cause an increase in delay for left-turning drivers. Exhibit 5-4 illustrates this phasing pattern. Typical signal head and associated signing arrangements that implement "protected-only" phasing are shown in Exhibit 5-5; refer to the MUTCD for other configurations. Chapter 11 of this document provides guidance on determining the need for protected left turns.

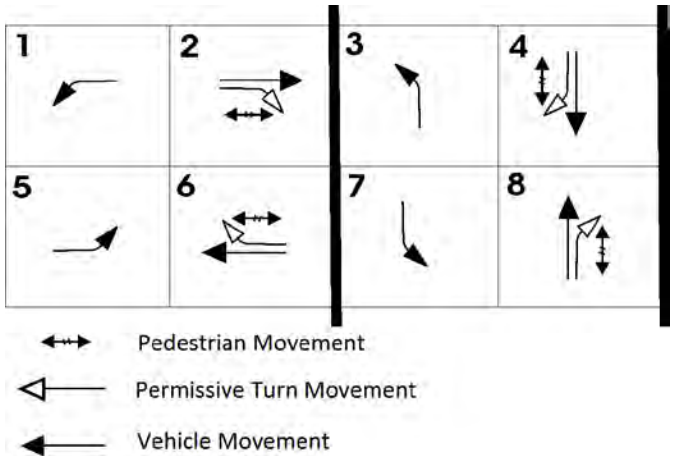


Exhibit 5-4. Typical phasing diagram for "protected-only" left-turn phasing.

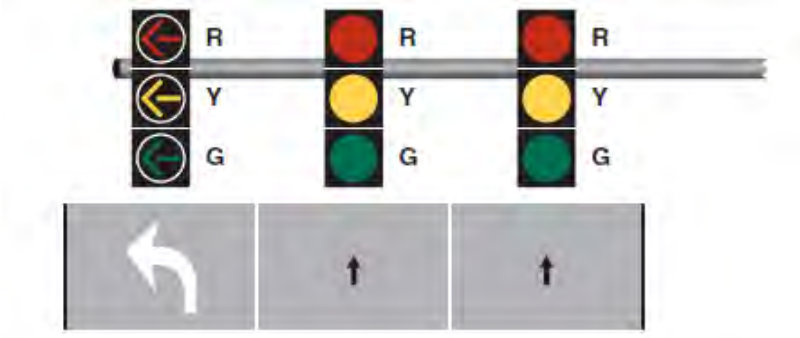


Exhibit 5-5. Possible signal head arrangement for "protected-only" left-turn phasing

(Source: 2009 MUTCD)

5.1.2 Protected-Permissive Left-Turn Phasing

A combination of protected and permissive left-turn phasing is referred to as protected-permissive left-turn (PPLT) operation. Exhibit 5-6 illustrates this phasing pattern. The 2009 MUTCD allows two different signal phasing techniques for this type of operation. The first is when the left-turn lane and the adjacent through lane share the same signal head. Exhibit 5-7(a) shows a typical signal head and associated signing arrangement that implements this type of protected-permissive phasing (refer to the MUTCD for other configurations).

The second phasing technique involves a separate signal head provided exclusively for a left-turn movement. In this case, the flashing yellow arrow is used for the permissive portion of the left-turn movement. Exhibit 5-7(b) shows a typical signal head and associated signing arrangement that implements this type of protected-permissive phasing (refer to the MUTCD for other configurations).

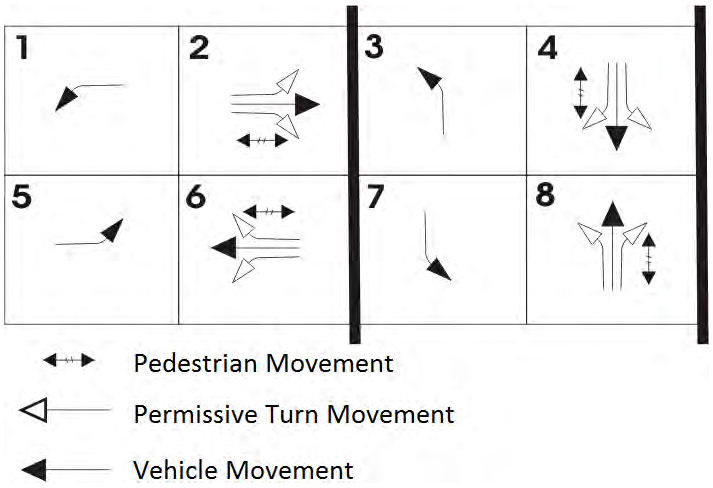
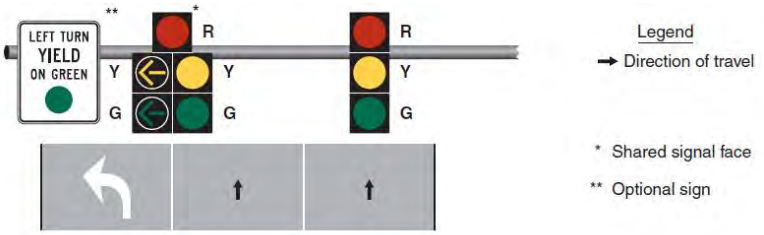
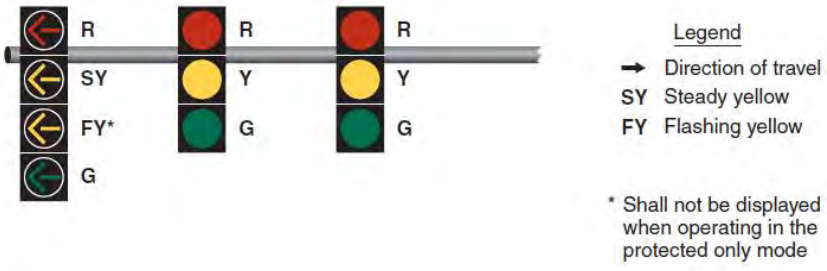


Exhibit 5-6. Typical phasing diagram for protected-permissive left-turn phasing.



(a) Protected-permissive left-turn phasing using a five-section head located directly above the lane line that separates the exclusive through and exclusive left-turn lane, along with an accompanying optional sign.



(b) Protected-permissive left-turn phasing using a five-section signal head located directly above the exclusive left-turn lane.

Exhibit 5-7. Possible signal head and signing arrangement for protected-permissive left-turn phasing.
Source: 2009 MUTCD

Observed improvements in signal progression and efficiency combined with driver acceptance have led to expanded usage of PPLT over the years. PPLT signals offer operational advantages when compared to "protected-only" operation. In protected-permissive phasing, consideration can be given to when in the cycle the protected left-turn movement is given. Where

both protected left-turn movements on opposing approaches operate before the permissive phase, it is known as lead-lead operation. Conversely, where the permissive phases operate before the protected left-turn movements on opposing approaches, it is known as lag-lag operation. Lead-lag operation involves a protected left-turn movement on one approach, while the opposite left-turn movement experiences a permissive left-turn. They include the following (adapted with additions by the authors):[56]

- Average delay per left-turn vehicle is reduced.
- Protected green arrow time is reduced.
- There is potential to omit a protected left-turn phase.
- Arterial progression can be improved, particularly when special signal head treatments are used to allow lead-lag phasing.

The primary disadvantage of the permissive phase is an increased potential for vehicle-vehicle and vehicle-pedestrian conflicts. Younger and older drivers especially have difficulties interpreting the sufficient gap distance need to safety make permissive left turns. The use of permissive phasing also leaves pedestrians without a protected walk phase.

The controller phasing for protected-permissive mode is the most complicated phasing because of the safety implications created by the potential of a “yellow trap” occurring.

For ordinary lead-lead operations where both protected left-turn phases precede the permissive phases, the yellow trap does not occur, as both permissive phases end concurrently. However, this problem can occur when a permissive left turn is opposed by a lagging protected left turn. In this type of operation (known as lag-permissive), the yellow display seen by a left-turning driver is not indicative of the display seen by the opposing through driver. The opposing through display might remain green when the yellow signal indication is displayed to the permissive left-turn movement. A driver who turns left believing that the opposing driver has a yellow or red display when the opposing driver has a green display may be making an unsafe movement. Exhibit 5-8 illustrates this yellow trap.

Drivers who encounter this trap have entered the intersection on a permissive green waiting to make a left turn when sufficient gaps occur in opposing through traffic. If the absence of gaps in opposing through traffic requires them to make their turn during the yellow change or red clearance interval, they may be “stranded" in the intersection because of the absence of gaps and because the opposing through movement remains green. More importantly, they may incorrectly presume that the opposing through traffic is being terminated at the same time that the adjacent through movement is being terminated. Therefore, they may complete their turn believing that the opposing vehicles are slowing to a stop when in fact the opposing vehicles are proceeding into the intersection with a circular green signal indication.

There are options to eliminate the yellow trap situation. The first, and arguably best, option is the flashing yellow arrow operation for the permissive left-turn movement that became allowable with the 2009 MUTCD.

However, there may be circumstances in which that option is not feasible. If that is the case, the phase sequence at the intersection can be restricted to simultaneous leading (lead-lead) or lagging (lag-lag) left-turn phasing. However, it should be noted that under very light side street volumes, the leading left-turn phase can be activated such that it operates like a lagging left turn. This can be prevented using detector switching or a diode in the controller cabinet.

MEMORANDUM

To: Traffic Commission

From: Scott Robinson, Planning Services Manager

Date: June 17, 2015

Re: Rogers Street School Speed Zone Request

Background

The City of Bloomington Planning and Transportation Department received a request from a citizen to add a school speed zone along North Rogers Street. The request was anonymous, received by the Monroe County School Corporation (MCCSC), and subsequently sent to the City. The current school speed zones for Fairview Elementary School are along 7th Street (Waldron Street to Rogers Street), 8th Street (William Street to Rogers Street), and Fairview Street (7th Street to 10th Street). The posted speed limit for Rogers Street is 30 M.P.H. The Traffic Commission reviewed the request at their April 22, 2015 meeting. The consensus of the Commission was to move forward with this request.

The east district boundary for Fairview is College Avenue running from 17th Street to 2nd Street. No information on the actual number of students living east of Rogers is known to staff (e.g. kids walking to/from school). Fairview does have students walk to areas within the Downtown as part of classroom activities. These activities are supervised by adults. Traffic speeds and volumes along Rogers may present safety concerns. The school zone along Rogers is therefore a reasonable request. Additionally, correspondence with MCCSC indicated there are no additional school speed zones needed at this time.

Rogers Street looking south at 8th Street towards 7th Street

To accommodate this request, Title 15 of the Bloomington Municipal Code would need to be amended. Specifically, 15.24.030, Schedule J – School, Park and Playground Speed Zones, would need to include the location for 20 M.P.H. reduced speeds along Rogers Street. If approved, a detailed amendment will be prepared once this request is forwarded to the Common Council for their consideration.

Recommendation: Staff recommends a reduced 20 M.P.H. school speed zone from 6th Street to 540 feet north of 8th Street (B-Line Trail Crossing) along North Rogers Street to periods when children are present. The existing 30 M.P.H. speed limit would apply for all other conditions.

MEMORANDUM

To: Traffic Commission

From: Scott Robinson, Planning Services Manager

Date: June 17, 2015

Re: Late Night/Early Morning Flashing Signals Request

Background

The Traffic Commission discussed the topic of late night/early morning flashing traffic signals and the general safety and operation of traffic signals using a flashing mode at their April 22nd meeting. Today, best practices suggest that converting late night/early morning flash mode to steady operation provides a significant safety benefit (see attached FHWA Signalized Intersections Informational Guide Chapter 9.4.4). Many jurisdictions are removing the late night/early morning flash mode due to the safety benefits associated with this change. As an example, INDOT has changed almost all of their signals that went into a yellow flash mainline/red flash cross-street to 24/7 steady signal operation. Thus, a preferred signal operation may be to not switch to a flashing condition during low traffic periods and operate the signals in steady operation like they do the rest of the day. This is seen as a simple yet effective safety enhancement to traffic signals.

The City of Bloomington currently has 82 traffic signals and of these 33 switch to a flashing condition during low traffic periods. Each traffic signal is unique in its configuration, operation, site conditions/constraints, and signal equipment. Furthermore, Title 15 of the Bloomington Municipal Code also regulates the duration for flashing signals. Eliminating the flashing signal phases for these 33 traffic signals will depend on the characteristics of each traffic signal as well as amending Title 15. While 15.12.030 states "The transportation and traffic engineer shall determine which intersections shall operate during certain times with flashing signals, which days and hours such intersections shall flash, and the preferentiality of such intersections (i.e. which streets/direction shall flash red and which yellow)", it also lists the respective signals and flashing hours and days under Schedule D(1).

In order to provide flexibility in the on-going operations of all City traffic signals, Title 15 of the Bloomington Municipal Code would need to be amended. Specifically, 15.12.030, Schedule D (1) – Signalized Intersections, would need to eliminate the columns for "Flasher Hours and Days" and "Preferentiality". This change would be consistent with the language included within 15.12.030. If approved, a detailed amendment will be prepared once this request is forwarded to the Common Council for their consideration.

Recommendation: Staff recommends amending 15.12.030 Schedule D(1) by removing the columns for "Flasher Hours and Days" and "Preferentiality". Schedule D(1) would then only list the cross streets for all signalized intersections.

Characteristics	Potential Benefits	Potential Concerns
Safety	Increase in cycle length corresponds to a decrease in the frequency of red-light running.	Longer cycle lengths could induce some drivers to run red lights.
Operations	Reduction in delay optimized at 90 seconds.	Excessive queuing (with longer cycle lengths). Inadequate capacity (with cycle lengths that are too short).
Multimodal	None identified.	Inadequate crossing time for pedestrians (with cycle lengths that are too short).
Physical	None identified.	None identified.
Socioeconomic	None identified.	None identified.
Enforcement, Education, and Maintenance	None identified.	Increased maintenance cost of regular signal observations and retiming.

Exhibit 9-19. Summary of issues for cycle length modifications.

9.4.4 Late Night/Early Morning Flash Removal

Description

Some jurisdictions operate traffic signals in flashing mode during various periods of the night, the week, or for special events. Flashing operation can benefit traffic flow, particularly with pre-timed signals, when traffic is very light (late evening/early morning hours, or on a Sunday or holiday in an industrial area).

Two modes of flashing operation are typically used: red-red and red-yellow. Red-red (all approaches receive a flashing red indication) is used where traffic on all approaches is roughly the same. In this instance, the intersection operates as an all-way stop. Red-yellow (the minor street receives a flashing red indication and the major street receives a flashing yellow indication) is used in situations where traffic is very light on the minor street. In this instance, the intersection operates as a two-way stop.

Safety Performance

One study examined safety impacts associated with converting 12 intersections from nighttime flashing operation to steady operation in Winston-Salem, NC. The analysis indicated that flashing operation reduced nighttime angle crashes (the ones most likely to be positively affected) by approximately 34 percent. Total nighttime crashes also saw a significant reduction of approximately 35 percent.[142]

A separate study evaluated safety impacts associated with a change in statewide late night flash policy by the North Carolina DOT making it standard practice to operate signals in steady mode at all times. Before this policy, it was standard practice to allow traffic signals to operate in late night flash mode unless directed otherwise by the division traffic engineer. The policy also changed the standard operating times for late night flash operations. As a result of this policy, many signals were either removed from late night flash operations or had their late night flash operating times modified to conform to the new policy. Replacing nighttime flash with steady operation was associated with an estimated 48 percent reduction in nighttime frontal and opposing direction sideswipe collisions and head-on collisions, and an estimated 27 percent reduction in all nighttime collisions.

Selected study findings associated with the removal of a traffic signal from a flashing mode operation (such as during the late-night/early morning time period) are shown in Exhibit 9-20.

Treatment	Finding
Remove signal from late night/early morning flash mode.[142],[143]	34 percent estimated reduction in nighttime angle collisions. 35 percent estimated reduction in all nighttime collisions. 48 percent estimated reduction in nighttime frontal and opposing direction sideswipe collisions and head-on collisions 27 percent estimated reduction in all nighttime collisions

Exhibit 9-20. Safety effects associated with removal of signal from late night/early morning flash mode: selected findings.

Operational Performance

If the signalized intersection removed from flashing operation is not fully actuated and responsive to traffic demand, increased red-light violations and/or complaints about unnecessary long waits on red signals may occur.

Multimodal Impacts

Removing a traffic signal from a flash mode will require vehicles to come to a complete stop during the red phase. This treatment should give vehicles more time to see, respond, and yield to any pedestrians.

Physical Impacts

No physical impacts are associated with this treatment.

Socioeconomic Impacts

No costs are associated with this treatment.

Enforcement, Education, and Maintenance

When a traffic signal is taken out of flash mode, police enforcement could be undertaken at the location to ensure habituated drivers do not proceed through the intersection as if the signal were still operating in flashing mode. The traffic engineer may consider temporary signing/publicity to inform motorists of the change in operations and to explain the safety benefits.

Summary

Exhibit 9-21 summarizes the issues associated with flash mode removal.

Characteristic	Potential Benefits	Potential Concerns
Safety	Angle collisions are reduced.	Could induce red-light running on minor legs if controller is not sufficiently sensitive to minor road demand.
Operations	None identified.	Increased delay for through traffic.
Multimodal	Motorists forced to yield to pedestrians.	None identified.
Physical	None identified.	None identified.
Socioeconomic	None identified.	None identified.
Enforcement, Education, and Maintenance	None identified.	Enforcement and temporary signing may be needed for a period after conversion.

Exhibit 9-21. Summary of issues for flash mode removal.

MEMORANDUM

To: Traffic Commission

From: Nate Nickel, Senior Long Range Planner

Date: June 24, 2015

Re: Traffic Inquiries

Background

The Planning and Transportation Department has received several Traffic Inquiries from the public, which are outlined below. The nature of Traffic Inquiries vary, but are within the purview of the Traffic Commission. The intent of Traffic Inquiries is to hear citizen requests and then leverage both the advisory role of the Commission, as well as citizen input, before a request is formally considered. The Traffic Inquiries process also allows City staff to properly evaluate and prepare information for any potential future Traffic Inquiries to be heard by the Commission.

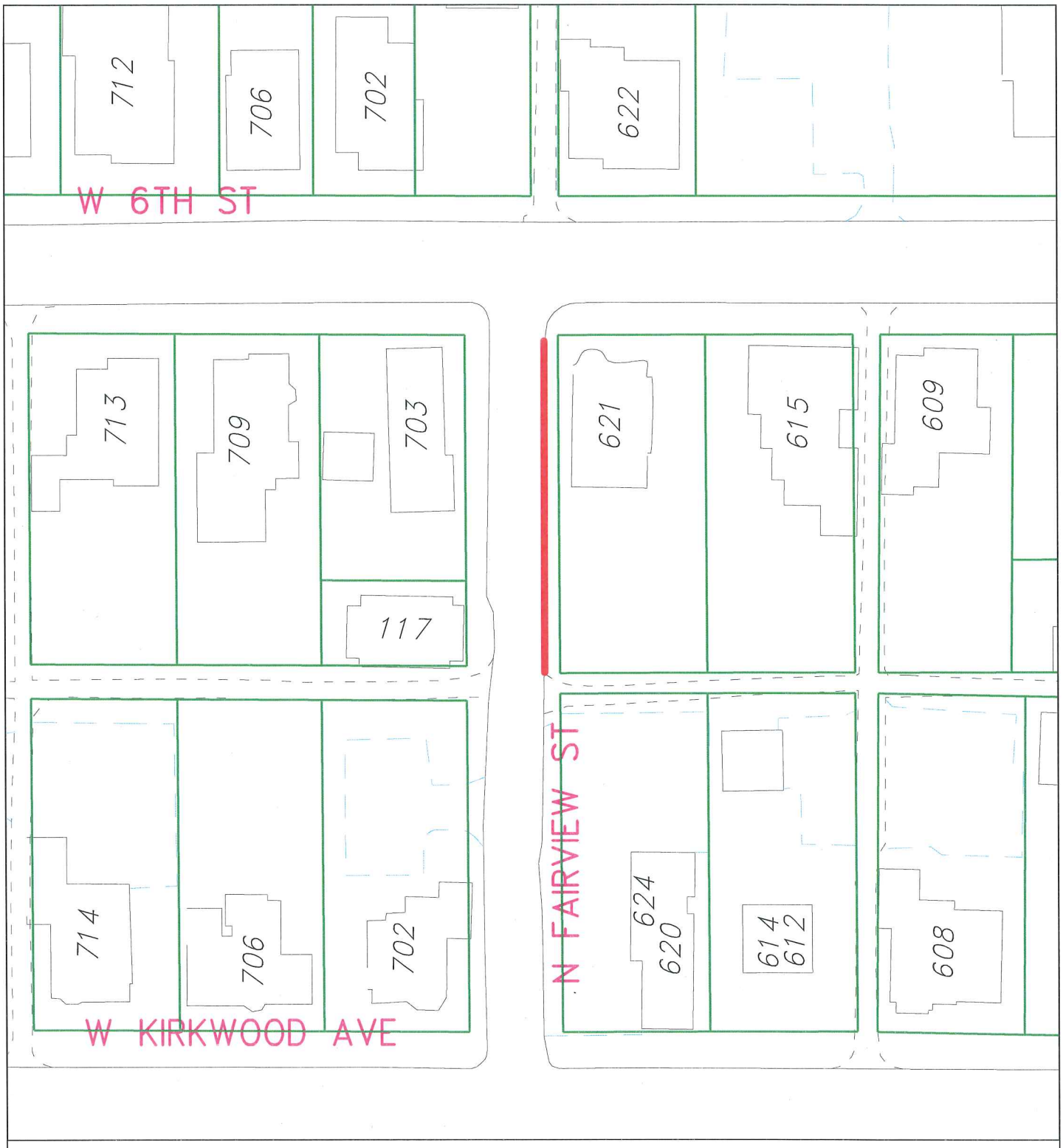
Basic information on Traffic Inquiries received by the Department are summarized below, as well as listed on the agenda. A respective map and site photos are also included for each Traffic Inquiry within the meeting packet for reference. Citizens that make Traffic Inquiries (either by phone, email, letter, U-Report, or in person) will be invited to attend the respective Traffic Commission meeting and given an opportunity to provide additional information.

Traffic Inquiries

- N. Fairview Street between W. 6th Street and east/west alley – add a no parking zone on the east-side of the street.
- S. High Street - traffic safety issues (speeds and lack of current stops between Arden Drive and Rogers Road). Add 4-way stops at the intersections of Greenbriar/Wimbleton Lane and Rock Creek Drive (especially for Childs Elementary School).
- E. 2nd Street - revise the current day and time regulations for 11 on-street parking spaces that are located on the south-side of the street, directly in front of the Bloomingfoods store.

Recommendations

Staff requests that the Traffic Commission identify those Traffic Inquiries that will need further analysis before a future case can be heard. Specific types of information, as well as possible solutions to consider, are also requested by staff.



N. Fairview Street – No Parking Zone

City of Bloomington
Planning & Transportation

By: nickeln
1 Jun 15

60 0 60 120 180

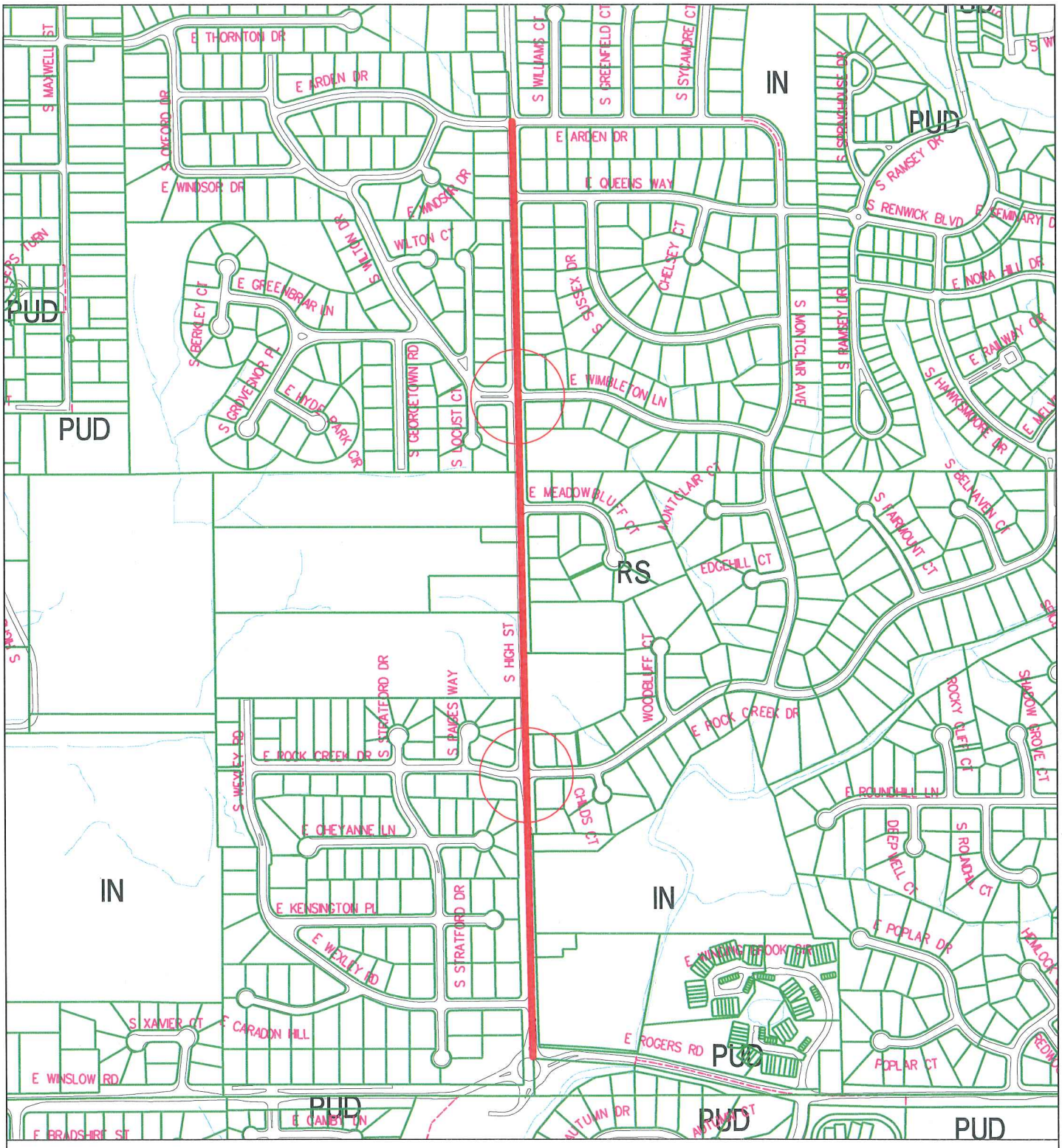
N

Scale: 1" = 60'

For reference only; map information NOT warranted.

N. Fairview Street (~22') looking northbound towards W. 6h Street, viewed from the alley.

N. Fairview Street (~22') looking southbound towards the alley and W. Kirkwood Avenue.



S. High Street Traffic Safety Issues

(Speeds and lack of stops on High St. between Arden Dr. and Rogers Rd.)

Add 4-way stops at the intersections of Greenbriar/Wimbleton Ln. and Rock Creek Dr.)

City of Bloomington
Planning & Transportation

By: nickeln
5 Jun 15

600 0 600 1200 1800

N

Scale: 1" = 600'

For reference only; map information NOT warranted.

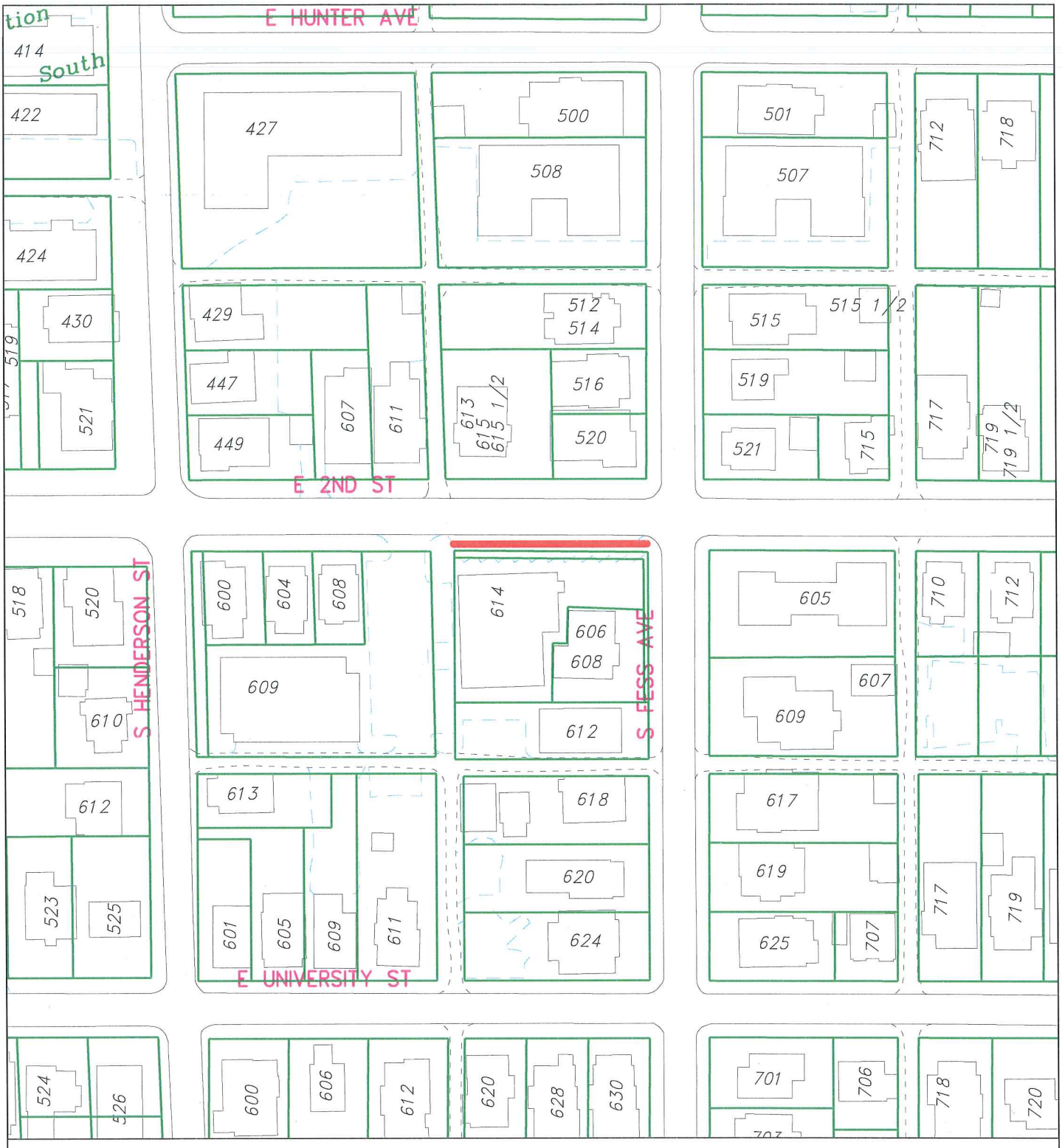
S. High Street looking north at the intersection with Rock Creek Drive (~20 feet).

S. High Street looking south at the intersection with Rock Creek Drive (~20 feet).

The signalized pedestrian crossing at the intersection of S. High Street with Greenbriar/Wimbleton Lane (looking north on High Street).

S. High Street looking south at intersection with Greenbriar/Wimbleton Lane (~20 feet).

The traffic radar speed display located on S. High Street, in front of the church (looking south).



Revise day & time parking regulations

E. 2nd Street (directly in front of Bloomingfoods store)

11 on-street parking spaces

By: nickeln

15 Jun 15

100 0 100 200 300

N

City of Bloomington
Planning & Transportation

Scale: 1" = 100'

For reference only; map information NOT warranted.

The 11 on-street angled parking spaces, located on the south-side of E. 2nd Street (~25').

A close-up view of the parking spaces, looking east along E. 2nd Street.