AGENDA
BLOOMINGTON TRANSPORTATION COMMISSION
REGULAR MEETING
TUESDAY, OCTOBER 16, 2018 4:00 P.M.
COUNCIL CHAMBERS, CITY HALL
109 EAST OLIVE STREET
BLOOMINGTON, ILLINOIS

1. CALL TO ORDER

2. ROLL CALL

3. PUBLIC COMMENT

4. MINUTES: Review and approve the minutes of the September 18, 2018 regular meeting of the Bloomington Transportation Commission.

5. REGULAR AGENDA

A. **TC-2018-04:** Discussion of City Speed Limits and Residential Neighborhoods
B. **Information:** October Citizen Comments/Complaints Summary

6. OLD BUSINESS

A. Any old items brought back by the Commission

7. NEW BUSINESS

A. Any new items brought up by the Commission

8. COMMISSIONER COMMENTS

9. ADJOURNMENT

For further information contact:
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MINUTES
BLOOMINGTON TRANSPORTATION COMMISSION
REGULAR MEETING
TUESDAY, SEPTEMBER 18, 2018 4:00 P.M.
COUNCIL CHAMBERS, CITY HALL
109 EAST OLIVE STREET
BLOOMINGTON, ILLINOIS

MEMBERS PRESENT: Ms. Angela Ballantini, Ms. Jill Blair, Ms. Maureen (Reenie) Bradley, Ms. Katherine Browne, Mr. Michael Gorman, Ms. Elizabeth Kooba, Ms. Kelly Rumley

MEMBERS ABSENT: None

OTHERS PRESENT: Ms. Diana Hauman, Ward 8 Alderman; Mr. George Boyle, City Attorney; Mr. Jim Karch, Director of Public Works; Mr. Philip Allyn, City Traffic Engineer; and several members of the public and media.

1. CALL TO ORDER: Mr. Gorman called the meeting to order at 4:02 pm.

2. ROLL CALL: Mr. Allyn called the roll. With seven members in attendance, a quorum was established.

3. PUBLIC COMMENT:
There was no Public Comment,

4. MINUTES: Reviewed and approved the minutes of the August 21, 2018 regular meeting of the Bloomington Transportation Commission. Ms. Kooba motioned to approve the minutes. Ms. Blair seconded the motion. The motion was approved by the Transportation Commission unanimously via voice vote.

5. REGULAR AGENDA:

A. TC-2018-05: Approval of 2019 Meeting Dates

Reviewed and approved the proposed schedule of meetings on the 3rd Tuesday of each month for 2019. Ms. Blair motioned to approve the minutes. Ms. Bradley seconded the motion. No discussion. The motion was approved by the Transportation Commission unanimously via voice vote.

B. TC-2018-06: Recommendations to USPS Regarding Post Office Relocation

Mr. Allyn game a short presentation on the recent decision by the USPS to relocate customer service operations. City Staff have been discussing potential impacts to the surrounding area, specifically the frontage road running along the south side of Empire Street and its intersection at Fairway Drive. The City has requested that a traffic study be completed as discussed in the agenda packet as would be required for private developers. There were problems with traffic flow and congestion when customer service operations were at this location previously. Other previous problems were with traffic flow as the drop-off boxes were within the parking area. Potential remediation discussed included creating a cul-de-sac on the frontage road at Fairway and connecting the parking lot to the mall entrance to the south allowing traffic to access Fairway at an existing traffic signal. The cul-de-sac could also potentially serve as a point for the drop-off boxes. Mr. Allyn discussed the relation of the recently IDOT-approved Fairway and Empire project and the potential post office traffic impacts. The USPS initially was receptive to the cul-de-sac concept, but later backed off. They have recently restarted dialogue with the City. They are focusing on internal site configurations and not considering overall impacts to the area. Staff is requesting backing from the Commission in the form of the proposed letter to the USPS requesting a formal traffic study.

Ms. Blair asked about the cul-de-sac. Mr. Allyn clarified that it would disconnect the frontage road from Fairway. We have also been encouraging them to work with their neighbors, Eastland Mall and Talbots to make the best use of the area. One other benefit of eliminating the frontage road connection to Fairway is the ability then to remove the raised median currently providing access control. This would allow the reinstatement of the northbound left turn that was required to be removed when the Fairway bike lanes were added.

Ms. Blair asked about jurisdiction of the frontage road. Mr. Allyn indicated that it technically falls on IDOT's right of way; however, they have left us to maintain it. What this typically means in practice is that the City has control of it as long as we do not do something IDOT does not like. Eliminating the frontage road connection to Fairway with a cul-de-sac would require IDOT approval. Mr. Gorman asked if that means the City would be required to construct the cul-de-sac. Mr. Allyn indicated that it was too early to know. Typically, developers are required to fund infrastructure improvements needed because of their projects. In this situation, the City would see some benefits of this change as well, so this may be an opportunity for cost sharing if needed to get the best possible solution.

Mr. Gorman asked if the connection could be eliminated more cost effectively using planters or other obstacles on the existing pavement rather than constructing a cul-de-sac if the City has to pay for it. Mr. Allyn indicated that the main issue with that would be the inability for drivers to turn around as would be needed at the end of a public street. A hammerhead for 3-point turns could be a cheaper option than a cul-de-sac, but there could be safety issues if there are a higher number of vehicles on the street.

Mr. Gorman mentioned that there is a right turn across the bike lane on Fairway with the current IDOT approved Fairway plan. Would it be possible to provide a dedicated right turn lane to the outside of the bike lane to reduce the chance of a right hook crash with a bicyclist? Mr. Allyn indicated that could be looked at, but would require going back to the start of the 9-month process with IDOT. Mr. Gorman suggested additional signage encouraging drivers to enter the bike lane prior to the intersection and then making the right turn from the bike lane rather than turning across it. Mr. Allyn agreed with this suggestion.

Mr. Gorman asked about the positioning of the drop off boxes within the cul-de-sac. Mr. Allyn indicated that the actual layout would still need to be worked out so that the boxes are on the driver's side of the car without forcing cars to drive the wrong way around the cul-de-sac. The takeaway point is that the cul-de-sac could provide an alternative location for the drop off boxes that is not in the main parking area.

Mr. Gorman mentioned that there are many parking areas around the building, mostly used by USPS vehicles. Could these some of these areas be utilized by the public, specifically the north end of the parking area between the building and Fairway? Mr. Allyn indicated that late-Thursday or Friday of the previous week, the USPS started to send us some concepts for reconfiguring some of the access points along Fairway. We intend to continue dialogue with them on this point.

Ms. Bradley inquired about ownership of the various parking areas around the USPS and Talbots buildings. Mr. Allyn reviewed ownership of the various parcels. Ms. Bradley asked about potentially using some of the Talbot's or mall parking areas for the postal vehicles to allow more room for customers. There are more people sending packages that require parking and entering the building and fewer using a drop boxes for letter. Ms. Bradley liked the suggested letter, and as someone who remembers the problems with this location previously, does not feel there is any way we can go back to that again. It did not work then and will not work now. The problems on the frontage road and the intersection of Fairway and Empire were significant.

Ms. Blair asked for the status of the Empire USPS building and the likelihood that the USPS would leave it in the near future. If they were planning on staying long term, it would make more sense to do something nicer (trees, benches, etc.) rather than just abruptly ending the frontage road. Mr. Allyn

indicated that the key to the cul-de-sac is that we cannot end a public street in such a way that people cannot turn around if they travel to the end. There may be an opportunity for discussion about vacating the frontage road. This would allow the frontage road to function as a long driveway that could end at the parking lot. The City cannot however rely on using private property to turn around on a public street. Mr. Gorman reminded that complicating that discussion is the fact that the right of way to be vacated is actually IDOT's, not the City's.

Mr. Allyn added that the question of how long the USPS stays in this building is probably more related to the longer-term viability of the USPS itself and how long it continues to need this large of a facility with the decline in mail being sent. The USPS does own this building whereas they were leasing the Towanda building and are planning on spending around $2.2 million on the renovation. This is a lot of money to spend on somewhere they are not planning on staying for a while.

Ms. Bradley asked about the ownership of the Talbots property and building. Mr. Allyn indicated it was owned by the mall and leased to Talbots. Mr. Allyn indicated that the entire length of the frontage road could be vacated back to Empire Crossing. This would require post office patrons to travel across mall property, which might require some type of easement agreement. He reiterated that the USPS really needs to be talking with their neighbors about the best overall solution.

Ms. Blair motioned to approve Mr. Allyn sending out the letter on behalf of the Commission. Ms. Browne seconded the motion. No additional discussion. The motion was approved by the Transportation Commission unanimously via voice vote.

C. Information: August Citizen Comments/Complaints Summary

Ms. Bradley asked about the Stone Mountain area concerns. Has there been consideration of lowering the speed limit along College from 35 mph to 30 mph? This is a very residential area with a school and a popular park. Mr. Allyn indicated that we are currently gathering data and will be digging into this situation more deeply. Ms. Bradley noted the comparison of this area to the stretch of Hershey Road that was lowered to 30 mph relatively recently.

6. OLD BUSINESS:

A. Ms. Bradley brought back for discussion the speeding topic from the previous meeting. The people who came for public comment made some very good points. She inquired where this topic was going. In conversations with various people around the community, there isn't support for lowering the speed limit. Could the Aldermen find the traffic trouble spots in their wards, which could then be ranked and knocked off one by one? Evans Street is a unique situation. If there is a problem, fix it and take it off the list. West MacArthur is a racetrack and people on Wood Street should not have to feel unsafe crossing the street to get to Miller Park. There are some traffic issues. We are transitioning from priority on moving traffic to safer neighborhoods, so we need to move forward on that and start getting involvement by the Council. Mr. Allyn indicated that we are planning on bringing this back for discussion in October. Staff has been gathering requested data to help inform the discussion but did not have everything ready for this meeting. The change in the citywide speed limit is something that will specifically be discussed. Mr. Boyle indicated that he was able to research the legal aspects of the speed limit change and confirmed that municipalities are allowed to specify the speed on their local streets, but not on streets under the jurisdiction of others such as IDOT. There are some parameters such as the City cannot set a speed more than 20 mph lower than the State Statutory Speed. Mr. Allyn asked about the process. Mr. Boyle indicated that it would just take passing an ordinance and updating the City Code.

   Mr. Gorman asked if there are specific parameters or boundaries that would need to be followed or if the City could set the statutory speed limit as it saw fit. Mr. Boyle indicated that his understanding is that it would need to have some type of basis rather than just choosing a random number, but that there is a fair amount of legislative prerogative available. It appears that the only

real requirement is that the City cannot go more than 20 mph below the State. Since the State value is set at 30 mph, and we wouldn't want to go less than 10 mph, this shouldn't be a problem.

B. Ms. Bradley brought back for discussion the funding of our street maintenance work. She indicated a concern about raising the local motor fuel tax and believes it is a bad idea right now. There aren't any other communities with fuel taxes that high. The Council needs to creatively look at finances before we proceed with this discussion. There are other budget problems such as the Coliseum and in the meantime, we need help with the streets. Do we need to look back at the 20-year plan? Do we need to reevaluate the commitment to brick streets? What is the shorter-term fix for our streets? Mr. Allyn indicated that would be part of the upcoming bigger discussion. We need to discuss a combination of reduced service (oil and chip in some places instead or hot-mix asphalt, etc.) and finding additional revenue somewhere. Ms. Bradley challenged the Aldermen to look creatively at the budget and finding funding for the streets. We need to start looking outside the box.

   Mr. Gorman indicated that this is what we are trying to do. In March, the Commission recognized that our current funding and maintenance is not sustainable and directed Staff to develop a sustainable model that includes cuts since just the local fuel tax increase does not solve the long-term problem. People recognize that a short-term solution would also be beneficial. Staff is working on a solution that the Commission needs to vet before it goes back to Council.

   Ms. Bradley reiterated that Council needs to be part of the discussion and seek solutions, and not just dump the responsibility all on Staff to create solutions. Council needs to be contributing to the discussion.

   Mr. Gorman said that Council has delegated initial vetting of transportation policy to this Commission. Current infrastructure funding model is not sustainable. We are still in the process of researching the solution.

7. NEW BUSINESS:

A. Ms. Bradley introduced a new topic: The intersection of Airport Road and Cornelius Drive. Ms. Bradley indicated great concern for this intersection and what kind of control device will be installed. Currently under construction is the new Eye Center with 40,000 patients to the southeast of this intersection, Biaggi's is relocating, Central Catholic High School is already there.

   Mr. Allyn indicated that this intersection is a two-way stop and there are currently no plans to change. We will be monitoring it moving forward. The Eye Center has an entrance to Cornelius, but it and Biaggi's will also have access directly to Airport Road. There will also be a right-in-right-out access on Route 9 (Empire Street) at the east end of the Airport Road right turn lane that the State has approved. There will also be a connection to Trinity Lane that will allow access to Route 9/Empire Street further east. Ms. Bradley asked that we look at this closer.

8. COMMISSIONER COMMENTS:

Ms. Blair requested that reference material be send out earlier. It would be helpful to get each piece as it is available rather than waiting until the entire packet is available.

Ms. Browne asked about procedure if we notice something as citizens. Mr. Allyn indicated it would be most helpful if Commissioners completed and submitted the Non-Emergency Request form or the My Bloomington app. Commissioner can feel free to mention it during meetings, but using the form or app if preferred so that we can more easily track the request. Ms. Browne mentioned there is a transit stop across Washington from the Foundry/Green Top Grocery and that there is no good way to get across the street

without walking fairly far west to the underpass. It is difficult to cross for people with different levels of mobility. Can we provide a safer way to cross from the bus stop to the Foundry?

Mr. Gorman indicated that during discussion of the Washington Street Bike Master Plan Amendment, Alderman Buragas proposed a more comprehensive review of pedestrian access along that corridor that included a cross walk at this location. Typically, pavement markings are done with street resurfacing, but since adding the crosswalk wouldn't require large-scale marking removals, it might be able to be added. Ms. Browne indicated that part of the problem is the speed of traffic on Washington. Mr. Gorman mentioned this might be a good location for a HAWK signal to help cross. Mr. Allyn indicated the HAWK is more advanced and involves three lights that flash and actually stop traffic. We are using RRFB's instead on Front Street and on Hershey to the north of Hamilton Road. The HAWK costs significantly more and is fairly unknown in Central Illinois, but would be more effective.

Ms. Rumley requested talking to Connect Transit if there is a problem with their stop location and its suitability for riders using wheelchairs.

Mr. Allyn mentioned that the Annual Complete Streets Report has been posted on the website.

Mr. Allyn indicated that we have begun work on Front Street. The Traffic Signals will be deactivated later this week. Sidewalk removal and replacement begins Monday.

9. ADJOURNMENT: The meeting adjourned at 4:57 pm unanimously by voice vote; motioned by Ms. Blair and seconded by Ms. Rumley.

Respectfully,

Philip Allyn
City Traffic Engineer

CITY OF BLOOMINGTON
REPORT FOR THE TRANSPORTATION COMMISSION
October 16, 2018

CASE NUMBER:	SUBJECT:	ORIGINATING FROM:
TC-2018-04	Discussion of City Speed Limits and Residential Neighborhoods	Council Member Request for Consideration (Schmidt)
REQUEST:	Direction provided by the Transportation Commission on several proposed policies changes or proposed ordinances or other definitive statements of action or inaction (if required) to be brought back individually at a later meeting for final discussion and approval.	

STAFF RECOMMENDATION: To be provided with proposed policy or ordinance

Staff requests direction to either drop from consideration or develop formal updated policies, proposed ordinance(s), or other such documents regarding the following suggestions to be reviewed, discussed and formally voted on by the Commission at a subsequent meeting:

A. Modification of the City-wide Statutory Speed Limit.
B. Development of a policy for establishing specific reduced speed areas (neighborhood, downtown, etc.).
C. Development of a policy to identify specific isolated locations (intersection, 1 or 2 blocks of a specific street, etc.) for incorporation of traffic calming features other than speed humps/tables and recommendation to Council to allocate the necessary funding.
D. Recommendation on changes to the City Manual of Practice that encourage lower travel speeds.
E. Recommendation to City Council to direct the Police Department to re-establish a Traffic Enforcement Division and provide the necessary funding for such.
F. Review and recommend for or against implementation of Automated Speed Enforcement (ASE).

1. ATTACHMENTS:

a. See previous packet and attachments from August, 2018 Commission Meeting
b. Council Member Request for Consideration Form
c. City Code Chapter 29, Article V: Speed Regulations
d. Pages from the MUTCD regarding Speed Regulations
e. Excerpt pertaining to the use of Automated Speed Enforcement (ASE) from *Reducing Speeding-Related Crashes Involving Passenger Vehicles* (NTSB)

2. BACKGROUND AND SUPPLEMENTAL INFORMATION:

Since the August meeting, Staff has developed a list of potential policy and City Code/Ordinance changes to help reduce speeding within the City. We request, via an unofficial straw poll during the meeting, direction on each of these suggested items to either pursue further or to eliminate from consideration.

General Considerations:

Table 1 below shows the crash and fatality statistics for the City as detailed in the Annual Complete Streets Report:

Crashes and Safety				
Criteria	FY 2015	FY 2016	FY 2017	FY 2018
Total number of crashes	1,654	1,620	1,735	1,669
Total number of crash injuries	303	323	286	260
Total Number of crash fatalities	2	1	1	1
Number of pedestrian crashes	23	17	18	20
Pedestrian crash percent of total number	1.4%	1.0%	1.0%	1.2%
Number of pedestrian crash injuries	21	12	17	15
Number of pedestrian crash fatalities	0	1	0	1
Number of pedal cyclist crashes	18	12	16	18
Pedal cyclist crash percent of total number	1.1%	0.7%	0.9%	1.1%
Number of pedal cyclist crash injuries	16	11	13	14
Number of pedal cyclist crash fatalities	0	0	0	0
Exemptions granted and reason for exemption	N/A	N/A	0	0
Number of school flashers	7	7	9	9

Table 1: 4-Year Crash Statistics for the City of Bloomington

Over the last four years, there have been 2 pedestrian fatalities in the City of Bloomington, one in March 2016, and one in June 2017. The 2016 fatality involved a 6-year old girl running out into the street from behind an SUV in the middle of the afternoon. According to the police report, the driver indicated that he had slowed to below the 35 mph posted speed limit in advance of the area upon seeing several cars parked alongside the roadway and never see the girl. This occurred on a section of South Bunn Street on the edge of town by Bloomington Meats. It's unclear whether speed was a factor.

The 2017 fatality occurred at the intersection of Main and Wood approximately 30 minutes after sunset. According to the police report, an eastbound car was stopped at a red signal. Upon receiving a green signal, the driver proceeded to turn left and stick a 63-year old pedestrian operating a motorized wheelchair in the north crosswalk. There are discrepancies among the participants on whether the pedestrian had a WALK or DON"T WALK signal and whether the driver had his headlights on. Since the impacting vehicle was making a turning maneuver from a completed stop, speed does not initially appear to be a factor.

Staff was able to obtain information relating to noise emissions due to roadway traffic. Multiple factors, such as pavement condition and type, tires, electric vehicles, etc. all have an impact on traffic noise in addition to speed. In addition, the number and type of vehicles as well as the distance from the street impact the noise experienced for a particular location. Figure 1 below shows how speed impacts noise emission at cruise throttle on average pavement for various vehicle types. Note that the decibel (dBA) scale is logarithmic, so a 5 decibel change at the high

range (e.g. 125 dBA balloon popping versus 130 dBA jet taking off) is more dramatic than a 5 decibel change at the low range (e.g. 40 dBA whisper versus 45 dBA rain).

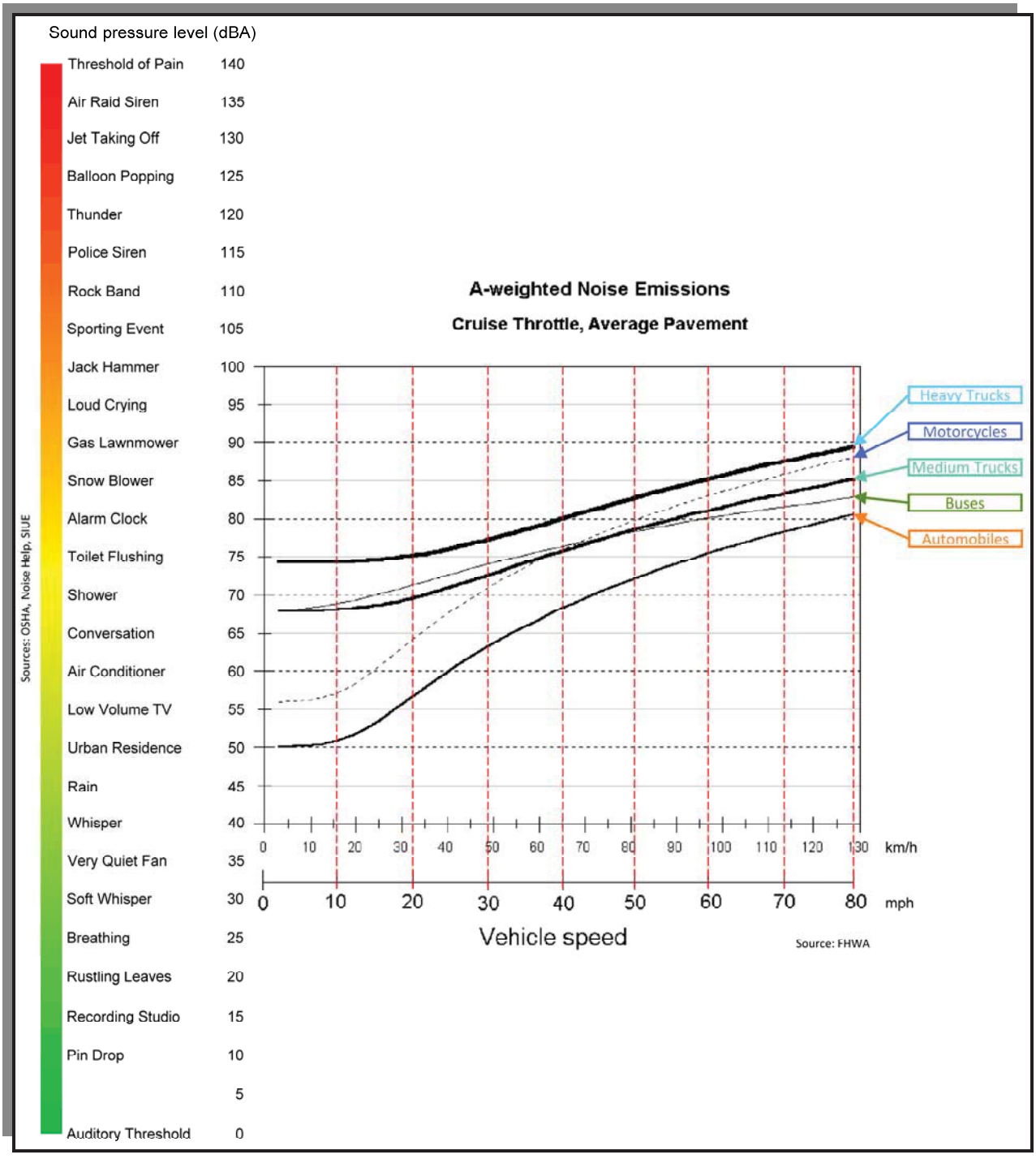


Figure 1: Relationship Between Vehicle Speed (mph) and Vehicle A-weighted Noise Emissions (dBA)

When isolated, speed has a minimal impact on dBA. For example, at 40 mph, an automobile's noise emission is about 68 dBA, whereas, at 30 mph, an automobile's emission is about 63 dBA. This 5 dBA difference is comparable to the difference between a shower and a conversation. When factoring for distance (e.g. from the road to a house), that difference is lower. Also, at the

lowest and highest speeds on the graph, the data points begin to level out, decreasing the difference in dBA between different vehicle speeds.

Suggestion A: Modification of the City-wide Statutory Speed Limit

It's important to note that there is a distinct difference between vehicle speeds and posted speed limits. Decreasing vehicle travel speeds should result in safer roadways; however, simply lowering a posted speed limit should not be expected to result in these same safety benefits if there isn't a corresponding decrease in vehicle travel speed.

As discussed at the previous meeting, the FHWA completed the previously provided study *Effects of Raising and Lowering Speed Limits.* The study focused on streets and highways posted between 20 and 55 mph rather than the much more heavily studied 55 and 65/70 mph posted limited access facilities (interstates). It looked at 100 locations spread over 22 states and generally found that lowering posted speed limits by as much as 20 mph or raising them by as much as 15 mph had little effect on motorist's speeds. The majority of motorists did not drive 5 mph above the posted speed limits when they were raised 5 mph, nor did they reduce their speed by 5 or 10 mph when the posted speeds were lowered. Data collected at the study sites indicated that the majority of speed limits are already posted below the average speed of traffic. Lowering speed limits further simply increases the violation rate.

Two additional studies are presented below. To help determine the impact of posted speed limit on actual travel speed, Spack Enterprise completed a Case Study comparing vehicle travel speeds in two similar communities: Woodbury, Minnesota, and River Falls, Wisconsin. Minnesota has a state-wide statutory speed of 30 mph, while Wisconsin has a state-wide statutory speed of 25 mph. Both state-wide speed limits have been in effect for decades, so it can be assumed that drivers are accustomed to the posted limits and the effects are not a temporary change due to a new condition. The study split the data by road width. It did not differentiate by other factors such as roadway geometry or profile, presence of traffic calming (raised medians, curb extensions, etc.) or parking, or lane configuration. In general, the results showed no clear difference in speed between 25 mph and 30 mph posted limits. In fact, overall the average and 85th percentile speeds were lower in Minnesota where the statutory speed is higher. The varying differences at the different roadway widths seem to indicate that travel speed is more affected by other factors such as lane width and the presence of parking.

Location	Number	Total Volume Measured	Average Speed	85th Percentile Speed	Percent Speeding
River Falls, WI (25 mph)	All 17 Sites	214,160 vehicles	26.6 mph	32.1 mph	53.6 %
Woodbury, MN (30 mph)	46 Sites	191,120 vehicles	25.3 mph	31.1 mph	21.3 %

Table 2a: Spack Enterprise Overall Speed Data Comparison

	Local Road Width	River Falls, WI (25 mph)			Woodbury, MN (30 mph)		
		Average Speed	85th Percentile Speed	Percent Speeding	Average Speed	85th Percentile Speed	Percent Speeding
Typical Local Road	28-Foot Road Width	N/A	N/A	N/A	23.2 mph	28.3 mph	13.3 %
	30-Foot Road Width	26.3 mph	31.8 mph	42.2 %	26.6 mph	31.5 mph	28.6 %
	32-Foot Road Width	27.7 mph	33.4 mph	57.5 %	25.3 mph	31.4 mph	19.4 %
	36-Foot Road Width	25.4 mph	30.8 mph	65.8 %	28.7 mph	33.5 mph	38.6 %
	38-Foot Road Width	22.0 mph	27.8 mph	60.8 %	N/A	N/A	N/A
	40-Foot Road Width	27.5 mph	33.7 mph	43.3 %	28.6 mph	33.9 mph	30.4 %
	42-Foot Road Width	29.0 mph	33.9 mph	36.1 %	29.9 mph	35.6 mph	47.3 %
	44-Foot Road Width	28.0 mph	33.6 mph	62.8 %	N/A	N/A	N/A

Table 2b: Spack Enterprise Speed Data by Roadway Width

The City of Boston, Massachusetts lowered their statutory speed limit from 30 mph to 25 mph, effective January 9, 2017. The Insurance Institute for Highway Safety (IIHS) completed a study comparing the before and after travel speeds at 50 sites in Boston. As a control to aid in the mathematical analysis, 50 similar sites were chosen in Providence, Rhode Island which had a statutory speed of 25 mph both before and after the study period. The sites in both Boston and Providence included arterials, collectors, and local roads. To minimize the effects of roadway characteristics on vehicle speeds, all the sites were similar in that they had no more than one lane per direction, and were located away from intersections on relatively flat, straight roadway segments. There was no posted speed limit sign at any of the sites. In addition, all the sites were located at least half a mile away from any school or speed feedback sign. Pre-change data was gathered in October-December 2016. Post-change data was gathered in September-November 2017, approximately 8-10 months after the change. For Boston, the average hourly vehicle count per lane was approximately 260 vehicles both before and after with peak hours of 607 and 551 respectively. This correlates to a two-way Average Daily Traffic (ADT) volume of around 12,000 vehicles.

Period	Boston sites					Providence sites				
	Speed (mph)		Proportions			Speed (mph)		Proportions		
	Mean	85th percentile	> 25 mph	> 30 mph	> 35 mph	Mean	85th percentile	> 25 mph	> 30 mph	> 35 mph
Before	24.8	31.0	47.9%	18.2%	4.9%	24.8	31.0	45.9%	15.9%	3.5%
After	24.8	31.0	46.9%	18.1%	3.8%	24.9	31.0	46.2%	17.5%	4.1%

Table 3: IIHS Boston Study Results

The results of the study show negligible change in either the average speed or the 85th percentile speed after the statutory speed was changed. However, the percentage of drivers exceeding 35 mph did drop from 4.9% to 3.8%. This indicates that there may have been a small reduction in the number of "excessive speeders". However, since the average speed did not noticeably change, it would seem to indicate a smaller speed change around the 35 mph threshold (i.e. slowing from 36 to 34 mph) rather than a larger reduction in more dangerous speeding (e.g. 40 to 34 mph).

There are several positives that could be reasonably assumed with a reduction in the City-wide Statutory Speed Limit:

1. Lowering the statutory speed limit should slow some drivers on City streets. Drivers following the current speed limit because it's the law may slow to the new posted speed limit. Drivers who drive a certain amount over the posted speed limit may slow to this same amount over the new speed limit. It's unclear based on available data how large of an effect this would be and whether this effect would be temporary or longer term.
2. The publicity resulting from the changed speed limit should draw the attention of the community to the dangers of speeding and may have an overall traffic calming effect on all roads (not just City streets with a new lower posted speed) at least temporarily if not longer term. In addition, this increased focus may lead to an opportunity for other safety measures that may have a longer lasting effect.

Similarly, there are several negatives that could be reasonably assumed with a reduction in the City-wide Statutory Speed Limit:

1. Absent other controls (increased enforcement or physical changes to the roadway), many drivers will likely continue to drive at the speed they feel is safe and reasonable. This will increase violation rate without increased enforcement or more expensive traffic calming.
2. May increase speed differential between fastest and slowest drivers. Drivers following the current speed limit because it's the law may slow to the new posted speed limit. Drivers who drive a certain amount over the posted speed limit may slow to this same amount over the new speed limit. However, absent other controls, many drivers will likely continue to drive at the speed they feel is safe and/or reasonable, creating less-safe situations for motorists and pedestrians. Faster drivers will come up on slower drivers more suddenly. At intersections, it will be harder to judge adequate gaps in traffic both by turning vehicles and pedestrians trying to cross. Pedestrians may gain a false sense of safety assuming vehicles are traveling slower, leading to more risky crossings.
3. Will not be able to change roads under other jurisdictions (State, County, Town, etc.) leading to potential confusion for drivers about the speed limit for the street on which they are driving.
4. Cost of new installation and future maintenance of signs stating City-wide speed limit. Installation costs alone are estimated to be approximately $50,000 (includes labor costs for City employee layout, JULIE coordination and installation). Additional indirect costs of City Staff to write ordinance, educational campaign for Citizens, etc.

For reference, attached is the page from the City of Bloomington Municipal Code relating to the Local Statutory Speed Limits and determining Altered Speed Limits. For comparison purposes, the statutory speed limits on urban streets in other Illinois communities similar to the City of Bloomington are provided below. Most communities reviewed had slower statutory speed limits for alleys, generally 15 mph.

Bloomington	**30 mph**
Carbondale	30 mph
Champaign	30 mph
Effingham	A speed that is "reasonable and proper" with rates of speed above the following being considered as prima facie evidence that the travel speed is not "reasonable and proper" - Business District – 20 mph, Residence District – 25 mph, Suburban District – 35 mph
Normal	**30 mph**
Peoria	As set by State Traffic Laws (currently 30 mph)
Rockford	30 mph
Springfield	30 mph
Urbana	As set by State Traffic Laws (currently 30 mph)

If this option is chosen for more consideration, Staff would prepare a draft ordinance to bring back to the Commission for further discussion, review and approval.

Suggestion B: Development of a policy for establishing specific reduced speed areas (specific neighborhood, downtown, etc.)

An alternative to a City-wide statutory speed limit change would be to reduce the speed for a defined area similar to how the City of Effingham has approached their statutory speed limits. The reduced speed area could be a high pedestrian area like the central business district with defined boundaries such as East Street, Locust Street, Madison Street and Olive Street. Other areas could be defined residential neighborhoods. The Northmoor Hills Subdivision in Peoria has the signs shown at the right installed at each of the streets entering the subdivision.

Many of the same positives and negatives anticipated with a City-wide change could be realized within these areas with this option. Additional positive results could include the following:

1. By limiting the scope of the change, it is highlighting the areas where reduced speed is more important such as where there are higher than average volumes of pedestrians or where there could be children playing. This could have a greater effect on reducing speed in these areas.
2. By reducing speeds limits within defined areas and not on the arterials that border them, through traffic is encouraged to remain on the arterial streets rather than "cutting though" on residential streets, keeping them with lower volumes and thus fewer potential vehicle-pedestrian conflicts.
3. Many residential subdivisions built within the last several decades have reduced points of entry from arterials streets reducing the signage effort and cost required to adequately notify of the reduced speed limit area.

Additional negative results could include the following:

1. Many of the older residential subdivisions within the grid system of streets are not as defined of an area and have significantly more points of entry from arterials streets. This could make adequately notifying drivers of the reduced speed limit area more challenging.
2. Similarly, the longer, straight streets within these older neighborhoods are more conducive to speeding than the curvy streets of newer subdivisions and thus are more at risk.

If this option is chosen for additional consideration, Staff would further research the legal requirements for this type of change and create a draft ordinance to bring back to the Commission for further discussion, review and approval. In addition, a policy would be developed with defined criteria for determining whether a certain area is eligible for the reduced speed limit, guidelines for setting the boundaries of said area, and a procedure for implementation. It would be anticipated that the implementation process would include significant interaction with, and approval by, the stakeholders for the area.

Suggestion C: Development of a policy to identify specific isolated locations (intersection, 1-2 blocks of a specific street, etc.) for incorporation of traffic calming features other than speed humps/tables and recommendation to Council to allocate the necessary funding

This suggestion would involve identifying and ranking specific locations with verifiable, measureable speeding problems. Engineering solutions would be applied based on the specifics of the location. Potential options could include curb extensions or bumpouts at intersections, raised medians, narrowed driving lanes, road diets/reduction of driving lanes, enhanced signage and/or pavement markings, or other similar treatments. Each year, one or more locations would be addressed depending on funding. This would be a specific, targeted approach to problem locations.

This suggestion has the benefit of addressing specific problem locations rather than applying a blanket "solution" to all or large areas, including those where there isn't an actual speeding problem currently. In addition, the permanent nature of the physical changes to the street or intersection would likely result in the greatest reduction in travel speed and could reduce the need for police enforcement.

The most significant downside to this option is the lack of resources – both funding for construction and staff time to implement – to have a noticeable impact in the short- or even medium-term. Costs for engineered solutions vary greatly depending on the treatment being applied, and the most effective are often the most expensive. While Staff currently incorporates some of features into the various annual resurfacing and sidewalk maintenance projects when possible (e.g. road diet and bike lanes on E. Washington and on Regency/Fairway, curb bumpouts and raised medians on Front Street), this is not sustainable due to the limited funding available. Every time a curb bumpout is completed rather than simply updating the ramp to ADA requirements, the amount of sidewalk money available to replaced deteriorated sidewalk elsewhere is reduced. It has been well documented that current funding levels are not sufficient to maintain the streets and sidewalks. Increasing the cost of the maintenance work with additional traffic calming, will only compound the issue. In addition, Staff time to identify and

rank locations, and then review, design, and implement engineered solutions is significant and prevents the completion of other vital tasks.

Due to federal requirements to update curb ramps to current standards when the adjacent street is resurfaced, locations of intersection curb and sidewalk work is often dictated by which streets need resurfacing, not which streets have speeding issues. This could easily result in problem areas not being addressed for many years. Finally, while helping in problem locations, this spot approach will likely not have a systemic effect on reducing travel speeds overall in the City.

If this option is chosen for additional consideration, Staff would develop a policy for review by the Commission with defined criteria for determining problem locations, ranking them in order of importance, and creating a process for implementation. It would be anticipated that the determination and implementation process would include significant interaction with, and approval by, the stakeholders/residents in the area.

To be effective, this option would have to include an annually recurring budget amount in the City budget for both construction as well as design engineering to be completed by a Consultant or the hiring of additional staff.

Suggestion D: Recommendation on changes to the City Manual of Practice that encourage lower travel speeds

The City's Manual of Practice defines standards for the construction of infrastructure within the City when not governed by another agency. For example, IDOT policies and standards are in effect when work is completed within the State Right of Way or when State or Federal money is used for the project. Therefore, this manual is used significantly by developers constructing new subdivision streets or modifying existing City streets. Under this option, Staff would review the current Manual of Practice to identify standards such as lane or road widths that could be modified to provide more inherently speed calming streets. Historically, the City and the Town of Normal have coordinated updates to each municipality's Manual of Practice to maintain a consistency in the community for developers, which may complicate any significant changes. Any potential changes would be required to be approved by the City Council.

Suggestion E: Request City Council direct the Police Department to re-establish a Traffic Enforcement Division and provide the necessary funding for such

Staff would draft a recommendation to the City Council and/or City Manager requesting this topic be discussed at the Council level. Staff would determine a recommended number of additional officers along with associated costs, and other logistical considerations.

Suggestion F: Review and recommend for or against implementation of Automated Speed Enforcement (ASE)

Attached is an excerpt pertaining to the use of Automated Speed Enforcement (ASE) from *Reducing Speeding-Related Crashes Involving Passenger Vehicles*, Safety Study NTSB/SS-17/01 (National Transportation Safety Board, 2017).

ASE refers to the use of a vehicle speed detection system coupled with a camera to identify speeding vehicles. When a speeding vehicle is detected, the camera system is triggered to

automatically take photographs of the vehicle, including the license plate and, in some implementations, the driver. Law enforcement and/or ASE vendor personnel then review the photographic evidence (typically off site and at a later time) to confirm that a speeding violation occurred, and state motor vehicle administration records are used to determine where to mail a speeding citation.

ASE has some advantages over in-person speed enforcement by an officer. It provides a force multiplier effect that can free up limited law enforcement resources to be used for other purposes. ASE can operate in locations and under conditions that would make traffic stops dangerous or impractical, and it may reduce congestion from other drivers distracted by traffic stops. Finally, its high rate of speeding detection may provide a higher general deterrence effect.

Several limitations of ASE have also been noted. Because ASE does not stop a driver at the time of the speeding offense, the driver may continue to speed and be unaware of the offense. Also, the time lag between committing a violation and receiving an ASE penalty may have a lower specific deterrence effect.

ASE has been, and continues to be, challenged on several constitutional grounds, including that it violates rights of due process, equal protection (because penalties may differ between ASE citations and in-person citations), and privacy, but courts have consistently found ASE to be constitutional. ASE has also been criticized by the public as a tool to generate revenue rather than increase safety. This concern appears to stem from well-publicized cases of automated red light and speed enforcement programs not following best practices, such as paying vendors on a per-citation basis, giving vendors responsibility for site selection, and not ensuring that yellow lights are appropriately timed. Some states have passed laws designed to increase public acceptance of ASE. For example, Maryland requires local jurisdictions to hold a public hearing prior to authorizing ASE and to designate an employee to respond to citizen concerns and review contested citations. Local jurisdictions in Maryland are also prohibited from paying ASE vendors on a per-citation basis.

In Illinois, AES is currently restricted to construction zones and to school zones and park districts in municipalities with a population of 1,000,000 or more (Chicago).

Staff would review the implementation requirements of ASE devices including legal, financial, and logistical considerations and draft a memorandum of recommendation to the City Council and/or City Manager requesting this topic be discussed at the Council level. If approved, Local Elected Officials would then petition legislators for a change in the State Law.

3. STAFF RECOMMENDATION:

Staff requests direction to either drop from consideration or develop formal updated policies, proposed ordinance(s), or other such documents regarding each of the above suggestions to each be formally voted on by the Commission at a subsequent meeting:

Respectfully submitted,

Philip Allyn, PE, PTOE
City Traffic Engineer

Bloomington ILLINOIS

CITY OF BLOOMINGTON
COUNCIL MEMBER REQUEST FOR CONSIDERATION

I. TO BE COMPLETED BY ALDERMAN

1. Name of alderman making the proposal: Karen Schmidt

2. Topic summary (attach additional information and documentation to this form:

City speed limits and residential neighborhoods

3. Alderman's priority level: ☐ LOW ☑ MEDIUM ☐ HIGH

II. TO BE COMPLETED BY STAFF

1. Aldermen supporting consideration of this topic (3 additional minimum):

Mwilambwe Buragas Painter Black
Sage Hauman Mathy

2. City Manager review (staff & financial resources required to implement; impact on City priorities, etc.):

3. Recommendation for further action on _____ at the following meeting type:

- ☐ **Committee of the Whole**
- ☐ **Council Consent Agenda**
- ☐ **Council Regular Agenda**
- ☐ **Work Session**
- ☒ **City Board or Commission** Transportation Commission
- ☐ **City Staff Review & Comment**

Proposed agenda items shall be submitted to the City Manager's Office using the Agenda Item Request Form at least 15 days in advance of the next regularly scheduled Council session if quick action is desired. Due to the substantial number of requested items and City projects, it may not be possible for requested items to appear on the next agenda.

Article V : Speed Regulations

Section 32 : Speed Regulations.

(a) It shall be illegal for any person to drive a motor vehicle at a speed greater than 30 m.p.h. on any public street within the City of Bloomington, except as a greater or lesser speed limit may be posted as established by law or ordinance. (Ordinance No. 1983-85)

(b) It shall be illegal for any person to drive a motor vehicle at a speed greater than 15 m.p.h. in any alley within the City of Bloomington. (Ordinance No. 1990-97)

(c) On the basis of an engineering or traffic investigation conducted by the Department of Engineering of the City of Bloomington, it has been determined that on various portions of city streets the speed permitted by state law is greater or lesser than is reasonable or safe under the conditions found to exist on such streets. The maximum speed limit on such streets or parts of streets enumerated in Section 156.5 (Schedule XVII) of this Chapter shall be as therein stated, which speeds declared shall be effective when signs are erected giving notice thereof. It shall be illegal for any person to drive a motor vehicle in excess of the speed therein stated. (Ordinance No. 2004-39)

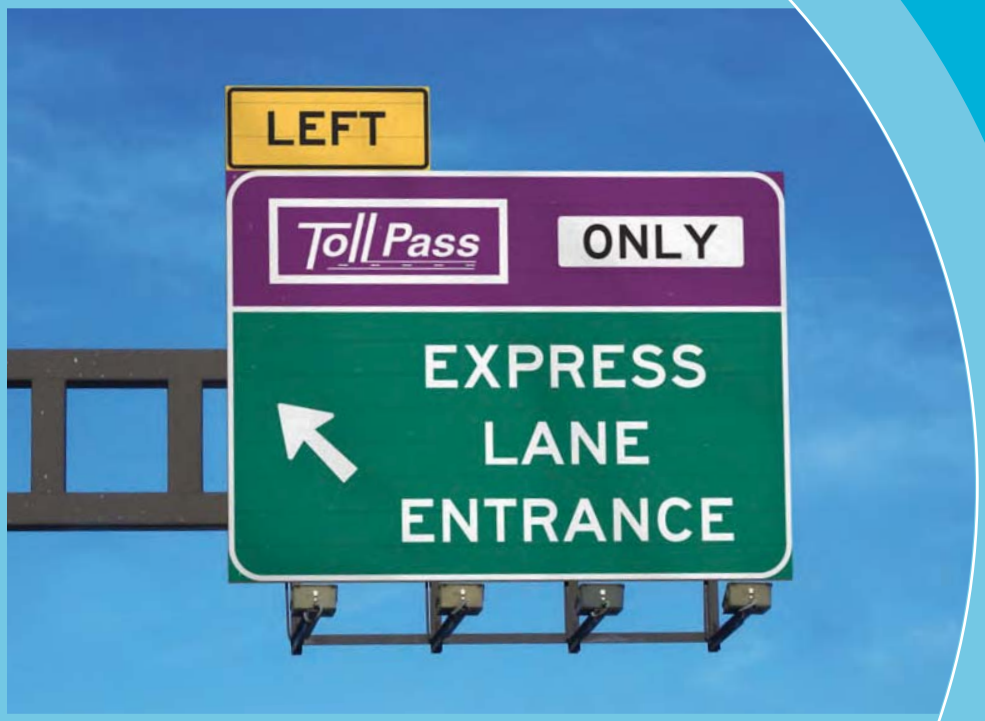
(d) Pursuant to Section 11-605 of the Illinois Vehicle Code, school speed zones within which the maximum speed is 20 m.p.h. are hereby established in Section 156.6 (Schedule XVIII) of this Chapter. It shall be illegal for any person to drive a motor vehicle therein at a speed in excess of 20 m.p.h. on school days when children are present when signs are erected giving notice of such speed zones. (Ordinance No. 1983-85)

Manual on Uniform Traffic Control Devices

for Streets and Highways

2009 Edition

Including Revision 1 dated May 2012
and Revision 2 dated May 2012



U.S.Department of Transportation
Federal Highway Administration

02 Highway agencies may develop and apply criteria for determining the applicability of In-Street Pedestrian Crossing signs.

Standard:

03 **If used, the In-Street Pedestrian Crossing sign shall be placed in the roadway at the crosswalk location on the center line, on a lane line, or on a median island. The In-Street Pedestrian Crossing sign shall not be post-mounted on the left-hand or right-hand side of the roadway.**

04 **If used, the Overhead Pedestrian Crossing sign shall be placed over the roadway at the crosswalk location.**

05 **An In-Street or Overhead Pedestrian Crossing sign shall not be placed in advance of the crosswalk to educate road users about the State law prior to reaching the crosswalk, nor shall it be installed as an educational display that is not near any crosswalk.**

Guidance:

06 *If an island (see Chapter 3I) is available, the In-Street Pedestrian Crossing sign, if used, should be placed on the island.*

Option:

07 If a Pedestrian Crossing (W11-2) warning sign is used in combination with an In-Street or an Overhead Pedestrian Crossing sign, the W11-2 sign with a diagonal downward pointing arrow (W16-7P) plaque may be post-mounted on the right-hand side of the roadway at the crosswalk location.

Standard:

08 **The In-Street Pedestrian Crossing sign and the Overhead Pedestrian Crossing sign shall not be used at signalized locations.**

09 **The STOP FOR legend shall only be used in States where the State law specifically requires that a driver must stop for a pedestrian in a crosswalk.**

10 **The In-Street Pedestrian Crossing sign shall have a black legend (except for the red STOP or YIELD sign symbols) and border on a white background, surrounded by an outer yellow or fluorescent yellow-green background area (see Figure 2B-2). The Overhead Pedestrian Crossing sign shall have a black legend and border on a yellow or fluorescent yellow-green background at the top of the sign and a black legend and border on a white background at the bottom of the sign (see Figure 2B-2).**

11 **Unless the In-Street Pedestrian Crossing sign is placed on a physical island, the sign support shall be designed to bend over and then bounce back to its normal vertical position when struck by a vehicle.**

Support:

12 The Provisions of Section 2A.18 concerning mounting height are not applicable for the In-Street Pedestrian Crossing sign.

Standard:

13 **The top of an In-Street Pedestrian Crossing sign shall be a maximum of 4 feet above the pavement surface. The top of an In-Street Pedestrian Crossing sign placed in an island shall be a maximum of 4 feet above the island surface.**

Option:

Known Error 14 The In-Street Pedestrian Crossing sign may be used seasonably to prevent damage in winter because of plowing operations, and may be removed at night if the pedestrian activity at night is minimal.

15 In-Street Pedestrian Crossing signs, Overhead Pedestrian Crossing signs, and Yield Here To (Stop Here For) Pedestrians signs may be used together at the same crosswalk.

Section 2B.13 Speed Limit Sign (R2-1)

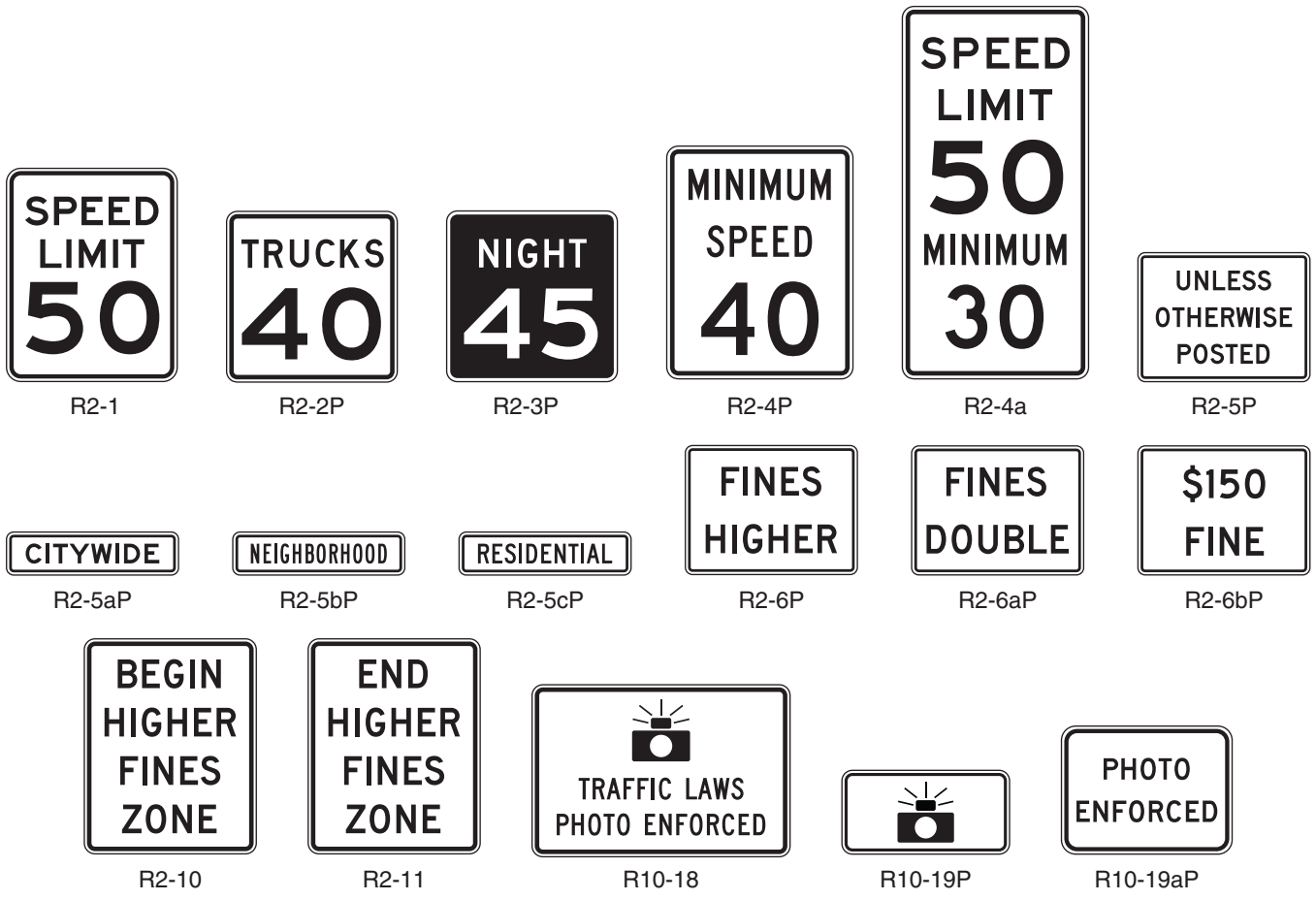
Standard:

01 **Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.**

02 **The Speed Limit (R2-1) sign (see Figure 2B-3) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency based on the engineering study. The speed limits displayed shall be in multiples of 5 mph.**

03 **Speed Limit (R2-1) signs, indicating speed limits for which posting is required by law, shall be located at the points of change from one speed limit to another.**

Figure 2B-3. Speed Limit and Photo Enforcement Signs and Plaques



04 **At the downstream end of the section to which a speed limit applies, a Speed Limit sign showing the next speed limit shall be installed. Additional Speed Limit signs shall be installed beyond major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.**

05 **Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State and, where appropriate, at jurisdictional boundaries in urban areas.**

Support:

06 In general, the maximum speed limits applicable to rural and urban roads are established:

A. Statutorily – a maximum speed limit applicable to a particular class of road, such as freeways or city streets, that is established by State law; or
B. As altered speed zones – based on engineering studies.

07 State statutory limits might restrict the maximum speed limit that can be established on a particular road, notwithstanding what an engineering study might indicate.

Option:

08 If a jurisdiction has a policy of installing Speed Limit signs in accordance with statutory requirements only on the streets that enter a city, neighborhood, or residential area to indicate the speed limit that is applicable to the entire city, neighborhood, or residential area unless otherwise posted, a CITYWIDE (R2-5aP), NEIGHBORHOOD (R2-5bP), or RESIDENTIAL (R2-5cP) plaque may be mounted above the Speed Limit sign and an UNLESS OTHERWISE POSTED (R2-5P) plaque may be mounted below the Speed Limit sign (see Figure 2B-3).

Guidance:

09 *A Reduced Speed Limit Ahead (W3-5 or W3-5a) sign (see Section 2C.38) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.*

10 *States and local agencies should conduct engineering studies to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review, such as the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes in traffic control signal coordination, or significant changes in traffic volumes.*

11 *No more than three speed limits should be displayed on any one Speed Limit sign or assembly.*

12 *When a speed limit within a speed zone is posted, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic.*

13 *Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately 1/2 mile, to avoid obtaining skewed results for the 85th-percentile speed.*

Support:

14 Advance warning signs and other traffic control devices to attract the motorist's attention to a signalized intersection are usually more effective than a reduced speed limit zone.

Guidance:

15 *An advisory speed plaque (see Section 2C.08) mounted below a warning sign should be used to warn road users of an advisory speed for a roadway condition. A Speed Limit sign should not be used for this situation.*

Option:

16 Other factors that may be considered when establishing or reevaluating speed limits are the following:

A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
B. The pace;
C. Roadside development and environment;
D. Parking practices and pedestrian activity; and
E. Reported crash experience for at least a 12-month period.

17 Two types of Speed Limit signs may be used: one to designate passenger car speeds, including any nighttime information or minimum speed limit that might apply; and the other to show any special speed limits for trucks and other vehicles.

Offic. Interp. 18 A changeable message sign that changes the speed limit for traffic and ambient conditions may be installed provided that the appropriate speed limit is displayed at the proper times.

Offic. Interp. 19 A changeable message sign that displays to approaching drivers the speed at which they are traveling may be installed in conjunction with a Speed Limit sign.

Guidance:

20 *If a changeable message sign displaying approach speeds is installed, the legend YOUR SPEED XX MPH or such similar legend should be displayed. The color of the changeable message legend should be a yellow legend on a black background or the reverse of these colors.*

Support:

21 Advisory Speed signs and plaques are discussed in Sections 2C.08 and 2C.14. Temporary Traffic Control Zone Speed signs are discussed in Part 6. The WORK ZONE (G20-5aP) plaque intended for installation above a Speed Limit sign is discussed in Section 6F.12. School Speed Limit signs are discussed in Section 7B.15.

Section 2B.14 Truck Speed Limit Plaque (R2-2P)

Standard:

01 **Where a special speed limit applies to trucks or other vehicles, the legend TRUCKS XX or such similar legend shall be displayed below the legend Speed Limit XX on the same sign or on a separate R2-2P plaque (see Figure 2B-3) below the standard legend.**

Section 2B.15 Night Speed Limit Plaque (R2-3P)

Standard:

01 **Where different speed limits are prescribed for day and night, both limits shall be posted.**

Guidance:

02 *A Night Speed Limit (R2-3P) plaque (see Figure 2B-3) should be reversed using a white retroreflectorized legend and border on a black background.*

Option:

03 A Night Speed Limit plaque may be combined with or installed below the standard Speed Limit (R2-1) sign.

Section 2B.16 Minimum Speed Limit Plaque (R2-4P)

Standard:

01 **A Minimum Speed Limit (R2-4P) plaque (see Figure 2B-3) shall be displayed only in combination with a Speed Limit sign.**

Option:

02 Where engineering judgment determines that slow speeds on a highway might impede the normal and reasonable movement of traffic, the Minimum Speed Limit plaque may be installed below a Speed Limit (R2-1) sign to indicate the minimum legal speed. If desired, the Speed Limit sign and the Minimum Speed Limit plaque may be combined on the R2-4a sign (see Figure 2B-3).

Section 2B.17 Higher Fines Signs and Plaque (R2-6P, R2-10, and R2-11)

Standard:

01 **If increased fines are imposed for traffic violations within a designated zone of a roadway, a BEGIN HIGHER FINES ZONE (R2-10) sign (see Figure 2B-3) or a FINES HIGHER (R2-6P) plaque (see Figure 2B-3) shall be used to provide notice to road users. If used, the FINES HIGHER plaque shall be mounted below an applicable regulatory or warning sign in a temporary traffic control zone, a school zone, or other applicable designated zone.**

02 **If an R2-10 sign or an R2-6P plaque is posted to provide notice of increased fines for traffic violations, an END HIGHER FINES ZONE (R2-11) sign (see Figure 2B-3) shall be installed at the downstream end of the zone to provide notice to road users of the termination of the increased fines zone.**

Guidance:

03 *If used, the BEGIN HIGHER FINES ZONE sign or FINES HIGHER plaque should be located at the beginning of the temporary traffic control zone, school zone, or other applicable designated zone and just beyond any interchanges, major intersections, or other major traffic generators.*

Standard:

04 **The Higher Fines signs and plaque shall have a black legend and border on a white rectangular background. All supplemental plaques mounted below the Higher Fines signs and plaque shall have a black legend and border on a white rectangular background.**

Guidance:

05 *Agencies should limit the use of the Higher Fines signs and plaque to locations where work is actually underway, or to locations where the roadway, shoulder, or other conditions, including the presence of a school zone and/or a reduced school speed limit zone, require a speed reduction or extra caution on the part of the road user.*

Option:

06 Alternate legends such as BEGIN (or END) DOUBLE FINES ZONE may also be used for the R2-10 and R2-11 signs.

07 The legend FINES HIGHER on the R2-6P plaque may be replaced by FINES DOUBLE (R2-6aP), $XX FINE (R2-6bP), or another legend appropriate to the specific regulation (see Figure 2B-3).

08 The following may be mounted below an R2-10 sign or R2-6P plaque:

A. A supplemental plaque specifying the times that the higher fines are in effect (similar to the S4-1P plaque shown in Figure 7B-1), or
B. A supplemental plaque WHEN CHILDREN (WORKERS) ARE PRESENT, or
C. A supplemental plaque WHEN FLASHING (similar to the S4-4P plaque shown in Figure 7B-1) if used in conjunction with a yellow flashing beacon.

Support:

09 Section 6F.12 contains information regarding other signs and plaques associated with increased fines for traffic violations in temporary traffic control zones. Section 7B.10 contains information regarding other signs and plaques associated with increased fines for traffic violations in designated school zones.

Reducing Speeding-Related Crashes Involving Passenger Vehicles

Safety Study

NTSB/SS-17/01
PB2017-102341

National Transportation Safety Board

NTSB/SS-17/01
PB2017-102341
Notation 56821
Adopted July 25, 2017

Safety Study

Reducing Speeding-Related Crashes Involving Passenger Vehicles

National Transportation Safety Board

490 L'Enfant Plaza, S.W.
Washington, D.C. 20594

National Transportation Safety Board. 2017. *Reducing Speeding-Related Crashes Involving Passenger Vehicles*. Safety Study NTSB/SS-17/01. Washington, DC.

Abstract: In this safety study, the National Transportation Safety Board (NTSB) examines causes of and trends in speeding-related passenger vehicle crashes and countermeasures to prevent these crashes. The countermeasures presented represent several, of many, potential solutions to the issue of speeding-related crashes. They do not address every cause of speeding or type of speeding-related crash, but they are intended to be widely applicable to a significant portion of these crashes.

The NTSB focused on the following five safety issues pertaining to the effective application of proven and emerging countermeasures for speeding: (1) speed limits, (2) data-driven approaches for speed enforcement, (3) automated speed enforcement, (4) intelligent speed adaptation, and (5) national leadership.

As a result of this safety study, the NTSB makes recommendations to the US Department of Transportation, the National Highway Traffic Safety Administration, the Federal Highway Administration, 50 states, the Governors Highway Safety Association, the International Association of Chiefs of Police, and the National Sheriffs' Association.

a program to increase the adoption of speeding-related *MMUCC Guideline* data elements and improve consistency in law enforcement reporting of speeding-related crashes.

3.3 Automated Speed Enforcement

To use limited resources efficiently, some law enforcement agencies are employing data-driven, technology-based solutions for speed enforcement in addition to using data-driven approaches for in-person speed enforcement.

ASE refers to the use of a vehicle speed detection system coupled with a camera to identify speeding vehicles.[45] When a speeding vehicle is detected, the camera system is triggered to automatically take photographs of the vehicle, including the license plate and, in some implementations, the driver. Law enforcement and ASE vendor personnel then review the photographic evidence (typically off site and at a later time) to confirm that a speeding violation occurred, and state motor vehicle administration records are used to determine where to mail a speeding citation (Roadway Safety Consortium 2012). In some jurisdictions, the vehicle owner may be cited and assessed a fine (similar to a parking ticket); in others, the vehicle driver may be cited and be assessed a fine and license points (similar to a speeding citation issued in person by an officer).[46]

ASE has some advantages over in-person speed enforcement by an officer. It provides a force multiplier effect that can free up limited law enforcement resources to be used for other purposes. ASE can operate in locations and under conditions that would make traffic stops dangerous or impractical, and it may reduce congestion from other drivers distracted by traffic stops. Finally, its high rate of speeding detection may provide a higher general deterrence effect (FHWA and NHTSA 2008).[47]

Several limitations of ASE have also been noted. Because ASE does not stop a driver at the time of the speeding offense, the driver may continue to speed and be unaware of the offense. Also, the time lag between committing a violation and receiving an ASE penalty may have a lower specific deterrence effect (FHWA and NHTSA 2008).

ASE has been, and continues to be, challenged on several constitutional grounds, including that it violates rights of due process, equal protection (because penalties may differ between ASE citations and in-person citations), and privacy, but courts have consistently found ASE to be constitutional (FHWA and NHTSA 2008). ASE has also been criticized by the public as a tool to generate revenue rather than increase safety. This concern appears to stem from well-publicized cases of automated red light and speed enforcement programs not following best practices, such

[45] The speed detection system typically uses radar or light detection and ranging (LIDAR) technology, similar to handheld devices used by officers for speed enforcement.

[46] Many states use a point system to account for moving violations, in which greater points are assigned to more severe violations; the accumulation of a particular number of points within a set time period can lead to higher insurance premiums or license suspension.

[47] In traffic law enforcement, general deterrence refers to "the impact of the threat of legal punishment on the public at large…result[ing] from a belief in the community that traffic laws are being enforced and that a real risk of detection and punishment exists." In contrast, specific deterrence is "the influence of enforcement on the road user behaviour of convicted offenders, due to previous detection, prosecution, and punishment experiences" (Zaal 1994).

as paying vendors on a per-citation basis, giving vendors responsibility for site selection, and not ensuring that yellow lights are appropriately timed (Farmer 2017). Some states have passed laws designed to increase public acceptance of ASE. For example, Maryland requires local jurisdictions to hold a public hearing prior to authorizing ASE and to designate an employee to respond to citizen concerns and review contested citations. Local jurisdictions in Maryland are also prohibited from paying ASE vendors on a per-citation basis (see Maryland Code, Transportation, Section 21-809).

The concern about ASE as a revenue-generation tool was also raised at the most recent congressional hearings on automated enforcement in 2010.[48] MAP-21 made it illegal for states to use federal funds to "carry out a program to purchase, operate, or maintain an automated traffic enforcement system" (Title 23 *Code of Federal Regulations* (*CFR*) 1200.13(b)).[49] This was a change from previous legislation, which stated that "the [DOT] Secretary may encourage States to use technologically advanced traffic enforcement devices (including the use of automatic speed detection devices such as photo-radar) by law enforcement officers" (Highway Safety Act of 1991, Public Law 102-240).

3.3.1 Historical and Current Usage

Friendswood and La Marque, Texas, became the first US communities to use modern ASE systems when they conducted short-lived trials in 1986.[50] The next year, Paradise Valley, Arizona, started the first sustained ASE program, which is still active (Town of Paradise Valley 2017).

As illustrated in figure 9, in the first 20 years of ASE operations, usage grew slowly; by January 2006, 26 ASE programs were active but over one quarter of the 36 programs that had been started up to this point had been discontinued. Between 2006 and 2013, ASE usage increased dramatically, peaking at 148 active programs in 2013. Since then, ASE usage has declined slightly, with 141 active programs as of April 2017, including statewide work zone programs in Illinois, Maryland, and Oregon (IIHS 2016a). These programs are concentrated in 14 states and the District of Columbia. For example, communities in Maryland account for 46 of the ASE programs.

[48] *Utilization and Impacts of Automated Traffic Enforcement: Hearing Before the Subcommittee on Highways and Transit of the Committee on Transportation and Infrastructure*, House of Representatives, 111th Congress, 2nd session, June 30, 2010.

[49] Title 23 *USC* section 402 defines an automated traffic enforcement system as "any camera which captures an image of a vehicle for the purposes only of red light and speed enforcement, and does not include hand held radar and other devices operated by law enforcement officers to make an on-the-scene traffic stop, issue a traffic citation, or other enforcement action at the time of the violation."

[50] The IIHS provided the NTSB with historical data on ASE programs, including locations, start dates, and (if applicable) end dates, covering the period from March 1986 to April 2017.

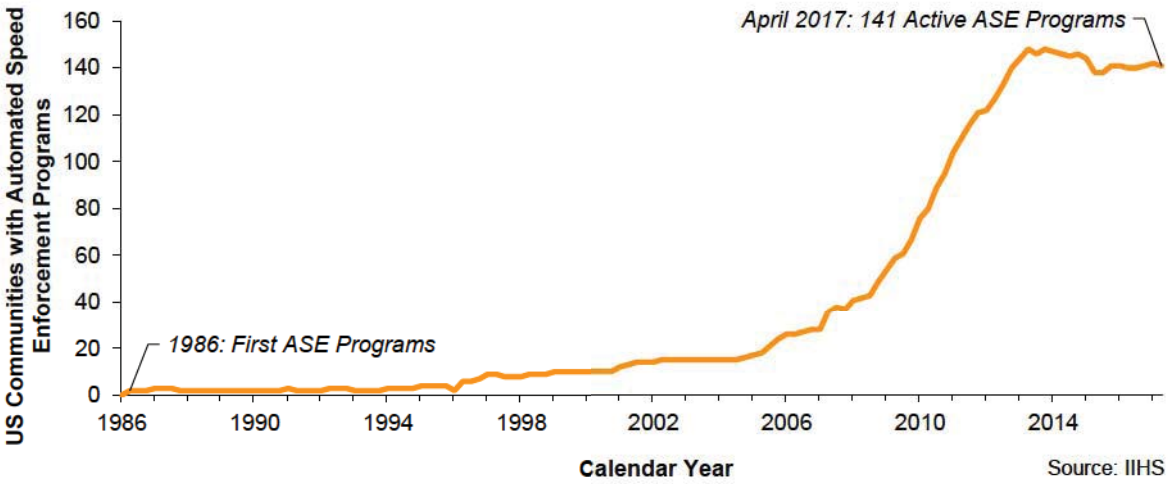


Figure 9. US communities with ASE programs, by year

There are four general types of ASE units (Miller and others 2016):

- **Fixed**: These ASE units are permanently mounted in fixed locations.
- **Speed-on-green**: These fixed units are primarily designed to detect red light violations at intersections, but they can also be used for ASE.
- **Semi-fixed**: These units use fixed housings with removable cameras. With fewer cameras than housings, cameras are rotated among the housings to maintain a deterrent effect at a lower cost, as drivers do not know which housings have cameras at any given time.
- **Mobile**: These units are mounted inside a vehicle (which may be occupied by law enforcement or ASE vendor personnel) or on a towed trailer, and they can be moved to different locations as needed.

3.3.2 Effectiveness

A 2005 systematic review of 14 studies of ASE programs in Canada, Europe, Australia, and New Zealand found crash reductions of 5 to 69%, injury reductions of 12 to 65%, and fatality reductions of 17 to 71% at ASE locations after ASE program implementation (Pilkington and Kinra 2005).

In 2007, NHTSA published a review of 13 studies of ASE programs (including 1 US program). Four of the 13 studies examined fixed ASE programs and generally found that injury crashes at fixed ASE locations declined between 20 and 25% after ASE implementation. The other 9 studies examined mobile ASE programs and found that injury crashes in mobile ASE zones declined between 21 and 51%. Two of the studies in the NHTSA review looked at the wider effects of ASE; one Canadian study found a provincewide 25% reduction in daytime speeding-related crashes, and the other, a US study, found a statewide 30% reduction in daytime crashes resulting in injuries (Decina and others 2007).

A 2010 review of 28 studies of ASE in the United States, Canada, Europe, Australia, and New Zealand determined that all 28 studies had found a lower number of crashes in ASE areas

after ASE implementation. These studies reported reductions of 8 to 49% for all crashes and reductions of 11 to 44% for crashes causing serious injuries or fatalities (Wilson and others 2010).

Most recently, in 2015, the IIHS published a study of the ASE program in Montgomery County, Maryland, which first began in 2007. Montgomery County operates an ASE program on residential streets and in school zones, via a combination of fixed, semi-fixed, and mobile units. Starting in 2012, some cameras were used in a corridor approach, in which semi-fixed units were rotated among various locations on signed road segments to encourage speed limit compliance along the entire segment. The IIHS study found that, 7.5 years after the program began, ASE was associated with a 10% reduction in mean speeds and a 62% reduction in the likelihood of speeding more than 10 mph over the posted speed limit at ASE sites. The likelihood that a crash involved an incapacitating injury or fatality decreased by 39% on ASE-eligible roads, and the corridor approach further reduced this likelihood by 30% compared to what would have been expected without the corridor approach.[51] The likelihood that a crash was speeding-related decreased by 8%. The IIHS also found that, on similar but ASE-ineligible roads in Montgomery County, the likelihood that a crash involved an incapacitating injury or fatality decreased by 27% and the likelihood that a crash was speeding-related decreased by 22%.[52] This demonstrated a positive spillover effect, in which the benefits of ASE extended beyond ASE sites (Hu and McCartt 2016).

Several federal agencies consider ASE to be one of the most effective speeding countermeasures. NHTSA evaluated eight speeding countermeasures and gave ASE their highest rating for effectiveness (Goodwin and others 2015).[53] In addition, the Centers for Disease Control and Prevention notes that ASE "can reduce crashes substantially" and includes ASE as the only speeding-related countermeasure in their Motor Vehicle Prioritizing Interventions and Cost Calculator for States (MV PICCS), an online tool for states to choose cost-effective interventions to prevent motor vehicle related casualties (CDC 2015a; CDC 2015b).[54] Based on studies of operational ASE programs in the United States and other countries, the NTSB concludes that ASE is an effective countermeasure to reduce speeding-related crashes, fatalities, and injuries.

[51] To analyze the effects of ASE on crashes, the IIHS study compared the crash experience of Montgomery County residential roads eligible for ASE (that is, those with speed limits from 25 to 35 mph, whether ASE cameras were actually installed) to the crash experience of similar roads in nearby Fairfax County, Virginia, which did not operate an ASE program.

[52] To analyze spillover effects on crashes, the IIHS study compared the crash experience of Montgomery County residential roads with similar characteristics as the ASE-eligible roads (aside from having a higher, 40 mph speed limit) to residential roads in Fairfax County, Virginia, with 40 mph speed limits.

[53] This rating indicates a countermeasure is "demonstrated to be effective by several high-quality evaluations with consistent results" (Goodwin and others 2015).

[54] Each intervention included in MV PICCS is chosen based on (1) empirical evidence that it can substantially reduce motor-vehicle-related injuries and fatalities; (2) currently low usage across the 50 states, with a corresponding potential for additional impact through wider adoption; and (3) the ability of states to implement the intervention.

3.3.3 Stakeholder Perceptions

The GHSA has advocated for ASE programs since 2005, calling for (1) states to enact enabling legislation for ASE, (2) a federal incentive grant program to encourage the use of ASE, and (3) the promotion of ASE best practices by NHTSA (GHSA 2005; GHSA 2012; GHSA 2013; GHSA 2016).

AASHTO has supported the use of ASE since 2004, when it called for all states to build public support for ASE, to promote the enactment of ASE laws, and to support the use of ASE (AASHTO 2004). In 2006, the AASHTO Standing Committee on Highway Traffic Safety (SCOHTS) adopted a policy resolution to further support automated traffic law enforcement, including ASE. Citing the high percentage of crashes involving traffic law violations, the limited resources and staffing difficulties of law enforcement agencies, and the demonstrated effectiveness of automated enforcement in reducing deaths and injuries, SCOHTS encouraged "a top-down leadership approach by the executive and legislative branches of the federal government to implement automated enforcement throughout the country," including incentives for states to enact enabling legislation (AASHTO 2006).

The IACP, in a 2007 resolution, cited some of the same reasons as AASHTO in calling for the use of ASE in high-crash locations in conjunction with in-person traffic enforcement (IACP 2007). The IACP also included ASE as an effective enforcement strategy in its *Traffic Safety Strategies for Law Enforcement* guide (IACP 2003).

The National Association of City Transportation Officials, in its 2016 policy document, noted that automated traffic enforcement "is a crucial tool in preventing crashes that result in serious injuries and fatalities," called for the federal government to allow states to use federal-aid grant funds for automated traffic enforcement, and encouraged states to authorize the use of ASE (NACTO 2016).

The positions of these national associations are in line with the statements made during stakeholder interviews the NTSB conducted for this study. Nearly all of the representatives from state and local transportation departments expressed a positive view of their ASE programs (for those with active programs) or a desire to use ASE (for those without ASE programs). Opinions from officers were more varied. Several officers mentioned the benefits of in-person traffic stops, including the ability to discover other illegal behaviors and outstanding warrants, the ability to apply discretion and take into account mitigating factors, and the opportunity to educate drivers about traffic laws and the risks of speeding. However, only officers in communities without active ASE programs mentioned the benefits of in-person traffic stops as reasons for not implementing ASE. The NTSB interviewed representatives of five law enforcement agencies operating ASE programs. With one exception, every law enforcement representative in a community with ASE expressed the view that their programs should be maintained or expanded, and stated that they did not see ASE as limiting their ability to conduct in-person speed enforcement.[55]

[55] The ASE program in question (which has since been discontinued) operated in about six school zones throughout a county, with two mobile vans that rotated among the schools on a daily basis. The officer responsible for the program indicated that the daily process of moving, configuring, and removing the mobile units was too time consuming for his small force of seven officers, given their other required duties in addition to traffic enforcement.

Driver surveys have shown that public support varies depending on the roadway environment for which ASE is used and driver characteristics. In a nationally representative survey conducted by the AAA Foundation for Traffic Safety in 2015, 35% of respondents stated they supported ASE on freeways, 41% supported ASE in urban areas, 45% supported it on residential streets, and 56% supported it in school zones. These figures have not changed substantially since 2012, when the AAA Foundation started surveying drivers about this topic (AAA Foundation for Traffic Safety 2016).[56] Also, in a 2009 national public opinion survey conducted by the University of Minnesota, 64% of respondents said they were very or somewhat supportive of ASE in general. When asked about particular locations for ASE, support was higher for roads near schools (87%), roads where many people have died (81%), and roads where many people violate speed limits (75%). However, support for ASE on all roads was lower (43%). ASE support was also higher among women and older drivers, which are groups that are less likely than males and younger drivers to be involved in speeding-related fatal crashes. In addition, 73% of all survey respondents said that ASE would be an effective way to improve road safety (Munnich and Loveland 2011).

Several studies have shown maintained or increased public support for ASE after program implementation (Retting 2003). In Montgomery County, Maryland, a survey taken 6 months before the county's ASE program began in 2007 showed that 58% of drivers were in favor of ASE on residential streets. This level of support has been sustained, with followup surveys taken 6 months after the program began and again in 2014, showing 62% of drivers supporting the program (Retting, Farmer, and McCartt 2008; Hu and McCartt 2016). Surveys of drivers in Scottsdale, Arizona, in 2005 and 2006, showed that the percentage of drivers favoring ASE increased from 62% before an ASE program began to 77% after 8 months of operation (Retting, Kyrychenko, and McCartt 2008).

Although most ASE public opinion surveys the NTSB reviewed were directed to drivers, non-drivers are also affected by speeding, especially in urban areas with large numbers of pedestrians and bicyclists. A 2012 survey of District of Columbia residents found support for ASE even higher among non-drivers (90% support) than drivers (71% support) (Cicchino, Wells, and McCartt 2014).

3.3.4 Enabling Legislation

Table 7 shows, as of August 2016, the number of states with laws authorizing or prohibiting ASE, and whether these states have active ASE programs operating within the state.[57] Of the 14 states with ASE programs, most of these programs are operating with state legislation explicitly authorizing the use of ASE; very few ASE programs operate in states where laws are silent on the topic. This indicates that state-level enabling legislation is an important criterion for local communities to implement ASE programs.

[56] It should be noted that the ASE survey questions specifically asked about citing vehicle drivers, an increasingly rare practice since newer ASE programs issue a fine to the vehicle owner. Survey respondents were asked if they support strongly, support somewhat, oppose somewhat, or oppose strongly "using cameras to automatically ticket drivers who drive more than 10 mph over the speed limit" on freeways, residential streets, urban areas, and school zones.

[57] Appendix E provides a complete summary of ASE laws by state.

Table 7. ASE state laws and active programs as of April 2017

	States Authorizing ASE	States Authorizing ASE with Restrictions	States without ASE Laws	States Prohibiting ASE	Total
States with ASE Programs	0[a]	10	4	0	14
States without ASE Programs	0	5	24	7	36
Total	**0**	**15**	**28**	**7**	**50**

Source: GHSA and IIHS
[a] The District of Columbia allows ASE throughout its jurisdiction and operates an ASE program.

The importance of state-level ASE-enabling legislation is supported by interviews the NTSB conducted with state and local transportation departments. Representatives from every state and local transportation department in a state without ASE-enabling legislation mentioned that they would like to implement an ASE program, but they were unwilling to do so without laws in place authorizing its use. The most common reason given for not implementing ASE programs without enabling legislation was that the citations issued by such a program, or the program itself, would be subject to significant legal challenges. For example, several Texas counties operated ASE programs only in unincorporated areas because state law prohibits ASE within Texas municipalities. As of April 2017, these programs have all been discontinued, and the law enforcement agency responsible for administering one such program reported a 50% dismissal rate for all ASE citations challenged in court.

However, even among the states with ASE-enabling legislation, significant restrictions on its use often prevent ASE from effectively reducing speeding-related deaths and injuries in these states. In the 15 states (and the District of Columbia) that authorize ASE, every state places some limitations on the specific municipalities or roadway environments in which ASE can be used; only the District of Columbia allows ASE throughout its jurisdiction. Several states limit the use of ASE to school zones, work zones, roads adjacent to parks, or some combination of these. Other states limit ASE programs to particular cities. For example, outside of school zones, the state of Washington effectively limits ASE to a single camera in the city of Tacoma.[58] Further, five states require that an officer or government employee be present at the time when the ASE unit captures the speeding violation.

Although it may be easier to garner community and legislative support for the use of ASE in locations such as school zones, those are generally not the locations most at risk for speeding-related deaths and injuries. For example, FARS data show that only seven US speeding-related fatalities occurred in school zones in 2014. The NTSB interviewed representatives from several agencies with active ASE programs who stated that the locations where ASE was authorized did not adequately address the speeding-related crash hot spots in their

[58] Any city "west of the Cascade mountains with a population of more than one hundred ninety-five thousand located in a county with a population of fewer than one million five hundred thousand" may operate a single ASE camera, and the specific site "must have first been authorized by the Washington state legislature as a pilot project for at least one full year" (see Revised Code of Washington 46.63.170).

communities, and that they would like the ability to place ASE equipment at the locations most susceptible to speeding-related crashes. The NTSB concludes that the lack of state-level ASE-enabling legislation, and restrictions on the use of ASE in states where legislation exists, have led to underuse of this effective speeding countermeasure. However, the NTSB acknowledges that some restrictions on ASE operations (such as the Maryland prohibition against paying vendors on a per-citation basis) may reflect best practices and are intended to increase public acceptance of ASE without limiting its safety benefits. Therefore, the NTSB recommends that the seven states prohibiting ASE amend current laws to authorize state and local agencies to use ASE.[59] The NTSB further recommends that the 28 states without ASE laws authorize state and local agencies to use ASE.[60] Finally, the NTSB recommends that the 15 states with ASE restrictions amend current laws to remove operational and location restrictions on the use of ASE, except where such restrictions are necessary to align with best practices.[61]

3.3.5 Best Practices

At the federal level, the primary source of best practices for establishing, operating, and evaluating ASE programs is the *Speed Enforcement Camera Systems Operational Guidelines* (FHWA and NHTSA 2008). These guidelines are designed to be a resource for "program managers, administrators, law enforcement, traffic engineers, program evaluators, and other individuals responsible for the planning and operation of the program" and contain best practices in over 40 topic areas related to ASE, such as legal authorities, site selection, marketing, operator training, equipment maintenance, violation processing and adjudication, and program evaluation.

However, NHTSA has found that these guidelines are neither well known, nor well adhered to, by ASE program managers. In 2011, NHTSA conducted a survey of all 107 communities identified at that time as current or recent operators of ASE programs (Miller and others 2016). The objectives of the study were to determine how aligned the ASE programs were with the federal guidelines. However, 63% of the survey respondents indicated that they were not even aware of the federal ASE guidelines.[62]

To determine these programs' degree of alignment to the guidelines, survey questions were developed for 35 topic areas in which the guidelines provided "clear guidance terms such as 'shall,' 'should,' 'critical,' and 'must.'" In only 7 of the 35 areas did 80% or more of the surveyed

[59] These seven states are Maine, Mississippi, New Hampshire, New Jersey, Texas, West Virginia, and Wisconsin. See appendix E.

[60] These 28 states are Alabama, Alaska, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Dakota, Vermont, Virginia, and Wyoming. See appendix E.

[61] These 15 states are Arizona, Arkansas, Colorado, Illinois, Louisiana, Maryland, Nevada, New York, Ohio, Oregon, Rhode Island, South Carolina, Tennessee, Utah, and Washington. See appendix E.

[62] Survey respondents included representatives from current and recently discontinued ASE programs at the time the survey was conducted and representatives from programs that began before and after the ASE guidelines were published. Programs starting before the ASE guidelines were published in 2008 reported 7% higher awareness of the guidelines (34%) than those programs starting in 2008 or later (27%). The survey was mailed to the head of the agency responsible for ASE within each community. NHTSA stated that "it appears that most of the agency staff assigned to complete the survey had operational responsibilities and/or oversight for ASE" but "the person assigned to complete the survey may not have been involved when the program was first established" (Miller and others 2016).

programs align with the guidelines. Further, in 11 of these 35 areas, less than 40% of the surveyed ASE programs aligned with the guidelines. For example, 31% of ASE programs aligned with the guideline to treat speeding violations by government vehicles the same as violations by the general public, and 27% of ASE programs aligned with the guideline to establish a stakeholder committee to guide program development (Miller and others 2016).

The NHTSA survey acknowledges that some of the low alignment to federal ASE guidelines may be due to changes in technology and operations that the 2008 guidelines do not reflect. For example, the guidelines recommend that the vehicle driver be identified and cited. However, in accordance with state and local laws, most recently established ASE programs send citations to the vehicle owner, a practice which has been shown to be effective (Hu and McCartt 2016). In addition, the survey noted that the increased use of unstaffed mobile units—a technology not available when the guidelines were written—could affect how an ASE program is operated and perceived.

The NTSB concludes that federal guidelines for ASE programs do not reflect the latest technologies and operating practices and are not very effective because their existence is not well known among the ASE program administrators. The NTSB therefore recommends that the FHWA work with NHTSA to update the *Speed Enforcement Camera Systems Operational Guidelines* to reflect the latest ASE technologies and operating practices, and promote the updated guidelines among ASE program administrators.

3.3.6 Point-to-Point Enforcement

One particular ASE technology that is relatively new is point-to-point enforcement (also referred to as average speed enforcement or section control). The first use of point-to-point enforcement was in the Netherlands in 1997; since then, its use has spread to other European countries, Australia, and New Zealand, but such systems have not yet been implemented in the United States (Soole, Fleiter, and Watson 2012).

Point-to-point enforcement uses the times a vehicle passes two points to calculate an average speed over the length of road between the points. Continuous visual observation of a vehicle is not necessary over the entire section of roadway, as a time-synchronized camera system captures vehicle images at the section endpoints and then uses automatic license plate recognition technology to match the images and determine which vehicles exceeded the posted speed limit. Thus, point-to-point enforcement can be used on highway segments many miles long, with multiple measurement points as necessary.

Point-to-point enforcement technology is best suited for limited-access highways with few entry or exit points on the designated highway section, for which the designated section is the fastest route between the section endpoints. This is a road type for which ASE in general has not been used extensively in the United States, despite interstate highways and non-interstate freeways and expressways accounting for 17% of speeding-related fatalities in 2014 (NCSA 2016a).

Several benefits of point-to-point enforcement have been noted in relation to fixed or mobile ASE implementations. By enforcing the speed limit over a longer segment of roadway rather than at discrete points, drivers are encouraged to drive the speed limit over longer distances.

In addition, point-to-point enforcement avoids the problem of drivers slowing prior to a known ASE site and then resuming an excessive speed after passing the camera (Lahrmann and others 2016).

Although it has not been evaluated as extensively as other types of ASE, studies have shown that point-to-point enforcement provides safety benefits, including some advantages over fixed ASE units. A 2013 review of studies in Europe and Australia found that point-to-point enforcement generally reduces average speeds, 85th percentile speeds, speed variability, fatal crashes, and serious injury crashes (Soole, Watson, and Fleiter 2013). A 2014 review of 15 fixed ASE studies and 4 point-to-point enforcement studies found that point-to-point enforcement was slightly more effective in reducing crashes than fixed ASE, with fatal and serious injury crashes declining by 51% for fixed ASE and 56% for point-to-point enforcement (Høye 2014).

Based on the experience of implementing point-to-point enforcement in Europe, Australia, and New Zealand, Austroads (the association of Australian and New Zealand transportation agencies) has developed best practices for point-to-point enforcement, which address operational, technological, legislative, evidentiary, public education, evaluation, and privacy considerations (Soole, Fleiter, and Watson 2012). However, this guidance may not be completely appropriate in the United States, where point-to-point enforcement would potentially be subject to the same types of legal arguments that have been made against other types of automated enforcement. Best practices for point-to-point enforcement in the United States would help ensure that enforcement operations are conducted in a legally appropriate manner, but US federal guidelines for ASE do not include any information on point-to-point enforcement (FHWA and NHTSA 2008).

The NTSB concludes that point-to-point speed enforcement has been shown to be an effective speeding countermeasure internationally, but it is not currently used in the United States. Therefore, the NTSB recommends that the FHWA work with NHTSA to assess the effectiveness of point-to-point speed enforcement in the United States and, based on the results of that assessment, update the *Speed Enforcement Camera Systems Operational Guidelines*, as appropriate.

3.4 Intelligent Speed Adaptation

Intelligent speed adaptation (ISA) is a vehicle technology that studies have shown is effective at reducing speeding. ISA systems determine the speed limit in effect by comparing a vehicle's global positioning system (GPS) location against a database of posted speed limits and using onboard cameras to recognize speed limit signs (Goodwin and others 2015).

The European Commission defines three levels of ISA (European Commission 2015):

- **Open ISA**: An advisory system that issues visual or aural alerts to the driver when the speed limit is exceeded; the driver is responsible for slowing the vehicle.
- **Half-Open ISA**: A system that increases back pressure on the accelerator when the speed limit is exceeded, making it more difficult (but not impossible) to exceed the speed limit.
- **Closed ISA**: A system that electronically limits the speed of a vehicle, preventing drivers from exceeding the speed limit.

Appendix E: State Laws Regarding Automated Speed Enforcement

Table E-1 summarizes state laws regarding automated speed enforcement (ASE) and notes whether any ASE programs are active in each state (IIHS 2016a). The District of Columbia allows ASE throughout its jurisdiction and operates an ASE program.

Table E-1. ASE state laws and active programs, April 2017

State	ASE State Law	Active ASE Programs	Notes
Alabama	No state law	Yes	
Alaska	No state law	No	
Arizona	Allowed with restrictions	Yes	Prohibited on state highways; contractors must be licensed as private investigators·
Arkansas	Allowed with restrictions	No	Officer must be present and citation issued at time of violation
California	No state law	No	
Colorado	Allowed with restrictions	Yes	Restricted to construction and school zones, residential areas, and streets that border a municipal park; officer or government employee must be present at time of violation.
Connecticut	No state law	No	
Delaware	No state law	No	
Florida	No state law	No	
Georgia	No state law	No	
Hawaii	No state law	No	
Idaho	No state law	No	
Illinois	Allowed with restrictions	Yes	Restricted to construction zones; allowed in school zones and park districts in municipalities with a population of 1,000,000 or more
Indiana	No state law	No	
Iowa	No state law	Yes	
Kansas	No state law	No	
Kentucky	No state law	No	
Louisiana	Allowed with restrictions	Yes	Restricted to specified jurisdictions and interstate work zones
Maine	Prohibited	No	
Maryland	Allowed with restrictions	Yes	Restricted to school zones, work zones on expressways or controlled access highways, and Montgomery County residential areas
Massachusetts	No state law	No	
Michigan	No state law	No	
Minnesota	No state law	No	
Mississippi	Prohibited	No	
Missouri	No state law	Yes	

CITY OF BLOOMINGTON
REPORT FOR THE TRANSPORTATION COMMISSION
October 16, 2018

CASE NUMBER:	SUBJECT:	ORIGINATING FROM:
INFORMATION	Summary of Citizen Comments/Complaints Received October, 2018	Philip Allyn, PE, PTOE City Traffic Engineer
REQUEST:	Item submitted as information for the Transportation Commission. Any feedback or comments are welcome.	

STAFF RECOMMENDATION: N/A

Staff submits the following information to the Commission. Any comments or feedback is appreciated.

1. ATTACHMENTS:

a. None

2. BACKGROUND AND SUPPLEMENTAL INFORMATION:

The following comments were received by the Engineering Department between September 11 and October 9, 2018 or are updates of previous comments (additions to previous updates are **Bold-Underlined**:

1) Received request to increase parking restrictions on Lee at Chestnut due to lack of sight distance when turning from Chestnut to Lee. Called petitioner to discuss: He indicated the problem was both to north and south, and for both westbound and eastbound. Phil indicated parking currently is restricted via in-place signage: no parking on west side Lee to south all the way to Locust, no parking on east side Lee to south for ~100', no parking on east side Lee north for 80'. Parking on west side of Lee to the north is not currently restricted via signage, but City Code and State Statute restricts parking within 20' of the cross walk. We'll look into signing northwest side, but the rest needs enforcement by Police as restrictions are already in place. We'll notify the Police of the concern. He should call Police if cars are parked illegally. He indicated he has a co-worker who has similar difficulties with sight distance that he would have call me with additional information. Received call from Ms. Kelley Luckey in late April who expressed concern that the sight distance obstruction is a combination of parked cars and existing trees. **Visited site and determined there were vehicles parking in restricted areas too close to the intersection. Referred to the Police Dept. for enforcement. Item considered closed.**

2) Received request from Dunraven Homeowner's Associate to restrict parking on west side of Glenbridge between Ballybunion and Dunloe. Letters were delivered to neighborhood requesting feedback on proposed parking ban on west side of street. Responses received overwhelmingly favor restricting parking. Mailed letter to residents notifying them that the parking restriction would be put in place. Engineering will evaluate over next 90-120 days and incorporate into City Code provided there are no unintended consequences that arise. Signs scheduled to be installed on or after April 24; no additional comments received to date. Continuing to monitor until August 30, 2018. **No additional complaints or comments received. City Code will be updated to reflect changes. Item considered closed.**

3) Received request to review restricting parking to one side of street and install traffic calming on Tanner between Park Lake and Springfield. **Reviewed file and location has been reviewed several times in past years with no findings of excessive speeding. Speed and traffic data to be gathered to evaluate request when weather and staffing allows.**

4) Received request to remove a No Parking sign in front of a house and an old utility pole which no longer has any lines on it along the back of the property. Reviewed request: parking restriction required to allow room for school buses and garbage trucks to turn around (house is on the end of a street without a cul-de-sac). Currently verifying owner of the pole, believed to be Ameren about its removal. Confirmed Ameren owned pole and contacted them about removal; also provided contact info to resident. Resident indicated school buses no longer use her street (child no longer school age) and garbage trucks use alley. Discussed further with internal staff on sign and confirmed that parking restriction needed to allow garbage trucks to turn from the alley. Staff to replace existing faded sign.

5) Received request to allow parking along the south side of Westport Court. Reviewed current restrictions and signing. Letters being developed to be delivered to neighborhood requesting feedback on proposed parking changes. Feedback received in favor of allowing additional parking. Signs scheduled to be installed on or after May 3; no additional comments received to date. Continuing to monitor until September 30, 2018. **No additional complaints or comments received. City Code will be updated to reflect changes. Item considered closed.**

6) Received request from multiple residents along the 1300 and 1400 blocks of Oak Street to restrict parking with a Tow Away Zone on both sides of the street from 6 am to 6 pm, Monday through Friday. Letters being developed to be delivered to neighborhood requesting feedback on proposed parking ban. Results returned with enough votes to put in the requested parking ban. However, some of the comments against the parking ban indicated a significant hardship (i.e., at least one house without a driveway who needs to be able to park in the street). We are working to contact these individuals to discuss potential options. Implemented requested parking ban on July 17, **continuing to monitor until October 30, 2018. Received minor complaints that were able to be resolved.**

7) Received request for handicap spot on 1200 block of Oak Street. Waiting to receive supporting documentation of plaque or license plate from requestor.

8) Received Request to replace faded parking restriction signs along Washington Street. **Need to visit site and submit work order to sign crew**.

9) Received complaint of speeding and request for traffic calming on Grove Street between Clinton and Mercer. Grove is a classified street with higher traffic volumes, so it does not meet the requirements for traffic calming. Coordinating with Police Department for enforcement. **Item considered closed.**

10) Received complaint of speeding on E. Oakland east of Hershey, especially around Watford. Due to hill east of Warford, can be worrisome turning from Watford onto Oakland and being overtaken. Request reduction from 40 mph to 30 mph. Completed field check. There is a hill to the east of Watford limiting the view of the intersection from westbound Oakland. There is also an existing "intersection warning" sign with a 30 mph plaque. Could consider speed reduction, but would need speed study. 85th percentile likely closer to 40 mph than 30 mph. Will gather speed data and review crash data.

11) Received request for increased pedestrian warnings at US 51 (Madison) and Front Street. **To be reviewed following completion of Front Street work and likely referred to IDOT for consideration. May modify crosswalks with new ADA ramps.**

12) Received request for clearly marked drop-off at the Arena on US 51 (Madison). To be reviewed and responded to but likely unable to provide due to moving lanes of traffic and IDOT jurisdiction. **Passenger loading and unloading zone is currently posted on Front Street west of Madison.**

13) Received request for crosswalk warnings at East and Locust for crossing from BCPA to/from north parking lot. To be reviewed and responded to after updating crosswalk policy.

14) Received request to relocate “CT” to Front Street by Arena. Need to contact submitter and clarify.

15) Received request for temporary traffic signals at Rhodes Lane and US 150. To be reviewed and referred to IDOT for consideration. **This intersection will be eliminated with the Hamilton Road project.**

16) Received four coordinated requests for an all-way stop or other pedestrian warning enhancements at Stone Mountain and College for pedestrians walking north and south to/from Tipton Park. **Due to close proximity to Northpoint Elementary School, will be reviewed and data collected when school resumes in the fall. Traffic counting completed. Traffic signal warrants not met. All-way stop warrants not met. Sent work order to mark crosswalk across College and install pedestrian warning signs at the crosswalk and in advance.**

17) Received complaint about truck traffic on Fort Jesse Road. Need to review.

18) Received request for traffic signals at Fort Jesse Road and Airport Road. Intersection currently 4-way stop with plans to signalize in near future. **Traffic counting and data collection completed. Need to review signal warrants.**

19) Received complaint of speeding and request for "Children at Play" signs on Gill Street at pass-through-cul-de-sac west of Airport. Need to evaluate "Yield" sign usage for clarity.

20) Received complaint of Park Drive on Chestnut being blocked by park traffic. Need to contact resident and clarify concern.

21) Received request for traffic calming on Eastport Drive between Clearwater and Empire. Need to gather speed and traffic volume data and compare to Traffic calming policy.

22) Received request for traffic calming on Gloucester Circle between Hersey and Dover. **Collected speed and traffic volume data. Does not qualify for traffic calming under Traffic Calming Policy (excessing speeding threshold not met).**

23) Received request for traffic calming on W. Oakland between Livingston and Euclid. Need to gather speed and traffic volume data and compare to Traffic calming policy.

24) Received request to add flashing yellow arrows at Emerson and Towanda due to confusion of eastbound left turn drivers and non-90 degree angle of intersection. Contacted requester and indicated flashing yellow arrows are beginning to be incorporated as other signal maintenance work is completed at an intersection. This particular location will be reviewed closer due to unique geometry.

25) Received report of missing no parking sign at McGregor and Oakland. Need to visit site and review.

26) Received report of missing intersection lane use sign on eastbound Washington at Hersey. Visited site and confirmed; **Work order submitted to sign crew. Item considered closed.**

27) Received report of defaced handicapped parking sign on University. **Visited site, graffiti cleaned from sign. Need to complete work order for replacement of faded parking sign at same location.**

28) Received request to remove school zone on southbound Center Street by Thornton's for Corpus Christi is no longer needed due to school closing. Need to confirm if this zone was just for Corpus Christi and not also Bent Elementary.

29) Received request for school crossing sign added at Washington and Darrah. Need to determine which intersection leg is being requested and evaluate request.

30) Received concern about an increase in collisions on GE Road between Golden Eagle and Towanda Barnes Road. Need to pull accident data, review for trends and evaluate options.

31) Received two separate concerns about commercial parking on residential portion of Norma Drive. Need to contact residents and discuss.

32) Received request for stop or yield sign at Ark and Matthew. **Need to visit site and review.**

33) Received request for no parking in front of a residence on Colton due to constant blocking of driveway. **Need to visit site and review.**

34) Received complaint of landscaping creating a sight obstruction at Peirce and Mercer. **Need to visit site and review.**

35) Received complaint of out of town school buses parking and blocking alley behind Elmwood Road and the BHS football/baseball fields during school sports activities. **Need to visit site and review.**

36) Received complaint about new power poles at Hershey and Jumer causing a sight obstruction. Visited site to review. Contacted Ameren to discuss poles. Ameren agreed at least one of the poles may not be necessary; they are reviewing internally.

37) Received report of signals at Four Seasons and Oakland not detecting northbound left turns. **Referred issue to electricians to check detection hardware and settings.**

38) Received complaint of signals at Ireland Grove Road and Loop Road not detecting northbound traffic. Referred issue to electricians to check detection hardware and settings: determined stop bar location was changed following street resurfacing by State Farm, detection settings were adjusted to reflect the new stopping point. **Item considered closed.**

39) Received complaint of signals at Ireland Grove Road and Towanda Barnes Road not cycling for eastbound traffic. **Referred issue to electricians to check detection hardware and settings: adjustments made. Item considered closed.**

40) Received request for street light at College and Stone Mountain. **Evaluating options to add a street light to the southeast quadrant to light the south leg and the bike path crosswalk. Need to contact Ameren for an estimate to install.**

41) Received request for additional school zone signage around Corpus Christi School. Need to visit site and review current signage.

42) Received complaint of signals at Empire and Empire Crossing not detecting southbound traffic. Need to have electricians check detection hardware and settings.

43) Received complaint of speeding on GE Road between Towanda Barnes and Airport Road with numerous accidents on a consistent basis. Request study of adding traffic signals and/or stop signs. Contacted and will gather speeding and crash data.

44) Received request to limit parking on Beecher between Fell and Horenberger due to sight distance reasons. Need to visit site and evaluate.

45) Received questions relating to signal operations and our use of yellow flashing arrows versus green arrows and order of phasing of left turns versus through. **Responded via email. Item considered closed.**

46) **NEW:** Received request from Benjamin Elementary School for No Parking along Black Oak Lane adjacent to the school. Need to evaluate.

47) **NEW:** Received complaint of stop sign obstructed by a tree limb at westbound Raspberry and Woodbine. Need to evaluate and coordinate with Parks Dept. for trimming.

48) **NEW:** Received notification of missing No Parking signs on S. Williamsburg and Yorktown. Existing signs have severely faded. Need to visit site and replace signs as needed.

49) **NEW:** Received notification of missing school zone sign by Washington School. Sign replaced. **Item considered closed.**

50) **NEW:** Received complaint of signals at Mercer and Hamilton not changing for traffic on Mercer. Referred to electricians who found a faulty detector component and replaced it. **Item considered closed.**

51) **NEW:** Received notification of missing speed limit sign on College by Biasi. Sign replaced. **Item considered closed.**

52) **NEW:** Received notification of missing speed limit signs on Hershey between GE Road and Ft. Jesse. Work order submitted to sign crew. **Item considered closed.**

53) **NEW:** Received notification of missing speed limit sign on Towanda just west of Jersey. Work order submitted to sign crew. **Item considered closed.**

54) **NEW:** Received notification of missing speed limit signs E College Ave and Hershey, east of Hershey by North Pointe School. Signs replaced. **Item considered closed.**

55) **NEW:** Received concern about no turn on red at Six Points Road and S. Morris. Need to contact to clarify.

56) **NEW:** Received questions from Home Owners Association relating to Ameren billing of street lights on Meadow Ridge Drive. Upon research, determined lights

were private and needed to be coordinated between Ameren and the HOA. **Item considered closed.**

57) **NEW:** Received request for reason parking not being allowed on Elmwood between Colton and Towanda. During football games many cars park on Colton, creating unsafe conditions, when they should be able to park on Elmwood. Need to research and evaluate.

58) **NEW:** Received request for extending the northbound left turn lane on Airport at Ft. Jesse. Traffic backs up past the left turn lane preventing left turners from entering it. Evaluated in field. Existing painted median allows for the turn lane to be extended and additional 70 feet, doubling the available storage. New markings have been laid out in field, need to complete work order for pavement marking crew.

59) **NEW:** Received complaints of bicyclists blowing stop sign at Bunn / Buchanan and Buchanan / Clayton. Request to evaluate options for additional signage and increased enforcement.

60) **NEW:** Received request for stop sign on Baker at Roosevelt (T intersection). Will review accident history and evaluate sight distance.

61) **NEW:** Received concern about a no parking sign at Lincoln and Main. Need to contact and determine exact concern.

62) **NEW:** Received concern about in adequate school zone signage for Corpus Christi School. Requested multiple blinking lights. Complained of cars extending out onto Lincoln during pickup and drop-offs. Need to visit site and review school zone signage and discuss modifications to drop-off and pickup routing on school site with school.

63) **NEW:** Received concern about parking availability in neighborhoods surrounding Sarah Raymond School during school drop-off, pickup, and special events. Need to evaluate parking in area and discuss with school.

64) **NEW:** Received complaint about almost 1 mile long backups on Ireland Grove Road at Towanda Barnes. Existing problems have been made worse by construction. Contacted submitter and indicated that widening for additional turn and through lanes on Ireland Grove was originally part of the current project but was removed from the project by the City Council. Staff will re-balance the signal timings once the southbound right turn lane installation is complete which may help Ireland Grove traffic. **Item considered closed.**

65) **NEW:** Received complaint about the signal timing for Ireland Grove Road at Towanda Barnes being shorter than it was before leading to increased time waiting at the light. Contacted submitter and indicated that widening for additional turn and through lanes on Ireland Grove was originally part of the current project but was removed from the project by the City Council. Staff will re-balance the signal timings

once the southbound right turn lane installation is complete which may help Ireland Grove traffic. **Item considered closed.**

66) **NEW:** Received concern about speeding and stop sign running in neighborhoods surrounding Corpus Christi School during school drop-off and pickup to avoid all-way stop at Lincoln and Mercer. Need to discuss modifications to drop-off and pickup routing on school site with school.

67) **NEW:** Received complaint about the signal timing for Ireland Grove Road at Towanda Barnes not allowing sufficient vehicles to get across Towanda Barnes. Contacted submitter and indicated that widening for additional turn and through lanes on Ireland Grove was originally part of the current project but was removed from the project by the City Council. Staff will re-balance the signal timings once the southbound right turn lane installation is complete which may help Ireland Grove traffic. **Item considered closed.**

68) **NEW:** Received complaint about the Ireland Grove Road and Towanda Barnes only including Towanda Barnes work and none of the widening. There are significant backups due to changes in school start times. Contacted submitter and indicated that widening for additional turn and through lanes on Ireland Grove was originally part of the current project but was removed from the project by the City Council. Staff will re-balance the signal timings once the southbound right turn lane installation is complete which may help Ireland Grove traffic. **Item considered closed.**

3. STAFF RECOMMENDATION:

Staff submits the above information to the Commission. Any comments or feedback is appreciated.

Respectfully submitted,

Philip Allyn, PE, PTOE
City Traffic Engineer