



**AGENDA
CITY OF HARRISONVILLE
PUBLIC WORKS COMMITTEE
REGULAR MEETING
CITY HALL
OCTOBER 3, 2017
6:00 PM**

I. Call to Order

- 1. Roll Call**

II. Approval of Minutes

- 1. Public Works Committee - Regular Meeting - Aug 1, 2017 6:00 PM**

III. Agenda Items

- 1. Adopt-A-Street Program Policy**
- 2. South & Commercial Intersection**

IV. Stormwater Issues

V. Public Works Project Updates

VI. Airport Reports

- 1. Airport Report**

VII. General Discussion

VIII. Adjourn

Posted on City Hall Bulletin Board this 28th day of September, 2017

Randall K. Jones, City Clerk

The Board of Aldermen meeting is an open meeting but is not a meeting of the public. There is a place on the agenda for comments of citizens under PUBLIC PARTICIPATION. Our rule is that comments by any individual or group shall not exceed (4) minutes. The Board of Aldermen request that concerns be initially addressed at the appropriate action level before coming to the Board of Alderman



**MINUTES
CITY OF HARRISONVILLE
PUBLIC WORKS COMMITTEE
REGULAR MEETING
CITY HALL
AUGUST 1, 2017
6:00 PM**

I. Call to Order

The meeting was called to order at 6:00 PM by Chair Brian Hasek

Attendee Name	Organization	Title	Status	Arrived
David Dickerson	Harrisonville	Member	Present	
Matt Turner	Harrisonville	Member	Present	
Brian Hasek	Harrisonville	Chair	Present	
Clint Long	Harrisonville	Member	Present	
Brad Bockelman	Harrisonville	Member	Present	

Also present were Jill Kiefer; Nathan & Leanna Garlock; Happy Welch, City Administrator; Eric Patterson, Director of Public Works; Rodney Jacobs, Street Superintendent; James Green, Lawrence Smith Memorial Airport Manager; Ted Martin, City Engineer; April Clark, Administrative Assistant for Public Works

II. Approval of Minutes

1. Public Works Committee - Regular Meeting - May 2, 2017 6:00 PM

With no additions or corrections, the May 2, 2017, minutes were approved as written.

RESULT:	ACCEPTED [UNANIMOUS]
MOVER:	Matt Turner, Member
SECONDER:	Brad Bockelman, Member
AYES:	Dickerson, Turner, Hasek, Long, Bockelman

III. Agenda Items

1. Solar Energy Station

City Administrator Happy Welch explained the program. He said that it is just in the asking stage, since there has been no approval from MPOA yet. He said if the Board would approve the program, there is a \$50,000 buy-in, which could be monies or in-kind, such as land. He reviewed a memo from the City of Marshall, who is currently using the system. Alderman Brad Bockelman asked if it's a violation of our contract with MPOA to participate in this program. City Administrator Welch said it is not because we're going through MPOA to do this. Mayor Brian Hasek asked Public Works Director Eric Patterson what his thoughts were on the program. Director Patterson said it's a good PR

opportunity for the City. While the City doesn't always have a good look to the public, this is a good way to show the public that we're willing to go green. City Administrator Welch said the \$50,000 would come from the Electric budget, and Director Patterson said it could easily be budgeted. City Administrator Welch said again that there is no approval from MPUA yet, but he wanted to find out if there is interest in pursuing the program or not. The consensus of the committee was to pursue it if MPUA approved it.

RESULT:	RECOMMENDED [UNANIMOUS]
AYES:	Dickerson, Turner, Hasek, Long, Bockelman

2. Single Phase Commercial Meter Policy

Director Patterson explained that when a business exceeds 10 kw of usage during a month, they no longer qualify for a meter without demand charge. The ordinance states that any business that exceeds 10 kw in any month, must have a demand meter for a year. He said the City is not currently enforcing this ordinance. He said the options are to enforce the ordinance for all businesses, enforce it as the situation occurs, or continue to ignore it. If the Board decides to continue ignoring it, then the ordinance should be changed. The additional cost that these businesses are not paying, due to not having the demand meter, is being paid by the City and is spread out as a charge to the private citizens.

City Administrator Welch said in the formula of the bill the MPUA send the City, the amount is charged out accordingly. Mayor Hasek stated the options are (1) equip all commercial businesses with demand meters, then start charging the demand charge, or (2) add a fee to each business and get rid of the demand meters. He asked what the difference is that the citizens would pay if the demand meters were installed at all businesses. Director Patterson stated that he can't know for sure unless all the businesses are fitted with demand meters. There was discussion regarding the pros and cons of City Electric vs. KCPL.

Mayor Hasek asked for some information from MPUA regarding the billing before making a decision on the demand meters. Alderman David Dickerson suggested getting rid of the demand meters. Director Patterson stated that the Commercial rate is approximately \$15.00 a month higher than residential. Mayor Hasek asked to put off this decision until the next meeting, giving Director Patterson time to get the billing information from MPUA. Director Patterson said there are currently 12-20 single phase meters at businesses in town.

RESULT:	DISCUSSION
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IV. Public Works Project Updates

1. August 2017 Project update

Water Treatment Plant:

Mayor Hasek said there have been some complaints about the water quality. He has responded that the new plant that is being built will take care of some of those issues. Director Patterson explained that most of the issues with DNR were paperwork, and they have been resolved. He also said that all plant levels are well below the level of concern.

I-49 Waterline Crossing:

Director Patterson said all parties have signed the easement with compensation as agreed upon. Mr. Linder has some questions for city staff regarding the survey he had done and how this easement would plot out on his survey. We are waiting to hear back from Mr. Linder.

Beckerdite Waterline:

Director Patterson said the bid will go out in the Fall with hopes for better bids and winter construction.

Chateau Stormwater:

Director Patterson said the bid was awarded at the last Board meeting. He also said they will need to transfer \$10,000-\$15,000 to cover any unforeseen change orders.

2017 Asphalt Program:

Superintendent Rodney Jacobs said the slurry seal project is complete, and the asphalt program starts Monday.

Jefferson Parkway Sidewalk:

Director Patterson said the bid will be out in the paper on Friday.

Electric Crew:

Director Patterson gave an overview of the Electric Department crew's help to the City of Independence last week.

RESULT:	DISCUSSION
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V. Airport Reports

1. Lawrence Smith Memorial Airport Report for July 2017

Manager James Green gave an overview of the last month for the airport. He reported that they finally found someone to take care of the hay for the next 10 years. They will keep the area mowed and will take the hay.

Director Patterson asked an opinion on whether or not to have a Fly-In at the airport next budget year. The consensus of the committee was to not have one.

RESULT:	DISCUSSION
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VI. General Discussion

Adopt-A-Street:

Jill Keifer addressed the Committee and said she has been picking up trash along Jefferson Parkway for years. She had a sign up years ago, but took it down for privacy. She would like to

put up a sign again, but this one would honor Alison Smith. She also made a suggestion for a sign design change.

Director Patterson suggested that the adopting parties pay for the signs, rather than have them request to adopt a street, have the City put up a sign, and then nothing is done. There was discussion regarding starting the program up again.

Alderman David Dickerson made a motion to direct the Public Works Department to draft a policy regarding adopt-a-street to take to the Board. Alderman Matt Turner seconded. Director Patterson suggested getting the policy draft together and inviting Ms. Kiefer to go over it too. Ms. Kiefer also asked for permission to design a sign and it was granted. The motion passed unanimously.

Drainage Issue:

Nathan Garlock, 204 E. Polk, presented his concerns about the drainage ditch going through his property. He explained that instead of flowing straight through, it makes a 45 degree angle through the corner of his property and is eroding his yard. He put a fence up to try and help, but the erosion continues. Ted Martin said that he did talk with Mr. Garlock and told him that whatever is done in the creek cannot adversely impact the upstream or downstream properties. Mr. Martin also stated that instead of a pipe to control erosion, they could also consider leaving the creek as is, and build a retaining wall or other slope protection. Alderman Dickerson commented, "like the park dam, use large stones to hold the slope." Director Patterson said it's all private property and public funds cannot be spent on it. Mr. Garlock said the cost to put in a 48" pipe with the dirt work is approximately \$7000. He was present to ask for the City's help. Mayor Hasek asked Director Patterson if there were any options. Director Patterson said the only real option is for the Garlock's to put in the pipe. They would have to hire a civil engineer, because the City's liability insurance wouldn't cover the City hiring one. Mr. Garlock said he is basically asking for help on the purchase of the pipe, since the water is coming from the runoff from the Post Office and a few other properties to the north of him. Director Patterson said the City isn't saying a 48" pipe is necessary. The City hasn't done a study there. Mr. Garlock said a smaller pipe is considerably cheaper. Director Patterson said, in theory, you can do whatever you want on your property, but you don't want to cause trouble for your neighbors. He suggested asking the neighbors to sign off on the size of pipe, if they are ok with the smaller size. Mayor Hasek said he understands the legal aspect that keeps the City from using public funds, so if the Garlock's can clear the smaller size pipe with their neighbors, then it seems the City won't stop them from putting in the smaller pipe.

Trash Service:

Mayor Hasek asked about the trash service. City Administrator Welch said it goes through Finance/Administration, rather than Public Works. There was some discussion regarding the current service and those that submitted bids. Pleasant Hill uses Municipal Waste, who submitted a bid. Mayor Hasek asked what services the surrounding cities have. City Administrator Welch said if the parameters for the bid are regarding the services, we will need to readvertise for bids.

Alderman Dickerson stated that there is a dead tree at 902 S. Independence that fell on a power line and needs to be removed.

VII. Adjourn

Alderman Dickerson made a motion to adjourn and Alderman Long seconded. The motion passes unanimously, and the meeting was adjourned at 7:30 PM.

Brian Hasek, Mayor & Ex-Officio
Chairman of the Board of Aldermen

ATTEST:

Randall K. Jones, City Clerk

Minutes Acceptance: Minutes of Aug 1, 2017 6:00 PM (Approval of Minutes)

M E M O R A N D U M

TO: Mayor and Public Works Committee
FROM: Rodney Jacobs, Superintendent of Streets
DATE: September 26, 2017
SUBJECT: Board approval to establish an Adopt-A-Street Program Policy

Type of Item: *Administrative*

Issue:

A resolution to establish an Adopt-A-Street Program Policy

Summary Recommendation:

It is staff's recommendation to approve the establishment of an Adopt-A-Street Program Policy to promote community involvement and encourage people to keep roads litter free.

Background:

A request has been made by a Harrisonville resident for the City to begin a program where individuals or groups can adopt a section of city street for the picking up of litter and for that effort to be recognized in the form of an acknowledgment sign. The policy requires the person or group to form a partnership with the City and that each have responsibilities under that partnership. The policy states that the person or group must select from a list of roadways provided by the City and clean that section at least four times each year following specified procedures within the policy. The City would provide trash bags, trash collection, safety vests and acknowledgment signs.

The acknowledgment sign should follow the Manual on Uniform Traffic Control Devices, which dictates sign design and placement.

Options:

An option to require For Profit Organizations to pay for the acknowledgment sign and installation and for Non-Profit Organizations to receive the sign and installation at no cost has been considered, but as the sign cannot have private logos, or contact numbers the reasoning behind the signs for both Profit and Non-Profit are similar, and the City receives the same benefits. To purchase and install a sign 18" x 24", it is estimated to cost \$196 each.

A resident on Jefferson Parkway has been working with Street Department staff for a design but has not completed the task.

Streets to be eligible for the Adopt a Street Program should be collector city streets without a large number of residences.

Recommendation:

Staff recommends approving the Adopt-A-Street policy, as it is designed to be a community involvement program that brings individual or group volunteers into partnership with the City of Harrisonville to keep city roadways clean. The program encourages people to stop littering and shows a better first impression of our city to residents and visitors by utilizing and seeing the cleanup efforts.



City of

Harrisonville^{est. 1836}

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City of Harrisonville ADOPT-A-STREET PROGRAM POLICY

MISSION STATEMENT

The City of Harrisonville is committed to providing safe, clean, and efficient city streets for the residents of Harrisonville and the traveling public.

PURPOSE AND BENEFITS

Adopt-A-Street is a community involvement program that brings individual or group volunteers into partnership with the City of Harrisonville to keep city roadways clean. The program encourages people to stop littering and shows a better first impression of our city to residents and visitors by utilizing and seeing the cleanup efforts. Adopt-A-Street program shows that people have pride in our community and care about the environment. The program sets a good example especially for the youth in the community and improves the quality of life in your neighborhood.

HOW IT WORKS

Each individual or group volunteer is responsible for a dedicated section of roadway. They agree to remove litter a minimum of four (4) times a year, over a two (2) year period. The City of Harrisonville supplies the caution signs, safety vests, and bags for cleanup efforts. Each sponsoring individual or group will be recognized with a signage placed along their designated roadway section.

PROGRAM POLICY GUIDELINES

1. Only certain streets within the corporate limits of the City of Harrisonville are included in this program. Some streets have been deemed too hazardous or additional efforts reasoned unnecessary to be adopted.
2. The sponsoring individual or group shall be responsible for litter pickup only. No planting. No maintenance such mowing or other activities will be permitted.
3. The sponsoring individual or group shall adopt their section of roadway for two years with the right to renew the agreement. The City of Harrisonville has the right to terminate the agreement and remove the sponsor's roadside signs should the sponsoring group fail to act in accordance with this policy.
4. The City of Harrisonville and the sponsoring individual or group will jointly decide on the length of roadway to be adopted. The Public Works Director will determine unreasonable or dangerous sections of City roadways.

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5. The City of Harrisonville will supply and put up the signs with the individual or group name. The signs shall conform to the requirements of the Missouri Department of Transportation (MODOT). No logos or slogans will be permitted on the signs.
6. In the case of a sponsoring group, they shall assign a group coordinator to work jointly with the Public Works Director or his designee.
7. The City of Harrisonville shall provide street safety materials to the sponsoring individual or sponsoring group's coordinator for distribution to the volunteers.
8. Litter pick is required a minimum of four (4) times a year. However, we encourage you to monitor and pick up for the area as necessary.
9. Adequate supervision must be provided for anyone under the age of 18. It is required that at least one (1) adult supervise five (5) youths. No one under the age of twelve (12) will be permitted to participate.
10. No food or beverage shall be carried or consumed while picking up litter.
11. The sponsoring individual or group shall be required to provide a first aid kit and an ample supply of water at a staging location.
12. The sponsoring individual or group shall place the litter into the trash bags provided by the City of Harrisonville at a predetermined location along the roadside ditches.
13. The sponsoring individual or group's coordinator may pick up the bags from the Public Works Department during normal working hours.
14. The adopter will advise the Public works Department at least 24 hours in advance of performing any work in their designated section of roadway.
15. Pick up days and times are during daylight hours between 8:00am to 5:00pm during moderate weather conditions such as, sunny and calm days.
16. The sponsoring individual or group shall proceed with litter pick up activities in the direction of oncoming traffic.
17. Large objects and hazardous materials found along the roadside shall be marked and reported to the Public Works Department.
18. The sponsoring individual or group may at any time terminate their agreement, but must do so in writing to the City of Harrisonville.

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ADOPT-A-STREET AGREEMENT

The (Sponsoring Individual or Group),

Recognize the need for litter free roadways throughout the City of Harrisonville and hereby enters into this agreement in an effort to contribute toward maintaining litter free roadways.

By signature below, the sponsoring individual or group acknowledges the hazardous nature of the work and agrees to the terms and conditions set forth by the City of Harrisonville.

The sponsoring individual or group and its volunteers, members, and/or agents shall assume all responsibility for, and hold the City of Harrisonville harmless (which includes all officials, employees, and agents) from any and all claims or actions resulting from the individual or groups or agent's work in the program.

All members of the sponsoring group are jointly bound by the terms and conditions of the agreement. The sponsoring individual or group and the City of Harrisonville shall hereby fulfill their respective responsibilities as outlined in the City of Harrisonville.

Sponsoring Individual/Group shall adopt a Roadway section of (street name)

From (street name)

To (street name)

The Sponsoring Individual/Group accepts the responsibility of picking up litter on this section of roadway for two (2) years on a time beginning From _____ (mm/dd/yyyy), and ending on _____ (mm/dd/yyyy),

Printed Name of Sponsoring Individual/Group and DATE (mm/dd/yyyy)

Printed Name of Group Coordinator and PHONE

Signature of Sponsoring Individual/ Group Coordinator and DATE (mm/dd/yyyy)

Signature of Public Works Director and DATE (mm/dd/yyyy)

Fill out this form and please return to:
Public Works Department
P.O. Box 367
201 W. Chestnut Street
Harrisonville, MO 64701

Attachment: Adopt a Street Program Policy Draft - PWC 10-3-17 (Adopt-A-Street Program Policy)

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Adopt-A-Highway Sign Prices & Guidelines

Your signs will be ordered after you application has been approved. All signs must conform to the Manual on Uniform Traffic Control Devices, Section 2 H.08 Acknowledgment Signs

A one two piece sign with the top portion measuring (24" x 24") and the bottom portion measuring (12" X 24") for the group's name will be placed at each end of your adopted highway segment at no charge.

Happy Welch

From: Lynda Thacker <jlrmt477@gmail.com>
Sent: Monday, September 4, 2017 4:37 PM
To: Happy Welch
Subject: Traffic light installation at the intersection of South Street and Commercial Avenue, Harrisonville Missouri 64701

I understand that this subject has been brought before you before, and rightfully so... There is a larger volume of traffic than ever, multiple entrances and exits in a small and difficult area. Accompanied by a business on one of its Corners that shows more interest in boasting a vehicle for sale than the safety of those that attempt Time After Time to enter onto Commercial Avenue from the stop sign at South Street... the ability to detect any oncoming traffic is restricted to Impossible on most of the days, due to the vehicles aligning the curb... I myself was recently a victim of this intersection and am totally aware that the outcome may have been even worse and possibly with fatality... I am strongly addressing this issue in hopes that it doesn't have to come to that extreme before it is resolved... Sincerely Lynda Thacker

Attachment: South-Commercial Complaint (South & Commercial Intersection)

lot located in the southeast quadrant of the intersection. These parked vehicles along with the horizontal curvature of Commercial Street restrict the sight distance for westbound drivers at the study intersection.

Table 3
Intersection Sight Distances

	Approach	Direction Looking Along Commercial Street	Approximate Sight Distance (feet)	
			Measured	Recommended *
South Street	Eastbound	North	>1,000	365 – 415
		South	>1,000	365 – 415
	Westbound	North	490	365 – 415
		South	300	365 – 415

* Sight distance based on AASHTO criteria for an approach speed of 35 m.p.h. along Commercial Street (lower value is the sight distance for a right-turn or crossing maneuver while the upper limit is the sight distance for a left-turn maneuver).

It is important to note that the sight distances shown in Table 3 were measured from a position where the driver is located 14.5 feet from the edge of traveled way along Commercial Street in accordance with AASHTO criteria. For the westbound approach, this results in a driver location that is beyond the existing stop lines, 7 feet for right-turn vehicles and 21 feet for through/left-turn vehicles. If drivers stop farther from Commercial Street, such as at the existing stop lines, sight distances will be less than those identified in Table 3.

These findings indicate the importance of the location where westbound motorists stop at this intersection, particularly since this affects the time required for a vehicle to enter or cross Commercial Street. At any stop-controlled intersection, motorists approaching the STOP sign generally look for visual clues regarding the appropriate stopping point. Drivers typically pull forward as close to the uncontrolled road as possible without encroaching on the intersection. AASHTO notes that field observations of vehicle stopping positions found that, where necessary, drivers will stop with the front of their vehicle 6.5 feet or less from the edge of the major-road traveled way. At skewed intersections, drivers may not stop this close to the intersecting road given the larger corner radii and the STOP sign location which is correctly located further back from the intersection in order to be adequately visible for approaching traffic. For locations such as this, placement of stop lines beyond the STOP sign is permissible in the MUTCD, and it would be beneficial in identifying the appropriate stopping point for drivers. In reviewing the current stop line locations, they are farther back than locations based on AASHTO criteria; however, stop lines must be located to avoid the potential for conflicts between a vehicle stopped on South Street and left-turn movements off Commercial Street. In considering all factors, it appears that the location of both stop lines could be moved closer to the edge of travelway on Commercial Street without encroaching on the left-turn vehicle path.

Crash Experience

Crash records for the Commercial Street and South Street intersection were requested from the city for the time period between January 1, 2009, and April 1, 2014. Using the crash reports that were provided, a collision diagram was prepared for the study intersection to identify any crash patterns or tendencies that might exist. The diagram has been included in the Appendix (Figure A-7). Some general statistics and/or patterns identified from the diagram or crash records are summarized below:

- As shown on Figure A-7, 13 intersection-related crashes were reported at this location during the 63-month analysis period. This crash total corresponds to a frequency of 2.5 crashes per year.
- The intersection crash types included 11 angle crashes, one (1) left-turn crash, and one (1) sideswipe crash. Some form of personal injury occurred in three (3) of the crashes, all of which were angle collisions. No fatalities occurred during the analysis period.
- There is a pattern of angle crashes at this intersection and most (8 of 11) involved a southbound driver on Commercial Street. All of the reports indicated that the drivers on South Street initially stopped at the intersection before attempting to enter or cross Commercial Street. Unfortunately, all the reports, except for two, offer little information that might explain

why drivers failed to yield to traffic on Commercial Street. One report indicated that a westbound driver did not see the vehicle traveling southbound on Commercial Street due to a truck on the opposite side of the road making a left-turn movement onto Commercial Street. Another report indicated that an eastbound driver did not see the northbound vehicle due to another eastbound vehicle that was to the right. This is not an uncommon situation on a wide-throat intersection approach to a stop controlled intersection given the potential for side-by-side traffic.

- Most of the 13 crashes occurred during daylight hours with no apparent pattern by day of week. Seven (7) of the crashes occurred during the afternoon between the hours of 12:00 p.m. and 5:00 p.m. Adverse weather conditions, driving under the influence of alcohol or drugs, vehicle malfunction, or other such factors were not identified as contributing circumstances in any of these crashes. Somewhat notable is that ten (10) of the 13 crashes involved either a younger driver or older driver (less than age 25 and above age 60); drivers who may have difficulty judging an adequate gap in the Commercial Street traffic stream due to the skew of the intersection.

The above information indicates that the Commercial Street and South Street intersection has a moderate crash frequency. Of primary concern is that angle collisions are the predominant crash type at this location, which tend to be more severe than other crash types (11 of the 13 crashes were angle collisions). These findings indicate that some intersection modifications may be appropriate to mitigate this crash pattern.

Analysis

Highway Safety Manual Analysis

To further evaluate the existing safety characteristics of the Commercial Street and South Street intersection, TranSystems used procedures outlined in the HSM to determine the predicted average crash frequency (crashes per year) for this location. Results from the HSM analysis for the study intersection have been included in the Appendix (Page A-8), and they indicate a predicted average crash frequency of 1.0 crash per year for an urban or suburban intersection with similar characteristics. Based on these findings, the Commercial Street and South Street intersection is of concern since the actual crash frequency of 2.5 crashes per year is higher than the HSM predicted crash frequency of 1.0 crashes per year.

To address the existing safety and operational deficiencies documented for the Commercial Street and South Street intersection, we would recommend that the city implement some improvements to enhance operations and safety at the study intersection. The following sections analyze various improvement considerations.

Traffic Signal Control

The use of traffic signal control can be an effective means of assigning right-of-way to various movements at an intersection, thereby providing for the orderly movement of traffic. These devices can increase the traffic-handling capacity of an intersection while also reducing the frequency and severity of certain types of crashes, especially angle collisions. However, installing a traffic signal without proper justification can result in disadvantages as well, such as higher overall intersection delay, higher vehicle emissions, noncompliance of control, increased use of other routes to avoid the signal, and an increase in the frequency of other types of crashes, particularly rear-end collisions.

The most current version of the MUTCD outlines nine warrants that justify the need for a traffic signal. It also states that the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal. The nine warrants are:

- Warrant 1: Eight-Hour Vehicular Volume
- Warrant 2: Four-Hour Vehicular Volume
- Warrant 3: Peak Hour
- Warrant 4: Pedestrian Volume
- Warrant 5: School Crossing
- Warrant 6: Coordinated Signal System
- Warrant 7: Crash Experience
- Warrant 8: Roadway Network
- Warrant 9: Intersection Near an At-Grade Rail Crossing

In evaluating each of these MUTCD warrants, the results indicate that the study intersection does not fully satisfy the requirements of any warrant at this time. Completed worksheets for the traffic signal volume warrants (Warrants 1, 2, and 3)

have been included in the Appendix (Pages A-9 and A-10). None of the eight hours with the highest traffic volume totals meet the traffic volume thresholds of Warrant 1. To meet the criteria, traffic volumes along South Street would need to increase by roughly 10 – 20 percent, which is unlikely in the near future given the mature development of the area surrounding the intersection. Likewise, the highest peak hour traffic volume totals do not meet the thresholds for Warrants 2 and 3. No pedestrians were observed crossing the intersection during the manual traffic volume counts, indicating that Warrants 4 and 5 do not apply at this location. Warrants 6, 8, and 9 also do not apply at this intersection. Warrant 7 applies, but the crash frequency at this intersection does not satisfy the minimum threshold identified in the MUTCD (five or more reported crashes in a 12-month period that are susceptible to correction by a traffic control signal).

Multi-way Stop Control

Since traffic signal control is not warranted, we also considered whether multi-way stop control should be installed. This form of control can be useful as a safety measure at intersections where certain conditions exist, particularly where the volume of traffic on the intersecting roads is approximately equal. However, a multi-way stop is the most restrictive form of intersection control since all vehicles at the intersection are required to stop, regardless of the situation, which has an adverse impact on efficiency and fuel consumption. This form of control would likely be beneficial in addressing the existing angle crash pattern at this location, but an important consideration is the current traffic volumes along Commercial Street and South Street, which are highly imbalanced at present. The traffic volumes on Commercial Street are more than double those on South Street (roughly 70 percent of the total intersection traffic is on Commercial Street). Given this imbalance, we would not recommend installation of multi-way stop control at this intersection at this time.

Other Recommendations

The use of traffic signal control or multi-way stop control has not been recommended for the study intersection at this time; therefore, the existing two-way stop control should remain in place. To address the observed sight distance deficiency and in an effort to help reduce the number of crashes occurring at the intersection, some modifications to the existing pavement markings are recommended. These modifications have been shown on Figure 2 and are summarized below:

- Remove the existing stop lines on the westbound South Street approach, and install new 24-inch wide stop lines on this intersection approach at the appropriate stopping point. The new stop line locations were established in accordance with AASHTO criteria, and they are based on the typical stopping location of a vehicle. For each approach lane, the stop lines should be installed a distance of 10 feet back from the extended edge of travel on Commercial Street measured down the middle of each westbound lane. These locations are closer to Commercial Street than the existing STOP sign, which is permissible in the MUTCD and not uncommon at skewed intersections with large corner radii. The new stop line location for the through/left-turn lane will not encroach on the turning paths for left-turn movements from Commercial Street. Once the new stop lines have been placed, the existing centerline and lane line markings should be extended to the new stop line locations.

Use of the new stop line locations should improve sight lines for westbound South Street motorists when looking both north and south along Commercial Street by identifying a more appropriate stopping location. However, as described previously in the intersection sight distance section, sight lines looking to the south will still be less than AASHTO's recommended minimum values for the existing 35 m.p.h. speed limit. Therefore, some additional signing would be appropriate along Commercial Street in advance of the intersection to alert drivers of the South Street intersection. This additional signing has also been shown on Figure 2 and is described below:

- Install Cross Road warning signs (MUTCD No. W2-1, 30"x30") along with 25 m.p.h. advisory speed plaques (W13-1p, size 18"x18") approximately 300 feet in advance of the intersection on the northbound and southbound approaches. The Cross Road warning sign indicates to drivers the presence of an intersection and the possibility of turning or entering traffic. The 25 m.p.h. advisory speed plaques are recommended to supplement the warning sign and to identify the appropriate advisory speed for this intersection based on the available intersection sight distance when a driver is located 14.5 feet from the edge of the traveled way along Commercial Street.

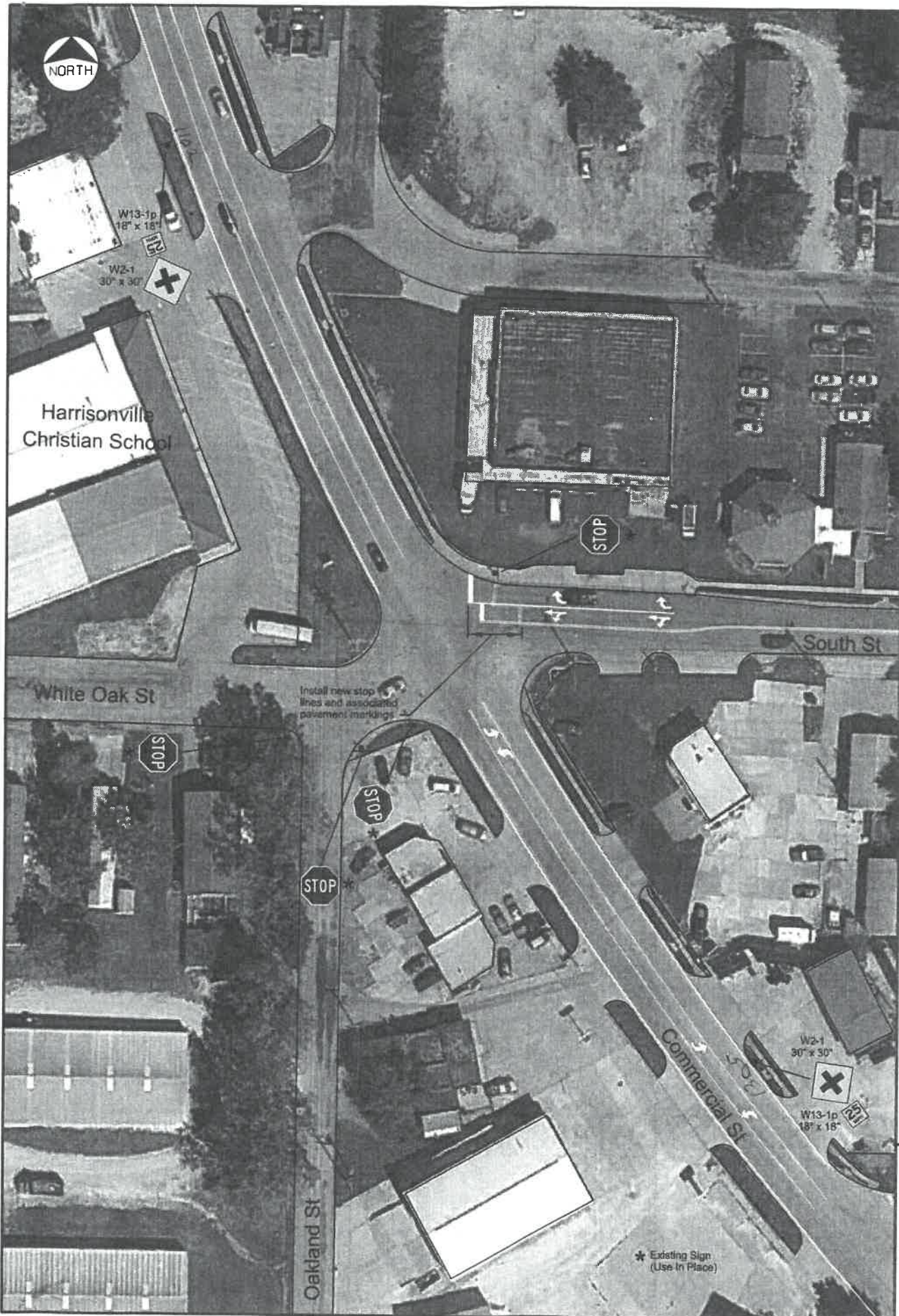


Figure 2

August 2014

No Scale

Intersection Analysis
Harrisonville, Missouri

INTERSECTION IMPROVEMENTS COMMERCIAL STREET AND SOUTH STREET



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Attachment: South-Commercial Study (South & Commercial Intersection)

Conclusion

The above study has focused on the need for safety improvements at the intersection of Commercial Street and South Street in Harrisonville, Missouri. The general procedures and analysis for this study were based on criteria set forth in the AASHTO Green Book as well as the *Manual on Uniform Traffic Control Devices* (MUTCD), the Federal Highway Administration (FHWA) reference adopted as the standard governing the use of traffic control devices in the State of Missouri.

Based on the data that were collected, including our observations of existing vehicular patterns at or near the intersection, the following deficiencies were identified for the intersection of Commercial Street and South Street:

- The measured intersection sight distance when looking south along Commercial Street from the westbound South Street approach is 300 feet. This value does not meet AASHTO's recommended minimum values of 365 feet for a right-turn or crossing maneuver and 415 feet for a left-turn maneuver.
- There is a crash frequency of 2.5 crashes per year at the study intersection. This frequency is above the predicted average crash frequency of 1.0 crash per year for an urban or suburban intersection with similar characteristics.
- There is a pattern of angle collisions at the study intersection, and three of these resulted in some type of personal injury. Angle collisions are of concern since these tend to be more severe than other crash types.

The above conditions indicate that some safety enhancements would be appropriate at the study intersection. Traffic volumes at the study intersection do not satisfy any of the traffic signal warrants or multi-way stop control warrants; therefore, the intersection should remain under two-way stop control. However, based on our analyses, it would be appropriate to install new stop lines on the westbound South Street intersection approach. The new stop line locations will be closer to the edge of traveled way along Commercial Street, which should improve sight lines for westbound South Street motorists by identifying a more appropriate stopping location. Another recommended safety enhancement is to install Cross Road warning signs (MUTCD No. W2-1, 30"x30") along with 25 m.p.h. advisory speed plaques (W13-1p, size 18"x18") for the northbound and southbound Commercial Street intersection approaches. These warning sign assemblies alert approaching drivers along Commercial Street of the presence of the South Street intersection and the possibility of turning or entering traffic. The advisory speed plaque supplements the warning sign and indicates the appropriate advisory speed for the condition.

Once the modifications outlined in the report have been implemented, we would recommend that the city closely monitor the crash experience at this location to see if additional safety enhancements are needed. If a pattern of angle collisions continues to occur, more extensive geometric modifications should be considered.

LAWRENCE SMITH MEMORIAL AIRPORT REPORT

For the month of September 2017

Hangar and Tie Down Space:

- All hangars are full, 18 people on the waiting list
- 6 Outside tie down spots available

Fuel:

- Potential jet fuel sales – approx. 450 gallons
- 100LL – our current price is \$4.10 per gallon
- Fuel prices in our service area:

Lee's Summit	\$3.95 per gal.
Butler	\$3.99 per gal.
Gardner	\$4.22 per gal.
Warrensburg	\$4.20 per gal.
Miami County	\$4.22 per gal.

AVGAS Sales: (August 27th through September 27th)

- Price \$4.10 per gallon
- Gallons Sold 1,710.3 gallons
- Revenue \$7,012.28
- Profit \$1,143.44

AWOS:

The Automated Weather Observation System currently had a malfunctioning VHF transmitter, it was replaced and failed again two days later. A new temporary board has been installed to get it back up and running until a new replacement arrives.

All costs for the AWOS repair is paid for by MoDOT.

Deer Strike:

Around 8 pm on September 11th I was contacted by KCI Approach Control and informed that the pilot of a single engine Cessna had hit a deer while airborne and was heading to the Lee's Summit Municipal Airport to make an emergency landing. The impact had bent the left main landing gear up past the bottom of the fuselage and the pilot would have to land on the nose gear and only one main landing gear. The pilot was able to land safely without injury and only minor additional damage to the aircraft.

Since an emergency was declared the NTSB has opened an investigation, the full accident report should be available before the end of the year.