

Magnolia Traffic Study

Magnolia, Delaware

Dover/Kent County Metropolitan Planning Organization
Town of Magnolia

June 1, 2020



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INTRODUCTION

On behalf of the Town of Magnolia, the Dover/Kent County Metropolitan Planning Organization (MPO) commissioned a study of the Main Street and Walnut Street intersection to determine potential measures to address the Town's concerns about traffic and safety at this intersection.

This study has included:

- Meetings with Magnolia's mayor and former fire chief
- Field views to collect information on travel lanes, parking, posted regulations, traffic controls, on-street parking, pedestrian crossings, driveways in the vicinity of the intersection, as well as roadway connections in the general area
- Intersection turning movement counts at the intersection of Main Street, Walnut Street and Irish Hill Road
- Automatic traffic recorder counts (ATR or tube counts) for two days on South Main Street 800 feet south of the traffic signal to collect speed and vehicle classification data
- Observation of conditions during the PM peak hour and during school dismissal
- Analysis of five years of DelDOT crash data
- Review of DelDOT's Little Heaven Grade Separation Environmental Assessment (June 2010) and available material from DelDOT's current Kent County Transportation Master Plan Study
- Capacity analysis of existing and future peak hour traffic volumes
- Investigation of options for addressing traffic concerns expressed by the Town



Town's concerns regarding traffic

Town officials expressed the following concerns related to traffic:

- Safety.
- Speeding.
- Trucks. Noise from trucks is an issue for Magnolia residents. The Town is also concerned that trucks will cause damage to municipal water mains under the street.
- Congestion on North Main Street at the post office. Congestion is especially bad during holiday seasons when residents are sending and receiving high volumes of mail and packages.
- Congestion during school arrival and dismissal. School traffic occurs in a small time window. Parents are in a hurry and sometimes make unsafe maneuvers at the signal.

EXISTING CONDITIONS

Magnolia is a town of 225 residents according to the 2010 U.S. Census. The area of the Town is approximately 0.12 square miles, in a circle centered on the intersection of Main Street and Walnut Street. The town comprises approximately 126 acres.

Existing streets

Main Street (called Clapham Road south of town and South State Street north of town) is a two-lane minor arterial road¹ that connects to SR 1 approximately 1.5 miles south of Magnolia at the Little Heaven interchange, and continues north of Magnolia into the City of Dover. Formerly designated US 113A, that designation was removed when the US 113 northern limit was moved south to its junction with SR 1 in Milford. Main Street in Magnolia is 32 feet wide curb to curb. The speed limit is 25 mph within town boundaries, 35 mph just outside of town boundaries, and then 50 mph further outside of town to the south and 40 mph to the north. Curb parking is generally prohibited, but is permitted at two locations: on the west side of North Main Street near the church and on the west side of South Main Street starting in front of the Magnolia Restaurant to north of Thorne Street. The yellow paint on the curb is faded and parking signs are badly faded and not legible, so it is not easy to determine exactly where parking is allowed.

Walnut Street (called Barkers Landing Road east of town) is a two-lane major collector² road that connects with SR 1 via Trap Shooters Road. Walnut Street is 23 feet wide curb to curb. The frontage of the J. McIlvaine Early Childhood Center school has a recessed curb, creating a curb to curb width of 29 feet. On-street parking is prohibited. The speed limit is 25 mph within town boundaries, 35 mph just outside of town boundaries and then 50 mph farther outside of town.

¹ Arterials provide for longer trips and connect high demand destinations.

² Collectors take traffic from local streets and feed to arterials. A minor arterial is a higher class of road than a major collector and will generally have a higher traffic volume than a collector. Local streets are low volume and mainly provide access to adjacent properties.

Irish Hill Road is a two-lane major collector road that connects to the west with US 13. Irish Hill Road is 23 feet wide curb to curb. On-street parking is prohibited. The speed limit is 25 mph within town boundaries, becomes 35 mph approximately ½ mile west near Magnolia Crossing mobile home park, and 50 mph farther outside of town.

There are electronic flashing “Your Speed” signs on northbound Main Street, eastbound Irish Hill Road and westbound Walnut Street that display vehicle speed and notify drivers of the 25 mph speed limit. A fourth sign had been located on southbound Main Street but was damaged and was not present at the time of the study. The speed signs are solar powered. No data is recorded or stored, so the signs do not provide an indication of how many vehicles are speeding.

The intersection of Main Street and Walnut Street has a single travel lane on each approach with no separate turn lanes. Pedestrian crosswalks are marked on all four sides. The traffic signal operates on two phases, with one phase for all movements on Main Street and the other phase for all movements on Walnut Street/Irish Hill Road. The signal has vehicle detectors on all approaches, pedestrian walk/don't walk signals with pushbuttons and countdown timers. The signal is equipped with emergency preemption for the fire station.

Land uses at intersection

The northwest corner is a home with yard and driveway. On the southwest corner is the Magnolia Restaurant. On the southeast corner is the Town Square Park with landscaping and benches. The nearest building at this corner is Town Hall, located 85 feet east of the curb line of Main Street. On the northeast corner is Magnolia Volunteer Fire Company. The fire station building is set back 65 feet from Main Street. The bay doors open to the Main Street side, and Main Street curb is depressed for 185 feet north of Walnut Street for fire station vehicle access.

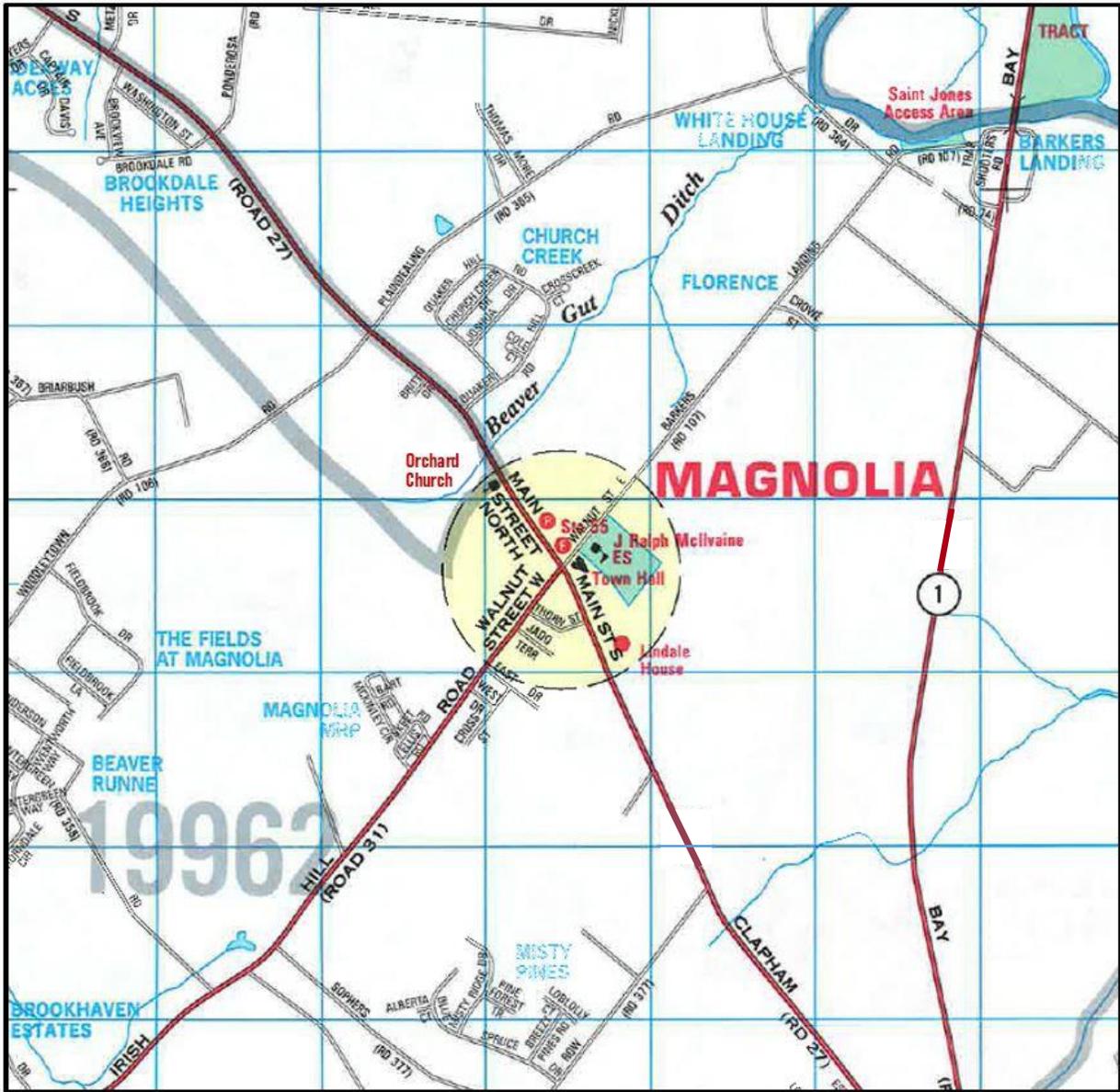
Traffic generators in proximity to the intersection are the J. Ralph McIlvaine Early Childhood Center on Walnut Street and the post office on North Main Street. The postal service delivers mail for town residents to the post office rather than to homes, so Magnolia residents walk or drive to the post office.

Existing traffic volumes

Mayor Jim Frazier indicated that traffic is heavy whenever there is an incident on SR 1. Also, summer traffic is heavy on Thursday and Friday nights as well as weekends. When SR 1 southbound backs up, some traffic exits to Trap Shooters Road and travels west on Barkers Landing Road/Walnut Street through Magnolia to bypass the backup.

The Average Annual Daily Traffic (AADT) volume on Main Street is 9,435 vehicles north of the intersection and 6,430 vehicles south of intersection. The AADT on Walnut Street is 1,847 vehicles. The AADT on Irish Hill Road is 2,111 vehicles. All data comes from DeIDOT's 2018 traffic counts.

Figure 1: Town of Magnolia and vicinity



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(not to scale)

Figure 2: Aerial photograph of study intersection



Source: Google Maps
(not to scale)

Figure 3: Intersection photos



Looking southwest from fire station corner



Looking north on Main Street

The Magnolia traffic study conducted Automatic Traffic Recorder (tube) counts³ on South Main Street just south of Walnut Street/Irish Hill Road over a two-day period in mid-January 2020. This count showed an average weekday 24-hour volume of 5,300 vehicles. DelDOT seasonal factors for similar roads in Kent County indicate a daily volume of 5,300 in January is consistent with the AADT of 6,430.

Intersection turning movement counts were conducted at the intersection of Main Street, Walnut Street and Irish Hill Road on Tuesday, January 16, 2020 from 6:30 am to 9:30 am and from 2:00 pm to 6:00 pm. In addition, summer Saturday peak period intersection turn movement counts were conducted by others on Saturday, August 17, 2019 from 10:00 am to 2:00 pm. The peak hour volumes are illustrated in Figure 4.

³ Continuous count using pneumatic road tubes laid across the roadway. Automatic Traffic Recorder equipment stores count data recorded in memory in time intervals that can be downloaded and viewed in software. Recorders can record the type of vehicle and speed based on a defined set of length or axle parameters.

Weekday commuter traffic on Walnut Street/Irish Hill Road is directional eastbound in the morning peak and westbound in the evening peak. The heaviest turning movement at the intersection is the southbound Main Street left turn to Walnut Street in the morning peak hour. This largely represents school traffic to the McIlvaine Early Learning Center: both school buses and parents driving their children.

Existing level of service

Level of service (LOS) is a mechanism used to describe how well a roadway is operating from a motorist's perspective and is measured in average delay per vehicle. Six levels of service (ranges of average delay per vehicle) are defined and each is assigned a letter designation from A to F, with LOS A representing the best operating conditions, and LOS F the worst. LOS D is considered acceptable by DelDOT in urbanized areas.

Capacity analysis performed at the Main Street/Walnut Street/Irish Hill Road intersection indicates level of service is good (LOS B or better) in both the AM and PM peak hours, with average delay per vehicle of less than 20 seconds. Individual vehicles could experience longer delays.

Pedestrian crossing volumes

All four approaches to the intersection have marked crosswalks. The traffic signal has pushbuttons and pedestrian signals with countdown timers.

Traffic counts taken on Saturday, August 17, 2019 recorded 14 pedestrians crossing the intersection in the four hours from 10:00 am to 2:00 pm. Counts conducted on Thursday, January 16, 2020 recorded five pedestrians crossing the intersection in seven hours (6:30 – 9:30 am and 2:00 – 6:00 pm). The high temperature was 55 degrees and there was no precipitation, so weather would not have affected pedestrian activity.

DART bus routes

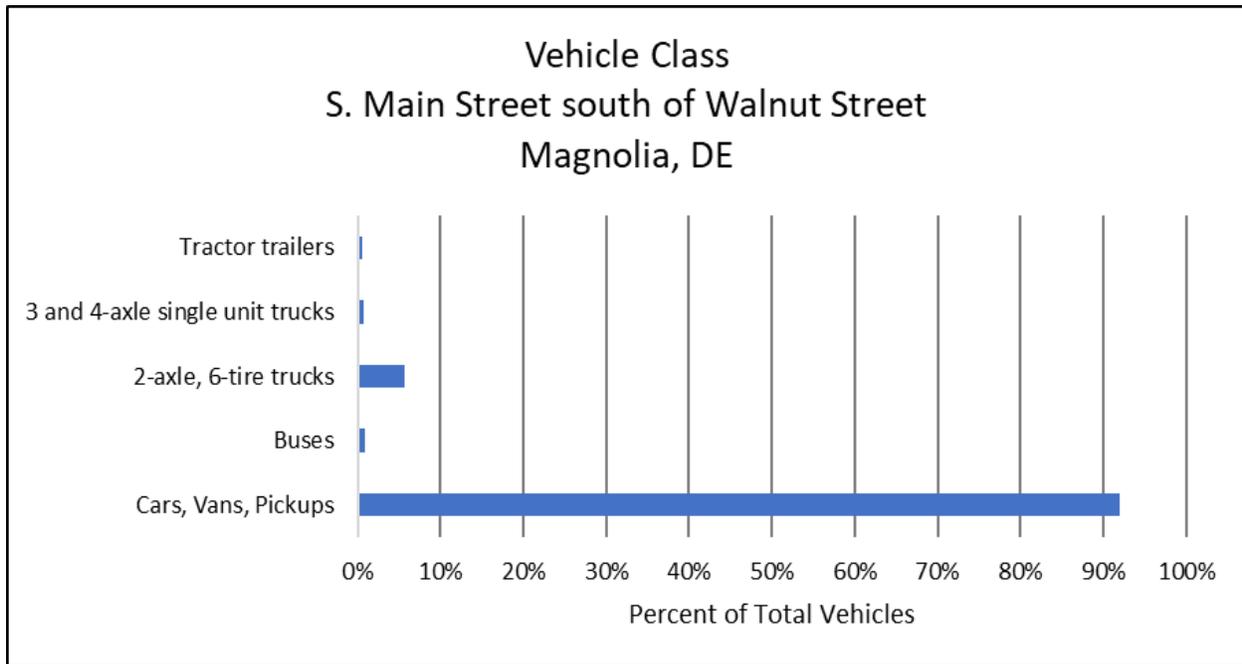
DART Route 303 from Georgetown to the Dover Transit Center runs eight buses in each direction on weekdays. The Route 303 bus has a stop on Main Street in Magnolia in each direction. The northbound stop is just north of the post office. The southbound stop is south of the Magnolia Restaurant. Daily total ridership (getting on and getting off) is five people at the northbound stop and four people at the southbound stop.

Truck volumes

Truck traffic is a concern to the Town because of noise issues and potential damage to water mains which are under the street.

Tube counters placed on South Main Street collected vehicle class data for a two-day period. As illustrated in Figure 5, during that period 92% of all vehicles recorded were cars, vans, or pickup trucks. 6% of vehicles were two-axle 6-tire single unit trucks. Buses, 3- or 4-axle single unit trucks, and tractor trailers each comprised less than one percent of total traffic. The largest size truck recorded was a 5-axle tractor trailer. Over the two days 750 trucks, including 64 tractor trailers, were recorded out of 10,610 total vehicles.

Figure 5: Vehicle class



Title 21, Chapter 45 of the Delaware Code specifies the maximum size and weight of vehicles that may travel on Delaware roads. Trucks within the size and weight limits are lawful and DeIDOT will not prohibit trucks because they are a nuisance to residents. In the past, when a particular development site created a steady stream of trucks traveling through town between the development and a borrow pit, the Town did negotiate an alternate route for those trucks with the assistance of a state legislator. However, a general truck prohibition through town is not consistent with the Delaware Code or DeIDOT policy. Regarding the concern for water mains, State-maintained roads should be structurally capable of supporting legal truck loads. The scope of this traffic study did not include analysis of the pavement or depth of utilities.

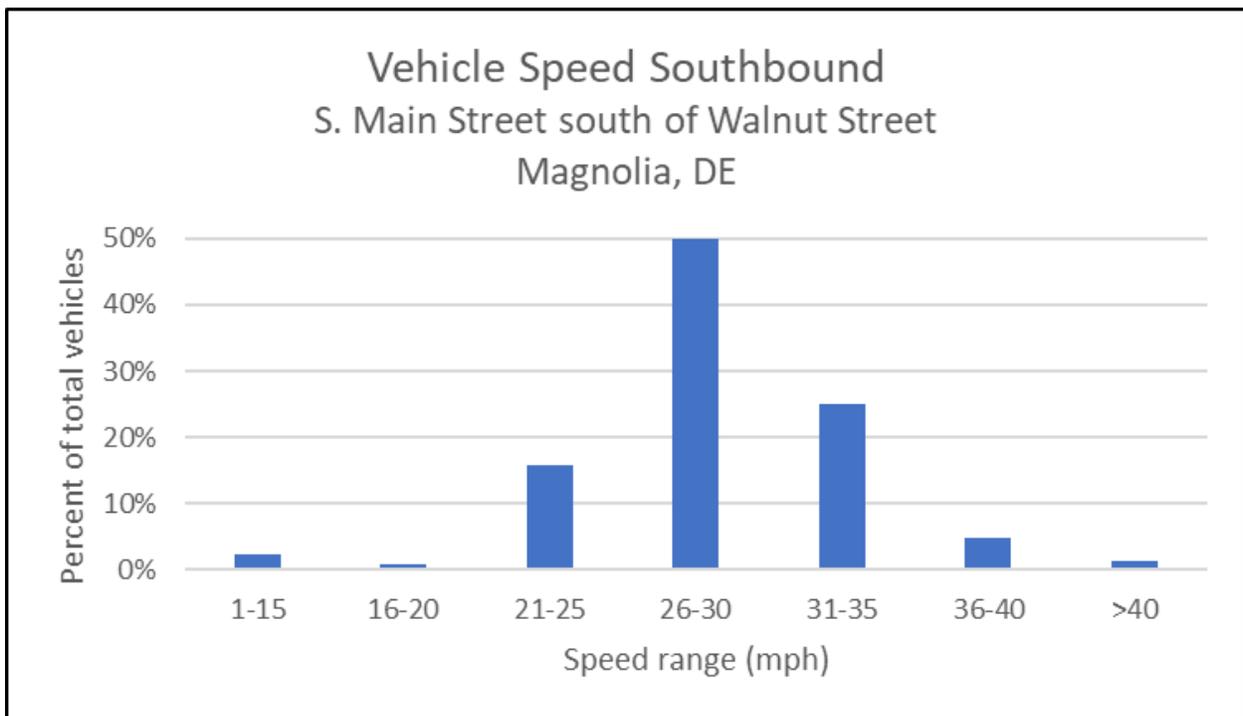
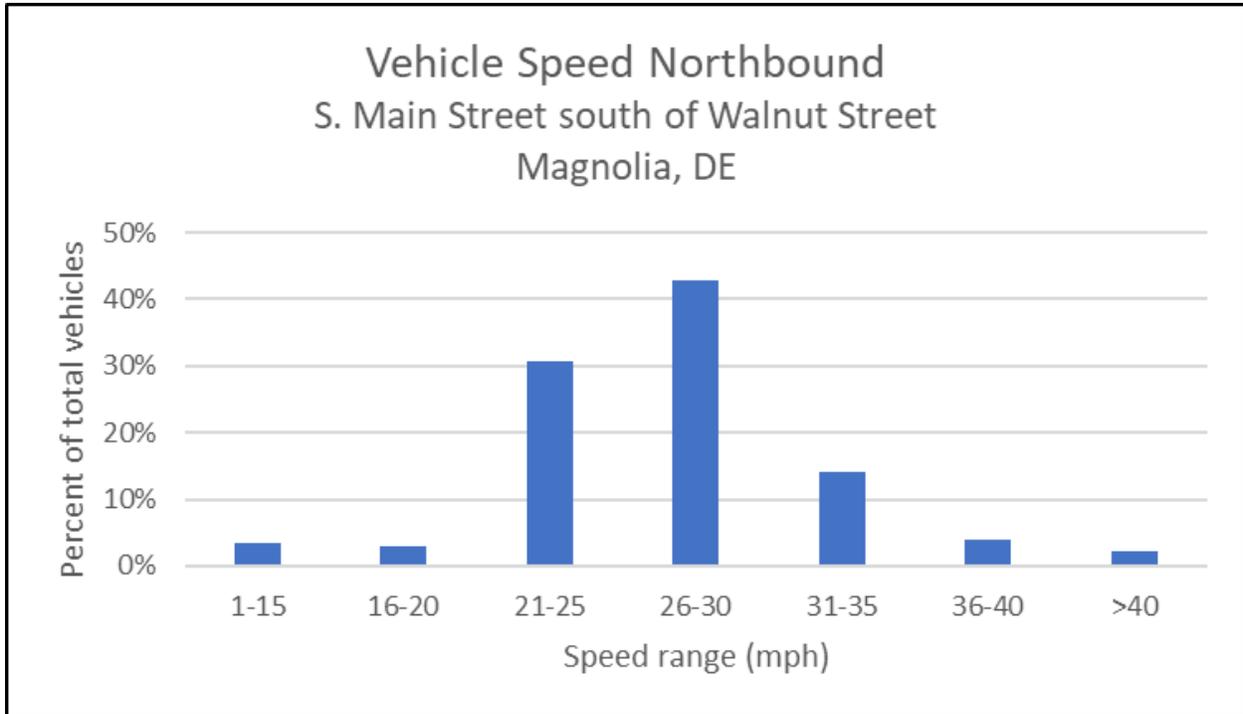
Traffic speeds

The speed limit on Clapham Road south of town is 50 mph. On S. State Street north of town the speed limit becomes 40 mph just before Woodlytown Road. The speed limit is reduced to 35 mph approaching town, and further reduced to 25 mph in the Magnolia Town limits.

There are radar "Your Speed" signs in the 25 mph zone on all approaches to the signalized intersection except southbound N. Main Street.

Tube counters placed on South Main Street collected speed classification data on S. Main Street in the 25 mph zone south of Irish Hill Road/Walnut Street over a two-day period in January 2020. The speed distribution in 5 mph increments is shown in Figure 6 for each direction.

Figure 6: Speed distribution on South Main Street south of Walnut Street



The speed data indicates that the average speed on South Main Street is 27 mph northbound and 29 mph southbound. The northbound direction is approaching the traffic signal, which is probably the cause of the lower speed distribution northbound. About 2% of vehicles were found to travel faster than 40 mph. The highest speed recorded was in the range of 60-65 mph.

	<u>Northbound</u>	<u>Southbound</u>
Average mean speed	27 mph	29 mph
85 th Percentile speed	31 mph	33 mph
Percent of vehicles exceeding 25 mph	63%	81%
Pace - 10mph range carrying most vehicles	21 – 30 mph (74%)	26-35 mph (75%)
Number of vehicles traveling >50mph	3	11

Crash analysis

DelDOT provided a five-year history of crashes within 800 feet of the intersection of Main Street, Walnut Street, and Irish Hill Road. The data covered the period from November 19, 2014 through November 19, 2019.

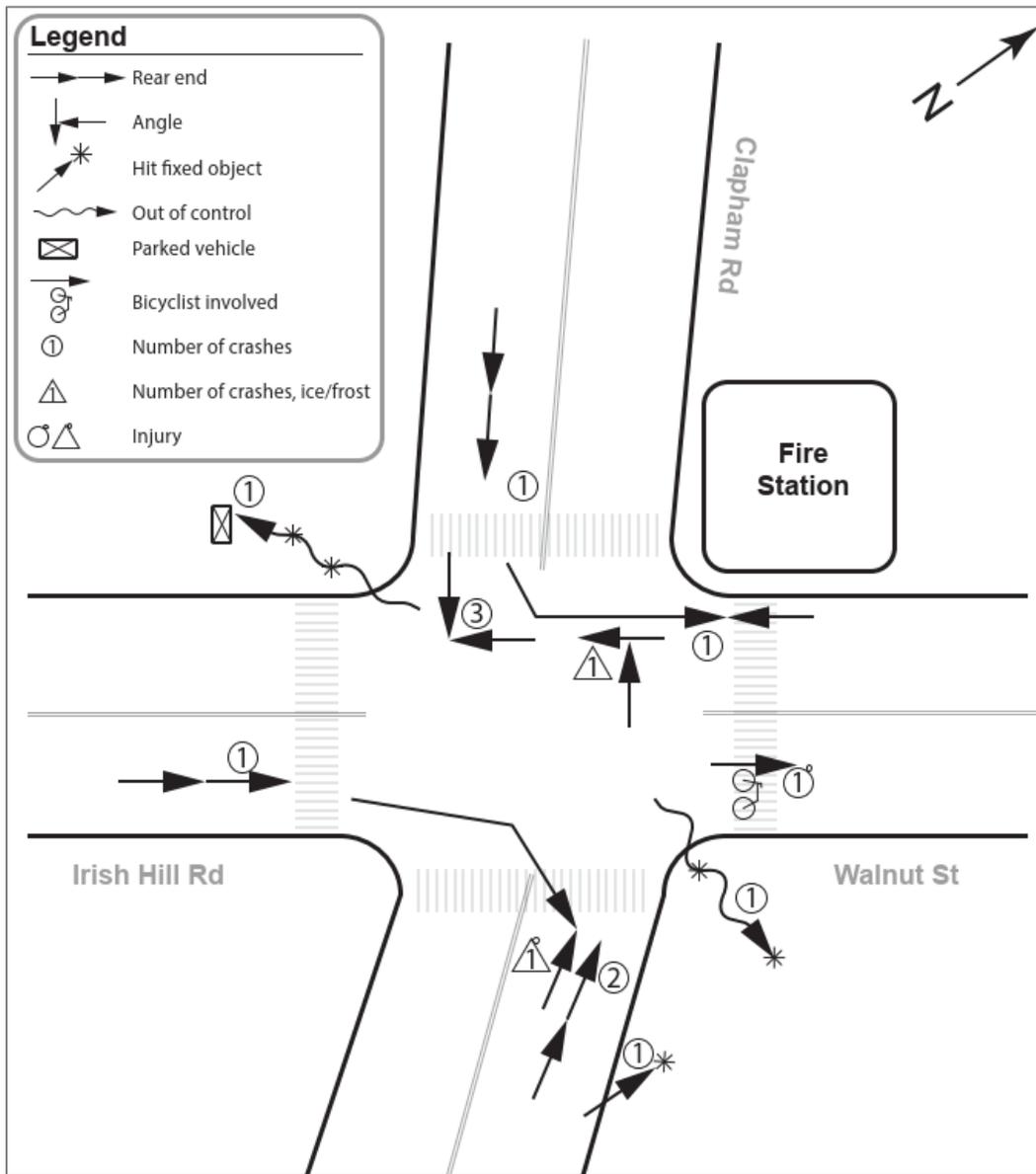
During that period there were a total of 29 roadway crashes in that area. 14 of the crashes were related to the signalized intersection itself, including:

- Four angle crashes; one of these crashes occurred in ice/frost conditions
- Four rear end crashes
- Three crashes where a vehicle left the road and struck an object
- Two crashes where a turning truck did not stay entirely within the lane it was entering and struck a vehicle waiting at the light; one of these crashes occurred in ice/frost conditions
- One crash involving a bicyclist who was intoxicated

Two of the intersection crashes resulted in injuries. There were no fatalities.

The 14 intersection crashes are illustrated in Figure 7.

Figure 7: Five-year crash history at intersection of Main Street, Walnut Street, and Irish Hill Road



Of the 15 other crashes that occurred within 800 feet but not at the signalized intersection:

- Five were on North Main Street (South State Street) north of the signal. Two were rear end crashes involving a vehicle stopped to turn into a driveway, one was a sideswipe of a parked vehicle, one was an angle crash involving a car exiting a driveway, and one was a front-to-front crash where a driver crossed the center line while looking for his phone.
- Nine were on South Main Street (Clapham Road) south of the signal. Four were rear end crashes near Thorne Street, four were single vehicle crashes that hit a pole or left the roadway, and one was a sideswipe of a parked vehicle.
- One crash occurred on Irish Hill Road where a driver hit a utility pole.

FUTURE TRAFFIC CONDITIONS

DeIDOT's SR 1, Little Heaven Grade Separated Intersection Environmental Assessment (June 2010) included AADT traffic forecasts for roadways in the project area. Clapham Road at the northern project limits (1.5 miles south of Magnolia) had an AADT of 5,199 in 2007, from an actual count. The AADT forecast for 2030 in the Environmental Assessment was 20,066 and included the projected AADT from proposed and committed developments. The background information used for the projections was not available for review. A development such as the Little Heaven Employment Center, which is currently under study by Kent County and DeIDOT, may have been included in the Environmental Assessment projection.

It is noted that the Environmental Assessment projected an AADT on Clapham Road of 16,679 in 2020. The actual AADT in 2020 is far lower, approximately 6,430.

Figure 8: Clapham Road AADT forecast from Little Heaven grade separated intersection environmental assessment

Table I-2: SR 1, Little Heaven Grade Separated Intersection: AADT for Existing Roadways

		Roadways							
		Clapham Road	Buffalo Road	Mulberrie Point Road		Skeeter Neck Road		Bower's Beach Road	Barratt's Chapel Road
Segment	From:	US113/SR1	West Project Limits	East Project Limits	US113/SR1	US113/SR1 (South)	Bower's Beach Road	East Project Limits	West Project Limits
	To:	North Project Limits	Clapham Road	US113/SR1	Clapham Road	Bower's Beach Road	US113/SR1 (North)	SR1/US113	SR1/US113
Year	1990	5,542	119	382	285	148	488	2,918	426
	1995	6,681	151	281	361	187	358	2,143	539
	2000	4,549	259	149	729	181	210	1,232	1,018
	2007	5,199	756	209	1,149	173	220	1,280	1,872
	2010	5,900	723	209	194	172	220	1,314	1,920
	2015	14,978	2,971	342	2009	232	254	2,913	9,050
	2020	16,679	3,043	350	2,173	247	270	3,201	9,561
	2025	18,375	3,111	358	2336	262	289	3,494	10,071
2030	20,066	3,169	366	2500	277	336	3,786	10,582	

Note: 1. 2007 AADT is the base for the 2010, 2015, 2020, 2025 and 2030 AADT projections.
 2. 2015, 2020, 2025 and 2030 AADT include projected ADT from proposed and committed developments.

Current Little Heaven study

DeIDOT is currently performing the Kent County Transportation Master Plan Study to analyze existing and future year (2045) traffic within the vicinity of South Frederica and Little Heaven along SR 1, as well as on connecting roadways. One purpose of the study is to proactively develop a transportation network to meet potential new development and growth needs.

As of November 2019, the Little Heaven Employment Center was estimated to ultimately include about 2.5 million square feet of development, as follows:

East of SR 1

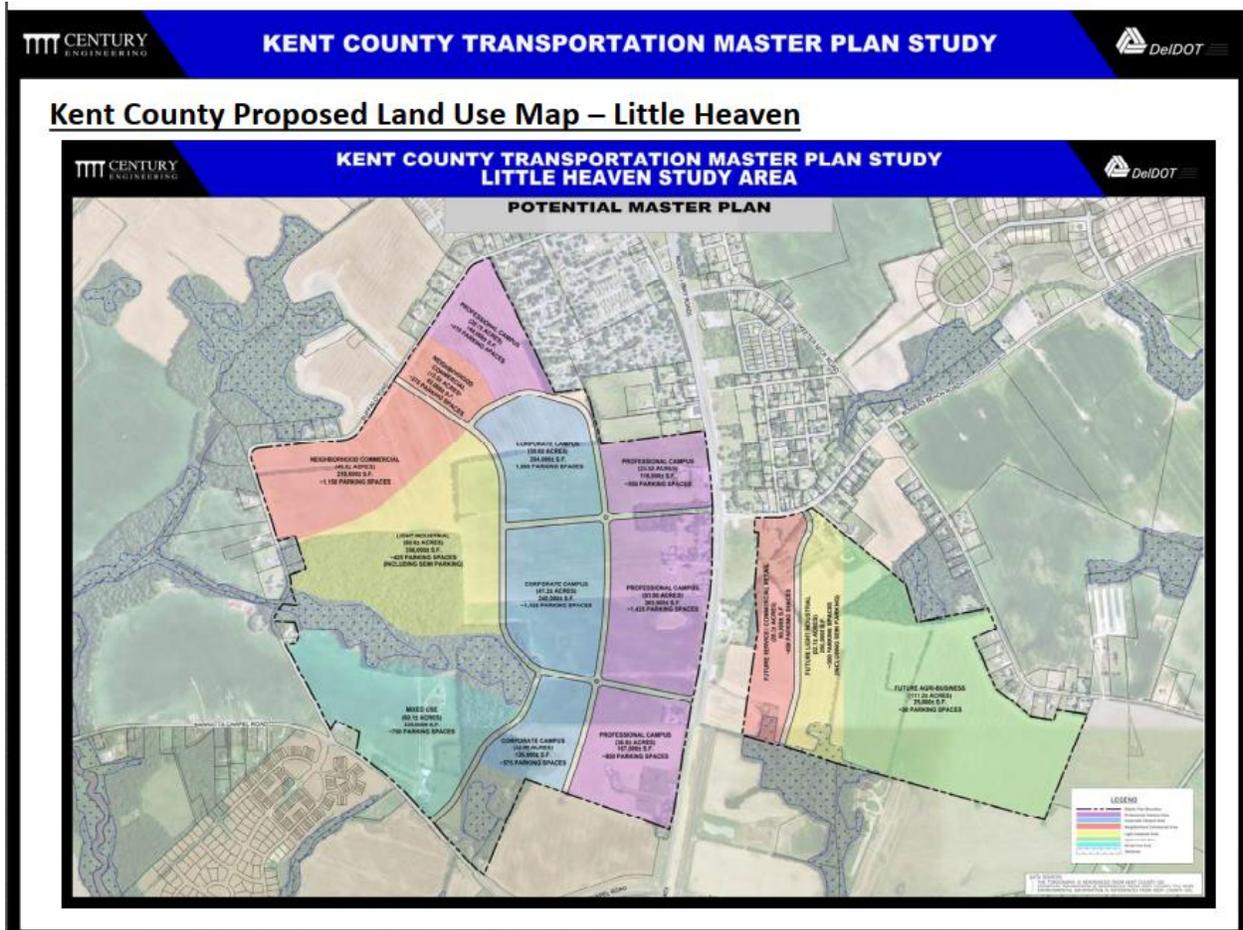
- Commercial Retail 80,000 SF
- Light Industrial 250,000 SF
- Agri-Business 25,000 SF

West of SR 1

- Professional Campus 692,000 SF
- Neighborhood Commercial 253,000 SF
- Mixed Use 335,000 SF
- Light Industrial 350,000 SF
- Corporate Campus 570,000 SF

Total 2,555,000 SF

Figure 9: Little Heaven Master Plan – exhibit from November 20, 2019 public workshop



The trips generated by that magnitude of development could be in the range of 28,000 daily (entering plus exiting), with peak hour trips in the range of 2,500. DeIDOT has estimated that almost 90% of that traffic would be expected to arrive and depart via SR 1. The Little Heaven area has very convenient access to SR 1 both northbound and southbound via the newly completed grade separated interchange and service roads.

Some portion of Little Heaven traffic will be travelling to and from Dover via Clapham Road. DeIDOT has estimated that less than 10% of Little Heaven traffic will use Clapham Road through Magnolia.

Traffic studies are being conducted for the Little Heaven master plan for the purpose of identifying transportation alternatives to accommodate the increase in traffic. That study won't be completed until summer or fall of 2020. However, DeIDOT provided their forecast of future peak hour volumes at the Magnolia intersection of Main Street and Walnut Street/Irish Hill Road. WRA adjusted east-west volumes based on higher existing volumes in the count conducted for this study.

Figure 10: Future peak hour volumes

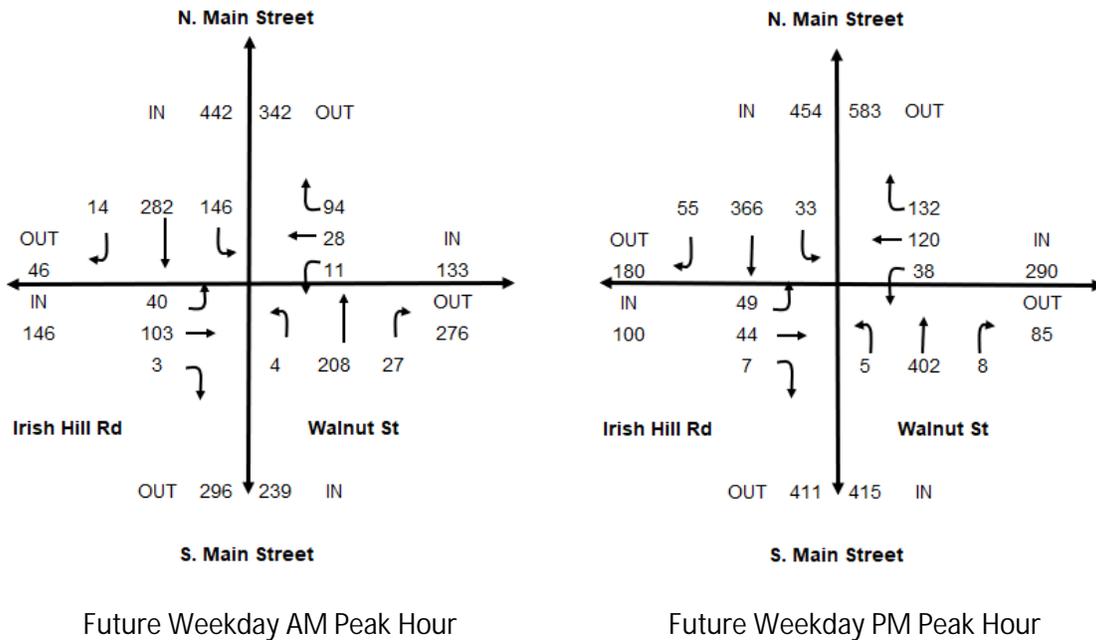
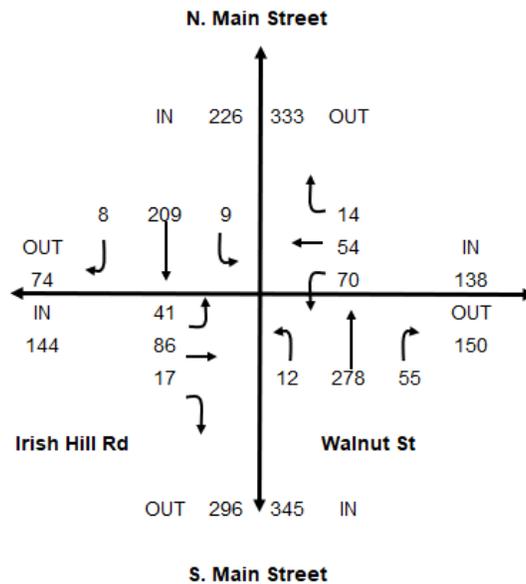


Figure 10 (continued)



Future Summer Saturday Mid-day Peak Hour

Future level of service

Capacity analysis performed with future projected traffic volumes and with no modifications to the existing intersection indicates that peak hour level of service will continue to be good (LOS B), with average delay per vehicle of less than 20 seconds. Individual vehicles could experience longer delays. For this reason, this study does not identify the need for capacity improvements to the intersection.

POTENTIAL ALTERNATIVES

As noted at the beginning of this report, the Town expressed five primary transportation issues:

- Safety
- Speeding
- Trucks
- Congestion on North Main Street at the post office
- Congestion during school arrival and dismissal

Previous sections of this report evaluated existing and anticipated future conditions related to these issues. Listed below are potential alternatives to address them.

Safety/speed control measures

Safety, and particularly speed control, was the primary concern expressed by the Town. The following alternatives could be considered to improve safety and manage speeds.

- Move the stop line on Walnut Street ten feet back and post a “Stop Here on Red” sign to make it easier for school buses and fire trucks to make the left turn into Walnut Street.
- Change the traffic signal operation to “Rest on Red”. Instead of Main Street signals remaining in green until there was a vehicle or pedestrian call on Walnut Street or Irish Hill Road, the signal could revert to All-Red until the next vehicle call. This would have very little effect on Main Street during peak hours when vehicle calls occur frequently on both Main Street and Walnut Street/Irish Hill Road. In low traffic periods where speeding is more prevalent, vehicles would be likely to approach the intersection on a red signal and therefore there would be less reason to travel at high speed.
- Consider red light running cameras: Three of 14 intersection crashes in five years were caused by red light running.
- Replace the missing radar “Your Speed” sign for southbound traffic on North Main Street.
- Enforcement: State police perform radar speed enforcement on occasion. WRA reached out to state police for information on frequency of enforcement and speeding citations, but was unable to obtain any information.
- Speed cameras: Speed cameras are not currently legal in Delaware and would require action by the General Assembly.
- Roundabout: A roundabout was investigated as a safety/speed control measure as described in the following section.

Roundabout

A roundabout alternative was investigated for several reasons:

- Roundabouts have a traffic calming effect and would prevent speeding
- Roundabouts generally experience fewer and less serious crashes than signalized intersections
- A roundabout here would accommodate left turns and reduce delay for all vehicles
- A roundabout would increase the turn radius available for bus and fire truck turns
- A roundabout would have flexibility to accommodate brief spikes in traffic and unanticipated future traffic volume increase

The available physical area around the intersection is very constrained, so a scale concept was drawn to determine if an acceptable geometry could be achieved. With an inscribed diameter of 100 feet needed to accommodate fire truck turns, it does not appear that a roundabout will fit without impacting houses and Town Hall. The concept is illustrated in Figure 11.

Therefore, a roundabout is not recommended.

Figure 11: Concept of roundabout



Alternate routes

The low turning movement volumes at the signalized intersection of Main Street and Walnut Street/Irish Hill Road seen in the peak period turning movement counts may be an indication that locals know how to bypass this signal.

Eastbound traffic on Irish Hill Road can use Sopher's Row to go south on Clapham Road. Some local residents may use Thorne Street as a bypass from eastbound Irish Hill Road to southbound Clapham Road, but Thorne Street is too narrow for general traffic.

An alternative for eastbound Irish Hill Road traffic that is destined north on South State Street is to use Woodytown Road to the traffic signal north of Magnolia.

Traffic from SR 1 at Trap Shooters Road can use Ponderosa Drive to Plaindealing Road and reach South State Street opposite Woodytown Road at the traffic signal.

Figure 12: Road network offering alternate routes in vicinity of Magnolia



Potential modification to post office circulation

The Fire Company, which owns the post office parcel, previously investigated acquiring the parcel north of the post office in order to install a second driveway for the post office. This would have allowed separate one-way entry and exit driveways. That idea did not work out.

An alternative way to achieve one-way entry and exit would be to construct a connector road from the rear of the post office lot to the rear of the Fire Company's lot on Walnut Street. Traffic exiting the post office would exit to Walnut Street using the existing exit aisle.

Figure 13: Existing Magnolia post office circulation and possible alternative

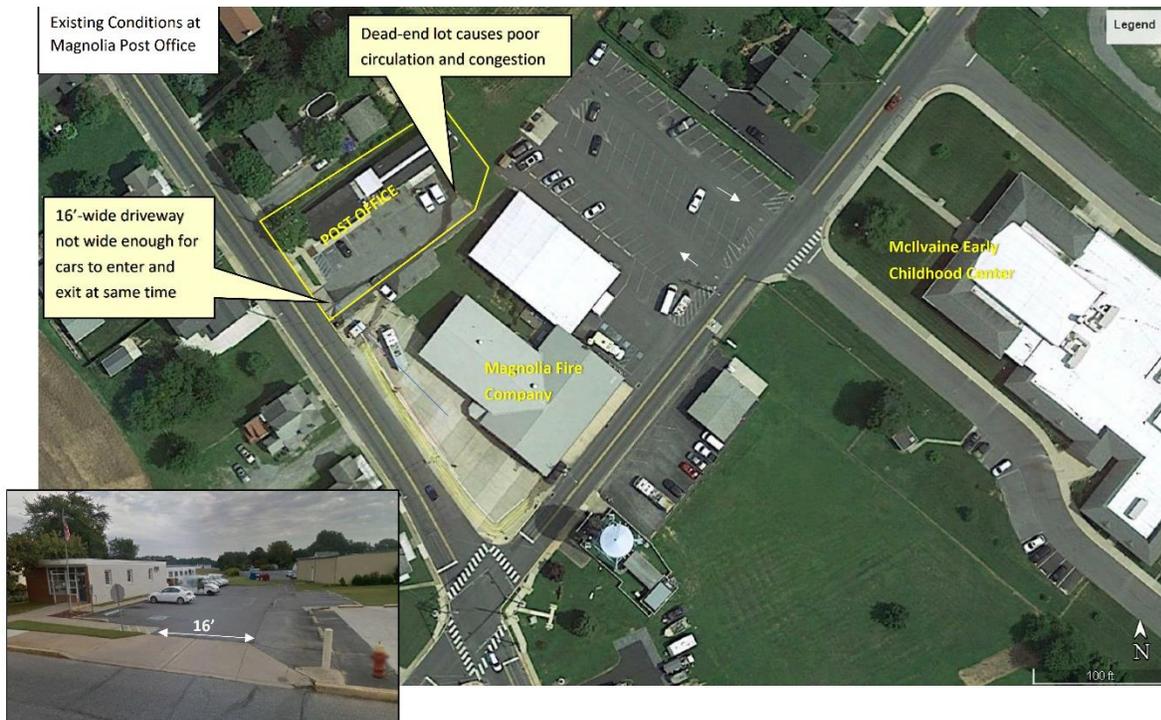
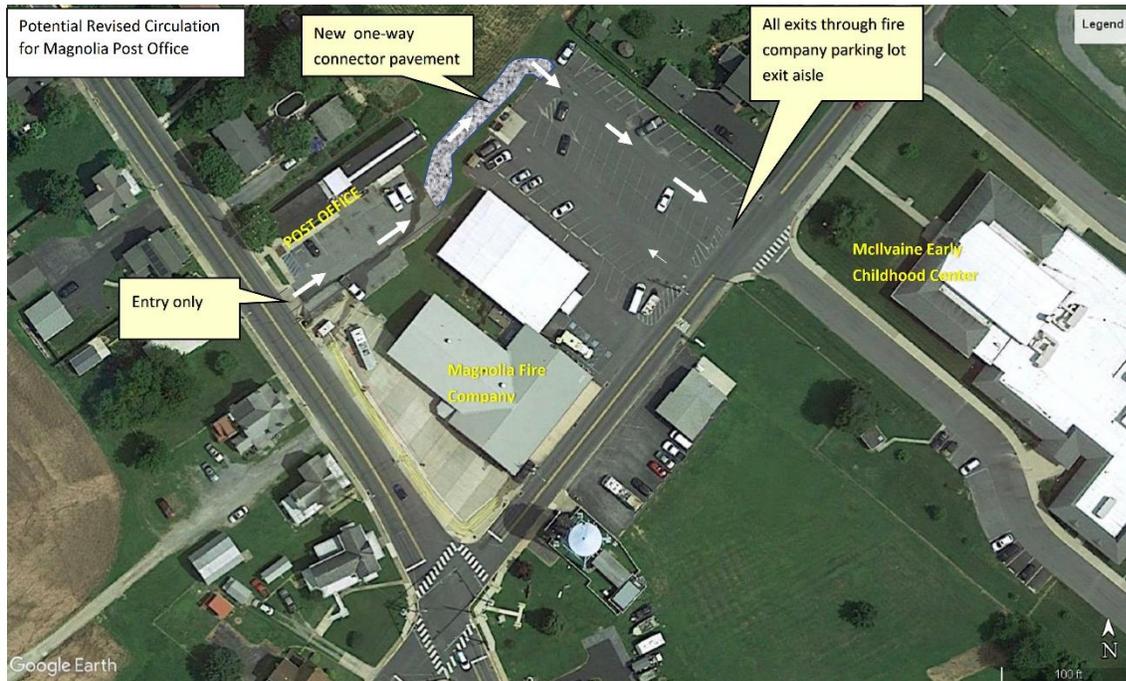


Figure 13 (continued)



This circulation would eliminate backups on Main Street when a vehicle can't turn into the post office due to another vehicle in the driveway waiting to exit, as well as reducing congestion within the post office parking lot. Exiting traffic has less conflict due to the lower traffic volume on Walnut Street. The Fire Company owns all involved properties. The post office would need to revise current delivery vehicle parking that occurs at the rear of its lot.

Looking east toward rear of post office lot, showing parked USPS delivery vehicles



The Fire Company would need to review this idea for possible impacts to its operations. During school arrival and departure times, parent parking occurs in the Fire Company lot and parents with children cross Walnut Street on the east side of the driveway with assistance of a school crossing guard.

Potential modification to school pick-up queue

This study observed a dismissal time at the McIlvaine School but did not count parent vehicles or pedestrian crossings. It was observed that the queue in the school driveway for parent pickup briefly extended back into Walnut Street, causing some temporary backups. It may be possible to extend the driveway further into the school property and move the turnaround loop to the rear of the school property, which would allow about 22 more vehicles in the queue. This may not eliminate parent parking in the Fire Company lot; some parents may think it will take longer to wait in the queue than to park, walk in, and walk out with their children. But queue pickup would be desirable to some parents, especially in bad weather.

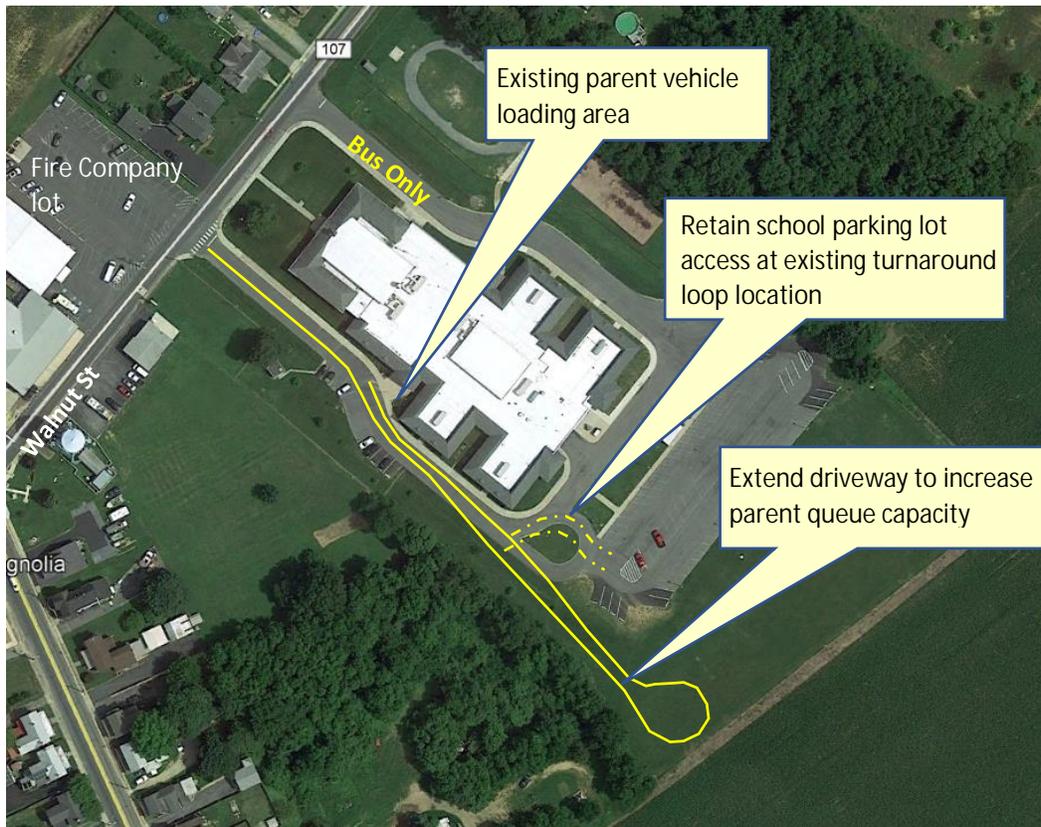
Pedestrian crossings to Fire Company parking lot



Fire Company lot exit at school dismissal



Figure 14: Concept to add parent vehicle queue capacity at McIlvaine School



Left turn lanes

Brief periods of backups occur in the southbound direction on Main Street during school peak hours and the PM peak. When a left-turning vehicle must wait for opposing traffic, through traffic behind that vehicle must also wait.

It is important to note that no capacity improvements are needed to accommodate anticipated future traffic. Also, none of the rear end crashes involved a southbound vehicle waiting for a gap to turn left during a green light. However, this study did consider how a left-turn lane might be implemented. This would only be considered in the event traffic increases more quickly than anticipated in the future.

Striping left turn lanes within the existing roadway on Main Street to reduce delay for through vehicles would have these impacts:

- Shifts through traffic to the curb, requiring removal of street parking in front of the Magnolia Restaurant.
- Makes southbound and northbound right turn maneuvers more difficult and slower because the effective turn radius would be reduced.
- Larger vehicles making the acute-angle northbound or southbound left turns would need to encroach into the adjacent same-direction through lane. Fire trucks currently need to travel

along the right curb line to make the southbound left turn and sometimes clip the utility pole at the northwest corner.

Therefore, adding left turn lanes just with striping is not recommended.

Buildings on Main Street are very close to the roadway. If a left-turn lane is determined to be needed in the future, it should be accomplished by widening the east side of the roadway as shown in Figure 15 in order to avoid impacts to buildings and provide adequate sidewalks. North Main Street would be widened by approximately 12 feet, keeping the curb alignment near the intersection the way it is today to accommodate fire truck right turns from Walnut Street. The northbound through lane on South Main Street should be aligned to minimize the potential for head-on conflict with southbound left turning vehicles. This concept would affect two utility poles at the east curb south of the intersection and signal poles on the east side. Signals and utility poles on the west side would not be affected.

Figure 15: Concept of left-turn lane



County and State plans

The Kent County 2018 Comprehensive Plan has set certain roads in the Magnolia area as priorities for both vehicular and bicycle/pedestrian improvements:

- State Street extended: Sorghum Mill to Magnolia
- Irish Hill Road: Route 13 to South State Street extended

DeIDOT added a new Highway Safety Improvement Project to its FY 2021 - FY 2026 Capital Transportation Program for improvements to the intersection of South State Street and Plaindealing Road/Woodlytown Road north of Magnolia. Preliminary engineering for this project is expected to begin in FY 2025.

Improvements to the intersection of Irish Hill Road and Woodlytown Road, as well as improvements to the intersection of South State Street and Plaindealing Road/Woodlytown Road, would help create an alternate route for traffic making three movements through Magnolia.

- Between Walnut Street and Irish Hill Road (east to west and west to east)
- Between South State Street and Irish Hill Road (north to west and west to north)
- Between South State Street and Walnut Street (north to east and east to north)

CONCLUSIONS

Purpose and Need

The purpose of these recommendations is to improve safety, reduce speeding, and reduce congestion in the Town of Magnolia. The following needs were identified.

- Safety.
- Speeding.
- Congestion on North Main Street at the post office. Congestion is especially bad during holiday seasons when residents are sending and receiving high volumes of mail and packages.
- Congestion on Walnut Street during school arrival and dismissal. School traffic occurs in a small time window. The queue of parent vehicles in the school driveway extends into Walnut Street, causing temporary backups.

None of the recommendations below will involve the NEPA (National Environmental Policy Act) process, which requires a formal purpose and need statement. NEPA compliance is required when a federal action is taken that may have impacts on the human or natural environment. Federal actions are those that require federal funding, permits, policy decisions, facilities, equipment, or employees. The recommendations in this report involve only state, local and private actions.

Summary of Recommendations

The intersection of Main Street, Walnut Street and Irish Hill Road should remain under traffic signal control. A roundabout is not feasible.

Levels of service at the intersection with existing travel lanes and signal operation are good today (level of service B) and are expected to remain good in the future with anticipated development. Physical changes to the intersection are not recommended at this time.

The following recommendations are suggested to address elements of need described above.

- Request that DeIDOT move the stop line on Walnut Street ten feet back and post a “Stop Here on Red” sign to make it easier for school buses and fire trucks to make the left turn into Walnut Street.
- Work with DeIDOT to evaluate a “Rest on Red” operation at the traffic signal to discourage speeding.
- Replace the missing radar “Your Speed” sign for southbound traffic on North Main Street. Funding for these signs comes from the legislature’s Community Transportation Fund (CTF). CTF funding provides a fixed amount of funds annually to each State Senator and House Representative to be used as they and their constituents believe is best for transportation improvements within their district.
- Implement improved circulation measures at the post office and at McIlvaine Early Learning Center described in this report. These measures involve construction on private property.

