

Re-recorded to correct language



ORDINANCE NO. 2017- 1

ROAD SPEED LIMITS

AN ORDINANCE TO ESTABLISH A SPEED LIMIT ON A SECTION OF LAKE HELENA DRIVE, NORTH OF THE EAST HELENA CITY LIMITS AND THE CAUSEWAY AT LAKE HELENA, LEWIS AND CLARK COUNTY, MONTANA, AND TO PROVIDE PENALTIES FOR A VIOLATION THEREOF.

SOUTH OF

WHEREAS, the Lewis and Clark County Board of County Commissioners(County Commission) requested a review of the speed limit on Lake Helena Drive, Lewis and Clark County; and

WHEREAS, the Lewis and Clark County Public Works Department requested that Abelin Traffic Services of Helena, Montana, perform a speed study on this road and determine if the posted speed limit is appropriate for the existing road conditions and travel patterns; and

WHEREAS, Section 61-8-310, MCA allows the Lewis and Clark County Commission to establish speed limits on any public highway as defined in 60-1-103, MCA; and

WHEREAS, Lake Helena Drive, north of the East Helena City Limits, in Lewis and Clark County, Montana is a public road as defined in Section 60-1-103 MCA; and

NOW THEREFORE, BE IT ORDAINED BY THE COUNTY COMMISSION OF LEWIS AND CLARK COUNTY, STATE OF MONTANA:

SECTION 1. SPEED LIMIT ESTABLISHED.

The speed limit shall be a consistent 45 miles per hour from Boundary Street to Deal Lane, and the speed limit should remain 35 miles per hour on the gravel section from Deal Lane to the Causeway, pursuant to attached "Exhibit A – Abelin Lake Helena Speed Limit Study."

SECTION 2. SPEED LIMIT SIGNS.

Upon receiving notice of the regulatory speed limit established by this Ordinance, and after the passage of at least 30 days from the date this Ordinance is adopted, the Public Works Department shall erect the appropriate signs giving drivers notice of the regulatory speed limit established by this Ordinance.

SECTION 3. SEVERABILITY.

Should any court declare any part of this Ordinance unconstitutional or invalid, the Ordinance as a whole or any part thereof, other than the part so declared to be unconstitutional or invalid, shall remain in effect.

SECTION 5. EFFECTIVE DATE.

This Ordinance shall take effect thirty days after the date of the Second Reading and approval of this Ordinance by the County Commission.

SECTION 6. MODIFICATION.

This Ordinance may be modified by formal action by the County Commission in the same manner as required in the adoption of the Ordinance.



SECTION 7. DURATION.

This Ordinance shall remain in effect until repealed or suspended by other legislative or judicial action.

READ and adopted at first reading this 13 day of July, 2017 by the Lewis and Clark County Board of County Commissioners, State of Montana.

**FOR LEWIS AND CLARK COUNTY
BOARD OF COUNTY COMMISSIONERS**

BY



Susan Good Geise, Chair



Attest:




Paulette DeHart, Clerk of the Board

READ and adopted at the second and final reading this 22 day of August, 2017, by the Lewis and Clark County of Board of County Commissioners, State of Montana.

**FOR LEWIS AND CLARK COUNTY
BOARD OF COUNTY COMMISSIONERS**

BY

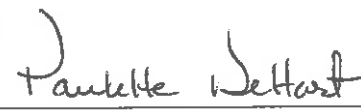


Susan Good Geise, Chair



(Seal)

Attest:



Paulette DeHart, Clerk of the Board



December 6, 2016

Eric Griffin
Lewis & Clark County
3402 Cooney Drive
Helena, MT 59601

RE: Lake Helena Drive Speed Limit Study

Dear Eric,

Per your request Abelin Traffic Services (ATS) has reviewed the existing speed limits on Lake Helena Drive between the East Helena city limits and the causeway at Lake Helena. The current posted speed limits on this road increase from 35 MPH at the East Helena city limits to 50 MPH north of Canyon Ferry Road. Between York Road and Deal Lane the speed limit is set at 40 MPH and decreases to 35 MPH north of Deal Lane. Lewis & Clark County requested that ATS perform a speed study to determine if the posted speed limits are appropriate for the existing road conditions and if the speed limits could be changed to create more uniform speeds for the route and provide more consistency with other routes in the area.

Existing Conditions

The study roadway begins at the north city limits of East Helena on Lake Helena Drive (Intersection of Lake Helena Drive and Lewis Street) and extends north to the Lake Helena causeway. The road is primarily straight with a slight S-curve at Country View Drive. The roadway is relatively flat south of York Road and has a consistent slight uphill grade to the north. North of York Road Lake Helena Drive is characterized by rolling hills with moderate grades as the roadway crosses various drainages as it climbs towards the mountains to the north before dropping back down to Lake Helena. Lake Helena Drive continues across the causeway to the north and becomes Hauser Dam Road. The roadside environment consists of a mix of residential areas and open lands. The Fox Ridge Golf Club is located west of Lake Helena Drive just north of York Road. See Figure 1 for a map of the study roadway.

Through the study area, Lake Helena Drive has a paved width of 25 to 26 feet on 55 to 85 feet of right-of-way. The road surface is paved south of Deal Lane and is gravel from Deal Lane to the causeway. The pavement is primarily in good condition with one section of fair condition pavement between Lewis Street and Sly Road. The gravel portion of the roadway is in good to fair condition. The full length of the paved portion of the study roadway (from Lewis Street to Deal Lane) does not have any passing zones or shoulder striping. Roadside visibility is good and the clear zones have few obstructions. The rolling hills to the north of York road and the slight S-bends north of Deal do create intermittent sight distance obstructions for drivers. The roadway has 20 public approaches and 35 private approaches.

Historic traffic data for Lake Helena Drive was obtained from Lewis & Clark County. The historic data for this location is presented in Table 1. The Average Annual Daily Traffic (AADT) data indicates that traffic volumes along Lake Helena Drive have increased slightly over the past ten years.

Table 1 – Historic Traffic Data

Lake Helena Drive Location	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
South of Canyon Ferry Road	2,091	1960	2,060	2,112	2,236	1,928	1,870	1,920	na	1,831
North of Canyon Ferry Road	2,617	4394	3,898	5,772	4,476	4,933	4,048	na	na	4,828
South of York Road	2,690	2574	2,546	3,332	3,231	3,042	3,005	3,153	na	2,724
North of York Road	1,619	1513	1,667	899	1,796	1,718	1,510	na	na	1,235
South of Deal Lane	1,243	1188	1,285	1,599	1,361	1,240	1,132	na	na	962
North of Deal Lane	986	938	842	965	965	976	864	859	na	765

Crash Data

ATS obtained vehicle crash data for the study roadway from the L&C County vehicle crash database. This data indicated that 32 vehicle crashes have occurred along Lake Helena Drive over the past five years. Of these 32 crashes, 15 were multi-vehicle accidents, and 11 resulted in injuries. A total of eight crashes occurred at the intersection of York Road. Only 2 crashes occurred at the roundabout at the intersection with Canyon Ferry Road. Half of the crashes (50%) occurred in darkened conditions and 47% occurred on icy, snowy, or wet roads. The crash rate on Lake Helena Drive is 1.3 crashes per million vehicle miles traveled, which is in line with the state average for collector roadways.

Speed Data

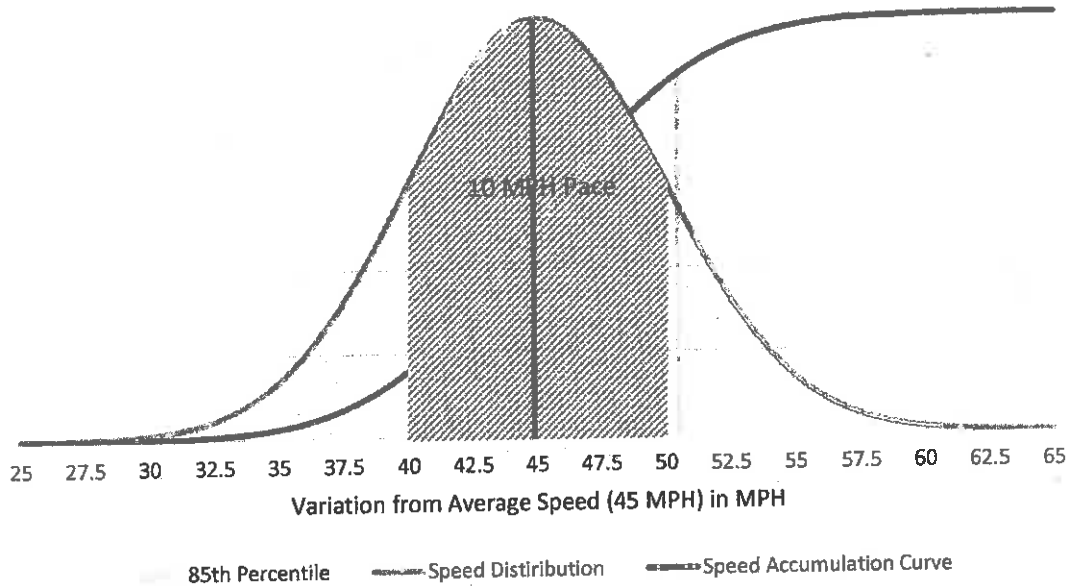
In order to analyze vehicle speed data Engineers calculate a variety of operational characteristics based on vehicle speed distribution data. The significant data includes average vehicle speed, 85th percentile speed, and pace speeds. Figure 2 shows a standard vehicle speed distribution with a 45 MPH average speed (red line). The 85th Percentile speed is point at which 85% of traffic falls below on the cumulative speed line (purple line). The pace is the 10 MPH increment that has the highest number of observed vehicle speeds.

Figure 1 - Vicinity Map



Figure 2 – Standard Speed Profile

Speed Distribution



Vehicle speed data was collected at six locations along Lake Helena Drive from August 10th to the 12th and September 19th to the 21st of 2016. The sites were located south of Canyon Ferry Road (Station 1), north of Canyon Ferry Road (Station 2), south of York Road (Station 3), north of York Road (Station 4), south of Deal Lane (Station 5), and north of Deal Lane (Station 6). The weather conditions during the traffic study were warm and dry with very good driving conditions throughout the data collection period. The data was collected continuously for 48 hour periods using Diamond Unicorn Limited traffic counters to record the individual speed data from every vehicle using the road. The results of the data collection are shown in Table 2. A detailed roadway characteristics and speed data table is included in the appendix.

TABLE 2 – Vehicle Speed Data

	Station 1	Station 2	Station 3	Station 4	Station 5	Station 6
Average Speed (MPH)	43.2	42.2	43.9	41.0	44.7	37.0
85% Percentile Speed (MPH)	48.7	48.5	49.6	47.2	51.0	43.6
10 MPH Pace Speeds (MPH)	40 – 50	40 – 50	40 – 50	35 – 45	40 – 50	30 – 40
Percent in Pace	71%	56%	64%	65%	64%	59%
Observed Daily Traffic (VPD)	2,724	1,713	1,220	1,931	930	599
Percent Trucks	8.1%	5.1%	5.4%	5.4%	7.1%	5.2%

The observed traffic data indicates that the vehicle speeds along Lake Helena Drive are fairly consistent. The most commonly used road operations characteristic for posting a speed limit is the 85th percentile speed. However, it is reasonable to set a posted speed limit below the 85th percentile speeds if the road conditions and roadside environment are inconsistent with the observed vehicle speeds. The 85th percentile speeds on the paved sections of road (Stations 1-5) varied from 47 to 51 MPH. The 85th percentile speed on the gravel section was 44 MPH. Average vehicle speeds along the road were all below 45 MPH. The 10 MPH pace speeds (the 10 MPH range in which the most road users are driving) were 40 – 50 MPH for Stations 1, 2, 3, and 4 while for Station 5 it was 35 – 45 MPH. Pace speeds on the gravel section was 30-40 MPH. In general, it is desirable to have the majority of traffic on a roadway traveling within or around the 10 MPH pace. This decreases the variability in vehicle speeds and decreases vehicle conflicts.

Recommendations

Based on the vehicle speed profiles it is recommended that the posted speed limits on Lake Helena Drive be changed to a consistent 45 MPH from the existing 45 MPH speed limit north of Boundary Street to Deal Lane. This change would decrease the speed limit by 5 MPH from Canyon Ferry Road to York Road and increase the speed limit by 5 MPH from York Road to Deal Lane. The existing 35 MPH speed limit on the gravel section from Deal Lane to the Causeway should remain. This would provide one consistent speed limit for the entire paved section of roadway which is justified by the consistency in existing vehicle speeds along the section. The existing 35 MPH speed limit on the gravel section is appropriate for the road conditions and should remain. If you have any questions about these results please feel free to call me at 406-459-1443

Sincerely,



Bob Abelin, P.E.
Abelin Traffic Services, Inc.

Lake Helena Drive

Section Number	Length	Start	End	Speed Avg.		85% Speed	Pace	% in Pace	Road Width
				Limit	Speed				
1	0.4	0.0	0.4	Lewis St	35				24.9
2	0.1	0.4	0.5	Boundary St	35				25.4
3	0.6	1.1	1.8	North of Lagoon	45	43.2	48.7	40-50	71%
4	0.3	1.8	2.1	Canal Dr	45				25.4
5	0.3	2.1	2.3	Warning	45	42.2	48.5	40-50	59%
6	0.4	2.3	2.7	50 Speed Limit	50				26.3
7	1.5	2.7	4.2	Sly Road	50	43.9	49.6	40-50	64%
8	1.1	4.2	5.2	York Road	40	41.0	47.2	35-45	65%
9	1.0	5.2	6.2	Melkat Ln	40	44.7	51.00	40-50	64%
10	1.9	6.2	8.1	Deal Ln	35	37.0	43.60	30-40	59%
				Causeway					26.0

Section Number	NB Lane	SB Lane	Road Condition	Roadside Environment	Alignment	ROW			Approach Percent ADT		
						Width	Total App.	Density	Trucks	Volume	
1	12.2	11.9	Good	East - Residential	Straight	55	7	17.9			2724
2	11.5	11.4	Good	Open Land	Straight	65	0	0.0			2724
3	11.5	11.4	Good	Open Land/Light Residential	Straight	75	5	7.8	8.1%		2724
4	11.5	11.4	Good	Residential	Straight	75	4	13.8			2724
5	11.5	11.4	Good	West - Residential	Straight	85	4	15.4	5.1%		1713
6	13.1	13.2	Moderate	Open Land	Straight	85	3	7.7			1713
7	13.1	13.2	Good	Open Land/Light Residential	Slight Right Curve	75	8	5.4	5.4%		1220
8	11.9	11.9	Good	East - Open Land	Two Curves BB 45	75	8	7.6	5.4%		1831
9	11.9	11.9	Good	Light Residential/Open Land	Straight	75	9	9.3	7.1%		930
10	N/A	N/A	Gravel	Light Residential/Lake Shore	Curving	75	8	4.2	5.2%		599
						Avg.			8.9		

Helena Valley – Existing and Proposed Speed Limits

LOCATION	Existing Speed Limit	Proposed Speed Limit	Change
Wylie Drive			
East Helena Step-Down	25 to 45 MPH	25 to 45 MPH	No Change
East Helena Step-Down to Canyon Ferry Road	55 MPH	45 MPH	Decrease by 10 MPH
Canyon Ferry Road to York Road	55 MPH	45 MPH	Decrease by 10 MPH
Valley Drive			
East Helena to Canyon Ferry Road	35 MPH	35 MPH	No Change
Canyon Ferry Road to York Road	35 MPH	35 MPH	No Change
Lake Helena Drive			
East Helena to Canyon Ferry Road	45 MPH	45 MPH	No Change
Canyon Ferry Road to York Road	50 MPH	45 MPH	Decrease by 5 MPH
York Road to Deal Lane	40 MPH	45 MPH	Increase by 5 MPH
Deal Lane to Causeway	35 MPH	35 MPH	No Change

