



**MEMORANDUM**

**Highway  
Department**

Jason Benson, P.E.  
County Engineer

Richard S. Sieg  
Superintendent

Thomas B. Soucy, P.E.  
Design and Construction  
Engineer

TO: Cass County Road Advisory Committee

FROM: Jason Benson, Cass County Engineer *JB*

DATE: November 7, 2013

SUBJECT: Road Advisory Committee Meeting  
November 18, 2013 2:00 p.m.

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A Road Advisory Committee meeting has been scheduled for Monday, November 18, 2013 at 2:00 pm in the Cass County Commission Room. The agenda is as follows:

2:00 – 2:05	Introduction and Recognition of Outstanding Highway Employees	<b>Information</b>
2:05 – 2:15	Superior Inc., road and bridge improvements on Cass 36 for economic development	<b>Information/Action</b>
2:15 – 2:25	Roll Up of 2013 Construction Projects	<b>Information</b>
2:25 – 2:35	Traffic Analysis of Gravel Roads for long range paving planning	<b>Information/Action</b>
2:35 – 2:45	Update on current Transportation Studies (Metro COG LRTP, ND LRSP, and FM Diversion)	<b>Information</b>
2:45 – 3:00	Other Business	
3:00	Adjourn	

1201 Main Avenue West  
West Fargo, North Dakota  
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Fax: 701-298-2395



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### MEMORANDUM

TO: Cass County Road Advisory Committee

FROM: Jason Benson, Cass County Engineer *JB*

DATE: November 14, 2013

SUBJECT: Road Advisory Committee Meeting, November 18, 2013  
Paving Gravel Roads

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During the July Road Advisory meeting we discussed long terms goals for the paving of certain gravel roads. At that meeting it was determined to include paving Cass Highway 6 in our long term plan. The topic of additional traffic counts was also discussed. Following that meeting I worked with the Upper Great Plains Transportation Institute (UGPTI) to assist in completing those counts.

In late July UGPTI completed traffic counts on C10 at Buffalo, C11 north of C4, C20 east of C11, C6 east of ND18, C16 west of Davenport, and C32 east of C81. Analysis of this data shows that none of these gravel road sections have the necessary traffic volumes to meet our Commission policy (see traffic count maps and spreadsheet). Cass Commission Policy 9.30 places a criteria of the average daily traffic, either current or projected within the next 5 years, be a minimum of 400 vehicles per day.

Of the roads listed above, only Cass 6 from C15 to C17 and C10 from Buffalo to C5 have higher traffic counts, approximately 230 average annual daily traffic (AADT). These two sections, if paved, may increase the traffic volumes up to 400 AADT range.

The Cass County Highway Department is also in the process of evaluating alternatives to paving. We have recently attended several workshops that have discussed these alternatives. Increased traffic in western ND has brought some of these different options into our state in places like Williams County. Over this winter we will work with UGPTI, LTAP, and other resources to evaluate the long term maintenance costs and viability of these paving alternatives.

I am recommending that Cass County continues to include in our Comprehensive Highway/Bridge Plan to construct a continuous paved highway running east-west across the County south of Interstate 94, to include the paving of Cass 6 from ND18 to Horace. I also recommend reporting back to the Road Advisory Committee in March 2014 with an overview of paving alternatives.

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Location: Cass County  
Date: 07/30/13

	July		August	
	Day Factor (M-Th)	Seasonal Factor	Day Factor (M-Th)	Seasonal Factor
Cars	0.9576	0.8894	0.9782	0.8968
Single Units (SUs)	0.8710	0.8491	0.8636	0.9263
Combination Units (CUs)	0.9171	0.8538	0.8735	0.8595

	Site B				Site C				Site D			
	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total
Day 1 (Raw)	50	0	13	63	75	7	14	96	25	3	2	30
Day 2 (Raw)	52	1	6	59	64	13	11	88	39	6	0	45
Day 1 (Factored)	43	0	10	53	64	5	11	80	21	2	2	25
Day 2 (Factored)	44	1	5	50	56	10	8	75	34	5	0	39
AADT	43	0	7	51	60	8	10	77	28	4	1	32

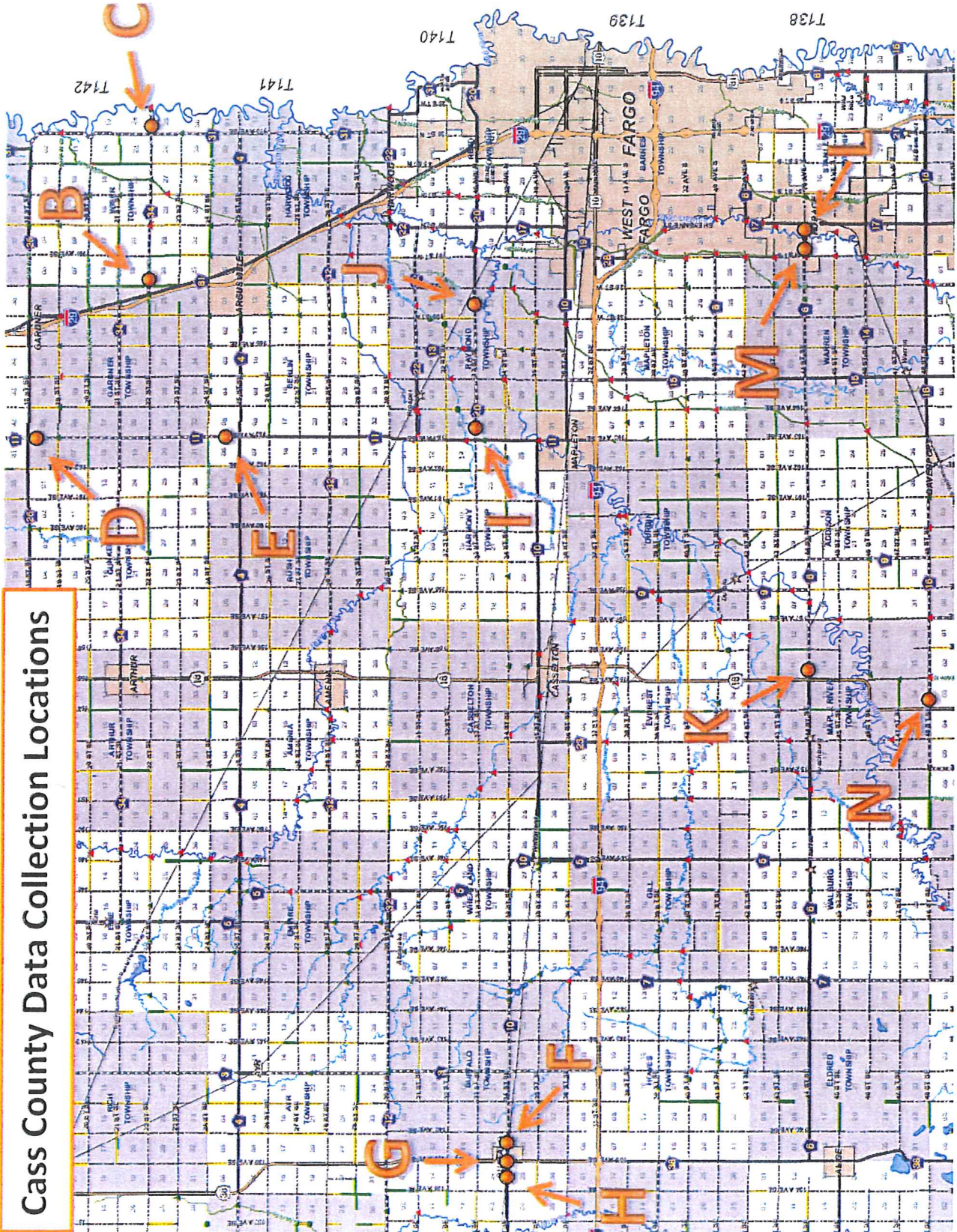
	Site E				Site F				Site G			
	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total
Day 1 (Raw)	79	7	15	101	238	37	7	282	1055	65	63	1183
Day 2 (Raw)	69	4	15	88	229	27	11	267	1081	64	59	1204
Day 1 (Factored)	67	5	12	84	203	27	5	236	899	48	49	996
Day 2 (Factored)	61	3	11	75	201	22	8	231	948	51	44	1044
AADT	64	4	12	80	202	24	7	233	923	50	47	1020

	Site H				Site I				Site J			
	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total
Day 1 (Raw)	368	36	49	453	78	13	23	114	144	11	34	189
Day 2 (Raw)	409	49	57	515	83	4	26	113	-	-	-	-
Day 1 (Factored)	313	27	38	378	66	10	18	94	123	8	27	157
Day 2 (Factored)	359	39	43	441	73	3	20	96	-	-	-	-
AADT	336	33	41	410	70	6	19	95	123	8	27	157

	Site K				Site L				Site M			
	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total	Cars	SUs	CUs	Total
Day 1 (Raw)	55	7	6	68	877	5	3	885	208	15	4	227
Day 2 (Raw)	-	-	-	-	878	12	3	893	262	35	3	300
Day 1 (Factored)	47	5	5	57	747	4	2	753	177	11	3	191
Day 2 (Factored)	-	-	-	-	770	10	2	782	230	28	2	260
AADT	47	5	5	57	759	7	2	768	203	20	3	226

	Site N			
	Cars	SUs	CUs	Total
Day 1 (Raw)	75	8	10	93
Day 2 (Raw)	-	-	-	-
Day 1 (Factored)	64	6	8	78
Day 2 (Factored)	-	-	-	-
AADT	64	6	8	78

# Cass County Data Collection Locations



**Key to Site Locations**

<u>Site</u>	<u>Start Date</u>	<u>Start Time</u>	<u>End Date</u>	<u>End Time</u>	<u>Time Elapsed</u>	<u>Description</u>
B	7/30/2013	11:00	8/1/2013	11:00	48 hr	Argusville; CR 34, East of ND 81
C	7/30/2013	12:00	8/1/2013	12:00	48 hr	Argusville; CR 34, West of Red River
D	7/30/2013	13:00	8/1/2013	13:00	48 hr	Argusville; CR 11, South of CR 26
E	7/30/2013	13:00	8/1/2013	13:00	48 hr	Argusville; CR 11. North of CR 4
F	7/30/2013	15:00	8/1/2013	15:00	48 hr	Buffalo; CR 10, East of Buffalo
G	7/30/2013	15:00	8/1/2013	15:00	48 hr	Buffalo; CR 10, North of railroad tracks
H	7/30/2013	15:00	8/1/2013	15:00	48 hr	Buffalo; CR 10, East of 138th Ave
I	7/30/2013	16:00	8/1/2013	16:00	48 hr	Mapleton; CR 20, half mile East of CR 11
J	7/30/2013	17:00	7/31/2013	17:00	24 hr	Mapleton; CR 20, 2.5 miles West of CR 17
K	7/30/2013	18:00	7/31/2013	18:00	24 hr	Casselton; CR 6 (44th St SE), East of ND 18
L	7/30/2013	18:00	8/1/2013	18:00	48 hr	Horace; CR 6, West of CR 17, East of Sheyenne River
M	7/30/2013	18:00	8/1/2013	18:00	48 hr	Horace; CR 6, West of CR 17, West of Sheyenne River
N	7/30/2013	19:00	7/31/2013	19:00	24 hr	Leonard; CR 16, East of ND 18



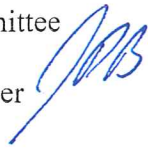
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TO: Cass County Road Advisory Committee  
FROM: Jason Benson, Cass County Engineer   
DATE: November 14, 2013  
SUBJECT: Road Advisory Committee Meeting, November 18, 2013  
Superior Inc. request for Road and Bridge Improvements

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Superior Inc. would like to have another discussion of the options for improving Cass 36. Mr. Troy Von Ruden will be present at the meeting to provide updated information on their expansion project.

Superior Inc. is a commercial producer of grain storage, drying, and handling systems. Their existing facility is located 2.5 miles south of Cass 16 along Cass 36. This section of road is a 26 foot wide gravel road. During the spring load restrictions this section is limited to a 6 ton load. In addition, there is a short section that is low and has had minor overtopping during past floods. The main bridge servicing this facility on Cass 36 is load restricted at 34 tons.

As discussed at the July Road Advisory Meeting, Superior Inc. is requesting the County complete improvements to the bridge and road to bring them up to a year round legal 10 ton load standard. In lieu of that, they would like to know what other options may be available. Our engineering staff has developed several options with approximate costs for completing a repair project for the road. The Highway Department has programed to replace the bridge in 2014. This project will be moved forward for construction regardless of the Superior Inc. expansion.

As to the road improvements, I feel the best option would be to complete the Draintile, Roadway Reshaping, and Subgrade Repair. This project would cost approximately \$360,700. After the completion of these upgrades, the roadway would be tested to evaluate if we could allow the road to be brought up to an eight ton spring load restriction. This road restriction would match that of the adjacent paved highway. Based on the current 2014 budget, financing for this project may not be available until 2015.

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CASS COUNTY HIGHWAY DEPARTMENT						
DRAINTILE - 2.5 MILES						
C36 FROM C16 2.5 MILES SOUTH						
ITEM	SPEC NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT COST	TOTAL
1	302	AGGREGATE BASE COURSE - CL. 5	TON	4,278	\$20.00	\$85,555.56
2		DRAINTILE	LF	13,500	\$3.00	\$40,500.00

TOTAL = \$126,055.56

CASS COUNTY HIGHWAY DEPARTMENT						
ROADWAY RESHAPING & SUBGRADE REPAIR - 2.5 MILES						
C36 FROM C16 2.5 MILES SOUTH						
ITEM	SPEC NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT COST	TOTAL
1	103	CONTRACT BOND	LS	1	\$600.00	\$600.00
2	230	ROADWAY RESHAPING	MILE	2.5	\$1,500.00	\$3,750.00
3	302	AGGREGATE SURFACE COURSE CL 5 - 3"	TON	6,417	\$20.00	\$128,333.33
4	702	MOBILIZATION	LS	1	\$5,000.00	\$5,000.00
5	704	TRAFFIC CONTROL	LS	1	\$1,500.00	\$1,500.00
6	708	SEEDING - TYPE B - CL V	ACRES	15.0	\$600.00	\$9,000.00
7	708	MULCHING	ACRES	15.0	\$600.00	\$9,000.00
8	802	PORTLAND CEMENT	TON	425	\$150.00	\$63,750.00
9		STABILIZATION	SY	38,133	\$2.00	\$76,266.67
10	930	QC/QA TESTING	LS	1	\$5,000.00	\$5,000.00

TOTAL = \$302,200.00

CASS COUNTY HIGHWAY DEPARTMENT						
DRAINTILE, ROADWAY RESHAPING & SUBGRADE REPAIR - 2.5 MILES						
C36 FROM C16 2.5 MILES SOUTH						
ITEM	SPEC NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT COST	TOTAL
1	103	CONTRACT BOND	LS	1	\$600.00	\$600.00
2		DRAINTILE	LF	13,500	\$3.00	\$40,500.00
3	230	ROADWAY RESHAPING	MILE	2.5	\$1,500.00	\$3,750.00
4	302	AGGREGATE SURFACE COURSE CL 5 - 3"	TON	6,417	\$20.00	\$128,333.33
5	702	MOBILIZATION	LS	1	\$5,000.00	\$5,000.00
6	704	TRAFFIC CONTROL	LS	1	\$1,500.00	\$1,500.00
7	708	SEEDING - TYPE B - CL V	ACRES	30.0	\$600.00	\$18,000.00
8	708	MULCHING	ACRES	30.0	\$600.00	\$18,000.00
9	802	PORTLAND CEMENT	TON	425	\$150.00	\$63,750.00
10		STABILIZATION	SY	38,133	\$2.00	\$76,266.67
11	930	QC/QA TESTING	LS	1	\$5,000.00	\$5,000.00

TOTAL = \$360,700.00

CASS COUNTY HIGHWAY DEPARTMENT						
DRAINTILE, ROADWAY RESHAPING WITH SHOULDER WIDENING & SUBGRADE REPAIR - 2.5 MILES						
C36 FROM C16 2.5 MILES SOUTH						
ITEM	SPEC NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT COST	TOTAL
1	103	CONTRACT BOND	LS	1	\$600.00	\$600.00
2	203	COMMON EXCAVATION - TYPE B	CY	12,500	\$4.00	\$50,000.00
3	203	BORROW	CY	25,000	\$5.00	\$125,000.00
4	203	TOPSOIL	CY	30,000	\$5.00	\$150,000.00
5		DRAINTILE	LF	13,500	\$3.00	\$40,500.00
6	230	ROADWAY RESHAPING	MILE	2.5	\$1,500.00	\$3,750.00
7	302	AGGREGATE SURFACE COURSE CL 5 - 4"	TON	11,458	\$20.00	\$229,166.67
8	702	MOBILIZATION	LS	1	\$5,000.00	\$5,000.00
9	704	TRAFFIC CONTROL	LS	1	\$1,500.00	\$1,500.00
10	708	SEEDING - TYPE B - CL V	ACRES	30.0	\$600.00	\$18,000.00
11	708	MULCHING	ACRES	30.0	\$600.00	\$18,000.00
12	802	PORTLAND CEMENT	TON	425	\$150.00	\$63,750.00
13		STABILIZATION	SY	38,133	\$2.00	\$76,266.67
14	930	QC/QA TESTING	LS	1	\$5,000.00	\$5,000.00
15		RIGHT OF WAY	LS	1	\$150,000.00	\$150,000.00

TOTAL = \$936,533.33

CASS COUNTY HIGHWAY DEPARTMENT						
DRAINTILE, ROADWAY RESHAPING WITH SHOULDER WIDENING, SUBGRADE REPAIR & 36' ASPHALT PAVING - 2.5 MILES						
C36 FROM C16 2.5 MILES SOUTH						
ITEM	SPEC NO.	DESCRIPTION	UNIT	APPROX. QUANTITY	UNIT COST	TOTAL
1	103	CONTRACT BOND	LS	1	\$600.00	\$600.00
2	203	COMMON EXCAVATION - TYPE B	CY	12,500	\$4.00	\$50,000.00
3	203	BORROW	CY	25,000	\$5.00	\$125,000.00
4	203	TOPSOIL	CY	30,000	\$5.00	\$150,000.00
5		DRAINTILE	LF	13,500	\$3.00	\$40,500.00
6	230	ROADWAY RESHAPING	MILE	2.5	\$1,500.00	\$3,750.00
7	302	AGGREGATE SURFACE COURSE CL 5 - 10"	TON	38,194	\$20.00	\$763,888.89
8	408	HOT BITUMINOUS PAVEMENT	TON	21,115	\$25.00	\$527,871.27
9	408	PG 58-28 ASPHALT CEMENT	TON	1,372	\$600.00	\$823,479.18
10	702	MOBILIZATION	LS	1	\$5,000.00	\$5,000.00
11	704	TRAFFIC CONTROL	LS	1	\$1,500.00	\$1,500.00
12	708	SEEDING - TYPE B - CL V	ACRES	30.0	\$600.00	\$18,000.00
13	708	MULCHING	ACRES	30.0	\$600.00	\$18,000.00
14	709	GEOTEXTILE FABRIC-TYPE R1	SY	16,720	\$3.00	\$50,160.00
15	714	CULVERTS	LS	1	\$50,000.00	\$50,000.00
16	802	PORTLAND CEMENT	TON	425	\$150.00	\$63,750.00
17		STABILIZATION	SY	38,133	\$2.00	\$76,266.67
18	930	QC/QA TESTING	LS	1	\$5,000.00	\$5,000.00
19	762	PAVEMENT MARKINGS	LS	1	\$5,000.00	\$5,000.00
20		RIGHT OF WAY	LS	1	\$150,000.00	\$150,000.00

TOTAL = \$2,927,766.00