

**To:** The City of Auburn

**From:** Tom Errico, PE  
Todd Serbent

**Date:** September 13, 2019

**Address:**

**CC:**

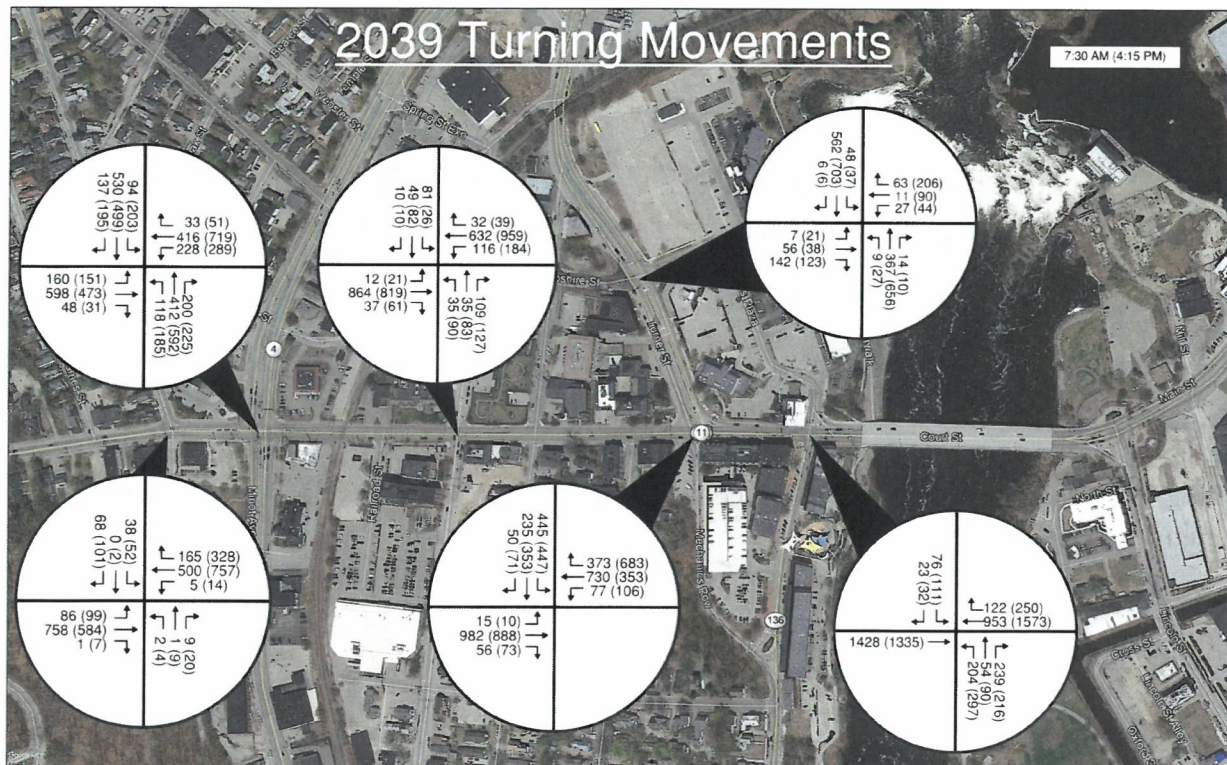
**Re:** ATRC Court Street Traffic Study

## MEMORANDUM

The purpose of this memorandum is to inform the steering committee on the preliminary modeling results of potential road diet options along the Court Street corridor as well on Turner Street. These results should be considered draft.

### Growth Forecast

Detailed growth forecasts were not yet available at the time of this memo. In the interim, the Design Hour Volumes (DHV) were set using a 20-year forecast using an assumed growth factor of 1% growth per year. The 2039 DHV are shown in **Table 1**.



### Modeling

All traffic modeling was done using Synchro and SimTraffic softwares. This software takes inputs such as volumes, speeds, and signal timings to replicate the real-world traffic conditions. The software outputs

the delay (in seconds/vehicle) and the 95<sup>th</sup> percentile queue (defined as length in which the queue is shorter than 95% of the time). The delay is used to find a qualitative measure called Level of Service (LOS).

Level of Service provides a measurement of the delay experienced at an intersection because of traffic operations at that intersection. In general, there are six levels of service: Level of Service A to Level of Service F. The highest, Level of Service A, describes a condition of free-flow operations where the effects of incidents are easily absorbed. Level of Service B describes a state in which maneuverability and speed limits are beginning to be restricted by other motorists although level of comfort is still high. In Level of Service C, experienced drivers are still comfortable, but maneuverability is noticeably restricted. Level of Service D brings noticeable congestion and driver comfort levels decrease. In Level of Service E, roadway capacity is reached, and disruptions are much more prevalent – driver comfort has declined. Finally, Level of Service F is the results of volumes greater than roadway capacity with congestion and possible stopped conditions. MaineDOT has determined that Levels of Service A-D are acceptable conditions for intersections.

The measures of delay for each Level of Service rating for unsignalized and signalized intersections are found in **Table 1**.

Table 1 Level of Service Criteria		
LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	>80 sec	>50 sec

#### No-Build Conditions

All alternatives are compared to the “No-Build” condition, or what the system will look like with no changes to the physical conditions to the network. Signal timings were optimized using Synchro’s optimization feature.



Table 2 No-Build Conditions at the Intersection of Court Street and Goff Street (STOP Controlled)								
	Court Street				S. Goff St	Goff Street		All
	EBL*	EBTR	WBLT	WBR	NBLTR	SBL	SBTR	
AM No-Build	31.7	0.3	0.6	0.5	25.4	71.5	7	4.3
AM LOS	D	A	A	A	D	F	A	A
AM Queue	288	63	78	19	34	86	59	N/A
PM No-Build	21.2	0.2	0.6	0.4	48.5	52.9	11.2	4.7
PM LOS	C	A	A	A	E	F	B	A
PM Queue	236	60	90	36	73	91	78	N/A

\*The eastbound left-turn lane does not exist. However, vehicles will bypass a left-turning vehicle using the shoulder.

This intersection has failing movements during both the AM and the PM peak hours. The southbound left-turn movement operates at an unacceptable LOS during both peak hours. The northbound lane operates at an unacceptable LOS during the PM peak.

Table 3 No-Build Conditions at the Intersection of Court Street, Minot Avenue, and Union Street (Signalized)															
	Court Street						Minot Avenue				Union Street				All
	EBL	EBT	EBTR	WBL	WBT	WBTR	NBL	NBT	NBT	NBR	SBL	SBT	SBT	SBR	
AM Delay	29.1	26.1	23	40.2	27	19.5	41.8	20.5	16.3	6.3	36	21.5	18.3	6	23.5
AM LOS	C	C	C	D	C	B	D	C	B	A	D	C	B	A	C
AM Queue	145	<b>493</b>	<b>493</b>	247	312	195	139	191	141	94	129	206	178	86	N/A
PM Delay	35.2	22.6	21.1	35	20.3	15.3	44.4	42.7	29.7	7.2	42.1	31.7	26.5	8.9	27.4
PM LOS	D	C	C	D	C	B	D	D	C	A	D	C	C	A	C
PM Queue	143	177	173	200	270	207	231	346	290	139	233	222	194	107	N/A

In the morning, the eastbound through queues operate at an unacceptable LOS.

Table 4 No-Build Conditions at the intersection of Court Street and Spring Street (Signalized)									
	Court Street				Spring Street				All
	EBLT	EBTR	WBLT	WBTR	NBL	NBTR	SBL	SBTR	
AM Delay	7.4	7.3	40.2	11.5	23.4	8.4	18.4	11.5	14.4
AM LOS	A	A	D	B	C	A	B	B	B
AM Queue	216	245	343	311	77	74	78	72	N/A
PM Delay	20.3	21	15.1	7.4	53.3	13.3	33.1	19.2	17.7
PM LOS	C	C	B	A	D	B	C	B	B
PM Queue	278	301	201	241	241	90	87	77	N/A

This intersection operates at an acceptable LOS.

Table 5 No-Build Conditions at the Intersection of Court Street and Turner Street (Signalized)									
	Court Street					Turner Street			All
	EBLT	EBTR	WBLT	WBT	WBR	SBL	SBL	SBTR	
AM Delay	8	7.7	38.5	7.9	0	16.5	21.8	16.5	12.8
AM LOS	A	A	D	A	A	B	C	B	B
AM Queue	168	182	488	526	177	140	157	175	N/A
PM Delay	43.7	47.6	18.4	6.9	0.1	52.9	64.9	171	42.2
PM LOS	D	D	B	A	A	D	E	F	D
PM Queue	<b>528</b>	<b>554</b>	67	<b>8140</b>	267	212	276	<b>409</b>	N/A

This intersection operates at an acceptable LOS during the AM peak hour. The eastbound lanes back up through the Minot Avenue intersection during the PM peak hour. The westbound through lane backs through the Turner Street intersection during the PM peak. The southbound left and the southbound through-right lanes operate at an unacceptable LOS.

Table 6 No-Build Conditions at the Intersection of Court Street, Main Street, and Great Falls Plaza (Signalized)										
	Court Street					Main Street		Great Falls Plaza		All
	EBT	EBT	WBT	WBT	WBR	NBL	NBTR	SBL	SBR	
AM Delay	7.7	8.6	7.6	8	0.1	25.7	22.5	35.5	11.2	10.9
AM LOS	A	A	A	A	A	C	C	D	B	B
AM Queue	<b>458</b>	<b>488</b>	199	236	60	183	242	96	45	N/A
PM Delay	10.2	12	2156.5	682.4	0.3	47.9	47.6	38.4	23.2	404.4
PM LOS	B	B	F	F	A	D	D	D	C	F
PM Queue	<b>905</b>	<b>955</b>	<b>7803</b>	<b>7779</b>	408	261	587	141	86	N/A

This intersection sees the eastbound queues back into the Turner Street intersection during both peak hours. The westbound approach fails during the PM peak and backs well into Lewiston during the PM peak hour.



<b>Table 7</b> <b>No-Build Conditions at the Intersection of Turner Street, Hampshire Street, and Great Falls Plaza (Signalized)</b>											
	Hampshire Street		Great Falls Plaza		Turner Street						All
	EBL	EBTR	WBLT	WBR	NBL	NBT	NBTR	SBL	SBT	SBTR	
AM Delay	7.7	5.1	6.7	3.7	21.5	5.7	8	14.7	7.6	6.8	7.2
AM LOS	A	A	A	A	C	A	A	B	A	A	A
AM Queue	17	75	41	54	27	88	110	57	150	130	N/A
PM Delay	10.6	72.4	124.8	11.9	19.1	5.9	8.7	21.3	115.4	327.6	91.9
PM LOS	B	E	F	B	B	A	A	C	F	F	F
PM Queue	58	224	270	221	40	85	101	157	537	540	N/A

This intersection operates at an acceptable LOS during the AM peak hour. The southbound through and through-right fails during the PM peak hour, as does the eastbound through right and the westbound left-through.

#### Full Road Diet

There is interest in reducing Court Street from a 4-lane section to a 3-lane section to better allocate space for bicycle and pedestrian facilities. **Tables 8-13** show the modeling results of a full road diet on Court Street.

No changes were made at the intersection of Court Street and Goff Street.

<b>Table 8</b> <b>Full Road Diet at the intersection of Court Street and Goff Street (STOP controlled)</b>								
	Court Street				S. Goff St	Goff Street		All
	EBL*	EBTR	WBLT	WBR	NBLTR	SBL	SBTR	
AM Delay	1909.5	4.8	0.7	0.2	92.1	2369.8	8.7	308.1
AM LOS	<b>F</b>	A	A	A	<b>F</b>	<b>F</b>	A	<b>F</b>
AM Queue	<b>3230</b>	58	84	34	49	<b>1270</b>	114	N/A
PM Delay	1908.5	11.8	0.7	0.2	205	2476.1	14.6	419.6
PM LOS	<b>F</b>	B	A	A	<b>F</b>	<b>F</b>	B	<b>F</b>
PM Queue	<b>5188</b>	58	79	31	140	<b>1292</b>	162	N/A

The queues from the intersection of Court Street, Minot Avenue, and Union Street cause approaches to operate at unacceptable levels of service in both the AM and the PM peak hour.

The following changes were assumed at the intersection of Court Street, Union Street, and Minot Avenue:

- Remove the Eastbound through lane on Court Street
- Remove the Westbound through lane on Court Street
- Combine the northbound through lane and right-turn lane on Minot Avenue
- Combine the southbound through lane and right-turn lane on Union Street

Table 9 Full Road Diet at the intersection of Court Street, Union Street, and Minot Avenue (Signalized)															
	Court Street						Minot Avenue				Union Street				All
	EBL	EBT	EBTR	WBL	WBT	WBTR	NBL	NBT	NBT	NBR	SBL	SBT	SBT	SBR	
AM Delay	42.7	N/A	44.2	80.6	N/A	20.5	58.2	33.8	52.2		268.3	56.2	37.5		52.9
AM LOS	D	N/A	D	F	N/A	C	E	C	D		F	E	D		D
AM Queue	149	N/A	3438	501	N/A	311	187	299	345		425	684	639		N/A
PM Delay	67.3	N/A	70.3	81.2	N/A	23.3	89.8	143.4	331.2		641.2	517.5	74.1		154.8
PM LOS	E	N/A	E	F	N/A	C	F	F	F		F	F	E		F
PM Queue	177	N/A	5396	941	N/A	297	302	654	636		411	1239	1336		N/A

This intersection operates poorly without two through lanes in each direction on Court Street. The queues on the eastbound approach back into the Goff Street intersection during both the AM and the PM peak hour. The westbound queues back through the Spring Street intersection during both the AM and the PM peak hour. The northbound left, southbound left, and southbound through lanes operate at an unacceptable LOS during the AM peak hour. All northbound and southbound lanes operate at an unacceptable LOS during the PM peak hour.

The following changes were assumed at the intersection of Spring Street and Court Street:

- Convert the eastbound left-through lane to a left-turn bay on Court Street
- Convert the westbound left-through lane to a left-turn bay on Court Street

Table 10 Full Road Diet at the intersection of Court Street and Spring Street (Signalized)									
	Court Street				Spring Street				All
	EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	SBTR	
AM Delay	13.3	51.7	22.4	7.4	69.1	22.8	145.7	24	35.1
AM LOS	B	D	C	A	E	C	F	C	D
AM Queue	45	4107	153	403	176	85	327	91	N/A
PM Delay	9.9	108.6	14	6.5	988.1	52	1099.4	43.3	107.8
PM LOS	A	F	B	A	F	D	F	D	F
PM Queue	48	5972	166	387	602	98	530	94	N/A

The eastbound queues on Court Street back through the Minot Avenue intersection during the AM peak hour. The northbound and southbound left-turn movements operate at an unacceptable LOS and block the through movements during the AM peak hour. The eastbound through movement operates at an unacceptable LOS and the queue backs through the Minot Avenue intersection during the PM peak hour. The northbound and southbound movements once again operate at an unacceptable LOS and block the through movement during the PM peak hour.



The following changes were assumed at the intersection of Court Street and Turner Street:

- Convert the eastbound left-through lane to a left-turn bay on Court Street
- Convert the westbound left-through lane to a left-turn bay on Court Street
- Remove a southbound left-turn lane on Turner Street

Table 11 Full Road Diet at the intersection of Court Street and Turner Street (Signalized)								
	Court Street					Turner Street		All
	EBL	EBTR	WBL	WBT	WBR	SBL	SBTR	
AM Delay	21.4	50	42.5	11.4	0	116.3	100.8	44.4
AM LOS	C	D	D	B	A	F	F	D
AM Queue	48	<b>777</b>	138	<b>2019</b>	324	331	501	N/A
PM Delay	7.6	108.7	18.8	6.8	0	147	156.1	60.5
PM LOS	A	F	B	A	A	F	F	E
PM Queue	20	<b>6685</b>	155	<b>8142</b>	<b>8054</b>	338	<b>420</b>	N/A

The eastbound queue backs through the Spring Street intersection and the westbound queue backs through the Main Street intersection during both the AM and the PM peak hours. The southbound approach is failing in both lanes during both peak hours and will back into the intersection of Turner Street, Hampshire Street, and Great Falls Plaza.

The following changes were assumed at the intersection of Court Street, Main Street, and Great Falls Plaza:

- Remove an eastbound through lane on Court Street
- Remove a westbound through lane on Court Street

Table 12 Full Road Diet at the intersection of Court Street, Main Street, and Great Falls Plaza (Signalized)								
	Court Street			Main Street		Great Falls Plaza		All
	EBT	WBT	WBR	NBL	NBTR	SBL	SBR	
AM Delay	10.2	41.9	0.1	88.5	223.8	120.3	37.1	52
AM LOS	B	D	A	F	F	F	D	D
AM Queue	<b>1109</b>	<b>1660</b>	343	272	<b>1122</b>	186	54	N/A
PM Delay	10	225.6	0.2	113	841.9	177.5	61.5	213.8
PM LOS	B	F	A	F	F	F	E	F
PM Queue	452	<b>7758</b>	378	245	<b>3038</b>	279	121	N/A

The eastbound queue backs through the Turner Street intersection during the AM peak hour. The westbound queue backs into Lewiston during both peak hours during both peak hours and operates at an unacceptable LOS during the PM peak hour. The northbound and the southbound approaches operate at an unacceptable LOS during both peak hours.

The following changes were assumed at the intersection of Turner Street, Hampshire Street, and Great Falls Plaza:

- Remove a southbound through lane on Turner Street

Table 13 Full Road Diet at the intersection of Turner Street, Hampshire Street, and Great Falls Plaza (Signalized)										
	Hampshire Street		Great Falls Plaza		Turner Street					All
	EBL	EBTR	WBLT	WBR	NBL	NBT	NBTR	SBL	SBTR	
AM Delay	12.8	75.6	193.1	4.5	23.5	6.2	6.5	17.2	294.5	132.6
AM LOS	B	E	F	A	C	A	A	B	F	F
AM Queue	27	263	163	54	26	77	95	212	1320	N/A
PM Delay	14.9	62	208.9	23.2	14.6	5.7	7.5	19.2	206.8	86.8
PM LOS	B	E	F	C	B	A	A	B	F	F
PM Queue	53	211	288	284	36	81	100	201	533	N/A

The through movements on the eastbound, westbound, and southbound approaches fail during both peak hours. All other lanes operate at an acceptable LOS.

#### Partial Road Diet

The larger intersections like the intersection of Court Street, Minot Avenue, and Union Street and the intersection of Court Street and Union Street carry too much volume for a road diet. The segment in between those two intersections sees much less movement from the side streets, so a three-lane section was considered in that stretch, including the Spring Street intersection.

Table 14 Partial Road Diet at the intersection of Court Street and Goff Street (STOP Controlled)								
	Court Street				S. Goff St	Goff Street		All
	EBL*	EBTR	WBLT	WBR	NBLTR	SBL	SBTR	
AM Delay	1094.4	2.6	21	8.3	835.1	1958.8	10	199.6
AM LOS	F	A	C	A	F	F	B	F
AM Queue	2967	57	206	153	173	1241	95	N/A
PM Delay	1412.9	7.7	1.6	0.4	27.1	1856.1	20.6	258.5
PM LOS	F	A	A	A	D	F	C	F
PM Queue	4118	58	137	67	55	1308	219	N/A

This intersection fails on the eastbound approach and the southbound approach during both the AM and the PM peak hour. The northbound approach also fails in the AM peak hour.

The following changes were assumed at the intersection of Court Street, Minot Avenue, and Union Street:

- Combine the northbound through and right turn lanes on Minot Avenue
- Combine the southbound through and right-turn lanes on Union Street



Table 15 Partial Road Diet at the intersection of Court Street, Minot Avenue, and Union Street (Signalized)															
	Court Street						Minot Avenue				Union Street				All
	EBL	EBT	EBTR	WBL	WBT	WBTR	NBL	NBT	NBT	NBR	SBL	SBT	SBT	SBR	
AM Delay	32.1	63.5	53.1	34.1	88.6	38.9	128.4	50.8	17.2		39.3	50.4	86.1		55.9
AM LOS	C	E	D	C	F	D	F	D	B		D	D	F		E
AM Queue	174	304	234	256	617	1009	225	492	418		259	659	664		N/A
PM Delay	36.9	73.6	78.2	35.6	23.3	20	51.6	55.3	59.2		172.8	43.3	31.3		54.2
PM LOS	D	E	E	D	C	C	D	E	E		F	D	C		D
PM Queue	169	4340	4374	223	266	198	261	562	546		451	652	572		N/A

The westbound through movement fails in the AM peak hour and backs into the Spring Street intersection. The southbound through-right lane also fails in the AM peak hour. The eastbound approach fails during the PM peak hour and backs well through the Goff Street intersection. The northbound through lanes operate at an unacceptable LOS. The southbound left lane operates at an unacceptable LOS.

The following changes were assumed at the intersection of Court Street and Spring Street:

- Convert the eastbound left-through lane to a left-turn bay on Court Street
- Convert the westbound left-through lane to a left-turn bay on Court Street
- Create a merge point eastbound to the west of the intersection to create a three-lane section

<b>Table 16</b> <b>Partial Road Diet at the intersection of Court Street and Spring Street (Signalized)</b>									
	Court Street				Spring Street				All
	EBL	EBTR	WBL	WBTR	NBL	NBTR	SBL	SBTR	All
AM Delay	52.1	6.6	19.3	40.2	305.2	22.4	195.5	47.4	36.6
AM LOS	D	A	B	D	F	C	F	D	D
AM Queue	41	<b>740</b>	142	<b>621</b>	407	92	408	84	N/A
PM Delay	15.1	17.1	29.9	6.6	814.6	35.9	459.5	38	58
PM LOS	B	B	C	A	F	D	F	D	E
PM Queue	76	<b>937</b>	161	392	627	89	321	96	N/A

The Court Street lanes operate at an acceptable LOS during both peak hours. However, the eastbound queue backs into the Minot Avenue intersection during both peak hours and the westbound queue backs into the Turner Street intersection during the AM peak hour. The left-turn movements on Spring Street fails during both peak hours and block the through movements.

The following changes were assumed at the intersection of Court Street and Turner Street:

- The eastbound through-right lane is changed to a through-right bay as the three-lane section ends
- The westbound left-through lane becomes a left-turn lane on Court Street

<b>Table 17</b> <b>Partial Road Diet at the intersection of Court Street and Turner Street (Signalized)</b>									
	Court Street					Turner Street			All
	EBLT	EBTR	WBL	WBT	WBR	SBL	SBL	SBTR	
AM Delay	11.1	8.6	15.9	20.6	0	17.9	25.4	52.1	17.6
AM LOS	B	A	B	C	A	B	C	D	B
AM Queue	199	198	87	<b>2276</b>	276	135	292	371	N/A
PM Delay	61.7	28.2	20.2	6.7	0	55.3	66.8	176.5	42.4
PM LOS	<b>E</b>	C	C	A	A	<b>E</b>	<b>E</b>	<b>F</b>	D
PM Queue	<b>757</b>	228	81	<b>8173</b>	276	221	346	<b>424</b>	N/A

The westbound through queue backs through the Main Street intersection during the AM peak hour. The eastbound left-through lane backs through the Spring Street intersection and operates at an unacceptable LOS during the PM peak hour. The southbound approach operates an unacceptable LOS during the PM peak hour and the through lane backs through the intersection of Turner Street, Hampshire Street, and Great Falls Plaza.

<b>Table 18</b> <b>Partial Road Diet at the intersection of Court Street, Main Street, and Great Falls Plaza (Signalized)</b>										
	Court Street					Main Street		Great Falls Plaza		All
	EBT	EBT	WBT	WBT	WBR	NBL	NBTR	SBL	SBR	
AM Delay	7.6	8.8	265.5	88.7	0.2	63.8	86.1	37.4	79.5	55.9
AM LOS	A	A	<b>F</b>	<b>F</b>	A	<b>E</b>	<b>F</b>	D	<b>E</b>	<b>E</b>
AM Queue	284	497	<b>1881</b>	<b>1938</b>	327	246	<b>828</b>	109	94	N/A
PM Delay	9.5	11.2	1990.3	657.5	0.1	44	35.3	39.4	26.4	395.3
PM LOS	A	B	<b>F</b>	<b>F</b>	A	D	D	D	C	<b>F</b>
PM Queue	<b>1087</b>	581	<b>7852</b>	<b>7829</b>	405	255	458	137	82	N/A

The westbound through lanes fail during both peak hours and queue well into Lewiston. The northbound approach and the southbound right turn lane fail during the AM peak hour. The eastbound queue backs into the Turner Street intersection during the PM peak hour.



<b>Table 19</b> <b>Partial Road Diet at the intersection of Turner Street, Hampshire Street, and Great Falls Plaza (Signalized)</b>											
	Hampshire Street		Great Falls Plaza		Turner Street						All
	EBL	EBTR	WBLT	WBR	NBL	NBT	NBTR	SBL	SBT	SBTR	
AM Delay	7.6	23.9	30.1	3.5	15.1	6	8.1	15.9	29.7	37.9	22.4
AM LOS	A	C	C	A	B	A	A	B	C	D	C
AM Queue	10	147	68	56	24	74	106	84	431	408	N/A
PM Delay	12.7	56.5	79.8	10.7	14.9	6	8.4	17.3	106.7	295.8	81.7
PM LOS	B	E	E	B	B	A	B	B	F	F	F
PM Queue	62	201	232	198	33	84	96	133	611	585	N/A

The intersection operates at acceptable LOS during the AM peak hour. The eastbound and the westbound through movements operate at an unacceptable LOS during the PM peak hour. The southbound through movements operate at an unacceptable LOS during the PM peak hour.

#### Side Street Lane Reduction

The three-lane section does not work on Court Street, but other improvements may still be possible.

<b>Table 20</b> <b>Reduced Side Streets at the intersection of Court Street and Goff Street (STOP controlled)</b>								
	Court Street				S. Goff St	Goff Street		All
	EBL*	EBTR	WBLT	WBR	NBLTR	SBL	SBTR	
AM Delay	22	0.3	1.1	0.3	17.6	66.5	6.4	3.8
AM LOS	C	A	A	A	C	F	A	A
AM Queue	244	60	99	14	31	88	57	N/A
PM Delay	17	0.2	0.6	0.3	33.8	53.7	11.7	4.2
PM LOS	C	A	A	A	D	F	B	A
PM Queue	208	59	94	41	56	92	80	N/A

The southbound left movement operates at an unacceptable LOS during both peak hours.

The following changes were assumed at the intersection of Court Street, Minot Avenue, and Union Street:

- Combine the northbound through and right turn lanes on Minot Avenue
- Combine the southbound through and right turn lane on Union Street

Table 21															
Reduced Side Streets at the intersection of Court Street, Minot Avenue, and Union Street (Signalized)															
	Court Street						Minot Avenue				Union Street				All
	EBL	EBT	EBTR	WBL	WBT	WBTR	NBL	NBT	NBT	NBR	SBL	SBT	SBT	SBR	
AM Delay	32.3	27.6	26.9	41.2	28	19.6	38.5	18.2	15.4		42.6	20.3	16.5		25.3
AM LOS	C	C	C	D	C	B	D	B	B		D	C	B		C
AM Queue	165	467	466	248	284	213	123	190	205		133	207	214		N/A
PM Delay	47.5	25.2	25.2	26.1	22.7	17	51.5	37.8	34.6		44.8	27.1	26		31.2
PM LOS	D	C	C	C	C	B	D	D	C		D	C	C		C
PM Queue	179	189	187	203	311	242	260	412	401		216	247	263		N/A

The intersection operates at an acceptable level of service during both peak hours. The eastbound queue does back through the Goff Street intersection during the morning peak hour.

<b>Table 22</b> <b>Reduced Side Streets at the intersection of Court Street and Spring Street (Signalized)</b>									
	Court Street				Spring Street				All
	EBLT	EBTR	WBLT	WBTR	NBL	NBTR	SBL	SBTR	
AM Delay	11.8	14.1	18.8	7.3	23.2	9	16.9	11.8	12.7
AM LOS	B	B	B	A	C	A	B	B	B
AM Queue	247	261	243	264	74	76	84	64	N/A
PM Delay	26.3	26.4	13.9	7.1	45.8	12.4	30.6	16.4	19.1
PM LOS	C	C	B	A	D	B	C	B	B
PM Queue	313	328	199	239	197	89	79	73	N/A

This intersection operates at an acceptable LOS during both peak hours.

The following changes were assumed at the intersection of Court Street and Turner Street:

- Remove a southbound left-turn lane on Turner Street
- Remove the channelized right-turn on Court Street

<b>Table 23</b> <b>Reduced Side Streets at the intersection of Court Street and Turner Street (Signalized)</b>									
	Court Street					Turner Street			All
	EBLT	EBTR	WBLT	WBT	WBR	SBL	SBL	SBTR	
AM Delay	21.5	19.4	34.2	13.7	3.4		31.6	21.3	20.6
AM LOS	C	B	C	B	A		C	C	C
AM Queue	330	351	274	288	215		340	396	N/A
PM Delay	62.6	56	22.9	6.5	1.8		149.2	144.3	52.6
PM LOS	<b>E</b>	<b>E</b>	C	A	A		<b>F</b>	<b>F</b>	D
PM Queue	606	616	69	<b>8136</b>	262		<b>1335</b>	<b>1340</b>	N/A



This intersection operates at an acceptable LOS during the AM peak hour. The southbound approach fails during the PM peak hour and backs into the intersection of Turner Street, Hampshire Street, and Great Falls Plaza. The westbound through lane backs into the Main Street intersection. The eastbound approach operates at an unacceptable LOS.

The following changes were assumed at the intersection of Court Street, Main Street, and Great Falls Plaza:

- Remove the westbound channelized right-turn on Court Street

<b>Table 24</b> <b>Reduced Side Streets at the intersection of Court Street, Main Street, and Great Falls Plaza (Signalized)</b>										
	Court Street					Main Street		Great Falls Plaza		All
	EBT	EBT	WBT	WBT	WBR	NBL	NBTR	SBL	SBR	
AM Delay	8.2	9.4	7.2	9.2	1.7	33	26	36.1	14.8	12.3
AM LOS	A	A	A	A	A	C	C	D	B	B
AM Queue	665	699	204	264	140	195	331	92	32	N/A
PM Delay	10.7	11.9	2203.6	684.5	3.5	46	45.1	39.6	25.7	406.1
PM LOS	B	B	F	F	A	D	D	D	C	F
PM Queue	959	962	7810	7790	395	264	552	130	81	N/A

The eastbound queue backs through the Turner Street intersection during both the AM and PM peak hour. The westbound approach fails in the PM peak hour and the queue backs well into Lewiston.

<b>Table 25</b> <b>Reduced Side Streets at the intersection of Turner Street, Hampshire Street, and Great Falls Plaza (Signalized)</b>										
	Hampshire Street		Great Falls Plaza		Turner Street					All
	EBL	EBTR	WBLT	WBR	NBL	NBT	NBTR	SBL	SBTR	
AM Delay	14.6	9.9	17.3	3.7	23.9	5.2	6.5	12.7	8.8	8.5
AM LOS	B	A	B	A	C	A	A	B	A	A
AM Queue	24	95	57	57	30	76	97	85	244	N/A
PM Delay	16.5	49.7	75.4	7.8	16	5.7	5.2	18.1	274.7	94.7
PM LOS	B	D	E	A	B	A	A	B	F	F
PM Queue	58	210	232	171	40	80	99	240	861	N/A

This intersection operates at an acceptable LOS during the AM peak hour. The eastbound left-turn and the southbound through-right operate at an unacceptable LOS during the PM peak hour.

### Alternative Comparison

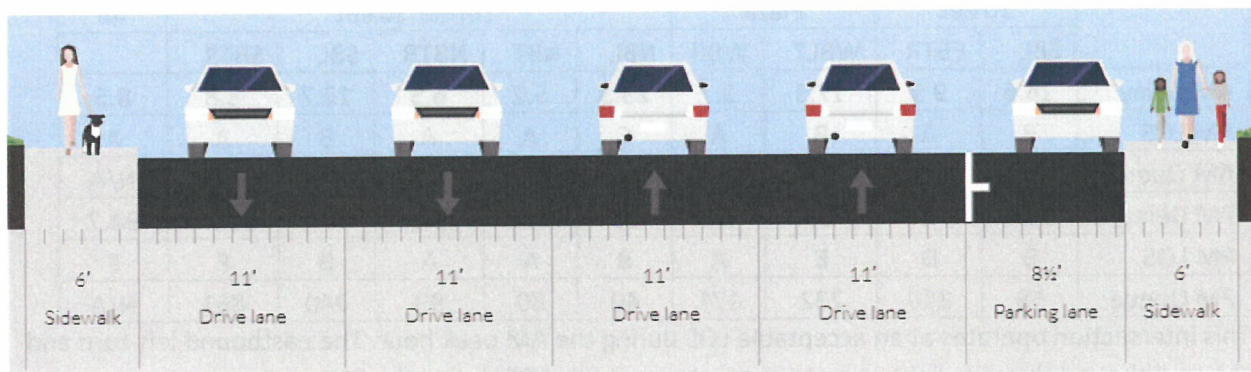
Each alternative is compared in **Table 26**. The reduction of lanes on Court Street creates severe mobility issues, while the minor reduction of the side streets is comparable to the No-Build condition.

Table 26 Comparison Matrix				
Intersection	No-Build (Optimization only)	Full Road Diet	Partial Road Diet	Reduced Side Streets
<i>AM LOS/PM LOS (Failing Delay)</i>				
Court Street/ Goff Street	A/A	<b>F (308.1)/F (419.6)</b>	<b>F (199.6)/F (258.5)</b>	A/A
Court Street/ Minot Avenue/ Union Street	C/C	<b>D/F (154.8)</b>	<b>E (55.9)/ D</b>	C/C
Court Street/ Spring Street	B/B	<b>D/F (107.8)</b>	<b>D/E (58)</b>	B/B
Court Street/Turner Street	B/D	<b>D/E (60.5)</b>	B/D	C/D
Court Street/ Main Street/ Great Falls Plaza	<b>B/F (404.4)</b>	<b>D/F(213.8)</b>	<b>E (55.9)/F(395.3)</b>	<b>B/F (406.1)</b>
Turner Street/ Hampshire Street/ Great Falls Plaza	<b>A/F (91.9)</b>	<b>F (132.6)/ F (86.8)</b>	<b>C/F (81.7)</b>	<b>A/F (94.7)</b>

### Other Opportunities

There are potential ways to improve bicycle and pedestrian conditions in the corridor without impacting vehicle mobility.

Typically, lane widths are examined, and space can be reallocated as needed. Unfortunately, lanes were measured to be 11-ft wide. An example of a typical cross section of Court Street between Spring Street and Turner Street is shown below.



Reducing the lanes to 10-ft could be considered, but lanes would be narrow for the conditions and only 2-ft of space would be created.

The Pleasant Street Crossing is a frustrating and potentially dangerous intersection for pedestrians. Below is a potential configuration to increase pedestrian visibility and safety.



