



CHAPTER 4:
Projected Traffic Conditions (2030)

CHAPTER 4: PROJECTED TRAFFIC CONDITIONS (2030)

This chapter of the Transportation Plan examines projected traffic conditions in the year 2030. The year 2030 is the extent of the planning horizon for this Transportation Plan. By using socio-economic and land use projections described earlier in **Chapter 3**, traffic conditions and traffic volumes can be predicted out to the planning horizon. Through this endeavor, potential future problems to the transportation system can be identified and corresponding solutions can be planned.

4.1 PROJECTED CORRIDOR FACILITY SIZE VERSUS TRAFFIC VOLUME (2030)

Roadway capacity is of critical importance when looking at the growth of a community. As traffic volume increases, vehicle flow deteriorates. When traffic volumes approach and exceed the available capacity, the road begins to fail. For this reason it is important to look at the size and configuration of the current roadways and determine if these roads need to be expanded or reconfigured to accommodate the existing or future traffic needs. The capacity of a road is a function of a number of factors including intersection function, land use adjacent to the road, access and intersection spacing, road alignment and grade, speed, turning movements, vehicle fleet mix, adequate road design, land use controls, street network management, and good planning and maintenance. Proper use of all of these tools will increase the number of vehicles that a specific lane segment may carry. However, the number of lanes is the primary factor in evaluating road capacity, since any lane configuration has an upper volume limit regardless of how carefully it has been designed. The function of intersections is a very critical element and can artificially limit lane capacity. The model discussed in **Chapter 3** assumed that intersections will not artificially limit corridor capacity. The approximate volume capacity of typical existing road segments was discussed in **Chapter 2**. **Table 4-1** shows a range of volumes for roadways developed in the future.

Table 4-1
Approximate Volumes for Planning of Future Roadway Improvements

Road Segment	Volumes ¹	Volumes ²
Two Lane Road	Up to 12,000 VPD	Up to 15,000 VPD*
Three Lane Road	Up to 18,000 VPD	Up to 22,500 VPD*
Four Lane Road	Up to 24,000 VPD	Up to 30,000 VPD*
Five Lane Road	Up to 35,000 VPD	Up to 43,750 VPD*

¹ Historical management conditions // ² Ideal management conditions // * Additional volumes may be obtained in some locations with adequate road design, access control, and other capacity enhancing methods.

Table 4-1 is a capacity level which is appropriate for planning purposes in growth areas of the study area. In newly developing areas there are opportunities to achieve additional lane capacity improvements. The careful, appropriate, and consistent use of the capacity enhancing mechanisms listed above can provide for long-term cost savings and help maintain roads at a scale comfortable to the community.

Using the traffic model developed for this project, it was possible to determine projected traffic volume on all major roads within the study area. These roads were analyzed for the base year 2003 and for the future year 2030 to determine if the roads have adequate numbers of lanes for the traffic volumes. The best tool generated by the traffic model for comparing the future traffic volumes to the existing number of travel lanes on the major corridors is the volume to capacity ratio (v/c ratio). By definition, the “v/c ratio” is the result of the flow rate of a roadway lane divided by the capacity of the roadway lane. **Table 4-2** shows “v/c ratios” and their corresponding roadway corridor “level-of-service” designations.

Table 4-2
v/c Ratios & LOS Designations

v/c Ratio	Description	Corridor LOS
< 0.60	Well Under Capacity	LOS A and B
0.60 – 0.79	Under Capacity	LOS C
0.80 – 0.99	At or Nearing Capacity	LOS D and E
> 0.99	Over Capacity	LOS F

The roadways in the Whitefish area that experience a v/c ratio 1.0 or greater, and are therefore over capacity, are listed in **Table 4-3**. The roadways listed in **Table 4-3** are currently undersized for the expected traffic volume increases by the year 2030. Values for v/c ratios as well as traffic volumes for the year 2003 and 2030 are found in **Chapter 3** in **Figures 3-17** thru **3-24**.

Table 4-3
Roadways Exceeding v/c Ratio of 1.0 by Year 2030

Roadway Name	Roadway Capacity (Assigned in MDT Model)	Year 2003 ADT Volume	Year 2003 V/C Ratio	Year 2030 ADT Volume	Year 2030 V/C Ratio	Starting Point	Ending Point
1ST ST	4000	3223	0.81	5808	1.45	O'Brien Ave	Spokane Ave
2ND ST	11000	10375	0.94	16927	1.54	Good Ave	Lupfer Ave
2ND ST	11000	7908	0.72	12191	1.11	Baker Ave	Highway 93
2ND ST E	10000	4543	0.45	13128	1.31	Larch Ave	Half Moon Rd
2ND ST E	10000	4094	0.41	9978	1.00	Pine Ave	Mill Ave
3RD ST	4000	2193	0.55	4891	1.22	Baker Ave	Spokane Ave
4TH ST	4000	1403	0.35	4888	1.22	Baker Ave	Spokane Ave
5TH ST	4000	1775	0.44	5393	1.35	Baker Ave	Spokane Ave
6TH ST	4000	1863	0.47	4133	1.03	5th St	Spokane Ave
ARMORY RD	5000	2596	0.52	6604	1.32	Voerman Rd	City Limit
BAKER AVE	15000	14714	0.98	19827	1.32	2nd St	Railway St
BAKER AVE	11000	10429	0.95	15816	1.44	W 18th St	6th St
BARKLEY LN	4000	989	0.25	3987	1.00	All	
BLANCHARD LAKE RD	5000	2090	0.42	6671	1.33	Crane Marsh Wy	Highway 93
BLANCHARD LAKE RD	5000	613	0.12	5670	1.13	Meadows Rd	Karrow Ave
CENTRAL AVE	4000	2598	0.65	4912	1.23	5th St	1st St
COLORADO AVE	10000	1934	0.19	10615	1.06	Denver St	Crestwood Ct
COLUMBIA AVE	10000	2173	0.22	10424	1.04	10th St	7th St
DILLON RD	5000	1901	0.38	5342	1.07	Monegan Rd	Braig Rd
E EDGEWOOD DR	10000	3966	0.40	13975	1.40	Texas Ave	Haskill Basin Rd

E LAKESHORE DR	11000	10145	0.92	19587	1.78	Barkley Ln	Houston Dr
E LAKESHORE DR	4000	2471	0.62	8283	2.07	Houston Point Dr	Birch Glen Rd
EDGEWOOD PL	10000	5365	0.54	10571	1.06	Iowa Ave	0.06 Miles East
EDGEWOOD PL	10000	2677	0.27	10137	1.01	Colorado Ave	0.08 Miles East
FAIRWAY DR	4000	1886	0.47	4740	1.19	Mountain Side Dr	W 7th St
FAIRWAY DR	4000	1400	0.35	4230	1.06	Green Pl	Highway 93
GEDDES AVE	5000	2127	0.43	5110	1.02	5th St	4th St
GOOD AVE	4000	1252	0.31	4511	1.13	3rd St	2nd St
GREENWOOD DR	4000	614	0.15	5002	1.25	Spruce Ct	End of road
HAUGEN HEIGHTS RD	5000	1114	0.22	5089	1.02	Patton Ln	Lion Mountain
HIGHLAND DR	5000	3248	0.65	5838	1.17	Northwoods Dr	End
IRON HORSE DR	4000	3429	0.86	8244	2.06	Murdock Ln	Lookout Ln
J P RD	10000	1574	0.16	10557	1.06	Highway 93	Monegan Rd
KALISPELL AVE	4000	644	0.16	4128	1.03	8th St	7th St
KALNER LN	5000	175	0.04	6129	1.23	Highway 40	0.41 Miles North
KARROW AVE	10000	2333	0.23	10334	1.03	4th St	W 3rd St
LION MOUNTAIN RD	10000	2659	0.27	12113	1.21	State Park Rd	Highway 93
LOOKOUT LN	4000	2040	0.51	4139	1.03	Iron Horse Dr	Whitefish Lookout Rd
MILES AVE	4000	862	0.22	4551	1.14	2nd St	1st St
MT STATE HWY 40 W	11000	9215	0.84	13148	1.20	0.35 Mi. E of Whitefish Stage Rd	0.18 Mi. E of Voerman Rd
MT STATE HWY 40 W	11000	11312	1.03	15534	1.41	US Hwy 93	Kalner Ln
MURDOCK LN	4000	3429	0.86	8244	2.06	Ridgecrest Dr	Kinnikinnik Cir
MURDOCK LN	4000	4025	1.01	9715	2.43	Wisconsin Ave	Ridgecrest Dr
NORTHWOODS DR	5000	3248	0.65	5838	1.17	N Valley Dr	Highland Dr
PARK AVE	4000	1169	0.29	4976	1.24	Voerman Rd	10th St
PARK KNOLL LN	5000	1811	0.36	6034	1.21	All	
PARKHILL DR	5000	941	0.19	7668	1.53	W 3rd St	Highway 93
PARKWAY AVE	4000	979	0.24	4839	1.21	0.018 Miles East of Birch Hill Dr	Birch Hill Dr
RAILWAY ST	4000	2886	0.72	6154	1.54	Baker Ave	Central Ave
RESERVOIR RD	5000	3676	0.74	6829	1.37	E Lakeshore Dr	N Valley Dr
SPOKANE AVE	15000	10893	0.73	17571	1.17	13th St	Riverside Ave
SPOKANE AVE	11000	11247	1.02	14729	1.34	Riverside Ave	9th St
SPOKANE AVE	11000	10705	0.97	14160	1.29	9th St	6th St
SPOKANE AVE	4000	3429	0.86	5134	1.28	2nd St	1st St
STAGE LINE RD	5000	6239	1.25	7669	1.53	All	
STATE PARK RD	10000	2216	0.22	11253	1.13	Lion Mountain	Haugen Heights Rd
TEXAS AVE	5000	3422	0.68	6710	1.34	Edgewood Pl	Cedar St
US HIGHWAY 93	11000	9583	0.87	22449	2.04	Lion Mountain	City Limit
US HIGHWAY 93	11000	9583	0.87	22449	2.04	Highway 40	W 19th St
VIADUCT	15000	17566	1.17	27473	1.83	Railway Avenue	Edgewood Place
VOERMAN RD	4000	1169	0.29	4947	1.24	Park Ave	Rivertrail Ct
VOERMAN RD	4000	1080	0.27	4739	1.18	Shady River Ln	Monegan Rd
W 2ND ST	11000	10674	0.97	18316	1.67	City Limit	Good Ave
W 3RD ST	5000	849	0.17	7652	1.53	Parkhill Dr	Karrow Ave
W 5TH ST	4000	2133	0.53	5094	1.27	6th St	Geddes Ave
W 6TH ST	4000	2619	0.65	5636	1.41	Baker Ave	5th St
W 7TH ST	4000	2992	0.75	6750	1.69	Fairway Dr	Baker Ave
WF LOOKOUT RD	4000	2040	0.51	4139	1.03	Lookout Ln	City Limit
WISCONSIN AVE	11000	10675	0.97	13267	1.21	Denver Ave	Glenwood Rd
WISCONSIN AVE	11000	11391	1.04	23938	2.18	Glenwood Rd	Barkley Ln
WISCONSIN AVE	11000	9475	0.86	12195	1.11	Woodland Pl	0.08 Mi. N of Woodside Ln
YAMPAH LN	4000	3149	0.79	4655	1.16	All	

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